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Assignment of bachelor's thesis

Title:	Buben Club Reservation System
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Study program:	Informatics
Branch / specialization:	Software Engineering 2021
Department:	Department of Software Engineering
Validity:	until the end of summer semester 2025/2026

Instructions

Efficient room reservations for student activities present various challenges, where addressing these can significantly streamline the process for both users and administrators. One such challenge is ensuring smooth communication between systems that manage reservations and room access. The goal of this project is to develop a reservation system for the Buben Student Club that automates the entire room booking process. The application will integrate with the student information system (IS) of the Buben Club to retrieve necessary user data, add the created event to Google Calendar, and efficiently grant access to the reserved room.

- Analyze the domain of reservation services with a focus on managing various types of room reservation and calendars in it and build on the different rights in the club hierarchy. Use conceptual modelling to describe relevant processes and structure.
- Conduct a brief review of key solutions for reservation and access management systems.
- Compile a requirements catalog for the custom solution and prepare use cases for the application.
- Design the application based on the requirements and use cases. Consider the integration of external systems like student information systems (IS), Google Calendar and room access management via chip cards.
- Implement a prototype of the backend using the FastAPI framework for building APIs in Python, leveraging Python's type hints for clarity and robustness. Justify the selection of any additional technologies.

Electronically approved by Ing. Michal Valenta, Ph.D. on 26 November 2024 in Prague.

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- Test and document the resulting solution.
- Evaluate the benefits for both club managers and users, and propose potential areas for future development.

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