Г. В. Абрамович
С. О. Кот
Н. П. Хоменко

# ENGLISH FOR COMPUTING I

Міністерство освіти і науки України
Вінницький національний технічний університет

**Г. В. Абрамович, С. О. Кот, Н. П. Хоменко**

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Навчальний посібник

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Навчальний посібник містить фахові тексти, лексичні та граматичні вправи комунікативного спрямування. Посібник також укомплектований аудіокурсом, що дає змогу використовувати автентичні записи зі спеціальності з метою формування навичок аудіювання.
Призначається для студентів, що вивчають комп'ютерні науки.

# 3MICT

## SECTION 1

# YEAR OF STUDY I
## SECTION 1
## Unit 1

*(G) Grammar:*                      *Verbs: to be, to have, there be*
                                    *Indefinite Tenses (Active Voice)*
                                    *Types of Questions*
                                    *Phrasal Verbs in Computing*
*(R) Reading:*                      *It's good to be a student*
*(S) Speaking:*                     *I'm a student of the University*

## (G) Grammar (block I):

**Verbs *to be, to have, there be* in Indefinite Active**

| Infinitive | Present | Past | Future |
|---|---|---|---|
| **to be** | I **am**<br>he, she, it **is**<br>we, you, they **are** | I, he, she, it **was**<br>we, you, they **were** | **will be** |
| **to have** | I, we, you, they **have**<br>he, she, it **has** | **had** | **will have** |
| **there be** | **there is**<br>**there are** | **there was**<br>**there were** | **there will be** |

**Exercise 1G.**
a) Write the following sentences in the Past and Future Indefinite, using the proper adverbial modifiers of time: *at 5 o'clock, tomorrow, 2 days ago, in a month, yesterday, next year,* etc.
1. Victor is free in the evening.
2. John has a friend in Ukraine.
3. There are some universities in our town.
4. This computer is new and expensive.
5. There is a new stadium at our University.
6. These students have 5 exams this session.
7. There are many good books in our library.
8. My friend has a good job.
9. They have a beautiful reading hall.
10. There is a computing center at our Institute.
   b) make up general questions to these sentences
   c) write the sentences in negative form

| |
|---|
| **General question:**<br>*Does (did, will) he enter the University?* |
| **Alternative question:**<br>Does (did, will) he enter the University or the Academy? |
| **Disjunctive question:**<br>He enters the University every year, doesn't he?<br>He entered the University last year, didn't he?<br>He will enter the University next year, won't he? |
| **Interrogative-negative question:**<br>Doesn't (Didn't/ Won't) he enter the University? |
| **Special questions:**<br>Who (enters, entered, will enter) the University?<br>What (Where) does (did, will) he enter?<br>When (Why) does (did, will) he enter the University? |

**Exercise 2G.**
Make all types of questions.
*Example:*            *There is a seminar today.*
          <u>General question:</u> *Is there a seminar today?*
          <u>Alternative question:</u> *Is there a seminar or a lecture today?*
          <u>Disjunctive question:</u> *There is a seminar today, isn't there?*
          <u>Interrogative-negative question:</u> *Isn't there a seminar today?*
          <u>Special questions:</u> *What is there today? When is there a seminar?*
1.   Mathematics was my favourite subject at school.
2.   They will be good specialists in 2 years.
3.   There are many foreign students at our University.
4.   We were good friends at school.
5.   There is a letter for him on the table.
6.   Yesterday he was late for the English lesson.
7.   There will be a conference in our group tomorrow.
8.   I was glad to see you at our meeting last Tuesday.
9.   There were 4 departments at our University before the war.
10.   I am a student now.

**Exercise 3G.**
Make some sentences with words from the three boxes, using <u>there is</u> etc..

| | | |
|---|---|---|
| There is/are a lot of | water | in Africa |
| There isn't much | air | in the USA |
| There aren't many | trees | in Antarctica |
| There isn't/aren't any | people | in London |
| There wasn't/weren't any | computers | on the moon in 1600 |

## (G) Grammar (block II):

**Розділ 1**

**Розділ 2 Indefinite Tenses Active**

| | Past | Present | Future |
|---|---|---|---|
| **Active** | *asked*<br>*did … ask* | *ask*<br>*asks*<br>*do … ask*<br>*does … ask* | *shall ask*<br>*will ask* |

**Exercise 4G.**

Make the sentences in Singular.

*Example:*       *My sisters <u>study</u> at the Technical University.*
        *My sister <u>studies</u> at the Technical University.*

1. My friends learn 2 foreign languages.
2. These girls go to the concert in the evening.
3. His boxes are big.
4. They want to buy some books because their sons have a birthday tomorrow.
5. Her brothers work much all day long.
6. My friends do not like History.

**Exercise 5G.**

Write these sentences in the Past and Future Indefinite.

1. I come to the University at 8.
2. He goes to the factory by bus.
3. We have dinner at 3 p. m.
4. The guy tells us everything.
5. They read newspapers in the morning.
6. My friend takes books from the library.
7. The lectures begin at $8^{15}$.
8. I know many English words.
9. He helps me in my work.
10. We do research at the University.

**Exercise 6G.**

Make up all possible types of questions to the sentences.

1. He graduated from the University 2 years ago.
2. She had a dog when she was a child.
3. My friend speaks English fluently.
4. They were born in our town in 1989.
5. They will have much work to do next month.

**Exercise 7G.**
Use the verbs in brackets in the Past Indefinite tense.

**22 February: I Love my New PC**

Cool, I have a brand new PC. I _____ (plug) it in, _____ (switch) on the monitor, _____ (type) my password, and _____ (connect) to the Net. I _____ (open) my favourite website, _____ (scroll) down the menu and _____ (download) an MP3 file of my favourite band. I _____ (listen) to it several times. It's awesome.

I _____ (google) for a nice site of car images. I _____ (copy and paste) about 20 images of cool cars in a folder that I _____ (create) for my Technology Project. I also _____ (scan) some terrific photos and _____ (edit) them.

I _____ (install) my favourite game on my new PC and _____ (play) it for about an hour. When Mum _____ (enter) my room, I _____ (minimise) the window and _____ (work) on my project. Hahaha ☺

When I _____ (finish) my project, I _____ (save) and _____ (email) it to my Technology teacher. I also _____ (print) it because I want to show it to my friends.

Mum's here again. I must go to bed. Nightie night.

## (R) Reading

### It's good to be a student!

Every young person wants to get higher education nowadays and technical education is a part of our country's education system. Some months ago, I passed my entrance exams and I'm a student of Computing Engineering Department.

My name's Victor, I'm 17. I finished school #5. I'm going to be a system engineer (programmer). I think this profession is especially important in our computer age, because computers are used everywhere and have many applications. In my opinion, every young specialist has to deal with computer and to know at least one foreign language.

I met many friends at the University. We are 30 in the group. There are some foreign students in our group, they come from China. Of course, their native language is Chinese, but they also speak Ukrainian and English a little. We learn many interesting and new subjects. My life becomes more and more interesting. Students do research, go in for sport, visit concerts, disco or a cinema. I'm glad to be a student! It's really great!

**Exercise 1R.**

Answer the following questions.

1. Are you a student now?
2. Where do you study?
3. Where are you from?
4. What are you going to be?
5. Do you have many friends at the University?
6. What foreign language do you study?
7. Are you good at computers?
8. What's your favourite subject?

**Exercise 2R.**

Translate into English.

1. Я – студент технічного університету.
2. В нашому університеті 7 інститутів.
3. У Вашій групі 25 осіб, чи не так?
4. Я збираюся бути програмістом.
5. Я впевнений, що студентам сподобається вчитися тут.
6. Ви готові до уроку?
7. Чи є у Вашій групі іноземні студенти?
8. Коли починаються заняття?
9. Вчора він запізнився на урок.
10. Хіба вони не мають вдома комп'ютера?

# (G) Grammar (block III):

**Розділ 3**
**Розділ 4 Phrasal Verbs in Computing**

**Exercise 8G.**

a) Draw lines to join verbs to particles to create 6 phrasal verbs used to talk about computing.

| back | into |
|------|------|
| boot | off |
| hack | on |
| link | up |
| log | |

b) Now match each phrasal verb to one of the definitions below.

1. to make a copy of the information on your computer so that you do not lose it
2. to get into someone else's computer system without permission
3. to start a computer so that it is ready to use
4. to finish using a computer system

5. to connect to a network of other computer users so that equipment and information can be sharedto perform the actions that are required to enable you to begin using a computer system

## (S) Speaking

**Exercise 1S.**
Make up a dialogue, using the words and word expressions.

1. to enter the University
2. to study at
3. to be good at
4. to be sorry
5. to be going to
6. to be sure
7. to live in hostels
8. to do research
9. to take part in
10. with pleasure
11. Good luck!
12. to graduate from

**Exercise 2S.**
Choose the proper word and translate.

1. Students get a higher (*examination/education/question*) at the universities.
2. Students receive a monthly (*profession/grant/tradition*).
3. After the students (*organize/graduate/teach*) from the universities they (*work/study/look for*) in all fields of national economy.
4. He didn't enter the Institute because he (*prepared/failed/learned*) in mathematics.
5. Students have to (*return/attend/begin*) lectures on different subjects.
6. When did you (*receive/make/want*) a letter from your parents?
7. He is a good student, he'll (*come/understand/pass*) all the examinations well.
8. As the lectures begin at 9 o'clock, you must come some minutes (*after/before/between*) 9 a.m.
9. She didn't answer this question because it was (*difficult/different/easy*).
10. (*Beautiful/Interesting/Foreign*) delegations from different countries come to visit (*your, his, our*) country.
11. What foreign (*newspaper/language/word*) can you speak?
12. After graduation from the University, he will work at the computing (*office/centre/firm*).

**Exercise 3S.**
Make up sentences.

1. gets, he, at, 6, day, o'clock, up, every.
2. teacher, the, this, at, many, asks, questions, examination.
3. is, no, English, book, her, there, table, on.
4. are, many, students, there, how?
5. did, come, not, I, to, Institute, the, days, ago, two.

**Exercise 4S.**
Make up questions to the following answers.
*Example:*                  Answer: *Yes, they do. They come home at 5 p.m.*
                            Question: *Do they return home at 5 p.m?*

| | |
|---|---|
| 1.    Yes, I did. I finished school last year. | 7.    No, they didn't attend lectures yesterday. |
| 2.    My friend will. | 8.    5 years ago. |
| 3.    In 1985. | 9.    We are 5 in the family. |
| 4.    Yes, it was. Mathematics was my favourite subject at school. | 10.    Yes, we are. We are good at English. |
| 5.    My friend was born in Vinnytsia. | 11.    John Brown. |
| 6.    Our University numbers 5000 students. | 12.    Last month I was in London. |

# Unit 2

*(G) Grammar:*  *Passive Voice*
*Modal Verbs and their Equivalents*
*Word Building (nouns)*
*(R) Reading:*  *The digital age*
*(SR)Supplementary reading:*  *Computers in the home*
*(L) Listening*  *Computer usage*
*(S) Speaking:*  *Applications of computers*

## (G) Grammar (block I):

**Passive Voice**

| Infinitive | be + Participle II *(to be used)* |
|---|---|
| **Present** | A computer *is used* (*застосовується*) = *they* use a computer<br>Computers *are used* (*застосовуються*) = *they* use computers |
| **Past** | A computer *was used* (*застосовувався*) = *they* used a computer<br>Computers *were used* (*застосовувалися*) = *they* used computers |
| **Future** | A computer *will be used* (*застосовуватиметься*) = *they will* use a computer<br>Computers *will be used* (*застосовуватимуться*) = *they* will use computers |

**Exercise 1G.**
Translate the following sentences.
1. Our University was founded in 1967.
2. An interesting problem was discussed at the lecture.
3. All the calculations will be done by a computer.
4. English is spoken all over the world.
5. This University is well known in Ukraine.

**Exercise 2G.**
Transform the sentences into Passive.
1. People use computers in a great variety of fields.
2. Computers perform different operations.
3. Students use computers to access the Internet.
4. Workstations in the race buses provide the timing system to TV stations.
5. Scientists invented computers last century.
6. Managers will use computers for administrative purposes.
7. This professor teaches two foreign languages.
8. The teacher asked the students many questions.
9. Airplane pilots use computers to help them control the plane.
10. We shall meet the delegation of foreign scientists next week.

**Exercise 3G.**
Transform the sentences from Passive into Active.
1.   Usually students are examined in this room.
2.   Students are taught different subjects.
3.   He will be given a good job.
4.   This hostel was built last year.
5.   These problems were discussed at the seminar 2 days ago.

**Exercise 4G.**
Fill in the blanks with the correct form of the verbs in brackets.

*Example:*      Houses (*design*) …………. with the help of computers.
                *Houses are designed with the help of computers.*
1.   Various terminals (*connect*) …………. to this workstation.
2.   Microcomputers (*know*) …………. as PCs.
3.   Magazines (*typeset*) …………. by computers.
4.   When a particular program is run, the data (*process*) …………. by the computer very rapidly.
5.   The Web (*use*) …………. to search for information and buy products online.
6.   The drug-detecting test in the Tour de France (*support*) …………. by computers.
7.   All the activities of the computer system (*coordinate*) …………. by the central processing unit.
8.   In some modern systems information (*hold*) …………. in optical disks.

## (L) Listening

**Task (Recording 1)**
**Exercise 1L.**
   a) Listen to these people talking about how they use computers and write each speaker's job into the table.

| electrical engineer | secretary | librarian | composer |
|---|---|---|---|

| Speak | Job | What they use computers for |
|---|---|---|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |

   b)      Now listen again and say what each speaker uses their computer for.

## (R) Reading

### The digital age

We are now living in what some people call *the digital age,* meaning that computers have become an essential part of our lives. Young people who have grown up with PCs and mobile phones are often called *the digital generation.* Computers help students to **perform (1)** mathematical **operations** and improve their maths skills. They are used to **access the Internet,** to **do** basic **research** and to communicate with other students around the world.

Teachers use projectors and interactive whiteboards to **give presentations** and teach sciences, history or language courses. PCs are also used for administrative purposes - schools use **word processors (2)** to **write letters,** and databases to **keep records** of students and teachers. A school website allows teachers to publish **exercises** for students to **complete online (3)**.

Students can also enrol for courses via the website and parents can download (4) official reports.

Mobiles let you **make** voice **calls, send texts,** email people and download logos, ringtones or games. With a **built-in (5)** camera you can send pictures and make video calls in *face-to-face* mode. New smartphones combine a telephone with web access, video, a games console, an MP3 player, a personal **digital (6)** assistant (PDA) and a GPS navigation system, all in one.

In banks, computers **store (7) information** about the money held by each customer and enable staff to **access** large **databases** and to **carry out financial (8) transactions** at high speed. They also control the cashpoints, or ATMs (automatic teller machines), which **dispense money** to customers by the use of a PIN-protected card. People use a Chip and PIN card to pay for goods and services. Instead of using a signature to verify payments, customers are asked to **enter a** four-digit **personal identification number (PIN),** the same number used at cashpoints; this system makes transactions more secure. With online banking, clients can easily **pay bills** and **transfer money** from the comfort of their homes.

Airline pilots use computers to help them control the plane. For example, **monitors (9) display data (10)** about fuel consumption and weather conditions. In airport control towers, computers are used to manage radar systems and regulate air traffic. On the ground, airlines are connected to travel agencies by computer. Travel agents use computers to find out about the availability of flights, prices, times, stopovers and many other details.

### Exercise 1R.

Find the words (1−10) in the text above. Can you guess the meaning from context? Are they nouns, verbs, adjectives or adverbs? Write *n, v, adj* or *adv* next to each word.

| 1. | perform | 6. | digital |
|----|---------|----|---------|
| 2. | word processor | 7. | store |
| 3. | online | 8. | financial |
| 4. | download | 9. | monitor |
| 5. | built-in | 10. | data |

**Exercise 2R.**

Match the words in the previous exercise (1−10) with the correct meanings (a-j).

| a. | keep, save | f. | screen |
|----|-----------|----|--------|
| b. | collection of facts or figures | g. | program used for text manipulation |
| c. | execute, do | | |
| d. | describes information that is recorded or broadcast using computers | h. | integrated |
| | | i. | copy files from a server to your PC or mobile |
| e. | monetary | j. | connected to the Internet |

# (S) Speaking

**Exercise 1S.**

Look at the text again and discuss these questions.
1. How are/were computers used in your school?
2. What other areas of study would benefit from the introduction of computers?

**Exercise 2S.**

Use collocations in the box to complete these sentences.

*access the Internet, perform operations, do research, make calls, send texts, display data, write letters, store information, complete exercises, carry out transactions*

1. Thanks to Wi-Fi, it's now easy to _____ from cafes, hotels, parks and many other public places.
2. Online banking lets you _____ between your accounts easily and securely.
3. Skype is a technology that enables users to _____ over the Internet for free.
4. In many universities, students are encouraged to _____ using PowerPoint in order to make their talks more visually attractive.
5. The Web has revolutionized the way people _____ − with sites such as Google and Wikipedia, you can find the information you need in seconds.

6. Cookies allow a website to _____ on a user's machine and later retrieve it; when you visit the website again, it remembers your preferences.
7. With the latest mobile phones, you can _____ with multimedia attachments – pictures, audio, even video.

**Exercise 3S.**
Choose words from the box to fill in the text.

> *store, process, enter, hard drive, data, save, program, graphics, input, keyboard, memory, CD-ROM, floppy disk*

A computer can _____ and _____ information. This information is called _____ and can be words, numbers or _____. To process data, the computer uses a _____, which is a set of instructions stored on the computer's _____.

To _____ data, you can _____ it using the _____. If you want to store this data, you _____ it in the computer's _____ or onto a _____. Large amounts of information, such as books, can be stored on a _____.

## (G) Grammar (block II):

**Modals**

| Can<br>Could<br>May<br>Might | Must<br>Shall<br>Have to<br>Be to | Ought to<br>Should<br>Dare<br>Need |
|---|---|---|

| |
|---|
| - ***could/might/may***<br>*Kate is not in the room, she **may/might** be in the laboratory. – Каті немає в кімнаті, але вона **може** бути в лабораторії.* |
| - ***can***<br>*The temperature **can** reach 35 degrees in summer. – Літом температура **може** сягнути 35 градусів.* |
| - ***can/could***<br>*When I was a child I **could** play basketball very good. – Коли я був дитиною, я **міг** добре **грати** в баскетбол.* |
| - **shall**<br>***Shall** I open the window? – Мені відкрити вікно?* |
| - **should**<br>*Look on the shelf the keys **should** be there. – Подивись на полиці – ключі **повинні** бути там.*<br>*I think you **shouldn't** sit in front of the monitor for so long. – Я думаю, тобі* |

| |
|---|
| **не слід** так багато часу проводити перед монітором. |
| - **can + verbs of perception**<br>I **could hear** the music coming out of the neighboring window. – Я **чув** музику, що лунала з сусіднього вікна. |
| - **can/could**<br>**Can** I come it? – **Можна** ввійти?<br>**Could** you help me? – Чи н**е могли б** ви мені допомогти? |
| - **may/might**<br>**May** I take your newspaper? – **Можна** мені взяти вашу газету? |
| - **must**<br>You **must** come at work on time. – Ви **повинні** приходити на роботу вчасно. |
| - **mustn't**<br>You **mustn't** be here! Go away! – Вам **не можна** тут бути! Йдіть! |
| - **have to**<br>My computer is broken and now I **have to** work with yours. – Мій комп'ютер зламався і тепер я **змушений** працювати на твоєму. |
| - **don't have to**<br>I have installed this program already, you **don't have to** do it, thanks. – Я вже встановив цю програму, тобі **не потрібно** цього робити, дякую. |
| - **ought to**<br>You **ought to** help him. – Ти **повинен** допомогти йому. |
| - **be to**<br>She **is to** be here soon, we decided to meet at 8 p.m. – Вона п**овинна** незабаром прийти, ми домовились о 8 вечора. |

**Exercise 5G.**
Write the sentences in the Past and Future Indefinite.

*Example A:*  You <u>must</u> attend lectures.
 You <u>had to</u> attend lectures.
 You <u>will have to</u> attend lectures.
1. Students must take examinations every session.
2. You must know what a computer is.
3. Everybody must cross the street on green light.
4. We must be present there by all means.
5. He must read the text again.

*Example B:*  He <u>can</u> read well.
 He <u>could</u> read well.
 He <u>will be able to</u> read well.
1. He can get second higher education.

2.   I can deal with computer.
3.   She can help you in your studies.
4.   They can't translate this text.
5.   We can meet you at the bus station.

*Example C:*          *She may come in.*
                      *She might (was allowed, was permitted to) come in.*
                      *She will be allowed (permitted) to come in.*

1.   You may go home after classes.
2.   They may continue the experiments.
3.   You may not take this book from my library.
4.   The students may attend this conference.
5.   He may use a dictionary at the test.

### Modal Verbs and their Equivalents

| Physical ability (фізична можливість, вміння) | Can – could – to be able to |
|---|---|
| Permission (дозвіл) | May – might – to be allowed (permitted) to |
| Obligation (повинність) | Must – to have to – to be to |
| | Should – ought to – to be obliged to |
| **Modals + be + Participle II** ||
| Computer (s) *can/ must/ should/ could/ may/might ... be used* by every student. ||

**Exercise 6G.**
Read and translate the sentences and make up special questions.
1.   Computers are used everywhere now.
2.   The department of physics was opened 3 years ago.
3.   He was asked many questions about his new job.
4.   The experiments will be completed soon.
5.   He was listened to with great attention.
6.   The students were explained how to use this rule.
7.   All the activities of the computer system are coordinated by the CPU.
8.   Your article may be published at our University's newspaper.
9.   Information can be stored in computer's memory.
10.  New hostels will be built next two years.

**Exercise 7G.**
Find the sentences in which verbs *to be* and *to have* are translated as *"повинен"*.
1.   Computer has five main units.
2.   The main task of this article was to show the results of our experiments.
3.   The lecture was to begin at 10 a. m.
4.   The participants of this conference are to arrive tomorrow morning.

5. Our lab assistant has to test this device at once.
6. He has done this work.
7. What am I to do?
8. Do you have any questions?
9. I will have to do this work.
10. He has no computer at home.

