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SOFTWARE PACKAGE FOR DISTRUBUTING THE WORKLOAD OF UNIVERSITY DEPARTMENT TEACHERS

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Abstract: The object of this research is a software system designed to automate the processes of planning and tracking teaching workload. The goal of this work is to develop a system that optimizes the operations of the academic department by ensuring accurate and efficient distribution of instructors' workloads. The developed software system has successfully passed testing and is ready for use in higher education institutions, significantly reducing data processing.
Keywords: Software system, workflow management, employee monitoring, automation, C#.

ПРОГАММНЫЙ КОМПЛЕКС РАСПРЕДЕЛЕНИЯ НАГРУЗКИ ПРЕПОДАВАТЕЛЕЙ КАФЕДРЫ ВУЗА

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Аннотация: Объектом исследования является программный комплекс, предназначенный для автоматизации процессов планирования и учёта преподавательской нагрузки.
Целью данной работы является разработка системы, которая оптимизирует работу учебного отдела, обеспечивая точное и эффективное распределение нагрузки преподавателей. Разработанный программный комплекс успешно прошёл тестирование и готов к применению в высших учебных заведениях, позволяя существенно сократить время обработки данных, снизить количество ошибок и повысить прозрачность учебного процесса.
Ключевые слова: программный комплекс, управление рабочими процессами, мониторинг сотрудников, автоматизация, C#.

Software development requires a clear understanding of user roles and the functions they perform within the system. This is especially important in administrative and management applications, where each category of users has access only to specific functionality. In the presented web application, a role-based access control model is implemented, which ensures the distribution of rights and responsibilities between two main types of users: Administrator and Department Head. Each of them interacts with the system within their scope of authority, allowing for efficient management of data, teaching workload, and user accounts.

To formally describe and visualize these interactions, a use case diagram is used. It displays users, their goals, and the available system functions. Such a diagram serves as an important tool for requirement analysis and forms the basis for designing application functionality. It also helps developers ensure logical and secure system navigation.

The use case diagram (Figure 1.1) shows the key participants in the system, their goals, and the scenarios for interacting with the application. This diagram helps establish a logical architecture and ensures that all business requirements are considered during the development of the software product.

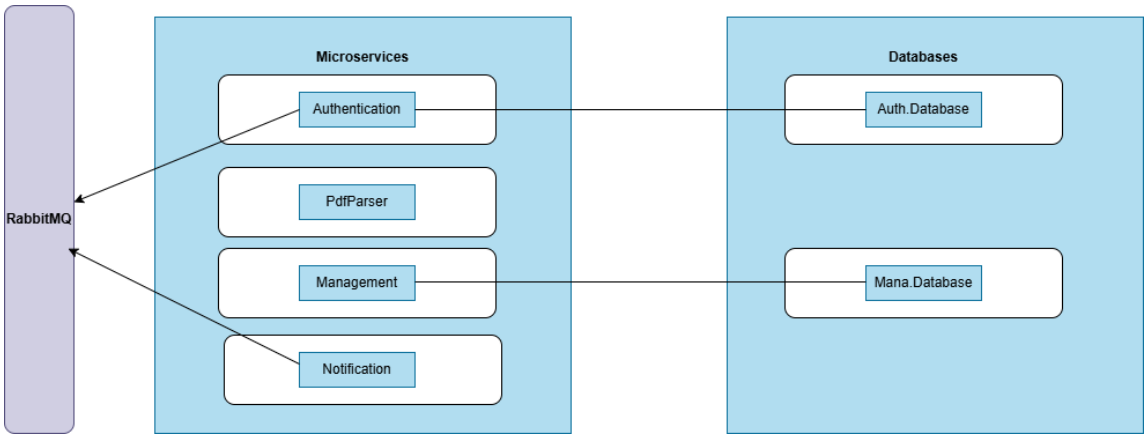

Fig. 1. Modular Architecture Diagram

The database schema is a key tool in the design and development of applications that utilize a database. It provides a graphical representation of the database structure and its components such as tables, relationships between them, columns, constraints, and other elements. The database schema visually describes entities, their attributes, and their interconnections, significantly simplifying data management and contributing to more efficient storage, updating, and retrieval of information.

In the context of a project focused on the development of a web application that interacts with data, documenting the database schema is an essential step. It allows developers to define the database structure in advance, specify the types of relationships between tables, and set the necessary constraints to ensure data integrity and consistency.

Formalizing the database schema as part of a thesis or final project helps to clearly define system requirements and optimize the overall performance of the application.

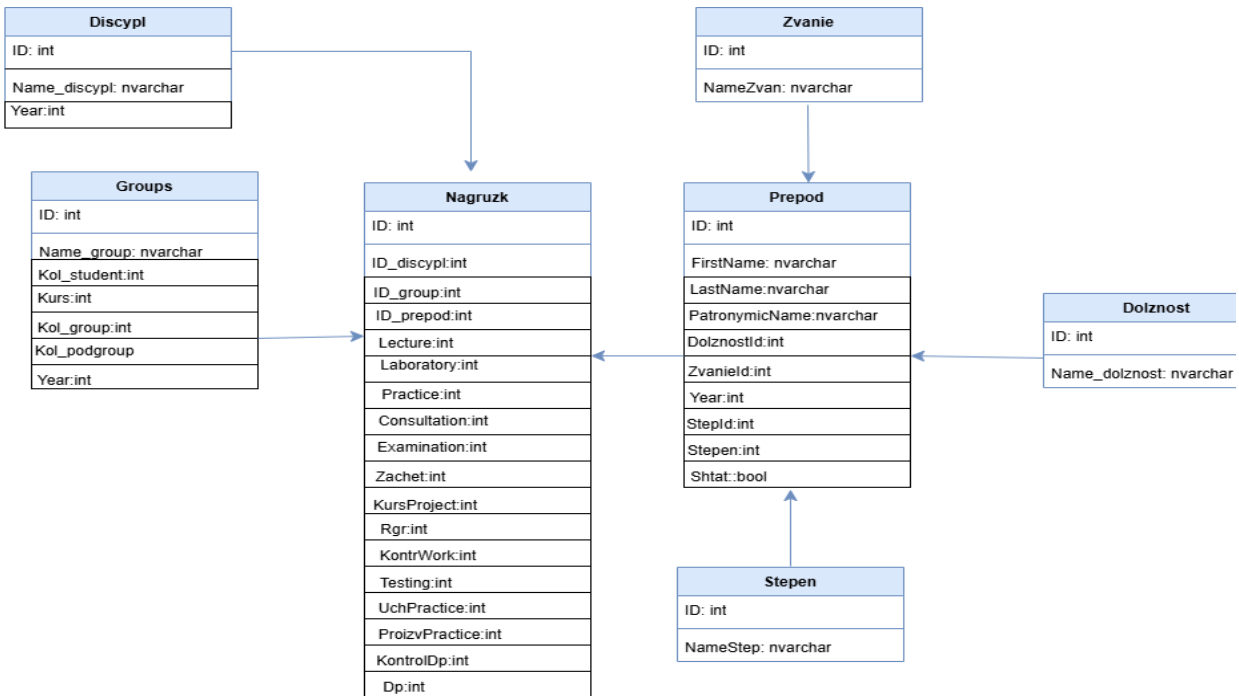

Fig. 2. Database Collections scheme

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