УДК 004.5

Л. Ю. Нестюк
Л. В. Ібрагімова

GRAPHICAL USER INTERFACE (GUI)

Вінницький національний технічний університет

Анотація *У статті дано визначення поняття графічного інтерфейса користувача, наведено його типи і компоненти, а також наведено приклади пристроїв введення та виведення інформації.*
Ключові слова: графічний інтерфейс користувача, взаємодія, компоненти ГІК, пристрої введення інформації, пристрої виведення інформації.

Abstract *The article defines the concept of graphical user interface, its types and components, as well as examples of input and output devices.*
Keywords: graphical user interface, interaction, GUI components, input devices, output devices.

The graphical user interface is a special system of user interaction with electronic devices based on the presentation of all system objects and functions available to the user in the form of graphical screen components.

Surely, it's no secret to anyone that computers and any other digital or electronic devices understand only the language of ones and zeros, that is, a binary code. For the human eye, such a representation looks unattractive and difficult to understand. Even when using various shells like Windows Shell or Bash, a person needs to remember a large number of complex commands in order to be able to "communicate" with the computer. Therefore, such a solution cannot be called absolutely winning either. This is where the graphical user interface comes in handy. This way of interacting with a computer is very simple, as it is based on the graphic perception of information. All the capabilities of the device are presented to the user at once in the form of thumbnail images placed on the main screen.

The GUI has the following components:

- Window;
- Icon;
- Menu;
- Submenu;
- Task bar;
- Desktop background;
- System tray;
- Button.

Most often, interface elements in the GUI are implemented on the basis of metaphors (images) that display the purpose and properties of the elements, which facilitates the understanding and use of devices by unprepared users. For example, if some new smartphone model falls into our hands, then, understanding it, we will understand that clicking on the handset icon will open the dialling panel or the contact list, and the landscape icon means a photo gallery, etc. This approach implements the concept of DWIM (do what I mean). According to this concept, the developed system should work predictably so that the user intuitively understands in advance what action the program will perform after receiving his command.

But it is important to understand that the GUI is only a part of the user interface UI, which can be textual, as in the command line. The GUI functions at the data visualisation level and interacts with the user in the same way.

In general, the graphical user interface is divided into three types:

- Simple: typical screen forms and standard interface elements;
- Two-dimensional: otherwise called true graphic, which includes non-standard interface elements and original metaphors implemented by the application's own tools or a third-party library;
- Three-dimensional: Represents the 3D interface objects broadcast on the display as 3D graphical elements.

Input devices are an integral part of the interaction between the user and computer devices. They can be divided into several categories:

- Interaction with a computer: Keyboard; Mouse; Joystick; Trackball;
- Interaction with touch devices: Touch screen; Stylus; Microphone.

In turn, devices can also interact with the user and, through output devices, respond to commands given by the user. Output devices include: Display; Printer; Headphones or speakers.

But every solution, even a good one, has both advantages and disadvantages. The main disadvantage of the GUI is its high demands on PC memory, especially when compared to a text-based interface. Also, with the GUI, it is more difficult to organize full-fledged remote work, it is difficult to automate if it was not included by default by the software developer. Still, the GUI is considered the most friendly for beginners who are just getting acquainted with the PC in general or certain software in particular. In programs for processing images or any graphical elements, the GUI is the only possible solution.

СПИСОК ВИКОРИСТАНОЇ ЛІТЕРАТУРИ

1. Що таке графічний інтерфейс? – [Електронний ресурс] – https://uk.education-wiki.com/9454272-what-is-gui
2. Graphical user interface – [Електронний ресурс] – https://www.sciencedaily.com/terms/graphical_user_interface.htm

Нестюк Людмила Юріївна — ст.гр. 1АКІТ-20б, факультет інтелектуальних інформаційних технологій та автоматизації, Вінницький національний технічний університет, м. Вінниця, e-mail: lynestiuk@gmail.com

Науковий керівник: ***Ібрагімова Людмила Володимирівна*** — старший викладач кафедри іноземних мов, Вінницький національний технічний університет, м. Вінниця, e-mail: milatvin@ukr.net

Nestiuk Liudmyla — Faculty of Intelligent Information Technology and Automation, Vinnytsia National Technical University, Vinnytsia, e-mail: lynestiuk@gmail.com.

Ibrahimova Liudmyla V. — Senior Lecture, Chair of Foreign Languages, Vinnytsia National Technical University, Vinnytsia, e-mail: milatvin@ukr.net