**Exercise 8G.**
Translate the sentences into English.
1. Вам слід знати, як працює комп'ютер.
2. Освічена людина має знати хоча б одну іноземну мову.
3. Чи можу я відвідати комп'ютерний центр сьогодні?
4. Що ще можуть робити комп'ютери?
5. Йому доведеться взяти словник, щоб перекласти текст.
6. Він ще не вміє писати програми, чи не так?
7. Студентам не дозволяється палити в приміщенні.
8. Хіба Ви не зможете зробити це за допомогою комп'ютера?
9. Ви повинні були зачекати на нього.
10. Студентам не дозволили користуватися цим приладом, тому що його потрібно було відремонтувати.

# (G) Grammar (block III):

## Word-building (nouns)

**Exercise 9G.**
Form the nouns from the adjectives using the suffixes: - *(i)ty, -ness.*

| | | |
|---|---|---|
| available | possible | difficult |
| dark | real | weak |

**Exercise 10G.**
Write the verbs from the corresponding nouns.

| | | | | |
|---|---|---|---|---|
| consumption | organiser | computer | instruction | entertainment |
| introduction | participation | information | programmer | calculator |

**Exercise 11G.**
Form the nouns using the following suffixes: *-ment, -er/-or, -tion, -ssion, -ness, -ance/-ence* from the verbs.

| | | | | |
|---|---|---|---|---|
| to compute | to operate | to inform | to teach | to perform |
| to generate | to measure | to determine | to manage | to relax |
| to apply | to produce | to process | to exist | to execute |

**Exercise 12G.**

Look at these extracts from various websites. Are the words in bold verbs, nouns, adjectives or adverbs?

1. Click here to begin your **download**.
2. **Download** the MP3 file now!
3. Buy now by visiting our **store**.
4. We will not **store** your details for more than 14 days.
5. Click here for an **online** discount.
6. Buy **online** by clicking here.

# (SR) Supplementary reading

**Exercise 1SR.**

Write a report on your computer application (in the form of a text).

### Useful constructions:
*Computers are used to ...; a PC can also be used for...; Computers can help ... make ... control... store ... keep ... provide ... manage ... give ... perform ... measure ... test... provide access to ...*

**Exercise 2SR.**

Read through the text and find the answers to these questions.
1. What are "computer graphics"?
2. What do the acronyms "CAD", "CAE" and "CAM" stand for?
3. What are the benefits of using computer graphics in the car industry?
4. What are the benefits of using graphics in business?
5. What is "computer animation"?

### Computer graphics

Computer graphics are pictures and drawings produced by computer. A graphics program interprets the input provided by the user and transforms it into images that can be displayed on the screen, printed on paper or transferred to microfilm. In the process the computer uses hundreds of mathematical formulas to convert the data into precise shapes and colours. Graphics can be developed for a variety of uses including presentations, desktop publishing, illustrations, architectural designs and detailed engineering drawings.

Mechanical engineers use sophisticated programs for applications in computer-aided design and computer-aided manufacturing. Let us take, for example, the car industry. CAD software is used to develop, model and test car designs before the actual parts are made. This can save a lot of time and money.

Computers are also used to present data in a more understandable form: electrical engineers use computer graphics to design circuits and people in business can present information visually to clients in graphs and diagrams.

These are much more effective ways of communicating than lists of figures or long explanations.

Today, three-dimensional graphics, along with colour and animation, are essential for such applications as fine art, graphic design, Web-page design, computer-aided engineering and academic research. Computer animation is the process of creating objects and pictures which move across the screen; it is used by scientists and engineers to analyze problems. With the appropriate software they can study the structure of objects and how it is affected by particular changes.

Basically, computer graphics help users to understand complex information quickly by presenting it in a clear visual form.

**Exercise 3SR.**

Graphics programs have several options that work in conjunction with the tools menu to enable the user to manipulate and change pictures.

Look at the facilities on the left and match them with the definitions on the right.

| | |
|---|---|
| 1)Patterns menu | a) Turning an image round. |
| | b) A tool which lets you scale the "view" of a picture and edit a small portion of it as if you were working under a magnifying glass. It is very useful for doing detailed work as you can edit the picture one dot at a time. |
| 2)Scaling | c) Making the object larger or smaller in any of the horizontal, vertical or depth directions. |
| 3)Rotating | d) A shading technique where two different colours are placed next to each other; the human eye blends the colours to form a third one. It is also used to show shading in black and white. |
| 4)Inverting | |
| 5)Zoom | e) A palette from which you choose a design to fill in shapes. |
| 6)Slanting | f) Reversing the colour of the dots in the selected part of a picture, so that white dots become black and black dots become white. |
| 7)Black-and-white dithering | g) Inclining an object to an oblique position. |

# Unit 3

| | |
|---|---|
| *(G) Grammar:* | *Continuous Tenses Active and Passive* |
| | *Adjectives: Degrees of Comparison* |
| | *Emphatic Construction: It is (was) …* |
| | *Numerals.* |
| *(R) Reading:* | *Computers are changing the world* |
| *(SR)Supplementary reading:* | *From the history of computers* |
| | *What's a computer?* |
| | *Types of computers* |
| | *Computer speed and capacity issues* |
| *(L) Listening* | *Types of computer systems* |

## (G) Grammar (block I):

### Continuous Tenses Active and Passive

| | Active | Passive |
|---|---|---|
| | **be + Participle I** | **be + being + Participle II** |
| **Present** | He *is installing* a new program now. *(встановлює)* | A new program *is being installed* now. *(встановлюється)* |
| **Past** | He *was installing* a new program when we came. *(встановлював)* | A new program *was being installed* when we came. *(встановлювалася)* |
| **Future** | He *will be installing* a new program tomorrow at 11 a.m. *(встановлюватиме)* | - |

---

**!!!!! Verbs not normally used in Continuous Tenses!!!!**
*like love hate want need prefer know realize suppose mean understand believe remember belong contain consist depend seem*

---

**Exercise 1G.**
Translate the sentences, paying attention to the use of tense-forms.

1. She often works with a computer.
2. He prepared his lessons well yesterday.
3. We are tired, we'll prepare our lessons tomorrow.
4. We shall finish the work tomorrow.
5. The plan was discussed 2 days ago.
6. She is working with a computer.
7. He was preparing his report when we came to see him.
8. We will be preparing our lessons the whole evening tomorrow.
9. The motherboard is being checked now.
10. The plan was being discussed all day long yesterday.

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**Exercise 2G.**

Replace the Indefinite Tenses sentences with the Continuous Tenses ones using the adverbial modifiers of time: *now, at 3 o'clock, from … to, when she came* where necessary.

1. They built a new hostel some years ago.
2. The students prepare their lessons in the library.
3. We'll have dinner at our student's canteen.
4. Tomorrow we'll have a seminar in mathematics.
5. They bought a new computer 2 weeks ago.
6. We read your text-book.
7. My friend worked in the computing centre.
8. We play football every Sunday.
9. Our teacher asks us many questions at the lesson.
10. I watched a new film on TV last week.

**Exercise 3G.**

Translate the sentences into Ukrainian.

1. What questions are being discussed now?
2. We are taking our exams next Friday.
3. My friend graduated from the University in 2004.
4. I don't know what university he is entering.
5. Who is being examined now?
6. Can you tell me who is sitting next to her?
7. Computers are becoming more and more popular.
8. The experiments were being carried out in some laboratories, when the new term started.
9. Our professor was being listened to with great attention the whole lecture.
10. Don't come at 2 o'clock! I'll be having my English lesson.
11. I can't understand what you are talking about.
12. Disc drives are used to handle one or more floppy drives.

**Exercise 4G.**

Translate the following sentences into English.

1. Наш університет був заснований понад 40 років тому.
2. Інформація зберігається в пам'яті комп'ютера, чи не так?
3. Основна пам'ять зберігає інструкції та дані, які зараз (в даний момент) обробляються комп'ютером.
4. Про що ти думаєш?
5. Я поїду провідати своїх батьків наступної суботи.
6. Коли я зайшов, вона роздруковувала документ.
7. Досліди будуть проводитися завтра чи сьогодні?
8. Мені здається, що мене не слухають.
9. Вони писали програму вчора ввечері.

## (G) Grammar (block II):
### Adjectives

| Degrees of Comparison of Adjectives | | |
|---|---|---|
| | **Comparative** | **Superlative** |
| big | big*ger* | the big*gest* |
| long | long*er* | the long*est* |
| easy | easier (*y → i+er*) | the easiest (*y → i+est*) |
| interesting | *more* interesting<br>*less* interesting | *the most* interesting<br>*the least* interesting |
| good | better | the best |
| bad | worse | the worst |
| much, many | more | the most |
| little, few | less | the least |
| far | farther (further) | the farthest (the furthest) |

**Exercise 5G.**

Open the brackets using the adjectives in the Superlative degree.

1. Our University is (*large*) than the Medical one.
2. Is English (*easy*) for you than maths?
3. December, 22 is (*short*) day of the year.
4. Notebook is (*comfortable*) than the desk-top computer.
5. My friend is (*good*) student in the group.
6. Programming is (*difficult*) for her than physics.

**Exercise 6G.**

Complete this review of a digital camera by typing in the superlative form of the adjectives in brackets.

With 6.0 megapixels and 3x optical zoom, the D930 is the _____ (*good*) high resolution digital camera available in this price range. You can use the D930 to produce some of the _____ (*sharp*) images possible and take detailed photos for printing up to poster size. In addition, it has a 3x optical and 5x digital zoom, giving 15x total zoom when combined – the _____ (*high*) in any digital camera under €50. ASR technology prevents the degradation of image clarity and colour common in flash photography. With ASR, the effects of camera shake are reduced in lower light conditions; you can even take well exposed, sharper pictures in low light without using a flash at all. It guarantees the _____ (*bright*) and the _____ (*natural*) pictures possible at this price.

**Exercise 7G.**

Answer the following questions.
1. What university is the oldest in your town?
2. Who's the youngest in your group?
3. Which of you is good at programming?
4. Is English more difficult than German?
5. What is the easiest subject for you?
6. Who studies better than you?
7. Who lives the farthest from the University?
8. What is the most attractive building in your town?
9. Who studies worse than you?
10. Does your sister get earlier than you?

## Order of Adjectives

| Deter-miner | Observation | Physical Description | | | | Origin | Material | Qualifier | Noun |
|---|---|---|---|---|---|---|---|---|---|
| | | Size | Shape | Age | Colour | | | | |
| a | beautiful | | | old | | Italian | | touring | car |
| an | expensive | | | antique | | | silver | | mirror |
| four | gorgeous | | long-stemmed | | red | | silk | | roses |
| her | | | short | | black | | | | hair |
| some | delicious | big | | | | Thai | | | food |

**Exercise 8G.**

Characterize these notions, using as many adjectives as you can.

1. notebook
2. scanner
3. Internet
4. e-mail
5. PDF-document
6. attachment

**Exercise 9G.**

Choose the correct order of words.
1. He's recently started working for a (brilliant new British/new British brilliant/British brilliant new) design company.
2. I need to replace this (cheap plastic/plastic cheap) laptop – it's embarrassing when I meet clients.
3. Let me show you this (clever new/new clever) design program I've started using.
4. We use the (computer Japanese latest/Japanese latest computer/latest Japanese computer) technology to make sure that our clients get what they need.
5. Why are you still using that (Sony old cheap/cheap old Sony/old Sony cheap) Walkman? You should get an iPod.

## (L) Listening

**Task (Recording 2)**
**Exercise 1L.**
Before listening, answer these questions.
1. Have you got a computer at home, school or work? What kind is it?
2. How often do you use it? What do you use it for?
3. What are the main components and features (the configuration) of your computer system?

**Exercise 2L.**
Listen to a short lecture given by John Griffiths, an expert on computer systems. As you listen, label the pictures below with the following words.

| *laptop* | *desktop PC* | *PDA* | *mainframe* | *tablet PC* |
|---|---|---|---|---|



a _____    b _____    c _____

d _____    e _____

**Exercise 3L.**
Listen again and decide whether these sentences are true or false. Correct the false ones.
1. A mainframe computer is less powerful than a PC.
2. A mainframe is used by large organizations that need to process enormous amounts of data
3. The most suitable computers for home use are desktop PCs.
4. A laptop is not portable.
5. Laptops are not as powerful as desktop PCs.
6. Using a stylus, you can write directly onto the screen of a tablet PC.
7. A Personal Digital Assistant is small enough to fit into the palm of your hand.
8. A PDA does not allow you to surf the Web.

## (G) Grammar (block III):

**Emphatic Construction**

| It is (was) … that/ who/ when/ where |
| :---: |
| *Саме ……, що/хто/ /коли/ де* |

**Exercise 10G.**

Translate the following sentences with the emphatic construction.

*Example:* *It was Pascal **who** invented in France the first mechanical computer.*
*Саме Паскаль винайшов у Франції перший механічний комп'ютер.*
*It was in France **where** the first mechanical computer was invented.*
*Саме у Франції був винайдений перший механічний комп'ютер.*
*It was the first mechanical computer **that** was invented in France by Pascal.*
*Саме перший механічний комп'ютер був винайдений у Франції Паскалем.*

1. It was the invention of the computer that revolutionized the thinking process.
2. It was in 1944 when the first automatic computer appeared and began to operate.
3. It was Norbert Wilner who was considered to be the father of cybernetic.
4. It was Chebyshev who invented the first arithmometer.
5. It was yesterday when we discussed our plan of work.
6. It was Gagarin who started the era of cosmic flights.
7. It is an input unit that accepts information from outside the computer.
8. It is the gravitation that makes the satellites move around the Earth.

## (R) Reading

### Computers are changing the world

Everybody agrees that a computer is really a very specific kind of counting machine. It can do arithmetic calculation much faster than any person alive, and answer any question in a few seconds. It stores the information in its memory until it is needed. Some can do only one job. They are the "big brains" that can solve the most difficult problems of science. And it was a computer that changed the world and thinking process.

Our grandparents used to think of a computer as a large machine that took up the whole room. But today computers are becoming smaller and more popular.

There are several advantages in making computers as small as one can. Sometimes weight is particularly important. But it's not the only factor. The

smaller the computer is, the faster it can work. The signals go to and fro at a very high but almost constant speed. A computer consists of 5 parts.

Some of the first computers cost millions of dollars, but people quickly learned that it was cheaper to let one expensive computer make the necessary calculations than to have a hundred clerks doing the same job. As their popularity grew the number of factories producing them also grew all over the world.

**Exercise1R.**
Read the text and choose the proper variant.
1. A computer is a kind of (a counting machine, a typewriter, a table game).
2. Computer could be used to (play games, solve different problems, save money).
3. There are (very many, few, five) most important parts of a computer.
4. The smaller the computer is, the (slower, better, faster) it can work.
5. Computers are becoming (cheaper, larger, more popular).

**Exercise 2R.**
Translate the following sentences into Ukrainian paying attention to the conjunctions of comparison: *as … as (як, так і/ як), not so … as (не так, як), the … the (чим …, тим …), than … (ніж), much more important (набагато важливіше).*

1. This computer is not so expensive as that one.
2. Today's computers are much cheaper than 10 years ago.
3. She doesn't work at her English as she did last year.
4. Chemistry is not so interesting for me as mathematics.
5. The more we study, the more we know.
6. The less we know the less we forget.
7. This problem is much more important to him.
8. English is the most popular language in the world.
9. The more expensive processors the faster they can run.
10. English is easier than Russian.
11. Computers do the calculations much faster than people.
12. Do it as quickly as possible.

## (SR) Supplementary reading (block I)

**Exercise 1SR.**
In pairs, label the elements of this computer system. Then read the text and check your answers.



CPU (inside)

## What is a computer?

Computers are electronic machines which can accept data in a certain form process the data and give the results of the processing in a specified format as information.

Three basic steps are involved in the process. First, data is fed into the computer's memory. Then, when the program is run, the computer performs a set of instructions and processes the data. Finally, we can see the results (the output) on the screen or in printed form (see the diagram below).

Information in the form of data and programs is known as software, and the electronic and mechanical parts that make up a computer system are called hardware. A standard computer system consists of three main sections: the central processing unit (CPU), the main memory and the peripherals.

Perhaps the most influential component is the central processing unit. Its function is to execute program instructions and coordinate the activities of all the other units. In a way, it is the 'brain' of the computer. The main memory holds the instructions and data which are currently being processed by the CPU. The peripherals are the physical units attached to the computer. They include storage devices and input/output devices.

Storage devices (floppy, hard or optical disks) provide a permanent storage of both data and programs. Disk drives are used to handle one or more floppy disks. Input devices enable data to go into the computer's memory. The most common input devices are the mouse and the keyboard. Output devices enable us to extract the finished product from the system. For example, the computer shows the output on the monitor or prints the results onto paper by means of a printer.

On the rear panel of the computer there are several ports into which we can plug a wide range of peripherals – modems, fax machines, optical drives and scanners.

These are the main physical units of a computer system, generally known as the configuration.
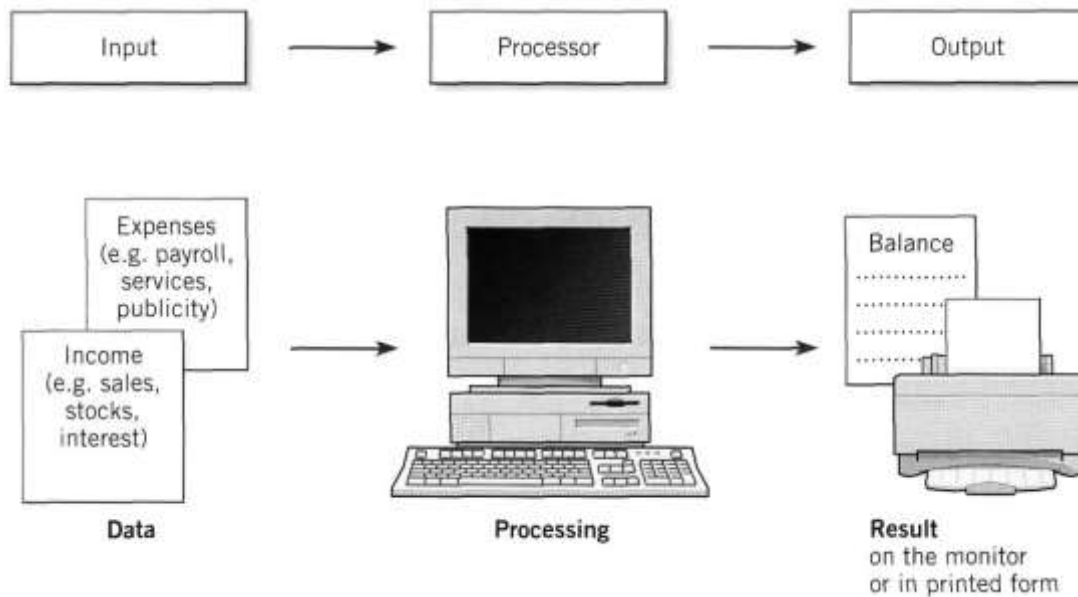


**Exercise 2SR.**

Read the text and study the diagram above.

Use the information in the text and the diagram to help you match the terms in the box with the appropriate explanation or definition below.

> a) software b) peripheral devices c) monitor d) floppy disk
> e) hardware f) input g) port h) output i) central processing unit

1. The brain of the computer. ☐
2. Physical parts that make up a computer system. ☐
3. Programs which can be used on a particular computer system. ☐
4. The information which is presented to the computer. ☐
5. Results produced by a computer. ☐
6. Hardware equipment attached to the CPU. ☐
7. Visual display unit. ☐
8. Small device used to store information. Same as 'diskette'. ☐
9. Any socket or channel in a computer system into which an input/output device may be connected. ☐

**Exercise 3SR.**
**Do you know…**

## Types of computers

**What is a mainframe computer?** – Mainframe computers are the big, powerful, expensive computers used in the background by most large organizations. The power of the mainframe can be distributed among many

people accessing the mainframe either via a PC or a so-called "dumb terminal". Companies such as large insurance companies would use the mainframe to keep track of their policyholders and send out renewal notices.

**What is a mini-computer?** – Like mainframes, these are very powerful and also very expensive. In many ways, the old differences between a mainframe and a minicomputer have blurred and in many cases, the two words are almost interchangeable. In former days, the mainframes were the biggest computers that organizations would use, while mini-computers were used by mid-sized companies.

**What is a super-computer?** – A super computer, as the name implies is an incredibly powerful beast with a phenomenal capacity for processing data. They are used extensively by the military. In civilian use, they tend to be used for research and also in areas such as weather forecasting where a tremendous amount of data has to be processed rapidly and used to make predictions. More information: http://www.cray.com/

**What is the difference between a PC and a Mac?** – IBM invented the PC (Personal Computer) way back in 1981. All PCs released since then are in many ways compatible with the original design, though many extensions to the original design have been made. The term PC compatible relates to PCs manufactured by companies other than IBM that are compatible with the traditional PC specification.

In the early days, most PCs ran an operating system called DOS (Disk Operating System). These days most PCs will be running a version of Microsoft Windows (Windows 95, Windows 98, NT or Windows 2000).

The Apple Mac is a computer, but NOT a PC. It uses a different operating system, and requires special versions of application programs (such as word-processors or spreadsheets). Even the hardware add-ons have to be customized to some extent to be able to be connected to a Mac. In the early days the thing that really distinguished the Mac over the PC was the GUI (Graphical User Interface), or in plain English the way you could use the mouse to drive the computer. In the early days of the PC, you really had to be a bit of an expert to use and maintain your PC!

Recently the differences between the PC and the Mac have blurred, with even Microsoft buying a stake in Apple. More information: http://www.apple.com

**What is a networked computer?** – A network allows you to connect two or more computers together. This allows data stored on one PC to be retrieved by other PCs connected to the network. It also allows the sharing of resources. Thus instead of each PC requiring its own printer to be directly connected to it, you can have a single printer shared amongst many, networked PCs. In the early days, to network PCs together was a complicated task, only to be attempted by qualified professionals. These days most people with a good working knowledge

of Microsoft Windows can install and configure a Windows based network. However to get the best out of your network, in terms of performance and security, still requires a qualified, experienced technician.

