

A Web Platform Connecting Volunteers and Organizations

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The bachelor's thesis focuses on the architectural planning of a web platform connecting volunteers and organizations and on the analysis of its implementation process. The goal of the project is to develop a system that ensures effective interaction between volunteers and organizations and determines profile-based matching using an external AI service. The platform includes the delivery of matching notifications, event storage, the use of navigation functionality, user search, and the organized management of volunteer activities. The platform allows organizations to create and manage events, while volunteers can search for opportunities tailored to their interests and skills and participate in relevant activities.

Within the scope of the thesis, key challenges are identified across different areas of work. At the management level, this includes the clear definition of requirements, structuring the development process, and ensuring documentation accuracy. On the front-end side, challenges are related to managing a multi-role system, providing logical navigation for users, and asynchronously reflecting data changes in the interface. On the back-end side, the difficulties are associated with managing complex business logic and dependency on external services, particularly in the context of artificial intelligence integration.

In the area of IT project management, these challenges are addressed through the use of the Waterfall methodology, which ensures step-by-step planning, process transparency, and result predictability. The issues identified in the front-end part are resolved through the use of role-based user flows and a component-based architecture, which ensures logical separation of code and interface manageability.

To address the problems in the back-end part, an architecture based on Clean Architecture principles is applied, which ensures a clear separation of responsibilities between software layers. This approach makes it possible to change infrastructure and external services without affecting the core business logic and increases system testability, maintainability, and scalability. The management and architectural approaches chosen in the thesis meet the requirements of modern software product development, including frequent system changes, the addition of new functional units, and the growth of project complexity.