

DEVELOPMENT OF SOFTWARE FOR INTEGRATED MANAGEMENT OF THE LEARNING PROCESS OF SCHOOLCHILDREN IN A LANGUAGE SCHOOL

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Анотація. У тезах представлено програмне забезпечення для інтегрованого менеджменту процесу навчання школярів у мовній школі, орієнтоване на щоденну роботу менеджера та адміністратора. Система охоплює повний цикл взаємодії з учнем: обробку звернень, комунікації, запис на пробні та регулярні заняття, управління розкладом і групами. Передбачено модуль абонементів із контролем залишку занять та автоматичним формуванням підстав для продовження навчання. Модуль платежів підтримує реєстрацію оплат, нагадування про заборгованість і зв'язок оплат із абонементом та відвідуваністю. Для інтеграції з зовнішніми сервісами реалізовано API та подієву взаємодію з месенджерами, а також звітність за ключовими показниками ефективності. Запропоноване рішення зменшує кількість ручних операцій, підвищує точність обліку та прозорість управління навчальним процесом.

Abstract. This paper presents software for integrated management of schoolchildren's learning in a language school, designed as a single workplace for the school manager. The solution covers the end-to-end learner journey, from the first enquiry and communication history to trial booking, timetable planning and attendance tracking. Subscription management supports lesson packages, remaining balance control and renewal prompts based on usage patterns. A payments module records transactions, links them to subscriptions and groups, and issues reminders for outstanding fees. An integration layer (REST API and event notifications) enables connectivity with learning platforms and messengers, whilst dashboards provide operational reporting for key

indicators. The proposed approach reduces fragmented tooling, improves data consistency and strengthens managerial decision-making.

1. Introduction.

Language schools that teach schoolchildren typically rely on a mixture of spreadsheets, messaging apps and separate scheduling tools. This fragmentation complicates lead handling, causes timetable clashes, and makes it difficult to reconcile attendance with subscription usage and payments. As a result, managers spend substantial time on routine coordination rather than on improving service quality and retention.

2. Aim, object and subject of the study.

The aim of the project is to develop an integrated system that supports the full operational cycle of a language school: communication, timetable, subscriptions and payments. The object of the study is the comprehensive process of managing pupils' learning in a language school. The subject is architectural decisions and software modules that integrate CRM functions with scheduling, subscription, accounting and billing.

3. Business process and automation points.

The baseline process includes: registering an enquiry, qualifying the lead, arranging a trial lesson, enrolling the learner into a group, maintaining a timetable, recording attendance, controlling the subscription balance, and tracking payments and renewals. Key automation points include fast conversion of enquiries into bookings, prevention of timetable conflicts, automatic deduction of lessons upon attendance, and timely reminders about renewals and outstanding fees.

4. System architecture and roles.

The MVP is organised around three roles: manager, teacher and administrator. The manager operates CRM pipelines, enrolment and billing; the teacher manages lesson delivery and attendance; the administrator configures reference data, users and integrations. Core modules include: learner registry and communication log, trial and

regular lesson booking, timetable and group management, subscription packages, payments and reminders, and reporting.

5. Integration and data consistency.

To avoid duplicate entries and support multi-channel communication, an integration layer is introduced as a REST API with event notifications. It enables synchronisation with external platforms (for example, online classrooms) and messaging services for confirmations and reminders. A unified data model links learners, groups, subscriptions, attendance and payments, ensuring that operational reports reflect the same source data.

6. Testing and KPI-oriented evaluation.

Comprehensive testing covers typical scenarios: enquiry processing, booking changes, timetable collision checks, attendance registration, subscription renewals, partial payments and refunds. The system supports KPI measurement, including enquiry processing time, accuracy of attendance and billing records, and the renewal rate of subscriptions. These indicators provide an evidence base for further optimisation of the school's operational workflow.

7. Conclusions.

The developed MVP demonstrates that integrating CRM, scheduling, subscription management and payments into a single tool can streamline daily operations in a language school. Future work includes tighter integration with payment gateways, advanced analytics for retention forecasting, and expanded self-service features for parents and pupils.