**What are laptop & palmtops computers?** – Laptop computers as the name implies are small, portable computers that can run on batteries as well as mains power. They use special screens, rather than the traditional bulky VDUs (Visual Display Units), which allows for longer battery life as well as portability. A newer term, "Notebooks", simply indicates a VERY small laptop. These are especially popular with salespersons on the move or people giving presentations. While they tend to still be more expensive than an equivalent Desktop computer, they can now match the power of a Desktop computer. Palmtops are even smaller computers!

## Computer speed and capacity issues

**CPU types** Modern PCs use some sort of Pentium (or equivalent) Central Processing Unit (CPU). There is a number of different Pentium CPUs on the market and to get information of the latest types read the computer press or visit the Intel Web site. Your computer may have a 586 rather than an Intel Pentium in it. This simply means that the CPU is not made by Intel, but by some other manufacturer, such as Cyrix or AMD. The Pentium name is copyrighted by Intel and only Intel CPUs can be called Pentium CPUs.

**Clock speed** It is the computer clock speed that governs how fast the CPU will run. The higher the clock speed the faster the computer will work for you. The clock speed is given in megahertz (MHz). The originally IBM PC ran at 4.77 MHz whereas modern PCs will often run at over 600 MHz which gives you an idea of how far things have progressed since the introduction of the original PC. The higher the MHz speed the faster the computer.

**RAM** If you are using a Windows based system, then you will often see great improvements to your computer's performance by adding more RAM (Random Access Memory).

**Hard disk speed and storage** Hard disks are also measured by their speed, defined by the disk access time, which is measured in milliseconds. The smaller this access time the faster the hard disk will store or retrieve data. The data storage capacity of hard disks continues to increase as new products are released. The disk storage capacity is measured in Gigabytes (GBytes). 1 GByte is equivalent to 1024 Mbytes.

**Exercise 4SR.**

Complete this customer review from a website by typing in the words from the box.

| perform | data | word processor | online | download |
|---|---|---|---|---|
| digital | built-in | store | personal | monitor |

> ***4 of 4 people found the following review helpful!!!***
> ***5 out of 5 stars: The best professional laptop on the market!!!***
> *12 Feb 2008*
>
> I bought a new Mac Book Pro last month, and I've been very happy with it so far. The Intel Core 2 Duo processor is a real bonus, allowing the computer to _____ (1) tasks faster than earlier Mac Book models; the 160GB hard drive is large enough to _____ (2) all of my music, photos and videos; and I didn't even need to buy an external _____ (3) – the widescreen 17″ display is easy to look at, even for long periods of time.
>
> Another great feature is the _____ (4) iSight camera; it can be used for web chats, to make video podcasts, or even just to take _____ (5) photos. Software updates are easy, too: if you're _____ (6) – just surfing the Web or checking email – and an update becomes available, a box appears asking if you want to _____ (7) the update. You just click OK, and it's done. I don't even have to worry about security either. Every time I transmit _____ (8) from my computer on the Internet, Apple's Safari web browser protects my _____ (9) information, such as bank details and credit card numbers, using a firewall. The only criticism I have is the lack of a good _____ (10), such as Microsoft Word. I had to buy a copy of Microsoft Office 2008 in the end, which cost an extra £99.95 – and that's with a student discount!

## (G) Grammar (block IV):

**Numerals**

| | | |
|---|---|---|
| **Numbers** | 21/ 21$^{st}$ <br> 995/ 995$^{th}$ <br><br> 4.200 <br> 2, 046,328 | twenty one/ the twenty first <br> nine hundred ninety five/ <br> the nine hundred ninety fifth <br> four thousand and two hundred <br> two million forty six thousand <br> three hundred and twenty eight |
| **Dates** | 2008 <br> 1996 <br> In 1905 <br> 1600 <br> May, 9 1945 | two thousand and eight <br> nineteen ninety six <br> in nineteen o [ou] five <br> sixteen o, o [ou, ou] <br> May the ninth nineteen forty five |
| **Fractions** | ½ km | Half a kilometer |

| | ⅓ t | One third of a ton |
|---|---|---|
| | 0.5 | Point five |
| | 3. 141 | Three point one four, one |
| | 1.5 Gb | One and a half Gigabyte |

**Exercise 11G.**

Read and translate the following sentences paying attention to numerals.
1. Our University was founded in 1967.
2. It became independent in 1974.
3. Our department numbers 300 people.
4. We celebrated the University day on the 6th of October.
5. ⅓ of student's staff does not pay for studying.
6. There are 4 or 3 students in each hostel room.
7. We are 30 in the group.
8. Each institute has 2 departments with the dean at the head.
9. The lessons finish at 2 p. m.
10. Our University library contains thousands of books on different specialties.
11. The student's staff is about 6.000 persons.
12. We are first-year students.
13. My friend will graduate from our University in 2009.
14. They entered our Computing department in 2000.
15. I live about 0.5 km away from the University.

# (SR) Supplementary reading (block II)

### From the history of computers

Thousands years ago, humans needed to count. Families had to know how many animals, how much food and how much land they owned. This information was important when people wanted to buy and sell things and also when people died or got married. There were many different ways to count and write down the numbers.

Around 1900 to 500 B.C. the Babylonians invented a new way to count which used place values and between 1000 and 500 B.C. they invented abacus. It used small stones which they put in lines. Each line of stones showed a different place value. To do calculations they were moving stones from one line to another. Although an abacus could be very fast it wasn't really a machine because it didn't do calculations automatically.

In the 17th century, people began to build calculating machines. In 1640, the French mathematician Blasé Pascal made an Arithmetic Machine. During the next 10 years, Pascal made 50 more machines.

In the 1670s, a German called Leibnitz continued Pascal's work and made a better machine. It was his machine that could do more difficult calculations than Pascal's Arithmetic Machine.

In the 19th century, machines changed the world. People could travel more easily and communicate more quickly. The Industrial age was being started.

The second half of the twentieth century saw the start of the Computer age. At first, computers were very difficult to use, and only a few people could understand them. But soon computers began to appear in offices, then at homes. When the first computers were built in the 1940s and 1950s, they were enormous. In fact, they were as big as a room. In fact they weighed less then 1, 5 tones.

Today's computers are being preferred in every office, school, and university. They are in so many ordinary things: cars, CD-players, washing-machines, TV-sets etc. Modern young people can't imagine their life without computers.

**Exercise 4SR.**
Read and translate the following text and ask all types of questions.

**Exercise 5SR.**
Read the text and write out the antonyms to the following words.

| | |
|---|---|
| more easily | better |
| as small as | to buy |
| new way | to die |
| enormous | young |
| less | |

**Exercise 6SR.**
Write tag questions to the following sentences.
1. At first computers were very large, чи не так?
2. Pascal invented the first computer in 1640, чи не так?
3. Computers will be really small, чи не так?
4. The experiments were being carried out the whole week, чи не так?
5. He is as smart as his brother, чи не так?
6. She can read English books in the original, чи не так?
7. Our University numbers about 6.000 students, чи не так?
8. You can keep it as long as you need it, чи не так?
9. They will be able to get a grant, чи не так?
10. Computers are becoming very popular, чи не так?

# Unit 4

| | |
|---|---|
| *(G) Grammar:* | ***Perfect Tenses Active and Passive*** |
| | ***Relative Clauses (which, who, that)*** |
| | ***Word Building (adverbs)*** |
| *(R) Reading:* | ***How computers have advanced?*** |
| | ***What's inside a PC system?*** |
| *(SR) Supplementary reading:* | ***Main parts of a Personal Computer*** |
| *(L) Listening* | ***Computer system*** |
| *(S) Speaking:* | ***My native town (village).*** |
| | ***My ideal computer system.*** |

## (G) Grammar (block I):

**Perfect Tenses Active and Passive**

| | Active | Passive |
|---|---|---|
| | **(have+ Participle II)** | **(have been + Participle II)** |
| **Present** | He ***has read*** this book. *(прочитав)* | This book ***has been read***. *(прочитана)* |
| **Past** | He ***had read*** this book by noon yesterday. *(прочитав)* | This book ***had been read*** by the noon yesterday. *(була прочитана)* |
| **Future** | He ***will have read*** thise book by the evening tomorrow. *(прочитає)* | This book ***will have been read*** by the evening tomorrow. *(буде прочитана)* |

**Exercise 1G.**
Translate the sentences, paying attention to the use of tense-forms.

1. He came to see his parents yesterday.
2. They didn't go to Kyiv last year.
3. They were learning the new English words when I came in.
4. We shall finish the work tomorrow.
5. The experiment was completed two years ago.
6. Her plans are changed everyday.
7. He has just come to see his parents.
8. They have never been to Kyiv.
9. They had already learnt the new English words, when I came in.
10. We shall have finished the work by 5 p. m. tomorrow.
11. The experiment had been completed by the end of the month.
12. Her plans have been already changed.

**Exercise 2G.**
a) Write the following sentences in the Present Perfect Tense.

*Example:*                I'm writing a program. (*already*).
                          *I have already written a program.*

1.  John spoke to me (just).
2.  I was reading the book (already).
3.  He is in London (never).
4.  I lived in Lviv in 1986 (since).
5.  Dick is trying to learn English (this year).
6.  They are finishing their work (this week).
7.  We will go home (just).
8.  He didn't come to his native town last year (since).
9.  They were in Odesa (never).
10. I saw this film (already).

b) Revise three forms of the following verbs.

| | |
|---|---|
| to be – was/were – been | to see – saw – seen |
| to speak – spoke – spoken | to come – came – come |
| to learn – learned – learnt(ed) | to read – read – read |
| to go – went – gone | to meet – met – met |

**Exercise 3G.**
Translate the sentences into Ukrainian.
1.  I have attended lectures on programming *since* October.
2.  I attended lectures on programming *in* October.
3.  I have entered the university *this* year.
4.  He entered the university *last* year.
5.  Have you passed your exams?
6.  Did you pass your exams *last* Friday?
7.  He has *already* returned to his native town.
8.  He returned to his native village *five years ago*.
9.  Our department was founded *in 2001*.
10. Our department has *just* been opened.
11. When was the new equipment installed in the lab?
12. The new equipment had *already* been installed when our chief came.

**Exercise 4G.**
Translate the following sentences.
1.  All necessary information is being stored in the computer.
2.  He has been interested in computer organization since childhood.
3.  He has been offered an interesting job at the University.
4.  The experiment will have been carried out by the end of the next month.
5.  The plan has to be carried out.
6.  They have carried out the plan successfully.
7.  Your group will have to carry out the experiment.
8.  The plan was to be carried out 2 days ago.

**Exercise 5G.**

Put in the correct verb form: present perfect or past simple.

1. How long _____ (*she / study*) German?
2. When _____ (*he / begin*) to study Computer Administration?
3. _____ (*you / visit*) any museums when you were in Sofia?
4. Prices _____ (*go*) up. Things are much more expensive this week.
5. What _____ (*happen*) to you?
6. Mr. Arnold _____ (*win*) the Exporter of the Year prize twice.
7. Alfred Hitchcock _____ (*make*) lots of films in his long career.
8. Mr. Miller _____ (*work*) in a travel agency for years. Then he gave it up.
9. Melanie lives in Bucharest. She _____ (*live*) there all her life.

**Exercise 6G.**

Translate into English. Pay attention to the usage of tenses.

1. Я придбав новий комп'ютер.
2. Що знаходиться всередині комп'ютера?
3. Інформація зараз обробляється.
4. З чого складається комп'ютер?
5. Яка головна функція комп'ютера?
6. Комп'ютер виконує багато операцій над даними.
7. Для чого використовується інтегральна схема?
8. Він купив комп'ютер ще до того, як розпочався навчальний рік.
9. Я прочитаю книгу по організації комп'ютера до кінця тижня.
10. Ми ніколи не працювали з таким комп'ютером.

# (R) Reading (block I):

### How computers have advanced

Over the last few years the advances in computer technology *have been* immense. Computers can do much more today than ever before. And sometimes you don't know what you really want to have. First of all we have to discuss processors. There are 2 main companies which produce processors today. They are Intel (Pentium Processors) and AMD (Athlon processors). But the difference between is very small. However, in all cases, the more expensive processors, the faster they can run. But it is important to mention that the performance of the processors can be restricted by how much memory it *has got*. So if you are planning to use the system for games or other graphics intensive application you should keep in mind that it's RAM that is especially important.

The only thing you have to worry about is the graphic card. You need expensive graphic cards for complex work, but the average users can be satisfied with the card that comes with the processor.

A computer is made up of a number of different electronic circuits, and as we *have* already *mentioned*, a computer that once took a whole room *has been redesigned* with integrated circuits. Because they are tiny, their electronic

pathways are very short. Chips made to store huge amounts of information are called memory chips. Another kind of chip, a microprocessor combines memory and control circuits to regulate computing operations. Simply stated a microprocessor is a "computer on a chip."

**What's a microprocessor?** It's an integrated circuit which has the properties and plays the role of a complete CPU of a computer. The main feature of a microprocessor is that its response and its logic can be altered. So, in other words it can be programmed in different ways rather than react in one pre-programmed way only.

It took some years before the first devices reached the market but in the meantime about a hundred of different microprocessors *had_become* available. As with all microelectronics products, the capabilities of microprocessors *have increased* rapidly day by day.

**Exercise1R.**
Read the text and find English equivalents to the following words and expressions.
1. за останні кілька років
2. успіхи
3. набагато більше
4. перш за все
5. різниця
6. нам слід обговорити
7. однак
8. можна обмежити
9. слід пам'ятати
10. єдине, про що слід турбуватися
11. складатися з
12. колись
13. величезні об'єми
14. просто кажучи
15. основна характеристика (риса)
16. можна змінити
17. по-різному
18. з кожним днем
19. іншими словами
20. реагувати

**Exercise 2R.**
Match the synonyms to the following expressions.

| | |
|---|---|
| You should keep in mind 1 | Is able to be restricted |
| Can be limited 2 | You have to remember |
| Is made up of 3 | Memory |
| Huge amounts of information 4 | Very small |
| Tiny 5 | A large quantity of data |
| Properties 6 | Features |
| Altered 7 | Abilities |
| Rapidly 8 | To read |
| Capabilities 9 | Changed |
| To respond 10 | Fast |
| Storage 11 | Consists of |

## (G) Grammar (block II):

### Relative Clauses

| We can define *people* or *things* with a restrictive (defining) clause! |
| --- |
| *The teacher **who** is responsible for the computer centre has just arrived.* – "**who**" вживаємо, коли йдеться про людей. Можна також вживати "**that**". |
| *The microprocessor is a chip **which** processes the information provided by the software.* – "**which**" вживаємо, коли йдеться про предмети або явища. Можна також вживати "**that**". |
| *The computer Ø we saw at the exhibition runs at 2.5 GHz.* – Відносний займенник можна опускати, якщо він не є підметом підрядного речення. |

### Exercise 7G.
Complete the sentences below with suitable relative pronouns. Give alternative options if possible.
1. That's the CPU ………. I'd like to buy.
2. A co-processor is an extra processor chip ………. does calculations at high speed.
3. The microprocessor coordinates the activities ………. take place in the computer system.
4. Last night I met someone ………. works for GM as a computer programmer.
5. A palmtop is a computer ………. is small enough to be held in the palm of one hand.
6. A megahertz is a unit of frequency ………. is used to measure processor speed.

### Exercise 8G.
Complete these definitions from a dictionary by typing in terms from the box. Then choose the correct word to make defining relative clauses.

| *chip* | *buses* | *central processing unit* | *clock speed* | *control unit* |
| --- | --- | --- | --- | --- |

1. The _____, or CPU, is like a "brain" (*which/who/-*) performs tasks for your computer.
2. The CPU is built into a single _____ (*that/who/-*) executes program instructions and coordinates activities within the system.
3. The _____ is the part of the processor (*which/who*) is responsible for loading and interpreting the individual instructions that make up a computer program.

4. _____ is measured in gigahertz; for example, a processor running at 4 GHz would give you all the performance (*who/-*) you need to run most applications.

5. _____ are electrical channels (*that/-/who*) allow devices inside the computer to communicate.

## (R) Reading (block II):

**What's inside a PC system?**

The nerve centre of a PC is the ***central processing unit*** or ***CPU***. This unit is built into a single ***microprocessor chip*** – an ***integrated circuit*** (1) **which** executes program instructions and supervises the computer's overall operation. The unit consists of three main parts:

**i** the ***control unit,*** **which** examines the instructions in the user's program, interprets each instruction and causes the circuits and the rest of the components – disk drives, monitor, etc. – to be activated to execute the functions specified;

**ii** the ***arithmetic logic unit*** (ALU), **which** performs mathematical calculations (+, -, etc.) and logical operations (and, or, etc.);

**iii** the ***registers,*** **which** are high-speed units of memory used to store and control information. One of these registers is the ***program counter*** (***PC***) which keeps track of the next instruction to be performed in the main memory. Another is the ***instruction register*** (***IR***) **which** holds the instruction (2) **that** is currently being executed.
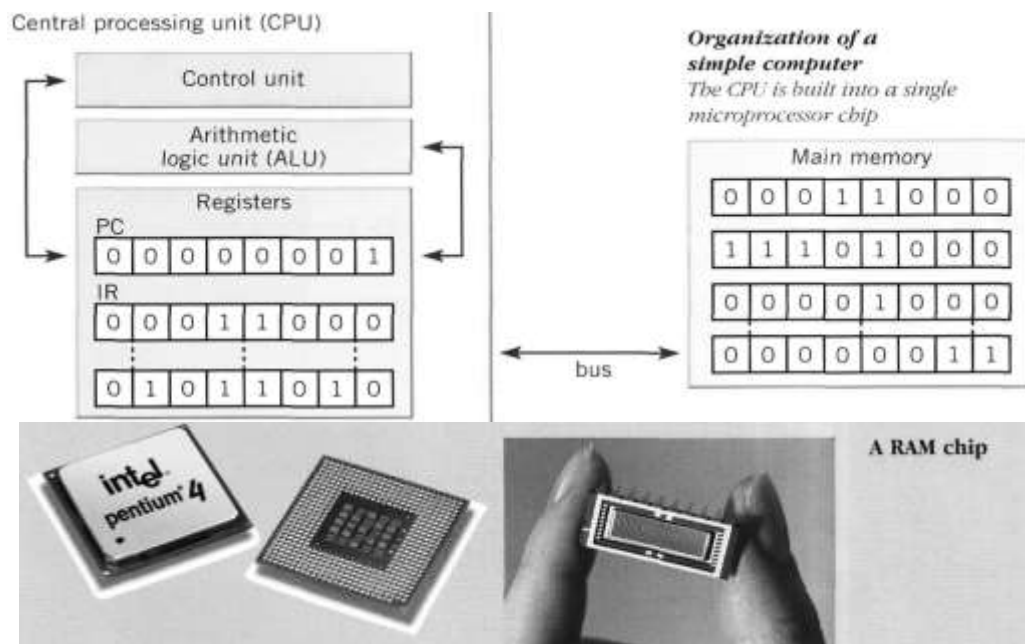
One area where microprocessors differ is in the amount of data, the number of bits, (3) **they** can work with at a time. There are 16, 32 and 64-bit processors. The computer's ***internal architecture*** is evolving so quickly that the new 64-bit processors are able to address 4 billion times more information than a 32-bit system.

The programs and data **which** pass through the central processor must be loaded into the ***main memory*** (also called the ***internal memory***) in order to be processed. Thus, when the user runs an application, the microprocessor looks for (4) **it** on secondary ***storage devices*** (disks) and ***transfers*** a copy of the application into the RAM area. ***RAM*** (***random access memory***) is temporary, i. e. (5) **its** information is lost when the computer is turned off. ***However***, the ***ROM*** section (***read only memory***) is ***permanent*** and contains instructions needed by the processor.

Most of today's computers have internal ***expansion slots*** (6) **that** allow users to ***install*** adapters or ***expansion boards***. Popular adapters include high-resolution graphics boards, memory expansion boards, and ***internal*** modems.

The power and performance of a computer is partly determined by the speed of its microprocessor. A ***clock*** provides pulses at fixed intervals to measure and synchronize circuits and units. The clock speed is measured in MHz (megahertz) or GHz (gigahertz) and ***refers to*** the frequency at which pulses ***are emitted***. For

example, a CPU running at 1,600 MHz (1,600 million cycles per second) will *enable* the computer to *handle* the most demanding applications.



Central processing unit (CPU)

Control unit

Arithmetic
logic unit (ALU)

Registers

PC
0 0 0 0 0 0 0 1

IR
0 0 0 1 1 0 0 0

0 1 0 1 1 0 1 0

*Organization of a
simple computer*
*The CPU is built into a single
microprocessor chip*

Main memory

0 0 0 1 1 0 0 0
1 1 1 0 1 0 0 0
0 0 0 0 1 0 0 0
0 0 0 0 0 0 1 1

bus

A RAM chip

**Microprocessor chip**
*Popular chips:*
• *Intel's Pentium (as shown*
• *AMD's Athlon*
• *Apple and IBM's PowerPC*
• *Sun's UltraSPARC*

**A RAM chip**
*The RAM capacity can sometimes be
expanded by adding extra chips. These are
usually contained in small circuit boards
called single in-line memory modules
(SIMMs). Modern Pentium processors also
accept dual in-line memory modules
(DIMMs), which allow for a wider data
path.*

**Exercise 3R.**

Read the text above and then sentences 1 to 8. Decide if the sentences are true or false, and correct the false ones to make them true.

1. The CPU directs and coordinates the activities taking place within the computer system.
2. The arithmetic logic unit performs calculations on the data.
3. 32-bit processors can handle more information than 64-bit processors.
4. A chip is an electronic device composed of silicon elements containing a set of integrated circuits.
5. RAM, ROM and secondary storage are the components of the main memory.
6. Information cannot be processed by the microprocessor if it is not loaded into the main memory.
7. "Permanent" storage of information is provided by RAM (random access memory).
8. The speed of the microprocessor is measured in gigahertz or megahertz. One GHz is equivalent to one thousand MHz. One MHz is equivalent to one million cycles per second.

