Web Application Design - Dating Application

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Contents

1 Introduction

This document details the design, development, and implementation of a fully functional web application developed as a laboratory project. The application is a dating platform intended to showcase modern web development practices by utilizing a robust backend API and an interactive frontend interface.

2 Project Overview

The objective of the project is to build a scalable dating application that allows users to register, create profiles, and interact through messaging and photo sharing. The application leverages ASP.NET Core for the backend and Angular for the frontend.

2.1 Project Goals

- Develop a complete web application with separate backend and frontend layers.
- Implement secure user registration, login, and profile management.
- Provide a responsive and intuitive user interface.
- Integrate real-time communication features.
- Ensure the system is scalable, maintainable, and secure.

3 System Requirements

3.1 Functional Requirements

- User authentication and authorization.
- Profile creation and editing.
- Search and matching functionality between users.
- Real-time messaging using SignalR.
- Photo upload and gallery display.

3.2 Non-Functional Requirements

- Responsive design using Bootstrap.
- Secure data transmission (HTTPS).
- Modular and maintainable code architecture.

4 System Architecture

4.1 Backend

The backend is built using ASP.NET Core (.NET 8.0) and exposes a RESTful API. Key responsibilities include:

- Handling user data and authentication.
- Managing business logic for user matching and messaging.
- Processing file uploads and managing user photos.

4.2 Frontend

The frontend is developed using Angular (version 17/18) and features:

- A dynamic and responsive user interface.
- Client-side routing and state management.
- Integration with third-party UI components.

5 Technologies Used

- **Backend:** ASP.NET Core (.NET 8.0)
- **Frontend:** Angular (v17/18)
- **Database:** SQLite
- **Real-time Communication:** SignalR
- **UI Framework:** Bootstrap
- **Development Tools:** Visual Studio Code, DotNet CLI, Angular CLI

6 Conclusion

This documentation provides a comprehensive overview of the Dating Application project. The project demonstrates modern web development practices and is built with scalability, security, and usability in mind. Future enhancements will continue to evolve the application and expand its feature set.