ABSTRACT

APPLICATION FOR NOTIFICATION OF GOMEL PUBLIC UTILITIES BY CITIZENS ABOUT PROBLEMS WITH ROAD SURFACE: diploma project / Hussein Khalid. – Gomel: ГГТУ им. П.О. Сухого, 2025. – Diploma project: [145] pages, [9] figures, [9] tables, [15] sources, [2] appendices.

Keywords: road surface issue reporting system, web application, ASP.NET Core Web API, C#, REST API, Next.js, TypeScript, Tailwind CSS, JWT authentication, MSSQL, citizen engagement, smart city.

The object of development is a web-based application designed to allow citizens of Gomel to report road surface issues such as potholes, cracks, and other hazards directly to public utility services.

The aim of the work is to develop a comprehensive software solution that enables efficient communication between citizens and municipal authorities regarding infrastructure problems, particularly those relatedA to road surfaces. The system aims to streamline the reporting process, improve transparency, and accelerate response times through a modern, secure, and user-friendly interface.

The stages of the work include: conducting an analytical review of existing systems, selecting appropriate technologies for frontend (Next.js, TypeScript, Tailwind CSS) and backend (ASP.NET Core, Entity Framework, MSSQL, JWT), designing the database structure, implementing core functionality (user registration, issue reporting, status tracking, and public utility responses), integrating with RESTful APIs, ensuring data security through JWT-based authentication, and testing the system under real-world conditions. Additionally, economic justification and energy/resource efficiency analysis were performed to assess the feasibility and sustainability of the proposed solution.

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