**Exercise 4R.**
**Contextual reference**
What do the words in bold print refer to.
1.  ... **which** executes program instructions and supervises …
2.  ... the instruction **that** is currently being executed, …
3.  ... the amount of data – the number of bits – **they** can work with at a time
4.  ... the microprocessor looks for **it** on ...
5.  … **its** information is lost when the computer is turned off.
6.  ... expansion slots **that** allow users to install adapters or expansion boards

# (L) Listening

**Task (Recording 3)**
**Exercise 1L.**
a) Label this diagram with the correct terms.
b) Listen recording 3 and check your answers.
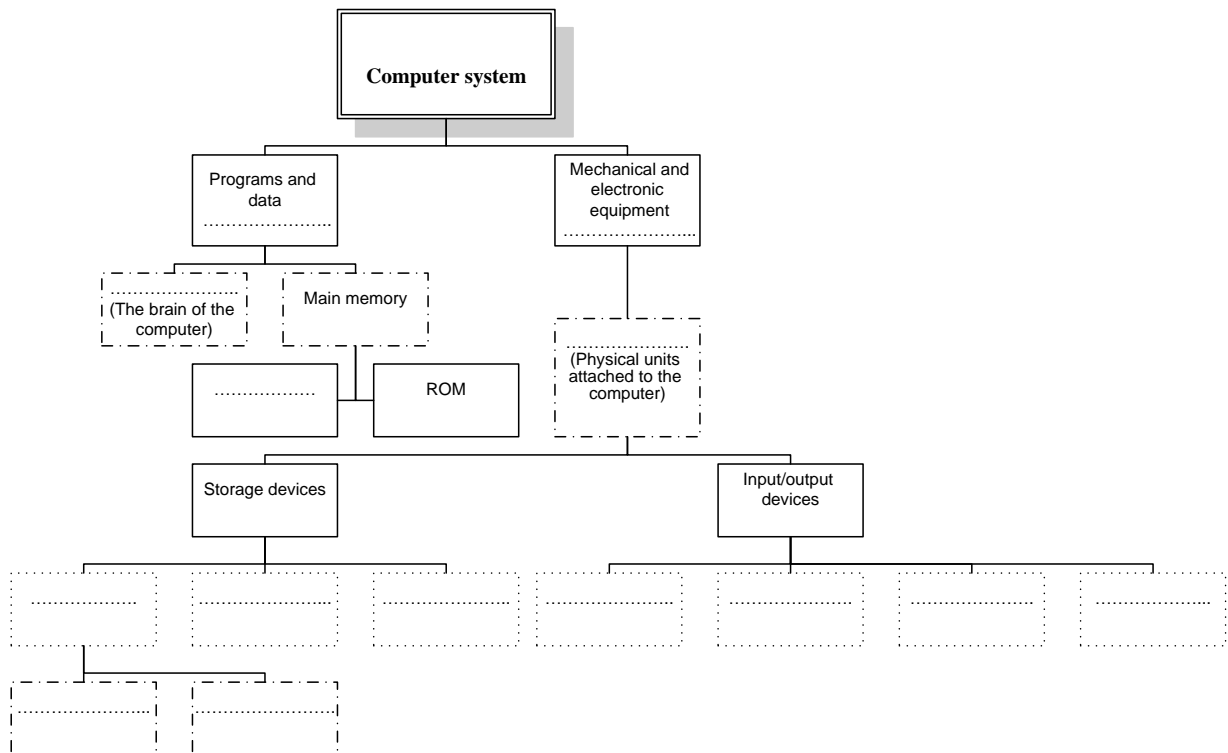


# (S) Speaking:

**Exercise 1S.**
Read and translate the text. Get ready to talk about your native city (village).

### My native town – Vinnytsia.
Vinnytsia as a small settlement was founded on the picturesque banks of the Pivdennyi Buh in the 13th century by Lithuanian Prince Olgert. The history of

our land is closely connected with the names of Bohdan Khmelnytskyi, Ivan Bohun, Maksym Kryvonis, Ustym Karmaliuk and many other outstanding Ukrainian people.

Now Vinnytsia is the centre of one of the 24 regions of Ukraine which is situated in the central part of Ukraine and has hilly landscapes. The natural resources are the following: the deposits of granite and lime stone, clay, sand and mineral spring water in several places.



As an administrative centre of Ukraine, Vinnytsia is the seat of the local legislative, executive and judicial branches of power in the region.

Vinnytsia is the industrial, transport, agricultural, cultural and educational centre of the region.

The Agricultural University, the National Technical University, the Pedagogical University, the University of Trade and Economy, the Medical University train the specialists almost for every branch of life.

Nowadays there are private schools as well as state schools, lyceums where all the children can get their general secondary education.

The citizens of Vinnytiia and the guests of our town like to attend the estate museum of the famous doctor – Mykola Pyrohov, the founder of the battle-field surgery, the scientist and pedagogue.

If you are interested in history it would be useful to visit our museum of Local Lore, which is situated in the centre of Vinnytsia near the Bridge across the Pivdennyi Buh. There are expositions devoted to various periods of the development of Vinnytsia.

Many our guests enjoy visiting the museum of the classic of Ukrainian Literature, Mychailo Kotsybynskyi. The small white house where he lived with his family is in the centre of Vinnytsia. It was Kotsybynskyi who first thought about the creating of the public library in Vinnytsia. There is a monument to the writer near the house and the street where it stands is named after him.

We call Vinnytsia the cultural centre not only for its historical places, museums and monuments, but also for two theatres and philharmonic society. Our Drama Theatre named after the well-known Ukrainian actor Sadovskyi is situated in the centre of Vinnytsia. Theatre-goers can enjoy dramas, comedies, musicals performed by our local actor company.



In 2011, Vinnytsia acquired yet another landmark, the light and music fountain, which is the biggest in Europe. Now, every evening, the locals and guests have a chance to watch a wonderful show of water and light!



There is a lot more to say but it is much better to visit this green and comfortable city in the very centre of Ukraine and see its beauty with your own eyes!

*Welcome to our Vinnytsia! You will fall in love with it!*

**Exercise 2S.**

Answer the following questions.

1. Where were you born?
2. Is it your native town?
3. What school have you finished?
4. Where's your town (village) situated?
5. Is it far from here?
6. When was your town founded?
7. How old is it?
8. What's its population?
9. Are there any historical places?
10. Did any famous people visit it?
11. Is there any river? What's its name?
12. Would you like to come back to your native place?
13. Do you know the history of your native town (village)?

Винница · Женская Гимназія



Городъ Винница, Под. губ.
М. Winnica, Pod. gub. · Костелъ. Kościół



29  г. Винница Под. губ.
Winnica Pod. gub.

Почтовая улица.
Poctowa ulica.

HOTEL IANKOWS

**Exercise 3S.**
1. Have a look at the photos of Vinnytsia in 1913. Try to recollect the present view of the places presented in the photos below.
2. Make a tour around the city and recollect the photos of old Vinnytsia.

## (G) Grammar (block III):

### Word-building (Adverbs)
**Exercise 8G.**

Forms adverbs from the following adjectives using suffix *-ly* and translate into Ukrainian.

| | | |
|---|---|---|
| successful | simple | expensive |
| rapid | short | internal |
| wide | special | frequent |
| regular | current | relative |

**Exercise 9G.**

Complete this extract from the interview with Matt Robinson by choosing the correct adjective or adverb.

---

**Interviewer**: So which game genres do you think will be the most popular in the future?

**Matt**: I think console games will play a (*large/largely*) part in shaping the future of games, while (*simultaneous/simultaneously*) helping to attract a (*new/newly*) audience. Games like Wiki Sports have already proven (*immense/immensely*) popular, just by emulating real-world games such as tennis and bowling, and making them as (*easy/easily*) to play as their real-life counterparts. You (*simple/simply*) move the controller around. Of course, the more (*traditional/traditionally*) video game genres, such as Halo and Burnout, will continue to sell just as (*good/well*) as they always have. (*Final/Finally*), there's online gaming. As connection speeds increase, and hardware improves, so does the potential to create (*full/fully*) living online worlds, much like you see in Second Life, for example.

---

## (SR) Supplementary reading
**Do you know…**

### Main parts of a Personal Computer
**The System Unit** – The "system unit" is the name given to the main PC box that houses the various elements that go together to make up the PC. For instance within the system unit it is the computer system's motherboard, which contains all the main components, such as the CPU. The system unit also houses items such as the hard disk, the floppy disk and CD-ROM drives etc. System units come in two

basic varieties, the tower version, as illustrated, or a desktop version, which is designed to sit on your desk, and you can place your monitor on top of the system unit.
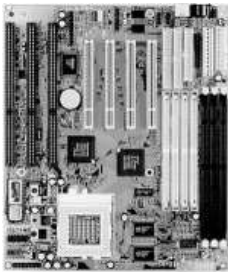
**The System (Mother) Board** – The system (mother) board in contained within your system unit and all the vital computer systems plug directly into the system board. The CPU is normally housed on your system board along with all the other electronic components. Other items such as the hard disk are attached to the system board, either directly or via cables. These boards are getting smaller and smaller as the components become more integrated. If you open up a system unit these days, mainly it is full of fresh air!

**The CPU** – The CPU (Central Processing Unit) is normally an Intel Pentium (or equivalent) and it is one of the most important components within your computer. It determines how fast your computer will run and is measured by its MHz speed. Thus, a 600 MHz Pentium is much faster than say a 400 MHz Pentium CPU. It is the CPU that performs all the calculations within the computer.

**Memory (RAM)** – The RAM (Random Access Memory) within your computer is where the operating system is loaded to when you switch on your computer and also where your applications are copied to when you load an application, such as a word processor or database program. When you create data, (e.g. letters and pictures), these are initially created and held in RAM and then copied to disk when you save the data.

As a rule of thumb, the more RAM you have installed in your computer the better. These days you will commonly find over 64 Mbytes of RAM installed.

**ROM-BIOS** – The ROM-BIOS (Read Only Memory - Basic Input Output System) chip is a special chip held on your computer's system (mother) board. It contains software that is required to make your computer work with your operating system, for instance it is responsible for copying your operating system into RAM when you switch on your computer.

**Serial Port** – The serial port is a socket located at the back of your computer that enables you to connect items to the computer, such as a modem. They are commonly labeled as COM1 or COM2.

**Parallel Port** – The parallel port is a socket located at the back of your computer that enables you to connect items to the computer, such as a printer. It is commonly labeled as LPT1 or LPT2.

**Universal Serial Bus (USB)** – The Universal Serial Bus is a relatively new item within the PC. You will see one or

more USB sockets at the back of the system unit, allowing you to plug in devices designed for the USB. These devices include scanners and digital cameras.

**The Monitor** – The monitor is the TV type screen that you view your programs on. They are supplied in different sizes, common sizes range from 15″ to 21″ screens. You should be aware that poor quality or badly maintained monitors can harm your eyesight!

**The Keyboard** – The keyboard allows you to type information into the computer. It has evolved over the years and many people now use a Microsoft style keyboard, which has additional keys designed to make Microsoft Windows easier to use.

**The Mouse** – When using an operating system, such as Microsoft Windows, you use the mouse to select drop down menus, to point and click on items, to select items and to drag and drop items from one place to another.

**CD-ROM** – Most computers are now supplied with a CD-ROM (Compact Disc – Read Only Memory) drive. CD-ROM discs look exactly like music CDs but contain computer data instead of music. The advantage of a CD-ROM is that it can hold a vast amount of data (equivalent to the storage capacity of over 450 floppy disks). The other big advantage of CD-ROMs is that they are interchangeable. This means that you can own a range of different CD-ROMs and choose which one to insert into your CD-ROM drive.

**DVD Drives** – Short for "Digital Versatile Disc". Similar to CD-ROM drives but allows you to use DVD disks, which contain vastly more information than a traditional CD-ROM disk. These also transfer the data from the disk to the computer far faster, allowing you to watch movies on your computer screen.

A CD-ROM can store 650MB of data, while a single-layer, single-sided DVD can store 4.7GB of data.

The two-layer DVD standard allows a capacity of 8.5GB, and if double sided ups the storage capacity to 17GB. (or over 25 times the data storage capacity of a CD-ROM!)

**Hard Disk (Drives)** – Hard disks are the main, large data storage area within your computer. Hard disks are used to store your operating system, your application programs (i.e. your word processor, games etc) and your data. They are much faster than CD-ROMs and floppy disks and can also hold much more data.

**What is a peripheral device?** – A peripheral device is any device that you can attach to your computer. Thus, you could attach a scanner or modem to the back of your system unit.

Additional items or cards – Many "extra" components can easily be fitted to your computer, which has the advantage of making the computer "upgradeable" as newer and better hardware comes along.

**Sound cards and speakers** – Many computers are now supplied with sound cards and speakers that mean that when you run "multi-

media" programs, you can listen to sounds that are played back via your computer. If you have a microphone and suitable software, you can also record sounds. You can even purchase special software that will allow you to talk to your computer and get the computer to type the words you have spoken on your screen. In time, this type of software may replace the keyboard.

**Modems** – A modem is a device that is used to attach your computer to the telephone system. The modem converts data into sound that is sent over the telephone line, the receiving modem turns the sounds back into data. If you wish to connect to the Internet, you will need a modem.

**Printers** – Most data is printed once you have created it and there are a vast number of different printers available to accomplish this. Most common are ink jet and laser printers both of which can now produce colored output (at a cost!)

**Scanners** – Scanners allow you to scan printed materials into your computer, which can then be stored within the computer. These pictures can then be altered, resized and printed as required.

**Recordable CDs** – CD-ROMs are read-only devices, but increasingly people are purchasing a special type of CD drive unit that allows you to record data (and music!) to your own CDs. These devices require that you purchase special CDs that you can write to, called CD-R (Compact Disc – Recordable).

**Tape backup** – A tape backup unit allows for regular backing up of your data. These tapes can store a vast amount of data at a low cost.

DAT (Digital Audio Tape) devices are commonly used for backups. The DAT tapes that they use can backup enormous amounts of data (i.e. over 4 GBytes per tape). The devices are also fast and reliable.

**What are input devices?** – Input devices allow you to input information to the computer and include things such as the keyboard and mouse.

**What are output devices?** – Output devices allow you to output information from the computer and include the printer and the monitor.

**What is PCMCIA?** – Portables by their very nature are very compact and require smaller than standard parts such as hard disks and CD-ROM drives. Many potables are supplied with special adaptor sockets at the rear that enable what are called PCMCIA compatible hardware to be connected to them.

PCMCIA components tend to be more expensive than standard computer parts that are designed for more bulky desktop computers. More information: http://www.pcmcia.org

# Unit 5

| (G) Grammar: | Perfect Continuous Tenses |
| | Some, any, no, every and their derivatives |
| | It-impersonal |
| | That, those, one, ones as substitution words |
| | Word Building (Prefixes) |
| (R) Reading: | The computers people have been dreaming of for a long time |
| (SR)Supplementary reading: | Units and types of memory |
| | Memory Storage Devices |
| (L) Listening | Buying a computer |
| (S) Speaking: | I'm buying a new computer |

## (G) Grammar (block I):

### Perfect Continuous Tenses

| to have + been + Participle I (-ing) } *since/ for* | | |
|---|---|---|
| **Present** | **have/ has + been + Participle I** | He ***has been learning*** English ***for*** 5 years. *(вивчав)* <br> We ***have been writing*** this report ***since*** morning. *(писали)* |
| **Past** | **had + been + Participle I** | He was tired, ***he had been working*** computer. *(працював до цього)* |

**Exercise 1G.**

Translate the following sentences, paying attention to Perfect Continuous Tenses.

1. You know English quite well. How long *have you been learning* it?
2. It *has been raining for* two hours already.
3. Have you been working hard today?
4. They *have been testing* this device *since* 2006.
5. She *has been dealing* with computer *since* she was 8.
6. How long *had you been reading* at the library when we came?
7. He *had been learning* French before he started to learn English.
8. Where *had you been working* before you entered the University?
9. They *had been discussing* this problem when he came in.
10. He gave up smoking at last. He *had been smoking for* 10 years.
11. He said he had been learning German for 2 years.
12. She says *she has been playing* with computer *since* morning.

**Exercise 2G.**

Write the verbs in brackets either in the Present Perfect or the Present Perfect Continuous.
1. I not (*to see*) you for a long time. Where you (*to be*)?
2. How long he (*to learn*) English?
3. How long you (*to know*) him?
4. How long she (*to be interested*) in computers?
5. How long they (*to read*) this textbook?
6. I not (*to do*) this task yet.

**Exercise 3G.**

Are these sentences correct or wrong? Correct the ones, which are wrong.
1. He has been busy with computer since morning.
2. How long has he a problem?
3. How long do you know him?
4. She has been working as an interpreter for 5 years.
5. Is it snowing since morning?
6. I am waiting here for an hour already?
7. They has been using computers for 20 years.
8. He have smoked since he was 17.
9. Tom have been driving for 10 years.
10. I had never used a laptop.

**Exercise 4G.**

Use the Present or the Past Perfect Continuous.
1. He looked tired. He (*has been working/had been working*) with computers the whole evening.
2. You are good at computers. How long (*have you been using/had been using*) them?
3. I'm sorry. I'm late. How long (have you been waiting/had you been waiting)?
4. The experiment (*will be carried out/will have been carried out*) by the end of the next month.
5. When I looked out of the window, it (*has been raining/had been raining*).
6. Your car is equipped with on-board computer. For how long (*have you owned/had you owned*) it?

**Exercise 5G.**

**Anthony** and **Beth** are discussing a magazine article about new technologies.
1. Complete their conversation by choosing the correct verb forms.
2. Decide what type of new technology they are discussing in each part of the conversation (1–4):

| | | |
|---|---|---|
| *Smart homes* | *Artificial Intelligence* | |
| *Ubiquitous computing* | *Nanotechnology* | *RFID* |

**(1)** _____

**Anthony**: Have you seen this article in the New Scientist? It's all about new technologies. It's fascinating.

**Beth**: Go on, then. How (*are our lives going to change/will our lives be changing*)?

**Anthony**: It's predicting that pretty soon scientists (*are going/will*) to be able to make devices like computers and robots using single cells and atoms.

**Beth**: Wow. To do what?

**Anthony**: Well, they're talking about being able to treat diseases at a cellular level by injecting one of these miniature robots, or using the technology to make new, more flexible materials from carbon atoms.

**Beth**: What (*will they think of/will they be thinking of*) next?

**(2)** _____

**Anthony**: Well, it's funny you should ask. The article goes on to talk about things like robotics and androids.

**Beth**: Androids?

**Anthony**: Yeah. It says that by 2050, scientists (*will build/will have built*) androids that look like humans and have the capacity to interact like humans.

**Beth**: I don't think I like that idea. I think it (*'ll be/'ll have been*) more trouble than it's worth. Imagine everything that could go wrong!

**(3)** _____

**Anthony**: OK, I think you (*'ll like/'ll be liking*) this next one more. How about having a computer that controlled all of the appliances and electronic equipment in our house? It would save money because the house would know when you weren't home, and it'd make sure everything was turned off.

**Beth**: It (*'ll probably be/'ll probably have been*) expensive, though, I imagine.

**Anthony**: Who knows how much things (*will cost/will be costing*) in future! Perhaps (*we'll all have lived/we'll all be living*) on the Moon by then!

**(4)** _____

**Beth**: What does that last bit of the article say? The bit with the photo of that small microchip?

**Anthony**: Hang on a minute, I (*'m going to/'ll*) look. Umm ... it's talking about a type of technology that uses radio waves and these things called 'tags' to identify people.

**Beth**: People? So they could embed one of these tags in me?

**Anthony**: Well, in theory, yes. But they're mainly used on animals – so you can track your pet if they vanish – and on products in shops – so that they can stop people stealing.

**Beth**: Mmm. It still sounds suspicious to me.

**Anthony**: Well, it does say here that some organizations are worried about privacy issues.

**Beth**: I do worry that in the future, governments and big corporations (*will be using/will have used*) all of these new types of technology to keep us under control.

**Anthony**: You worry too much. Here, you finish the article. I (*'ll make/'ll be making*) us a nice cup of tea.

## (G) Grammar (block II):

**Indefinite Pronouns *some, any, no, every* and their Equivalents**

| Pronouns | | Noun, Pronoun | → Adverb |
|---|---|---|---|
| some<br>any<br>every<br>no | + | thing<br>body<br>one<br>where | **something** — щось, що-небудь<br>**somebody** — хтось<br>**someone** — хто-небудь<br>**somewhere** — десь, кудись |
| | | | **anything** — щось, що-небудь<br>**anybody** — хтось<br>**anyone** — хто-небудь<br>**anywhere** — десь, куди-небудь |
| | | | **nothing** — нічого<br>**nobody** — ніхто<br>**no one** — ніхто<br>**nowhere** — ніде, нікуди |
| | | | **everything** – все<br>**everybody** – кожен, будь-хто<br>**everyone** – кожен, будь-хто<br>**everywhere** – будь-де |

**Exercise 6G.**

Translate the following sentences paying attention to indefinite pronouns and their derivatives.

1. I couldn't understand anything from this text.
2. Nobody knows French in our group.
3. Can anybody show me how to deal with this scanner?
4. Did anyone know the difference between the binary notation and the decimal system?
5. Everybody can explain what a bit is.
6. They have made no changes in their program.
7. Do you need any help?
8. He's good at programming. He knows everything about it.
9. A computer engineer can work everywhere.
10. I think something is wrong with my printer. It prints nothing.
11. He could think of nothing but computer games.
12. Computers are preferred everywhere.

**Exercise 7G.**

Answer the following questions.
1. Is there anything interesting in this manual?
2. Do you know any foreign languages?
3. Will you go anywhere tomorrow evening?
4. Could you find any new information in this article?
5. Are there any viruses in your computer?
6. Did anybody advise you to enter this University?
7. Do you have anything to add to your friend's answer?
8. Is there anybody sitting behind you?
9. Do you have any questions to ask me?
10. Does anyone know Chinese in you group?

**Exercise 8G.**

Translate the following sentences paying attention to the words in bold type.
1. Everyone should know **that** computer languages are based on English.
2. **One** of these problems has been solved by a computer.
3. **One** should remember all the grammar rules.
4. His experiment is simpler than **that** of yours.
5. Is it clear that these diagrams are like **those** in figure 5?
6. By means of a computer **one** can easily solve any problem.
7. There is only **one** solution of this problem.
8. One day we shall buy another computer, this **one** is old.

**Exercise 9G.**

Translate the sentences with the pronoun *it*.
1. It all depends on your needs.
2. Here's the money to buy a new computer. Take it!
3. It is important for every young specialist to know at least one foreign language.
4. This book is very interesting you should read it!
5. I advise you to buy this modem. Think about it!
6. I'll purchase this motherboard. It's not so expensive.

**Exercise 10G.**

Translate into English.
1. Всі знають, що він вміє користуватися комп'ютером з 6 років.
2. Як довго ти вивчаєш англійську мову?
3. Ти що-небудь зрозумів?
4. Лише кілька студентів нашої групи вже користуються портативним комп'ютером.
5. Комп'ютери використовують в будь-якій установі (офісі).
6. Це найкращий комп'ютер, я мрію про нього з дитинства.

7. Ніхто в нашій групі не має такого комп'ютера, тому що він дуже дорогий.
8. Хтось розуміє різницю між бітом та байтом?
9. Я вже давно шукаю зручний та легкий портативний комп'ютер.
10. Ви могли б щось мені порекомендувати?
11. Ви потребуєте допомоги?
12. Якщо Вас цікавить хороший принтер – придбайте ось цей.
13. Назви декілька речей, які можна купити в магазині комп'ютерної техніки.

## (R) Reading

### The computers people have been dreaming of for a long time

People *had been using* calculating machines long before the first computers appeared. And for over the last 60 years the scientists and engineers *have been improving* them.

Now it is impossible to imagine our life without computers. And perhaps there is no person who has never heard of them. Today they are everywhere. Some people still say that they have never used a computer but in fact they *have been using* them long, only they don't realize that. It is because they are in so many ordinary things: cars, televisions, CD-players, washing machines, telephones etc.

Nobody can deny it. Any young specialist who wants to get a good job has to deal with computer technique. Modern technology *has been bringing in* many changes in their design. One can choose any computer configuration he needs. Some prefer laptops because they can take them anywhere, others buy desktops. It depends upon a person's job. If you don't know which computer to choose because you are a newbie, you can ask for a piece of advice and any computer-literate person will recommend you the best one that is the closest to your ideal or dream.

Modern computers are extremely powerful, run with operating systems working with optical discs and multimedia applications, can integrate text and pictures with animation and voice applications. They have the best performance and expendability. And the most important thing is that the prices are dropping!

So, if you haven't bought the computer of your dream yet, go to the shop and look for one!

**Exercise 1R.**
In the written form give the answers the following questions.
1. Do you have a computer you have been dreaming of since childhood?
2. What do modern computer technologies offer?
3. What kind of computer will you recommend your friend to try?
4. Are you a newbie or a computer-literate person?
5. Which one would you like to buy: a laptop or a desktop?

6. What can a modern computer do?
7. Describe the configuration of your ideal computer.
8. What kinds of jobs can you do on a computer?
9. Does anybody in your group own a modern laptop?
10. What do you use your computer for?

## (SR) Supplementary reading

**Exercise 1SR.**
With a partner, try to answer these questions.
1. How many digits does a binary system use? What is a 'bit'?
2. What is the difference between binary notation and the decimal system? Give some examples.
3. What is a collection of eight bits called?
4. One kilobyte (1Kb) equals 1,024 bytes.
5. What does the acronym ASCII' stand for? What is the purpose of this code?

Can you work out the value of these units?  *(kilo-:* one thousand)
1 megabyte =.............. bytes/1,024 kilobytes  *(mega-:* one million)
1 gigabyte =_____bytes/1,024 megabytes  *(giga-:* one thousand million)

**Exercise 2SR.**
Now read the text to check your answers or to find the correct answer.

### Units of memory
**Bits – basic units of memory**
Information is processed and stored in computers as electrical signals. A computer contains thousands of electronic circuits connected by switches that can only be in one of two possible states: ON (the current is flowing through the wire) or OFF (the current is not flowing through the wire). To represent these two conditions we use **binary notation** in which 1 means ON and 0 means OFF. This is the only way a computer can 'understand' anything. Everything about computers is based upon this binary process. Each 1 or 0 is called a **binary digit** or **bit.**

**Bytes and characters**
1s and 0s are grouped into eight-digit codes that typically represent characters (letters, numbers and symbols). Eight bits together are called a **byte.** Thus, each character in a keyboard has its own arrangement of eight bits. For example, 01000001 for the letter A, 01000010 for B and 01000011 for C.

**The ASCII code**
The majority of computers use a standard system for the binary representation of characters. This is the American Standard Code for Information Interchange, known popularly as ASCII (pronounced "ask-key").

There are 256 different ways of combining 0 and 1 bits in a byte. So they can give us 256 different signals. However, the ASCII code only uses 128 bytes to represent characters. The rest of the bytes are used for other purposes.

The first 32 codes are reserved for characters such as the Return key, Tab, Escape, etc. Each letter of the alphabet and many symbols (such as punctuation marks), as well as the ten numbers, have ASCII representations. What makes this system powerful is that these codes are standard.
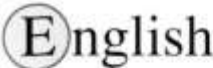
**Kilobytes, megabytes and gigabytes**

In order to avoid astronomical figures and sums in the calculation of bytes, we use units such as kilobytes, megabytes and gigabytes. One kilobyte is 1,024 bytes ($2^{10}$) and it is represented as KB, or more informally as K. One megabyte is equivalent to 1,024 KB, and one gigabyte is 1,024 MB.

We use these units (KB, MB, GB) to describe the RAM memory, the storage capacity of disks and the size of any application or document.

**Exercise 3SR.**

Look at the illustrations and the photos below. Then fill in the blanks with the correct unit of memory.



1 One .............. represents one character.

2 One .............. represents 1,024 characters (about a small page of text).

3 One .............. represents 1,000,000 characters (about the text of this book).

4 One .............. represents 1,000,000,000 characters (about 1,000 books in a library).

**Exercise 4SR.**
**Do you know…**

**Types of Memory**

**What is RAM?** – Random Access Memory (RAM) is the main "working" memory used by the computer. When the operating system loads from disk when you first switch on the computer, it is copied into RAM. The original IBM PC could only use up to 640 KB of memory (just over half a megabyte), whereas a modern computer can effectively house as much RAM is you can afford to buy! Commonly modern computers are supplied with over 64 MB of RAM. As a rough rule, a Microsoft Windows based computer will operate faster if you install more RAM.

Data and programs stored in RAM are volatile (i. e. the information is lost when you switch off the computer).

**What is ROM?** – Read Only Memory (ROM) as the name suggests is a special type of memory chip that holds software that can be read but not written to. A good example is the ROM-BIOS chip, which contains read-only software. Often network cards and video cards also contain ROM chips.

**What is the ROM-BIOS?** – The "Read Only Memory Basic Input Output System" chip is a chip located on the computer's system (mother) board, which contains software. This software performs a variety of tasks. When you first switch on the computer the ROM-BIOS software performs a self-diagnostic to check that the computer is working OK. This software then loads your operating system from the disk into the RAM.

**What is flash BIOS?** – Most modern computers are actually supplied with a flash BIOS rather than a ROM-BIOS. This chip contains exactly the same type of in-built software, but has the advantage that the software on the chip can be upgraded. This upgrade is achieved by simply running a small program supplied by the computer manufacturer.

**The ROM-BIOS and the Year 2000 bug** – Many older computers required the upgrading of the ROM-BIOS chip to fix the so-called "Millennium year 2000 bug". This was because the older computers held the year information as two digits, so that 99 would be used to represent 1999.

**What is Video (graphics) memory?** – The picture that you see on your screen is a form of data and this data has to be stored somewhere. The on-screen pictures are held in special memory chips called video memory chips, these chips are usually located on the video card. A modern computer will be supplied with several Megabytes of video memory.

## Memory Storage Devices

### Internal hard disks

*Speed:* Very fast! The speed of a hard disk is often quoted as "average access time" speed, measured in milliseconds. The smaller this number is the faster the disk works. There are different types of disk, and commonly used types are known as EIDE and SCSI drives. SCSI is better for large network servers while EIDE drives are often better for desktop computers.

*Capacity***:** Enormous! Often in excess of 10 Gigabytes. A Gigabyte is equivalent to 1024 Megabytes.

*Cost***:** Hard disks costs are falling rapidly and normally represent the cheapest way of storing data.

### External hard disks

*Speed***:** Normally slower that internal disks, but more expensive versions offer the same performance as internal hard disks.

*Capacity*: Same as internal disks.

*Cost***:** More expensive than internal disks.

### CD-ROM Disks

*Speed***:** Much slower than hard disks. The original CD-ROM speciation is now given a value of 1x speed, and later, faster CD-ROMs are quoted as a

multiple of this value. Thus, a 50x CD-ROM is 50 times as fast as the original 1x speed CD-ROM specification.

*Capacity*: Around 650 Mbytes.

*Cost*: Below £ 100 each (UK sterling).

**DVD Drives**

*Speed*: Much faster than CD-ROM drives but not as fast as hard disks.

*Capacity*: up to 17 GBytes.

*Cost*: Slightly higher than CD-ROM drives.

**What is the difference between internal and external hard disks?**

Internal hard disks are located inside your main computer unit, while external hard disks are joined to the main computer unit via a lead that you plug into the back of your computer unit. Some external hard disks will plug into the serial port (connector) located at the back of your computer. Other external hard disks require the installation of a special card within your computer that allows the connection of the external hard disk to the computer unit.

## (L) Listening
**Task (Recording 4)**
**Exercise 1L.**

1. Name eight different items you can buy in a computer shop.

2. You are going to hear two people making enquiries in a Macintosh computer shop. The shop assistant is telling them about the two models below. Listen and fill in the missing information.

**iBook**

| | |
|---|---|
| Processor speed | .................... |
| RAM standard | .................... |
| Hard disk capacity | .................... |
| Price | £1,207 |
| DVD and Mac OS included? | .................... |

**iMac**

| | |
|---|---|
| Processor speed | 1 GHz |
| RAM standard | .................... |
| Hard disk capacity | .................... |
| Price | .................... |
| DVD and Mac OS included? | .................... |

3. Now listen again and fill in the gaps below.

**Assistant:**    Do you need any help?

**Paul:**    Um yes, we're looking for a personal computer. Have you got any fairly basic ones?

**Assistant:**    Yes, sure. If you'd like to come over here ...

**Paul:**    What different (1) ......... are there?

**Assistant:**    At the moment we've got these two models: The iMac, which is a desktop computer with a (2) ____ operating at 1 gigahertz, and the portable iBook, which has a processor (3)_____ at 700 megahertz.

**Sue:**    So the iMac is the (4)_____ one. And which one has the most memory? I mean - which has the most RAM?

**Assistant:**    Well, the iMac has 256 megabytes of (5)____ .................. , which can be (6)_____ up to 1 gigabyte, and the iBook has 128 megabytes which can be expanded up to (7) _____.    It    all depends on your needs. The iMac is suitable for home users and small offices. The iBook is ideal for students and for people who travel.

## (G) Grammar (block III):

### Word-building (Prefixes)

**Exercise 11G.**
Explain these expressions, taking into account the prefixes and root words.
***Example:***    *the binary system*
    *The binary system is a notation which uses two digits, 0 and 1.*

1.    a minicomputer
2.    bidimensional chessboard
3.    a microcomputer
4.    a tricycle
5.    the decimal system
6.    a monochrome computer
7.    the hexadecimal system
8.    a CPU with 256 MB of RAM
9.    a multi-user configuration
10.    a document of 3 kilobyte

**Exercise 12G.**

The table gives some prefixes commonly used in computer science. Knowing the meaning of these prefixes will help you understand new words.

| Prefix | Meaning | Examples |
|---|---|---|
| *deci-* | ten | *decimal, decimalize, decibel* |
| *hexadeci-* | sixteen | *hexadecimal* |
| *kilo-* | one thousand (1,000) (1,024 in binary: $2^{10}$) | *kilocycle, kilogram(me), kilowatt* |
| *mega-* | large; one million | *megahertz, megalith, megaton* |
| *giga-* | very large; one thousand million | *gigantic, gigabyte, gigahertz* |
| *mini-* | small | *minibus, minimum, minimize* |
| *micro-* | very small | *microfilm, microphone, microwave* |
| *bi-* | two | *bidirectional, bidimensional, binary* |
| *tri-* | three | *tripartite, tricycle, trilingual* |
| *multi-* | many | *multi-racial, multi-user, multitasking* |
| *mono-* | one | *monologue, monosyllable, monolingual* |

# (S) Speaking

**Exercise 1S.**
*Role play.*

Work with a partner. One of you wants to buy a computer; the other is the sales assistant. Ask and answer questions, using the information and instructions below to help you.

| *Shop assistant* | **Customer** |
|---|---|
| *Greet the customer and offer help.* | |
| | Ask to see some computers. |
| *Show the customer some models.* | |
| | Ask for details: processor, RAM, etc. |
| *Describe the speed in megahertz and the main memory.* | |
| | Ask about the hard disk. |
| *Give explanations (GB storage capacity, etc.).* | |
| | Ask about the monitor and other features. |
| *Give the required information.* | |
| | Ask the price. |
| *Give the price and explain different ways of paying.* | |
| | Decide to buy one/to think about it. |
| | Thank the shop assistant and leave the shop. |

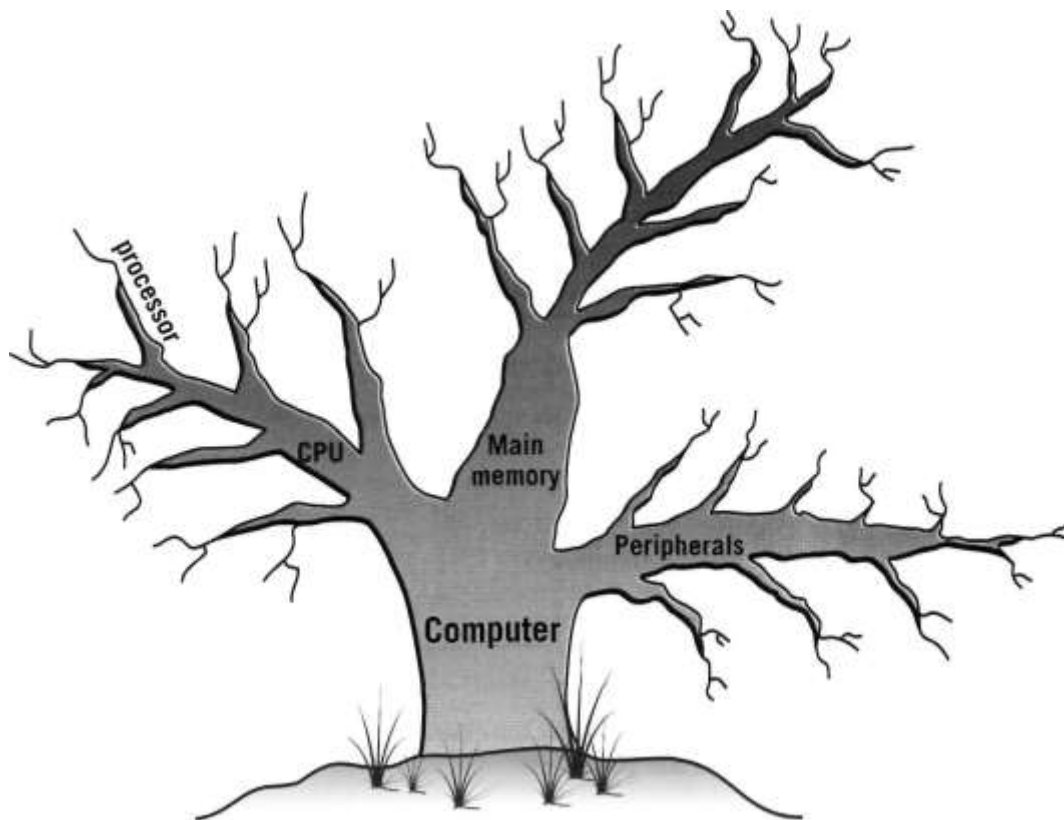| Products available | Processor Speed | Minimum /Maximum RAM | Hard disk | Disk drives | Monitor | Price |
|---|---|---|---|---|---|---|
| **Explora 700 Net PC** | Mips R4700 900 MHz | 128 MB expandable to 512 | 20 GB | Optional 3.5" drive | Super VGA compatible | £799 |
| **Toshiba portable** | Pentium 4 1.5 GHz | 256 MB expandable to 512 | 40 GB | 3.5" drive DVD/ CD-RW | colour LCD | £2,309 |
| **IBM** | Pentium 4 1.8 GHz | 256 MB expandable to 512 | 70 GB | DVD CD-RW | XGA | £2,149 |
| **Polywell** | AMD Athlon 1.6 GHz | 512 Mb expandable to 2 GB | 80 GB | 3.5" drive DVD/ CD-RW | SuperVGA | £2,700 |
| **Dell** | Pentium 4 2 GHz | 256 MB expandable to 1 GB | 60 GB | DVD/ CD-RW | XGA | £2,710 |

**Exercise 2S.**
**Vocabulary tree**
Designing vocabulary trees or networks can help you build up your own mental "maps" of vocabulary areas. Look at the list of terms in the box and put each one in an appropriate place on the vocabulary tree below. The first one has been done for you.

| | | |
|---|---|---|
| *processor* | *RAM* | *gigahertz* |
| *kilobyte* | *computer brain* | *CD-ROM* |
| *expandable* | *byte* | *megabyte* |
| *memory* | *DVD* | *floppy disk* |
| *megahertz* | *clock speed* | *registers* |
| *SIMMs* | *keyboard* | |
| *hard disk* | *mouse* | |

**Exercise 3S.**
**Vocabulary quiz.**

In groups of three, write answers to these questions. The winners are the group that answers the most questions correctly in four minutes.

1. What are the main parts of the CPU?
2. What is RAM?
3. What memory section is permanent and contains instructions needed by the CPU?
4. What information is lost when the computer is switched off?
5. What is the typical unit used to measure RAM memory and storage memory?
6. What is the meaning of the acronym SIMM?
7. What is a megahertz?
8. What is the ALU? What does it do?
9. What is the abbreviation for "binary digit"?
10. How can we store data and programs permanently?

**Exercise 4S.**

Make notes about the features of the computer that you would like to have.

*CPU:* ............          *Optical disk drives:* ...... ........
*Speed:* ...... ........          *Monitor* ...............
*Minimum/maximum RAM:* ..................... *Hard disc:* ...........

**Exercise 5S.**

Now describe it to your partner.

**Useful expressions:**

*It has got ...*                   *The hard disk can hold ...*
*It's very fast. It runs at ...*   *I need a SVGA monitor because ...*
*The standard RAM memory ... and it   As for the Internet ...*
*is expandable.*

**Exercise 6S.**

Nick has gone to his local computer shop to buy a new laptop. Complete his conversation with the sales assistant by typing in words from the box.

| *running* | | *storage* | *lighter* | *feature* | *any* | *bigger* |
|---|---|---|---|---|---|---|
| *for* | *got* | *specs* | *more* | *cost* | *cheaper* | *both* |

**Sales assistant:** Hi there. Do you need _____ (1) help or are you just looking?

**Nick:** Actually, yes, you might be able to help. I'm looking _____ (2) a new laptop. Have you _____ (3) any that are really reliable? I've had loads of problems with the one I've got at the moment.

**Sales assistant:** OK. Well, it'll depend on your budget, but we've got two with 20% off at the moment – the Acer Aspire 4920 and the Samsung R60.

**Nick:** Right. And what's the difference between these two? Do they have similar _____ (4)?

**Sales assistant:** Well, the Samsung's more of an entry-level model. It's got a Pentium Dual Core processor _____ (5) at 1.4 GHz, which is fast enough for most applications, although you might struggle if you want to play really advanced games on it. The Acer's processor runs at 2 GHz, which is really fast. The Acer also has twice as much RAM as the Samsung – that's 2GB as opposed to just 1.

**Nick:** OK and what's the _____ (6) capacity of each model?

**Sales assistant:** OK, that's 80GB for the Samsung and 250GB for the Acer.

**Nick:** Mmm. That's quite a difference, isn't it? Is there anything else I should know about?

**Sales assistant:** Well, they _____ (7) come fully wireless and Bluetooth-enabled, and Windows Vista is now standard on all the laptops we sell. They also both _____ (8) DVD writers, so backup onto DVD is quick and easy. The Acer has a slightly _____ (9) screen, and it's _____ (10), which would make it more practical if you plan to travel with it.

**Nick:** OK and how much do they _____ (11)?

**Sales assistant:** Let me just have a look. The Samsung's quite a bit _____ (12) than the Acer – it's £439.97 compared to £769.97. But the Acer is much _____ (13) powerful – it's got twice the RAM and a faster processor.

**Nick:** Yeah, but I just can't afford that much. I think I'll take the Samsung.

**Exercise 7S.**

Now complete this review of a digital camcorder by typing in the nouns and adjectives from the box.

| *addition(al)*  *process(or)*  *play(er)*  *optimize(d)*  *control(ler)*  *power(ful)* |
| --- |

The DF201 benefits from a (1) _____ optical zoom lens and a video image (2) _____ designed for High Definition (HD) recording. Features include a "Quick Start" button and an intuitive menu system, easily navigated using a joystick (3) _____. The camcorder is (4)_____ for high-resolution true widescreen recording and offers (5) _____ features such as a 2.7" LCD and a 0.27" 16:9 colour EVF (Electronic Viewfinder), which allow users to compose and play back video in the same dimensions that it will be displayed on a widescreen TV set. It is then a simple process to finalize the DVD in-camera before playing it back in a compatible home DVD (6) _____.

# SECTION 2

## Unit 6

*(G) Grammar:*                 *Tense Forms: Active and Passive*
                                   *Modals and their Equivalents*
                                   *Questions, Indefinite Pronouns*
*(R) Reading:*                    *Input devices*
*(SR) Supplementary Reading:*   *Input devices*
*(L) Listening*                   *Interacting with your computer*
*(S) Speaking:*                  *Vinnytsia National Technical University*

## (G) Grammar (revision):

### Tense Forms: Active and Passive

| | | Past | Present | Future |
|---|---|---|---|---|
| **Indefinite** | Active | *asked*<br>*did ... ask* | *ask*<br>*asks*<br>*do ... ask*<br>*does ... ask* | *shall ask*<br>*will ask* |
| | Passive | *was asked*<br>*were asked* | *am asked*<br>*is asked*<br>*are asked* | *shall be asked*<br>*will be asked* |
| **Perfect** | Active | *had asked* | *have asked*<br>*has asked* | *shall have asked*<br>*will have asked* |
| | Passive | *had been asked* | *have been asked*<br>*has been asked* | *shall have been asked*<br>*will have been asked* |
| **Continuous** | Active | *was asking*<br>*were asking* | *am asking*<br>*is asking*<br>*are asking* | *shall be asking*<br>*will be asking* |
| | Passive | *was being asked*<br>*were being asked* | *am being asked*<br>*is being asked*<br>*are being asked* | |
| **Perfect Cont.** | Active | *had been asking* | *have been asking*<br><br>*has been asking* | *shall have been asking*<br><br>*will have been asking* |

**Exercise 1G.**
Transform the sentences, containing modal verbs or equivalents into
- the Past
- the Future

1. Computers can replace people in dull routine work.
2. Computer-controlled robots must increase the productivity of labour.
3. Programmers have to write application programs in a way that computers can understand them.
4. What are you to test next?
5. A program may include data which is to be processed.

**Exercise 2G.**
Underline the right variant.
1. At the age of 13 Michael Faraday's schooling (*ends/ended/end*)
2. The students (*work/worked/were working*) from 5 to 6 p.m. yesterday.
3. By 2 o'clock the professor (*examined/had examined/was examining*) all the students of our group.
4. Next time they (*have to/had to/will have to*) revise all the rules.
5. At this time yesterday he (*worked/had worked/was working*) at the computing centre.
6. At last she (came/comes/has come).
7. How long (have you known/have you been knowing/know) them?
8. This program (*senses/sense/is sensing*) all cards.
9. Do you have (*some/any/every/no*) questions?
10. Usually students (*examined/examine/are examined*) in this room.

**Exercise 3G.**
Translate the sentences into Ukrainian.
1. The higher the accuracy of the system, the less errors the system makes.
2. It is natural that we should try to replace the human controller by some forms of automatic controller.
3. There are two kinds of errors which programmers must deal with.
4. He is to write the program immediately.
5. When I came in she was typing this document.
6. This job will have been finished by the end of the next week.
7. They could find him nowhere.
8. Don't you know that the computer has been rebooted?
9. How long has he been working here?
10. They were allowed to attend the conference last week.
11. What are you going to do with this device?
12. Have you been informed about the meeting?

**Exercise 4G.**

Rewrite the sentences into Passive.
1. We easily multiply these digits.
2. People use computers everywhere.
3. The students are writing a test now.
4. His computer displays the results of the work.
5. You must do this job at once.

**Exercise 5G.**

Translate the sentences into English.
1. В нашому університеті є студенти з інших країн.
2. В неї немає комп'ютера, чи не так?
3. Вам не слід розпочинати цю роботу.
4. Хіба Вам не пояснили це правило?
5. Вони знали один одного з дитинства.
6. Яку мову Ви вивчали до того, як вступили до нашого університету?
7. Їм не дозволять протестувати цей прилад.
8. Які операції виконує сучасний комп'ютер?
9. Студенти напишуть програму до червня.
10. Ви коли-небудь чули про цю технологію?
11. Студентам надають гуртожиток.
12. Цей прилад тестували цілий місяць.
13. Всі присутні. Можна розпочинати презентацію.
14. Цю книгу вже забрали. Візьміть ось цю – вона набагато цікавіша.
15. Чим більше я читаю, тим більше дізнаюсь.
16. Ви впевнені, що на Вас чекають?

**Exercise 6G.**

Rewrite the sentences into Active.
1. English is spoken in many countries.
2. Penicillin was discovered by Fleming.
3. The device is being tested now.
4. The new building has been built.
5. The exams will be passed next month.

**Exercise 7G.**

Make up questions to the sentences.
1. We are friends.
2. He has just come back from Kyiv.
3. Some days ago we had a scientific conference.
4. They will discuss this problem next time.
5. I am not able to help you with the joystick now – I have to go.

**Exercise 8G.**

Use the correct verb form.

1. We _____anything until we hear from you. (*not do*)
2. What parts _____a computer _____ (*to consist of*)
3. We _____present at the lecture last time because we were away. (*to be*)
4. He _____over the phone for 30 minutes. (*to talk*)
5. How long _____ you _____this professor? (*to know*)
6. Symbolic languages _____symbolic addresses in the operands. (*to use*)
7. He _____just _____his experiment. (*to finish*)
8. She _____to see her parents next weekend. (*to go*)
9. Where are the students? – They _____labs. (*to do*)
10. Ann _____her lecture on history now. (*to have*)
11. I am going to have a walk. I _____my entire home tasks already. I _____them for 3 hours. (*to do, to do*)
12. He _____his house by the end of next year. (*to build*)
13. What _____you _____in the morning? (*to do*)
14. What _____you _____since morning? (*to do*)

**Exercise 9G.**

Translate the sentences into Ukrainian, paying attention to modals and their equivalents.

1. The article should be published at once.
2. The lab assistant has to test this device in 2 days.
3. You will have to help him with his calculations.
4. I could ask him some questions about his job.
5. She is to write this program by all means.
6. We won't be able to make this experiment because of his illness.
7. The students were to start this work three days ago.
8. He had to work hard to master his English.
9. We were to follow this example.
10. I won't be allowed to finish this work.
11. You ought to remember all these scientists.
12. They were permitted to attend the conference on physics.

**Exercise 10G.**

Make questions to the following sentences.

1. There is no holiday today.
2. Our University was established many years ago.
3. I will not be able to do it now.
4. He has got a good mark at the exam.
5. They spoke French at school meeting last year.
6. We were good friends.
7. He can deal with computers very well.
8. We are good at reading in English.

9. You must learn this text by heart.
10. I had to prepare for my exams last Thursday.

## (L) Listening

**Task (Recording 5)**
**Exercise 1L.**
**Input devices** are the pieces of hardware which allow us to enter information into the computer. The most common are the keyboard and the mouse. We can also interact with a computer by using one of these: a light pen, a scanner, a trackball, a graphics tablet, a joystick or a voice recognition device.

1. Look at the illustrations and see if you can name them:
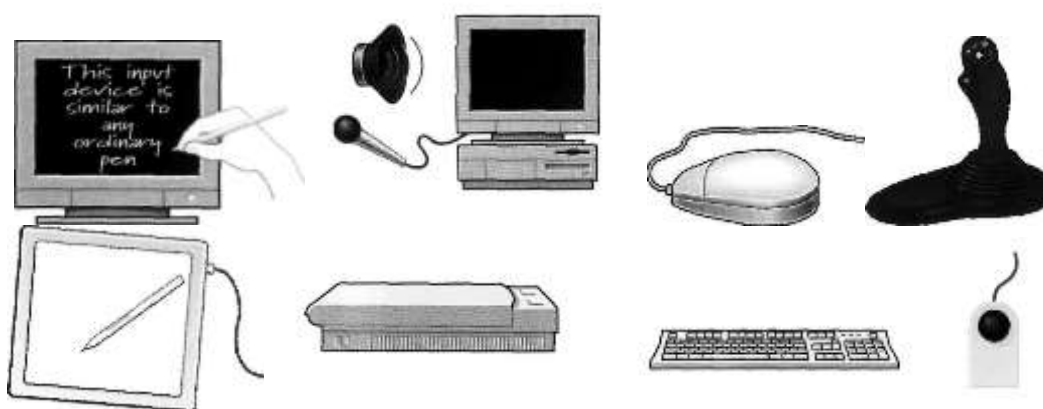


2. Listen to these descriptions of three input devices. What are they? Check your answers with a partner.

## (R) Reading

**Exercise 1R.**
Look at the picture of a PC-compatible keyboard and identify these groups of keys.
1. **Alphanumeric keys**: arranged in the same order as a typewriter.
2. **Function keys**: used by various programs to instruct the PC to perform specific tasks, such as Save, Copy, Cut, Paste, Help, etc.
3. **Numeric keypad**: set of numeric or editing keys. The Num Lock key is used to switch from numbers to editing functions.
4. **Editing keys**: cursor and other keys usually used within word processors to page up and down in a long document or to edit text (using Insert or Delete keys).
5. **Special keys**: used to issue commands or to produce alternative characters in key combinations, for example, the Alt key.

**Exercise 2R.**

Match these descriptions with the names of keys on the right. Then find them on the keyboard.

| | | | |
|---|---|---|---|
| *arrow keys  enter* | *return* | *caps lock* | *shift* |
| *tab*        *escape* | *space bar* | *backspace* | *alt* |

1. A long key at the bottom of the keyboard. Each time it is pressed, it produces a blank space. (_____)
2. It moves the cursor to the beginning of a new line. It is also used to confirm commands. (_____)
3. It stops a program without losing the information from the main memory. Sometimes its use depends on the applications. (_____)
4. It works in combination with other keys to produce special characters or specific actions. (_____)
5. It removes the character on the left of the cursor or any selected text. (_____)
6. It produces UPPER-CASE characters (or the upper-case character of the key). (_____)
7. It produces upper-case letters, but it does not affect numbers and symbols. (_____)
8. It moves the cursor horizontally to the right for a fixed number of spaces (in tabulations and data fields). (_____)
9. They are used to move the cursor, as an alternative to the mouse. (_____)

**Exercise 3R.**
Read this passage about a computer mouse. Fill in the gaps with verbs from the list.

| *click* | *double-click* | *drag* | *grab* | *select* | *move* | *control* |

A mouse allows you to (1) _____ the cursor and move around the screen very quickly. Making the same movements with the arrow keys on the keyboard would take much longer. As you (2) _____ the mouse on your desk, the pointer on the screen moves in the same direction. The pointer usually looks like an I-bar, an arrow or a pointing hand, depending on what you are doing.

A mouse has one or more buttons to communicate with the computer. For example, if you want to place the insertion point or choose a menu option, you just (3) _____ (press and release) on the mouse button, and the option is chosen.

The mouse is used to (4) _____ text and items on the screen. You can highlight text to be deleted, or you can select an item from a check-box or questionnaire.

The mouse is widely used in graphics and design. When you want to move an image, you position the pointer on the object you want to move, press the mouse button, and (5) _____ the image to a new location on the screen. Similarly, the mouse is used to change the shape of a graphic object. For example, if you want to convert a square into a rectangle, you (6) _____ one corner of the square and stretch it into a rectangle.

The mouse is also used to start a program or open a document: you put the pointer on the file name and (7) _____ on the name - that is, you rapidly press and release the mouse button twice.
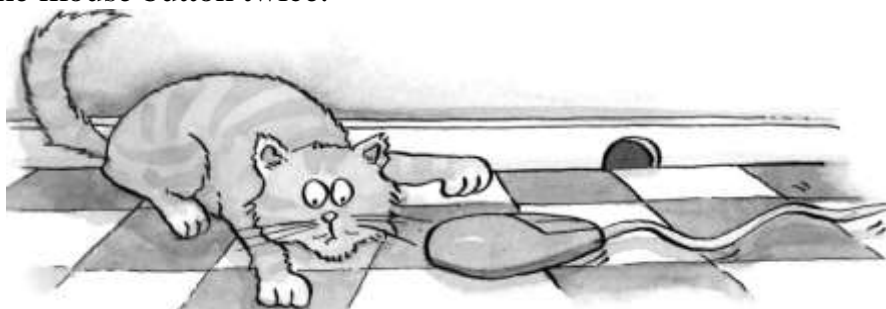


## (SR) Supplementary Reading

**Exercise 1SR.**
**Do you know…**

### Input Devices

**The Mouse** – The mouse came into common use on a PC with the introduction of the Microsoft Windows operating system. Before this, the operating system (DOS) would normally be controlled via the keyboard. These days it is vital to

be a competent mouse user. There are many different types of mice, a commonly used model now has a small wheel on it which when combined with the correct software allows additional functionally and fine control over the use of your applications.

**The Keyboard** – The keyboard is still the commonest way of entering information into a computer. There are a number of different types, including those specially designed for use with Microsoft Windows.

The quality of the keyboard is often overlooked when buying a PC; it should be robust and easy to use.

**Tracker Balls** – A tracker ball is an alternative to the traditional mouse and favored by graphic designers. Tracker balls often give much finer control over the movement of the items on the screen. They may take a while to get used to if you are used to the traditional mouse, but offer a lot in terms of added flexibility.

**Scanners** – A scanner allows you to scan printed material and convert it into a file format that may be used within the PC. You can scan pictures and then manipulate these inside the PC using a graphics application of your choice. In addition, you can scan printed text and convert this not just to a picture of the text but also to actual text that can be manipulated and edited as text within your word-processor. There are a number of specialist programs, generically called OCR (Optical Character Recognition) programs that are specifically designed for converting printed text into editable text within your applications.

**Touch Pads** – A touch pad is a device that lies on the desktop and responds to pressure. Used in conjunction with a special pen they can be used by graphic artists wishing to create original, digital artwork.

**Light Pens** – A light pen is used to allow users to point to areas on a screen and is often used to select menu choices.

**Joysticks** – Many games require a joystick for the proper playing of the game. There are many different types, the more sophisticated respond to movement in 3 axis directions, as well as having a number of configurable buttons. Like most things in life you get what you pay for with joysticks and it is worth investing in a good, strongly constructed model, especially bearing in mind that children will hammer these devices while playing games!

**Voice input for PCs** – Early voice recognition systems offered very poor results, due to the limitations of the software combined with hardware limitations. It takes an awful lot of CPU processing power to convert the spoken word into text that appears on the screen! Things are changing rapidly however and recent systems allow you to talk to a PC and see text appear on the screen. Most of these systems require an initial training period, where you train the

software to respond to your particular voice. While still not perfect this is a key technology of the future!

**Web Cams** – Ever since it was invented, the Web has become increasingly interactive. A recent development is to use a small digital movie camera (a Web cam) mounted on the PC monitor to allow two-way communication involving not just text communication but sound and video communication as well. While not yet considered a standard piece of PC kit, it is only a matter of time …

**Digital Cameras** – A digital camera can be used in the same way a traditional camera can, but instead of storing images on rolls of film which require developing, the images are stored digitally in memory housed within the camera. These pictures can easily be transferred to your computer and then manipulated within any graphics programs that you have installed on your computer.

Currently they are limited by the quality of the image recorded and the number of pictures that you may store within the camera.


**Exercise 2SR.**
The following extracts come from sales assistants in computer shops describing the features and functions of various input devices. Complete the sentences by typing in words from the box and then choose which device they're talking about.

| to | can | which | allows | used | by | features | works | for |
|----|-----|-------|--------|------|-----|----------|-------|-----|

1. This model _____ a backlight, so you can see what you're typing in the dark. (*scanner/keyboard/game controller*)
2. We have a Bluetooth version which _____ without wires, but the surface you use it on needs to be dark. (*game controller/mouse/microphone*)
3. Why don't you try this? It's _____ drawing, as if you were using a pen and paper. (*graphics tablet/scanner/keyboard*)
4. You'll need one of these – it's _____ to control your movements while you play. (*game controller/graphics tablet/microphone*)
5. For more precision, I'd recommend this. It's like an upside-down mouse, and it works _____ running your hand over the plastic ball here. (*game controller/trackball/light pen*)
6. This is our most popular model. It _____ you _____ reproduce exact copies of your documents in digital format. (*graphics tablet/scanner/microphone*)
7. This works just like a mouse, except you _____ write directly onto the screen with it. (*scanner/keyboard/light pen*)
8. This is a model _____ works particularly well with Skype. (*game controller/mouse/microphone*)

## (L) Listening

**Task (Recording 6)**
**Exercise 2L.**
1. Listen to an interview with Anne, an expert in voice-input technologies. Tick the features that she mentions.

| | |
|---|---|
| need a good sound card and a microphone | □ |
| take dictation with accuracy | □ |
| create and compile a computer program | □ |
| surf the Web by speaking | □ |
| execute programs and navigate around menus by voice commands | □ |
| design graphics | □ |

2. Listen again and fill in the gaps in these sentences. Use the correct modal verb from the list.

> ***can*** *(ability)*   ***must*** *(necessity)*   ***should*** *(advice)*
> ***could*** *(possibility)*   ***will*** *(prediction)*

1. If you intend to do a lot of dictation, you _____ get a high-quality headset microphone.
2. You _____ dictate text directly onto your word processor or e-mail program.
3. With many voice-recognition programs, the user _____ first train the software to recognize individual pronunciations.
4. Speech-recognition software _____ help children with special educational needs.
5. In a few years' time, a lot of people _____ use their voices to interact with computers.

## (S) Speaking (block II):

**Exercise 3S.**
Read and translate the text and get ready to speak on your University.

### General Information about VNTU

Vinnytsia National Technical University is an educational establishment of the fourth level of accreditation well known both in Ukraine and far abroad.

VNTU consists of 8 scientific and educational departments:

- Department of Automatics, Electronics and Computer Control Systems

- Department of Civil Engineering, Thermal Power Engineering and Gas Supply
- Department of Power Engineering, Ecology and Electrical Mechanics
- Department of Information Technologies and Computer Engineering
- Department of Machine Building and Transport
- Department of Radio Engineering, Telecommunication and Electronic Instrument Engineering
- Department of Management
- Department of Ecology

and seven integral Institutes, designed for the provision of training process:

The University trains 6000 day-time students, 1500 part-time students, 100 PhD and Doctor degree students, 1000 pre-University students.

The educational and scientific activity is conducted by 47 departments, 26 of which are running branch offices with the enterprises in Vinnytsia and Vinnytsia region. The departments are run by Doctors of Sciences, professors (84% of teaching staff in the graduating departments and 72% of University teachers have scientific degrees and titles). 2% of University teaches have honorary title "Meritorious". 10% are Academicians and Correspondent Members of State and Public Academies.

VNTU was the unique University in Ukraine to introduce in 1991 the three semester study system, two semesters of which are conducted following the curricula, and the third one is a working semester. During the working semester, the first year students obtain the working profession, corresponding to the future engineering one. The senior students are working on the enterprises independently, improving their qualification.

Department for Training and Production Integration has its representatives in all the industrial cities of Ukraine which allows to run the working semesters.

VNTU is given the highest IV$^{th}$ level of accreditation and trains students according to the three stage system Bachelor – Engineer – Master, following the curricula, which integrates the peculiarities of national and Canadian system of higher education.

Apart from acquiring the basic specialty, the students are allowed to get the second specialty by correspondence. Our University is also unique in Ukraine to allow students of any specialty with achievements in sports to obtain the additional specialization "Management of Organizations of Physical Culture and Sports".

One more peculiarity of students training in VNTU allows the Bachelors with the distinction who have the ability to scientific and educational activity to join Masters training courses after four years of Bachelor's training program.

Students of different specialties learn English for Specific Purposes on the level of technical translation, which allows them to join the overseas representative offices or work abroad.

University campus is located on the lot of 25 hectares in the city of Vinnytsia. 100 km away form Vinnytsia, the University owns 10 hectares with the University sports centre.

The first and second year students makes it possible to meet eminent people, authors, musicians, artists, theatre and film actors, politicians and religious figures and other people, who visit the University.

The University has the efficient system for training specialists of higher qualification, which has no analogues. Training of scientific and educational specialists is conducted on the post-graduated courses on 19 specialties and on the Doctoral courses on 4 specialties. There are 5 Specialized Scientific Councils for examination of PhD and Doctoral Thesis on 12 specialties. During the previous 10 years there had been defended 38 Doctoral and 260 PhD theses.



The University issues the social and political periodical "Impulse", which is in demand in the region. The University scientific journals on technical, economic and pedagogic sciences, approved by the Highest Attestation Board of Ukraine, are: "Visnyk of Vinnytsia Polytechnic Institute", "Optoelectronic Information", "Power Technologies", "Information Technologies and Computer Engineering". Recently initiated scientific journal is "Modern Technologies, Materials and Constructions in Civil Engineering". The journal "Sententiae" is specialized in the sphere of philosophical sciences.

VNTU is the only permanent member representing Ukraine in the International Association of Inventors IFIA with headquarters in Geneva. The scientists of VNTU are annually awarded medals for inventions presented on the invention exhibitions, organized by IFIA in Jassy /Romania/, Budapest / Hungary/, Sofia /Bulgaria/, Brussels /Belgium/, Geneva /Switzerland/, Pittsburg /USA/.

The University trains specialists with higher education on the level of Master and Philosophy Doctor in technical sciences for 69 countries in Africa, Asia, South and Central America.

# Unit 7

*(G) Grammar:*                              *Sequence of Tenses*
                                            *Affirmative Sentences*
                                            *Comparatives and Superlatives*
                                            *Word-Building (Suffixes)*
*(R) Reading:*                              *The eyes of your computer*
*(SR)Supplementary reading:*                *Output devices*
*(L) Listening*                             *Scanners*
*(S) Speaking:*                             *Why we study foreign languages*
                                            *Choosing a computer*

## (G) Grammar (block I):

**Sequence of Tenses**

| Tense (main sentence) | Tense (subordinate sentence) | Examples |
|---|---|---|
| Simple Present | Present Tenses | *I am eager to go to the concert because I love the Wallflowers.* |
| | Past Tenses | *I know that I made the right choice* |
| | Present Perfect Tense | *They believe that have elected the right candidate* |
| | Future Tenses | *The President says that he will veto the bill* |
| Simple Past | Past Indefinite Tense | *I wanted to go home because I missed my parents* |
| | Past Perfect Tense | *She knew she had made the right choice.* |
| | Present Tense (!) | *The Deists believed that the universe is like a giant clock* |
| Present Perfect Tense or Past Perfect Tense | Past Tense | *She has grown a foot since she turned nine. The crowd had turned nasty before the sheriff returned.* |
| Future | Present Tenses | *I will be so happy if they fix my car today.* |
| | Past Tenses | *You will surely pass this exam if you studied hard.* |
| | Present Perfect Tense | *The college will probably close its doors next summer if enrollments have not increased.* |
| Future Perfect | Present Perfect Tense | *Most students will have taken sixty by the time they have graduated.* |

**Exercise 1G.**

Translate the following sentences, paying attention to the use of tense-forms.

1. We **know** we **can** capture our favourite pictures using 3 different input devices *now*.
   We **knew** we **could** use this information *then*.
2. He **is sure** that a scanner "**sees**" images and **converts** the printed text into codes.
   He **was sure** that a scanner "**saw**" images and **converted** the printed text into codes.
3. She **says** she **will use** a camera *tomorrow*.
   She **said** she would use a camera *the next day*.
4. It **means** he **has bought** a digital camera too.
   It **meant** that he **had bought** a digital camera too.
5. They **promise** they **will have done** this work by the end of the week.
   They **promised** they **would have done** that work by the end of the week.
6. You **understand** I am not right.
   You **understood** I was not right.
7. My friend **denies** he **knew** about this program.
   My friend **denied** he **had known** about this program.
8. I **am told** he **speaks** 3 foreign languages.
   I **was told** he **spoke** 3 foreign languages.
9. He **finds out** she **has been studying** French for 2 years.
   He **found out** she **had been studying** French for 2 years.
10. She **confirmes** she **was** at *this* conference *yesterday*.
    She **confirmed** she had been at *that* conference *the prevous day*.

**Exercise 2G.**

Put in the correct tense form.

1. He wasn't sure they (come) the next day.
2. She (to say) she doesn't know German.
3. You (know) he had come back from Canada?
4. I am sure that they (to live) in our town.
5. My friend (to understand) what she had been told.
6. He said he (not to have) a scanner at home.
7. It doesn't mean we (to be) present at this party next Sunday.
8. I promised I (to finish) that job.
9. He (to say) he didn't smoke at all.
10. I was said he just (to arrive).

**Exercise 3G.**

Translate the following sentences into English.

1. Вчені з'ясували, що краще використати один комп'ютер, ніж сотню людей.
2. Він знав, що цей блок вбудований в один мікропроцесорний чіп.

3. Вона була впевнена, що зможе придбати такий комп'ютер.
4. Мені не сказали, що Ви вже чекаєте на мене.
5. Він каже, що йому часто задають це питання.
6. Ви впевнені, що його про це попередили?
7. Він не заперечував, що користувався вашим принтером.
8. Ви розумієте, що Вам кажуть?
9. Вони не впевнені, що Ви знаєте цю програму добре.
10. Я підтвердив, що вони не вміють користуватися цифровою камерою.

## (R) Reading
**Exercise 1R.**

You can capture your favourite pictures using three different input devices: a scanner, a digital camera, or a camcorder. Use the information below to answer these questions.
1. Which device is used to input text and graphic images from a printed page?
2. How does a colour scanner work?
3. Do digital cameras use film? How do they store photographs?
4. Which device would you use to take digital video?
5. What kind of software is used to manipulate video clips on the computer?
6. What do you think are the benefits of using scanners and cameras at home and in business?

### What does a scanner do?

A scanner "sees" images and converts the printed text or pictures into electronic codes that can be understood by the computer.

With a flatbed scanner, the paper with the image is placed face down on a glass screen similar to a photocopier. Beneath the glass are the lighting and measurement devices. Once the scanner is activated, it reads the image as a series of dots and then generates the digitized image that is sent to the computer and stored as a file.
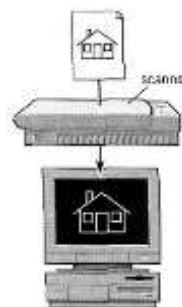


A colour scanner operates by using three rotating lamps, each of which has a different coloured filter: red, green and blue. The resulting three separate images are combined into one by appropriate software.

### What does a digital camera do?

A digital camera takes photos electronically and converts them into digital data (binary codes made up of 1s and 0s). It doesn't use the film found in a



normal camera; instead it has a special light-sensitive silicon chip. Photographs are stored in the camera's memory before being sent to the computer. Some cameras can be also connected to a printer or a TV set, to make viewing images easier.

**What does a camcorder do?**

A camcorder, or digital video camera, records moving pictures and converts them into digital data that can be stored and edited by a computer with special video editing software.

Digital video cameras are used by home users to create their own movies, or by professionals in computer art and video conferencing. They are also used to send live video images via the Internet. Then they are called Web cameras or webcams.

## (SR) Supplementary Reading
**Exercise 1SR.**
**Do you know…**

**Output devices**

**The VDU (computer monitor or screen)** – The VDU (Visual Display Unit) is the computer screen used for outputting information in an understandable format for humans. Remember that at the end of the day the computer works in binary code (a series of on/off impulses). It is hard to realize that the original electronic computers did not have a screen!

**Flat screen monitors** – Traditional computer monitors are based on the same sort of technology that is used within a television screen.

More recently, flat screen computer monitors have become available. These take up a lot less room on a desk and use less energy than the traditional, more bulky monitors.

**Screen size** - You should be aware that often if you specify a screen of a certain size, say a 17-inch screen, that this is the size measured diagonally, not horizontally across the screen. If you are upgrading you should also ask for the "visible viewing area" of the screen.

**What are VGA Super VGA and XGA?** – VGA (Video Graphics Array) was introduced way back in 1987 and was a standard that allows graphics to be displayed on your monitor. It was limited to only 256 colors and an on-screen resolution of 640 x 480 dots (or pixels).

Most people tend to use higher standards such as Super-VGA (which allows you to use more colors and a higher resolution). PCs that are more recent use even higher performance standards allowing a huge range of colors at an even higher resolution.

Another term you may hear is XGA (or XGA compatible). This gives you even higher screen resolution.

**Graphics for games** – Many games require very advanced graphics cards (boards) to be installed within your computer to make them run. These advanced graphics cards contain their own CPU that is dedicated purely to displaying the

graphics on your screen. You should find that a recent PC has this advanced graphics capability built-in where as PCs from only 2-3 years ago may not!

**Computer presentation projection devices** – These are projection devices that can be attached to your computer and are useful for displaying presentations to a group of people. They are best used in combination with presentation programs, such as Microsoft PowerPoint. They are used within education and are also very popular for sales presentations.

The price of these devices has dropped dramatically recently. When purchasing one of these devices the two things to look out for are the resolution (go for a minimum of XGA) and the brightness of the lamp (the brighter the better). Other factors to be aware of is the quietness (or otherwise of the device) and well as the cost of replacement bulbs!

**Different types of printers** – There are many different types of printers. In large organizations, laser printers are most commonly used because they can print very fast and give a very high quality output.

In most organizations, the printers are connected to the computers via a network. This means that each person with a computer does not require his or her own printer. Each computer connected to the network can print using a particular shared printer.

**Laser printers** – Laser printers produce high print quality at high speed. They are called "laser printers" due to the fact that contain a small laser within them. There are a wide range of laser printer manufacturers and one buzzword to be aware of is Postscript, a type of printer that is designed to give very high quality reproduction of pictures.

**Color laser printers** – Originally, most laser printers would only print in black and white (mono). More recently color laser printers have dropped in price and are entering wide spread use. While many of these produce excellent results, you should be aware of the fact that the "price per page", especially if you are using a lot of color on a page can be very high compared to the cost of printing in black and white.

**Inkjet printers** – Inkjet printers work by using tiny jets to spray ink onto the paper. Inkjet printers are very quiet in operation and produce print quality comparable to that of laser printers, though laser printers still have the edge in terms of speed.

Inkjet printers are ideal for low volume printing were high quality print is required and speed is not a high priority, e.g. printing letters in a small office or in the home.

**Dot Matrix printers** – Dot matrix printers work by firing a row of pins through an ink ribbon onto the paper. The more pins the print head has the higher the quality of the print, most modern dot matrix printers have 24 pins.

Unfortunately, dot matrix printers can generate a lot of noise and do not produce a very high quality of print, especially when

printing graphics. As a result, the dot matrix printer has now largely been replaced by the inkjet printer. Dot matrix printers are used for high volume / low quality printing, e.g. printing company pay slips.

Printer Memory – It is important to realize that most printers have their own memory chips, in the same way that each computer has its own memory. If you are printing very large graphics (i.e. pictures), and want the best quality output from your printer then you should consider adding more memory to your printer. This must only be done by a qualified person, and has the benefit of really speeding up the rate at which you can print pages in many cases.

**Cost of printer peripherals** – When you buy a printer, one of the things the salesperson will not necessarily stress is how much it will cost to keep that printer running. Laser printers do not use ink; they use something called toner, which is normally supplied, in a sealed unit called a toner cartridge.

Each toner cartridge will allow you to print a certain amount of pages and when the toner is all used up it needs to be replaced. In some cases the costs of these toner cartridges is very high!

**Plotters** – A plotter is an output device similar to a printer, but normally allows you to print larger images. There use is common is the design and research sector.

**Speakers** – Most computers these days are sold with the capability to add a pair of speakers to your system unit. In fact, in some cases, the monitor may have speakers built directly into the unit. This enhances the value of educational and presentation products and can now be considered a standard PC component.

**Speech synthesizers** – A recent development is the ability not only to display text on a monitor but also to read the text to you. Thus, you could receive a text email from a colleague and the system could read that email to you. This is of enormous benefit to the visually impaired when using a computer. On the flip side, it is now possible to use a microphone to talk to the computer and for the computer to directly convert the spoken word into text that will be displayed within say your word-processor. While these systems are far from foolproof they are getting better as more advanced software is being made available!

## (L) Listening

**Task (Recording 7)**
**Exercise 1L.**
Listen to the conversation between Vicky Cameron, an Information Technology (IT) lecturer, and one of her students, and complete these notes.

| |
|---|
| The technology used in scanners is similar to that used in _____ |
| A laser beam reads the image in _____ |
| The image is then _____ |
| Text is scanned with _____ |
| Flatbed scanners can scan _____ |
| Slide scanners are used to scan _____ |
| Hand-held scanners are used for capturing _____ |

## (S) Speaking (block I):



**1**

# ColourScan XR
## from Sunrise

**ColourScan XR**

The ColourScan XR from Sunrise is a flatbed scanner with 600 dpi of resolution and 9' × 15' of scanning area.
Think of the possibilities.
You can enter data and graphic images directly into your applications – word processors or databases. You can get crisp, clean scans for colour compositions, video and animation work.
It comes complete with its own image-capture software which allows for colour and grey retouching. And it's easy to use. What more could you want for only £290? It couldn't be cheaper.
In the field of flatbeds, the ColourScan XR is a clear winner.

**ColourScan XR**

**2**

## ScanPress 800

The ScanPress 800 is a self-calibrating, flatbed scanner with 800 dpi of resolution. You can scan from black and white to 24-bit colour. The package includes a hardware accelerator for JPEG compression and decompression. JPEG technology saves disk space by compressing images up to 50 to 1.

In creating ScanPress 800, the manufacturers have chosen the highest technology to give you the best scans with the least effort. It produces images with high colour definition and sharpness. And it comes with OCR software and Adobe Photoshop, so you can manipulate all the images you capture.

This is a fantastic machine you will love working with. And at only £510 it is an excellent investment.

**Exercise 1S.**
Read the advertisements above and underline what you think are facts and circle the opinions. Then write them in the table.
**!!!! dpi** = dots per inch **!!!! JPEG** = a standard format in image compression**!!!!**
*Facts* are 'real' objective information.
*Opinions* usually include emotive words, positive/negative phrases and subjective (persuasive) statements.

| | ColourScan XR | ScanPress 800 |
|---|---|---|
| **Facts** | Flatbed scanner 600 dpi of resolution | Self-calibrating flatbed scanner |
| **Opinions** | You can get crisp, clean | The highest technology |

**Exercise 2S.**

In small groups, compare your answers and decide: Which text has got more persuasive language? Which text is more factual or objective?

**Exercise 3S.**

Read and translate the text. Memorize it.

### Studying foreign languages

The great German poet Goethe once said: "He who knows no foreign language does not know his own one." Learning foreign languages is especially important nowadays. Some people learn foreign languages because they need them in their work, others travel abroad, for the third studying languages is a hobby. Every year thousands of people from Ukraine go to different countries as tourists or to work. They can not go without knowing the language of the country they are going to. A modern engineer or even a worker can not work with an imported instrument or a machine if he is not able to read the instruction how to do it. Ordinary people need languages to translate the instruction or the manual to the washing-machine or a vacuum-cleaner, medicine or even food-products. Some people are polyglots. Historians, diplomats need some languages for their work. If you want to be a qualified specialist you must learn English, the language of international communication. English is one of the world languages. It is the language of progressive science and technology, trade and cultural relations, commerce and business. It is the universal language of international aviation, shipping and sports. It is also the major language of diplomacy. Hundreds and hundreds of books, magazines and newspapers are printed in English, most of the world's mail and telephone calls are in English. Half of the world's scientific literature is written in English.

English is spoken by more than 350 million people. Geographically, it is the most widespread language on earth, second after Chinese. It is the official language of the UK, the USA, of Australia and New Zealand; it is used as one of the official languages in Canada, the South Africa. Millions of people study and use English as a foreign language. In our country it is also very popular. It is studied at schools, colleges and universities. Learning English is not an easy thing. It is a long process and takes a lot of time and patience. But to know English today is absolutely necessary for every educated person. I want to know it because it's interesting for me to know foreign countries, their culture and traditions. English will be of great use in my future profession connected with computers.

## (G) Grammar (block II):

### Comparatives and Superlatives

| Degree | Endings | Defining Words | Suffixes |
|---|---|---|---|
| **Comparative** | *–er than* | *more … than* | *– able* |
| **Example** | *The lake is **deeper than** the river* | *The novel is **more interesting than** the film* | *– al* *– ible* |
| **Superlative** | *the … -est* | *the most …* | *– ic* |
| **Example** | *This is **the deepest** lake* | *This novel is **the most interesting** I've ever read* | *– ish* *– ive* *– ful* |
| **!!!!!!!!!!!!** **Exceptons:** | ***good-better-best*** | гарний, кращий, найкращий | *– ous* |
| | ***bad-worse-worst*** | поганий, гірший, найгірший | *– y* *– ant* |
| | ***far-farther-farthest*** (***further-furthest***) | далекий, дальший, найдальший | *– ar* *– en* |
| | ***little-less-least*** | маленький, менший, найменший | *– ent* *– less* |

**Exercise 4G.**

Apart from catchy slogans and other persuasive techniques, advertisements often use the comparatives and superlatives of adjectives and adverbs.

Read the following examples from advertisements.

1. ... only ten times faster.
2. It couldn't be cheaper.
3. The manufacturers have chosen the highest technology ...
4. The cleverest personal scanner ...
5. The most revolutionary computer peripheral ...
6. The best scans with the least effort ...
7. Flatbed scanners are more accurate than ...
8. Now you can edit your documents more easily than ever, and they'll look better than ever too with ...

## (S) Speaking (block II):

**Exercise 5S.**

What to buy: a PDA or a laptop? Both devices have advantages and disadvantages. Compare PDA and a laptop in terms of: *size, portability, weight, price, efficiency/speed, versatility.*

*Example:*      *PDAs are smaller than laptops.*
             *Laptops are not as easy to carry as PDAs.*

1. Read the articles on these websites and check your answers:
   www.opentopia.com/showart.php?source=go&artid=54259&catid=7

2. Would a PDA or a laptop be more suitable for this person:

> "I work as a salesperson. I travel a lot and have to keep in touch with my office headquarters. I need to send my colleagues in the office my customers' orders and budgets. I also need a device to organize all my appointments. I don't want to carry much weight."

## (G) Grammar (block III):

**Word-building (Suffixes)**

The class of a word can often be changed by adding a suffix. For example, if **-er** is added to the verb *scan* (and the 'n' is doubled) we get the noun *scanner*.

Common adjectival suffixes are: **-ing, -y -able, -ible, -ive, -al, -ed, -ful, -less**

Common noun suffixes are: **-er, -or, -ion, -tion, -ation, -ment, -ness, -ity, -ant, -logy**

**Exercise 5G.**

Put the words in the box into the correct column below.

| | | | |
|---|---|---|---|
| computer | information | technology | possibility |
| self-calibrating | printed | calculator | reducible |
| easy | personal | useful | investment |
| resolution | capable | assistant | connection |
| sharpness | compression | expensive | digital |

| Adjectives | Nouns |
|---|---|
| | |

**Exercise 6G.**
**Do you know…**
- **betaware**: Software that is given to many users for beta testing before its official release.
- **bloatware**: Software that uses excessive memory in proportion to the task it performs, perhaps because of having too many unnecessary features.
- **firmware**: Software stored in ROM or PROM; essential programs that remain even when the system is turned off. Firmware is easier to change than hardware but more permanent than software stored on disk.
- **guiltware**: Freeware or shareware that has a message attached which attempts to make the user feel guilty until making some kind of payment.

- **hookemware**: Free software that gives a limited sample of how a program works, intended to hook the user into buying the full version.
- **nagware**: Shareware that displays a screen when the program is opened or closed that reminds the user to register and pay the fee.
- **payware**: Software that is sold; commercial software (not freeware or shareware).
- **vapourware**: Software that is announced long before it is ready for sale, and that sometimes never materializes.
- **wetware**: Human beings, or the human nervous system, as opposed to computer hardware or software.

**Exercise 7G.**

Some words have been left out of this persuasive advertisement. Read it and complete it with words from the box.

| *vivid* | *easy-to-use* | *faster* | *fashionable* | *wide* | *shots* |

### Advertisement: A digital camera

If you want great pictures from an (1) _____ digital camera, you want the Kodak DC215. Now you can capture life's memories in style with this sleek and (2) _____ digital camera.

The camera's 2X (29 mm-58 mm) optical zoom lens lets you get close up and personal without sacrificing image detail or quality while the (3) _____ angle lens design helps you capture more in each shot.

With one million (1152 x 864) pixels, you'll have enough detail to generate crisp, (4) _____ realistic photos up to 5" x 7".

The 1.8" colour LCD lets you preview and review your pictures so you get only the (5) _____ you want, and lets you delete those you don't.

With the included USB COMPACTFLASH Card Reader, you can download pictures up to ten times (6) _____ than with serial connections for faster image sharing.

# Unit 8

*(G) Grammar:*                    ***Indirect Speech***
                                  ***Special Questions in Indirect Speech***
                                  ***Imperatives***
                                  ***Instructions and Advice***
*(R) Reading:*                    ***Monitors***
*(SR)Supplementary reading:*      ***A good workspace***
                                  ***Health and safety***
                                  ***Security***
*(L) Listening*                   ***Safety in a computer classroom***
*(S) Speaking:*                   ***Monitor specifications***
                                  ***Are you a responsible mobile user?***

## (G) Grammar (block I):

### Indirect Speech (Reported Speech)

| Direct Speech → | Indirect Speech |
|---|---|
| He asks: "Are you good at computers?" | He asks me *if* I am good at computers. |
| He says: "Buy *this* monitor, Jack." | He says to Jack *to* buy *that* monitor. |
| He says (said): "***Don't stare*** at the screen for a long time!" | He asks (asked) me ***not to*** stare at the screen for a long time. |
| I ask him: "***Will*** you ***purchase*** t*his* printer?" | I ask him *if* he ***will purchase*** *that* printer. |
| She asked: "***Have*** you ***bought*** *this* flash memory card?" | She asked me *if (whether)* I ***had bought*** *that* flash memory card. |
| They asked me: "Where ***do*** you ***live***?" | They asked me ***where*** I ***lived***. |
| They asked me: "Where ***did*** you ***live***?" | They wanted to know ***where*** I ***had lived***. |
| They asked me: "Where ***will*** you ***live***?" | They asked me ***where*** I ***would live***. |
| *this (these) →* | *that (those)* |
| *now →* | *then* |
| *today →* | *that day* |
| *yesterday →* | *the day before* |
| *tomorrow →* | *the next day* |
| *ago →* | *before* |
| *here →* | *there* |

## Useful words

to explain – пояснювати
to warn – застерігати
to point – вказувати
to protest – бути проти
to inform – повідомляти
to thank – дякувати
to order – наказувати
to think – вважати
to insist – наполягати
to reply – відповідати
to declare – оголошувати
to boast – вихвалятися
to promise – обіцяти
to tell – розповідати
to advise – радити
to persuade – переконувати

to accuse of – звинувачувати
to admit – допускати
to agree – погоджуватися
to apologise – вибачатися
to blame – винуватити
to congratulate – вітати
to decide – вирішувати
to deny – заперечувати
to encourage – підбадьорювати
to invite – запрошувати
to offer – пропонувати
to recommend – радити
to refuse – відмовлятися
to remind – нагадувати
to threaten – погрожувати
to warn – застерігати

**Exercise 1G.**

Transform general questions and superlatives into the Reported Speech.
1. The customer asks: "Is it an ink-jet printer?"
2. The vendor asked: "Will you take this monitor?"
3. The teacher asked: "Have you translated this text?"
4. Dick asked: "Ann, do you have a monochrome monitor?"
5. Alice asks: "Have you bought a colour monitor?"
6. The Instructor warned: "Don't sit too close to the screen!"
7. Peter recommends: "Consider this processor. It's more powerful."
8. Alan asked: "Can you see dots on the screen, Jack?"
9. The client: "Is this a flat panel liquid crystal display (LCD)?"
10. The student: "Is this sequence repeated 50 times per second?"
11. Jane asked: "Kate, listen to some piece of advice, please."
12. The teacher warned: "Don't use the monitor that distorts the image, Pete."

**Exercise 2G.**

Translate the sentences into Ukrainian.
1. My friend wants to know if I can change the settings of the display.
2. The students asked whether portable computers used a flat panel liquid crystal display instead of a picture tube.
3. Alice asked Jane if she had got a travel mate.
4. A customer is interested to know whether a monitor is controlled by a separate circuit board known as a display adaptor.
5. I was asked to stay an arm's length away from this device.
6. He asked the vendor to show quite another display.

7. She asked me if I had been explained that monitors specifications.
8. She asked the doctor if it was harmful to spend 2 hours without breaks in front of the monitor.
9. I wonder whether you have heard about new chip technologies.
10. The teacher advised the student to use a flat panel monitor.

**Exercise 3G.**
Transform Direct Speech into Indirect one.
***Example:*** *She said: "I can't work with a scanner" (to admit)*
*She admitted she couldn't work with a scanner.*
1. Nick says: "I understood this task". (*to be sure*)
2. Ann said: "I will learn all these words". (*to promise*)
3. Dick said: "Computers appeared last century". (*find out*)
4. A teacher said: "There are many different ways to count". (*to remind*)
5. My friend said: "We know you are a polyglot". (*reply*)
6. A student wrote: "I have never been to Paris". (*to explain*)
7. They said: "We were doing our experiment". (*reported*)

**Exercise 4G.**
Read mini dialogues and retell them in Indirect Speech.
1. **Mary**: "Do you know that flat panel monitors save much space?"
   **Alice**: "Of course, I do. I've bought one recently."
2. **Mother**: "Jack, don't sit too close to the screen, you'll spoil your eyes."
   **Jack**: "Don't worry, mum. I know about it."
3. **A vendor**: "Buy a protective filter that cuts the radiation down."
   **A customer**: "Can you show me one?"
4. **Pete**: "Are flat panel monitors easier for eyes?"
   **A manager**: "They are. They consume less energy and have fewer emissions than traditional CRT monitors."
5. **Nick**: "Tell me, please, is it worth buying a more expensive monitor?"
   **A shop-assistant**: "It depends. If you use a lot of high-end graphic intensive functions, take more expensive one."
6. **Assistant**: "Do you need any help?"
   **John**: "Yes, I do. I'm looking for a personal computer. Have you got any fairly basic ones?"

**Exercise 5G.**
Translate the following sentences into English.
1. Продавець запитав, чи потрібна нам допомога.
2. Він відповів, що ніколи не бачив такого монітора.
3. Лікар порадив мені не сидіти перед комп'ютером довго.
4. Він спитав, чи довго я вчора сидів за комп'ютером.
5. Мене попросили показати роботу цього приладу.
6. Він пояснив, що не зможе вирішити цю проблему самостійно.

7. Він запитав, чи я впевнений, що цей тип монітора кращий.
8. Мені порадили купити захисний фільтр.
9. Цікаво, а пласкопанельні монітори корисніші для очей?
10. Я знав, що мій друг придбав дисплей на рідких кристалах.

## (R) Reading

After the information has been processed by the CPU we can see the results on the screen. This is also called a monitor or visual display unit (VDU).

### Exercise 1R.
Read the text and try to guess the meaning of any new words below. Refer to the Glossary if necessary.

| | | | | |
|---|---|---|---|---|
| *dot* | *pixel* | *display* | *resolution* | *cathode* |
| *ray tube* | *electron beam* | *scan (verb)* | *hertz* | *refresh* |
| | *rate   flicker* | *bit-mapped* | *visualize* | |

### The monitor
The characters and pictures that we see on the screen are made up of dots, also called picture elements (pixels). The total number of pixels in which the display is divided both horizontally and vertically is known as the **resolution.** If the number of pixels is very large, we obtain a high resolution display and therefore a sharp image. If the number of pixels is small, a low resolution is produced.

Typical resolutions are 640 x 480 or 1,024 x 768 pixels. The diagrams show how pixel density affects the image: a larger number of pixels gives a much clearer image. The **cathode ray tube** of the monitor is very similar to that of a TV set. Inside the tube there is an electron beam


Low resolution display        High resolution display
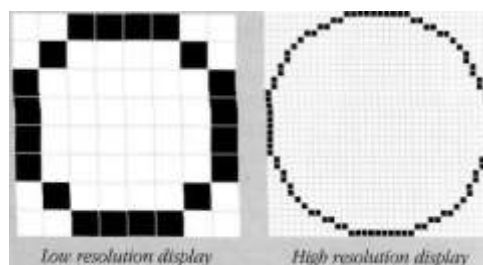
which scans the screen and turns on or off the pixels that make up the image. The beam begins in the top left corner, and scans the screen from left to right in a continuous sequence, similar to the movement of our eyes when we read, but much faster.

This sequence is repeated 50, 70 or 85 times per second, depending on the system. If the rate of this repetition is low, we can perceive a flickering, unsteady screen, which can cause eye fatigue. However, a fast-moving 75 Hz 'refresh rate' eliminates this annoying flicker.

What we see on the screen is created and stored in an area of RAM, so that there is a memory cell allocated to each pixel. This type of display is called **bit-mapped.** On monochrome monitors, bits 0 are visualized as white dots, and bits 1 as black dots.

On colour displays, there are three electron guns at the back of the monitor's tube. Each gun shoots out a beam of electrons for each of the primary colours: red, green and blue. These electrons strike the inside of the screen which is coated with substances called phosphors that glow when struck by electrons.

Three different phosphor materials are used – one each for red, green and blue. To create different colours, the intensity of each of the three electron beams is varied.

The monitor is controlled by a separate circuit board, known as the display adaptor, which plugs into the motherboard of the computer. Different boards drive different types of displays. For example, the **VGA** (video graphics array) card has become a standard for colour monitors.

Now flat-screen monitors are fashionable. They are inherently flat, and therefore require less space. In addition, they give crisp, clear images and eliminate screen flicker.

Portable computers use a flat **liquid-crystal display** (LCD) instead of a picture tube. An LCD uses a grid of crystals and polarizing filters to show the image. The crystals block the light in different amounts to generate the dots in the image.

**Exercise 2R.**
Read the text again and answer these questions.
1. According to the writer, what is the importance of "pixel resolution"?
2. Which unit of frequency is used to measure the refresh rate of a monitor?
3. In the writer's opinion, why can a low refresh rate produce eye fatigue?
4. What substance is hit by electrons in a monitor?
5. What is the standard display system for many PCs?
6. What does "LCD" stand for? What type of computers use LCD displays?

## (S) Speaking (block I)

**Exercise 1S.**
Describe the monitor of your computer to another student. Use these questions.
• Is it a monochrome or a colour monitor?
• What size is the screen?
• Does it have a cathode ray tube or a flat LCD screen?
• How can you change the picture using the controls?
• Does it produce a high quality image?

**Exercise 2S.**

| | Type | Size | Pixel resolution | Visual display | Refresh rate | Tilt-and-swivel | Other features |
|---|---|---|---|---|---|---|---|
| **Monitor A** Compaq TFT 8020 | Flat-panel LCD | 18.1" | 1024 x 768 | 16.7 million colours | 75 Hz flicker-free | + | energy saver mode |
| **Monitor B** Paintview | CRT monitor | 19" | 1280 x 1024 | 16.7 million colours | 85 Hz flicker-free | + | anti-glare filter |

The specifications of Superview (Monitor A) may be explained like this.
1. This is a flat-panel Liquid Crystal Display.
2. The screen size is 18.1 inches (diagonal viewable image size).
3. You get a resolution of 1024 by 768 pixels.
4. It offers support for 16.7 million saturated colours.
5. This digital display has a 75 hertz refresh rate. It never flickers (the images are bright, sharp, and distortion-free).
6. You can change the orientation of the display, adjusting your viewing angle back and forth.
7. It has a built-in power feature that saves a lot of energy consumption.
8. Use the example above to help you describe Monitor B.

**Exercise 3S.**
Decide which words are being defined in these extracts from the dictionary.
1. One of the small units that make up an image on a computer or television screen.
- pixel                    • cathode ray tube (CRT)
2. Flat-screen technology using noble gases; popular with movie fans.
- video projector                    • plasma screen
3. The most common computer display technology, made of two glass plates with …
- liquid crystal display (LCD)                    • cathode ray tube (CRT)
4. Card that plugs into a computer to give it display capabilities.
- video projector                    • video adapter
5. Device used to show images on a wall or large screen.
- video projector                    • video adapter

**Exercise 4S.**

Complete this conversation in a computer shop by typing in words or phrases from the box.

| *storage  head crash   holds   read/write   back up   don't   portable hard shouldn't   platters   should   external   capacity   formatted* |
| --- |

**Sales assistant**: Can I help you with anything?

**Anna**: Yes, please. I need a new (1)_____ drive.

**Sales assistant**: OK. Are you looking for an internal drive or an (2) _____ one?

**Anna**: Well, I need it for moving files between home and work.

**Sales assistant**: Sure. Well, you've basically got two options. If you need a lot of (3) _____ for secondary (4) _____, then you could try this Freecom drive. It (5) _____ 750 GB. That's probably enough to (6) _____ your whole computer many times over. You'd probably have lots of space left for archiving any files that you don't need on a day-to-day basis. This one's £ 140.

**Anna**: That's a little expensive, to be honest. And I probably don't need 750GB. My home computer only has a 120GB drive! And it looks a bit heavy to carry around.

**Sales assistant**: In that case, you need something more (7) _____. This might be what you're looking for: the ATMT HD160 Ultra-Portable. It's only 20GB, but it's light and relatively cheap – only £ 80.

**Anna**: That sounds perfect. I'll take it. Is it already (8) _____?

**Sales assistant**: Yes, it's all ready to use. Just bear a couple of things in mind if you're carrying it between home and work a lot. Inside the drive there is a stack of metal (9) _____ that are used to store the information. (10) _____ move the disk while the platters are spinning – you'll be able to hear them – or the drive could suffer a (11) _____. That's when the (12) _____ head touches the disk surface.

**Anna**: Right, OK. Anything else I need to know?

**Sales assistant**: Just a couple of things. You (13) _____ unplug the drive without using the 'Remove hardware' command first. And you (14) _____ check the drive regularly for viruses, especially if you're moving it between machines.

**Anna**: OK, well thanks for all your help. Now where do I go to pay?

## (G) Grammar (block II):

### Special Questions in Indirect Speech

**Exercise 6G.**

Transform Direct speech into Indirect one.

*Example:*              *"What **is** printing?" Alex asked.*
                       *Alex asked what printing **was**.*
                       *Sally asks: "Mary, what type of printer **do** you **have**?"*
                       *Sally asks Mary what type of printer she **has**.*

1. "How many computing centers are there in your University?" my friend asked/asks.
2. "What parts does a computer consist of?" the teacher asked/asks.
3. "What did you use this device for?" he asks/asked.
4. "Where have you been today?" the mother asks/asked.
5. "Why don't you study German, Linda?" John asks/asked.
6. "Where are you going for your holidays, guys?" I ask/asked.
7. "What type of printer is this?" Kate asks/asked.
8. "How far is it to your University?" My neighbour asks/asked.
9. "Which of your friends bought jet printer?" Peter asks/asked.
10. "How long have you been using this computer?" the professor asks/asked.
11. "What will you do with it, Sam?" Dolly asks/asked.
12. "What must be taken into account when choosing a printer?" the customer asks/asked.

**Exercise 7G.**
Translate the sentences into Ukrainian.
1. My friend wondered where I had been all this time.
2. The professor asks who hasn't done the home task.
3. My mother wanted to know when my last exam would take place.
4. The vendor asked me which of the printers I preferred.
5. A customer asks how much this printer costs.
6. Sally asked John what the final stage in creating a document was.
7. The professor asks how printing technology is evolving.
8. The teacher asked how jet printers operated.
9. Jane asks where printers are used.
10. Dan asked me why I hadn't come back the previous day.
11. I wonder where he will enter next year.
12. The buyer wanted to know when those printers would be on sale.

**Exercise 8G.**
Translate the following sentences into English.
1. Я запитав, котрий з принтерів найдорожчий.
2. Мій друг цікавиться, де продають лазерні принтери.
3. Професор запитав, чому я не виконав домашнє завдання.
4. Він поцікавився, хто ще знає, як працює принтер.
5. Лінда питає, як довго він вивчає англійську мову.
6. Покупець запитав, скільки це коштуватиме.
7. Мені не сказали, чому такий сканер дорожчий.

**Exercise 9G.**

Translate the sentences into Ukrainian.
1. The professor asked the students if they had prepared for the exams.
2. He was sure that his idea wouldn't work.
3. They promised they would have done the lab work by the end of the week.
4. She said she couldn't help me.
5. My friend wondered where I had bought this printer.
6. I asked my friend how much time it would take to print that document.
7. Didn't you promise that you would return the book in time?
8. He confirmed that all the texts had been translated.
9. The vendor told John not to buy that computer.
10. They knew the experiment was being carried out.
11. They were asked to wait in the next room.
12. We were denied that the printer was out of order.

# (L) Listening

**Task (Recording 8)**
**Exercise 1L.**

Tony Clark, a lecturer in computer ergonomics, is talking to some students about health and safety in a computer classroom. Listen and complete the sentences below. Then decide where they should go in the pictures below.
1. You should get a good chair, one that …
2. Position the keyboard…
3. Position the monitor… eye level, or just…
4. A tilt-and-swivel display lets you…
5. You should stay an arm's length away from …
6. If you work in a room with a lot of computers, sit  …
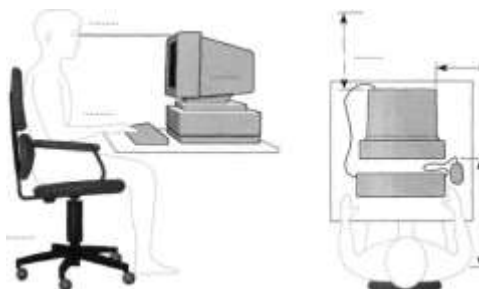
# (SR) Supplementary Reading
**Exercise 1SR.**
**Do you know…**

### A good workspace

**Good working practices:**
**Your chair:** Your chair should be fully adjustable, and be able to be moved up or down. It should have an adjustable back.

**Your screen:** Your screen should be fully adjustable so that your eyes are at the same height as the top of the screen. You may wish to use a filter attached to the

screen to reduce glare. If the screen is badly focused, to bright or appears to flicker, then get a qualified technician to take a look at it!

**Your keyboard:** Use a good keyboard and you may also wish to use a wrist pad to relieve pressure on your wrists.

**Your feet:** You may wish to use a footpad to rest your feet on while using the computer.

**Your mouse:** Use a mouse mat to make the mouse easier to use. Ensure that you have enough space to comfortably use the mouse. If your arm or figures become tired or painful, when using the mouse, take a break and do something else!

**Breaks:** Take frequent breaks when using a computer!

**Other factors:** Make sure that the area that you are using the computer in is adequately lit and well ventilated. Ventilation is especially important if you are using a laser printer, which may produce ozone when printing.


## Health and safety

**Make sure that cables are safely secured** – You should always use the power cables that were supplied with your computer or cables of a similar quality. Make sure that the cables are safely secured at the back of the desk and that you have power points located near the desk. If your desk has a cable ducting system make sure that, you use it. Avoid long trailing cables as yourself or other people can easily trip over them and cause injury to yourself or others. Apart from personal injury, accidentally pulling out a power cable could cause your computer to loose power and you will loose data as a result. Network cables tend to be delicate and easily damaged and the most common cause of failure to log onto a network server is that someone has accidentally dislodged or damaged the network cables.

**Make sure that power points are not overloaded** – Overloading of a power point is dangerous and a potential fire hazard! If you need more power sockets, have them properly installed by a qualified electrician!

**Repetitive Strain Injury (RSI**) – Often referred to as RSI. This is a condition caused by constant use of the keyboard or mouse. You should take regular breaks to help avoid this type of injury. You may want to consider the use of a pad that you can rest your arms on which will help to some extent.

More information**:** http://www.rsi-center.com

**Glare from screens** – You should take regular breaks to avoid constantly staring at the screen and straining your eyes. You should consider using the best (i.e. most expensive) monitor that you or your company can afford. The better the monitor the better the screen resolution and the higher the refresh rate. For detailed work, you should also consider using a large screen rather than the "standard" 14″ or 15″ screens that are in common use. In many countries, your employer has a legal duty to pay for eye tests for employees as and when they request it.

**Bad posture** – When sitting at your computer you should have a monitor at eye level that can be adjusted to suit you. In addition, you may want to consider a footrest.

## Security

**Why do you need to back up your computer?** – The most important thing that you store on your computer is information. Often the contents of a hard disk can represent years of work. If the hard disk stops working one day you could lose all those years of work. For this reason it is VITAL that you take regular backups of the information that is stored on the computer. In large organizations this backup procedure is normally performed automatically by your computer support team, where the data is normally held on a centralized, networked computer.

In smaller organizations, it is often up to the individual to organize some sort of data backup. If nothing else is available, copy your files to a floppy disk and make sure that these backup disks are stored away from the computer, ideally off-site. If there is a fire and your office burns down, if your backup disks are stored next to the computer they too will be incinerated!

**Why you should use "off-site" storage?** – It is no good backing up your data, only to leave the item that you backed up to next to the computer. If someone steals your computer, it is likely that they will also steal your backups if you leave them next to the computer! If you have a fire, then again you will lose your backups if the backups are stored next to the computer. Ideally, backups should be stored off-site at a safe location.  At the very least, consider storing your backups in a fireproof safe, which will give some protection against fire damage.

**Beware of "open files"** – You should perform backups at night. If you backup your computer during the day (when you are using programs on the computer) then any program or data files that are in use at the time of the backup will not be backed up. The backup program will skip these 'open' files.

**Passwords** – If your computer has a password that prevents other users from accessing it then do NOT give this password to anybody else. Do not write the password on a card and prop this up next to the monitor and above all do not attempt to hide your access passwords on the underside of your desk (this is the first place most criminals would look if trying to break into your system). Make sure you do not forget your passwords; in many cases, data cannot be recovered once the password is lost.

**The Importance of shutting down your computer** – When you are using a Windows based system it is important to remember that just switching off the computer or losing power due to a power cut (power outage) can cause loss of data. To protect against this you should save your work regularly. Many

programs have a facility that automatically saves your work, say every 10 minutes (or any time interval that you specify).

Some operating systems, such as the later versions of Windows 95 and also Windows NT have a facility that will automatically detect that the computer was not properly shut down the last time it was used. If this situation is detected, then a special recovery program will be run that will attempt to fix any damage caused by the power cut.

**What is a UPS?** – A UPS (Un-interruptible Power Supply) is a device that you can attach to your computer that will guard against power cuts (or indeed someone tripping over your power cable and pulling the plug out!). It contains batteries that will keep your computer alive long enough for you to use the shutdown command and turn off the computer in the proper way. This is especially important for PCs on a network that might provide data for many users on the network.

**Electrical surge protection** – The voltage that is supplied to your computer via the power cable can vary from time to time, and there are occasional power surges. Power surge protection devices are readily available and offer low cost protection again these occasional power surges.

In the example illustrated the power surge protection is built into a power adaptor allowing a number of plugs to be plugged into the adaptor.

**Things computers like:**
- Good ventilation
- Clean environment
- Stable, vibration free surface

**Things to avoid:**
- Dust
- Drinking and eating over the keyboard
- Heat, Cold
- Moisture
- Do not move the system while it's switched on, doing so could damage the hard disk inside the machine.
- Do not just switch the computer off at the mains! Follow the correct shutdown procedure or data could be lost.
- Do not place objects on top of monitors. This could block the ventilation holes and cause it to overheat.
- Do not place floppy disks near monitors. Monitors produce a strong electromagnetic field, which can damage floppy disks.

**What to do if the computer breaks down** – If you are working within a large organization, you should be aware of the company's policy if the computer suddenly breaks down. Many large companies have a special computer support

department and you should make sure that you know how to contact them in case of emergency.

In many smaller organizations, the situation is much less formalized. If you are not qualified to make repairs on the computer, do NOT attempt to open the computer case and investigate. This is especially true of the computer monitor, inside which, are many components operating at VERY HIGH VOLTAGES, which can kill! If in doubt, get a qualified technician to fix the problem.

Prior to contacting your computer support staff you may (if authorized by your organization) check that the various external components, such as the mouse, keyboard, monitor and network connections are in fact properly connected to the back of the computer. A very common complaint to support groups is that the screen is not working. You may wish to check that someone has not inadvertently switched off the screen, prior to ringing the support group! One of the more common reasons for a network not working is that someone (maybe an overnight cleaner) has accidentally pulled the network cable out of the back of a computer.

## (S) Speaking (block II)

**Exercise 3S.**
### Are you a responsible mobile user?
Mobiles can be very annoying for other people and they can even be dangerous in certain situations.

Look at the information on http://www.indianchild.com/cell_phone_etiquette.htm and learn how to become a more responsible mobile user.

After reading the information, decide if the following pieces of advice are True or False. If they are false, correct them.
1. Switch off your mobile or turn it to vibrate when you are at a meeting, in church, at the cinema, etc.
2. Never use it in mobile-free zones.
3. Don't talk and drive unless you have a hands-free mobile.
4. Don't shout while you're speaking. Remember that you can't judge how loud your voice is to the other person while you are using a mobile, and hearing a loud voice can be annoying for other people.
5. You can talk as much as you want if you are talking to friends.
6. Use your mobile to phone your friends any time, anywhere.
7. Inform others if you are going to use your mobile and get their permission if appropriate.

**Exercise 4S.**
Unscramble the letters to make features of mobile phones.
1. MIS crad: _____
2. peykad: _____
3. DCL neecsr: _____
4. notegrin: _____
5. tubil-ni meraca: _____
6. wileress trsuppo: _____
7. cagalhnebe cepfatale: _____

# (G) Grammar (block III):

**Instructions and Advice**

<div style="border:1px solid">

**Imperatives**
*Position* your keyboard at the same height as your elbows.
*Don't use* a monitor that is fuzzy or distorts the image.

**Should/ ought to**
You *should* position your keyboard at the same height as your elbows. = You *ought to* …
You *shouldn't* use a monitor that is fuzzy or distorts the image. = You *ought not to* (*oughtn't*) …

</div>

**Exercise 10G.**
Rewrite the sentences about what you should do to protect your eyes. Use modal auxiliary verbs in your sentences.
1. Do not stare at the screen for long periods of time.
2. Avoid placing the monitor so that it reflects a source of bright light, such as a window.
3. Keep the screen clean to prevent distorting shadows.
4. If you work in an office with a large number of computers, don't sit too close to the sides or backs of the monitors.
5. Buy a protective filter that cuts down the ELF (extremely low frequency) emissions.

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