Project Report: E-Commerce Application with .NET

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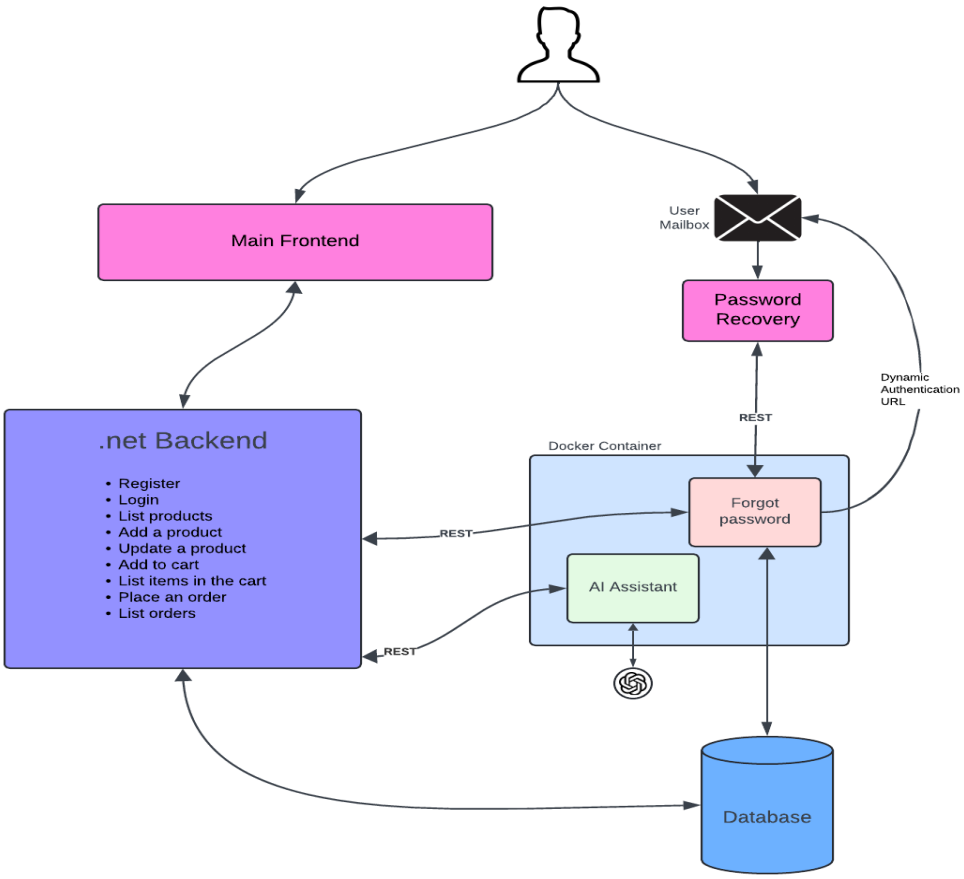
Overview

This project is an e-commerce application built using ASP.NET Core. It includes essential e-commerce features such as user authentication, product management, order processing, and enhanced AI-powered support for users. The project leverages .NET Identity for authentication and integrates with external Java-based services for specific functionalities.



Key Features

1. **Authentication System**
    - Utilizes **.NET Identity** to provide a secure login and registration system.
    - Includes features for password recovery (via a Java-based service).
2. **Controllers** The following controllers manage various application functionalities:
    - **AccountController.cs:** Handles user authentication and authorization.
    - **CartController.cs:** Manages shopping cart operations.
    - **ChatController.cs:** Integrates with the AI service for product-specific assistance.
    - **HomeController.cs:** Provides general site navigation and homepage functionalities.
    - **OrderController.cs:** Manages CRUD operations for customer orders.
    - **ProductController.cs:** Handles CRUD operations for products in the catalog.
3. **Views** The project includes a well-structured view system for rendering data to the user. Key views:
    - **Account Views:** For user-related activities such as login, registration, and password recovery.
    - **Home Views:** Displays the homepage.
    - **Order Views:** Allows users to create orders, view details, and track order status.
    - **Product Views:** Includes a product editor and details page for customer interaction.
4. **External Services Integration**
    - **Forgot Password Service:** A Java-based service for secure password recovery.
    - **AI Service:** Uses ChatGPT API to assist users with product-related inquiries in a chat interface.
5. **AI-Powered Chat Feature**
    - Accessible via the ChatController.cs.
    - Allows users to interact with an AI assistant for product details, recommendations, and support.

Docker Integration in the Project

This project uses Docker to containerize and manage external services like the Forgot Password Service and AI Service. These services are orchestrated using Docker Compose for consistent deployment across environments.

Steps to Use Docker Compose with This Project:

1. Update Environment Variables
    - Edit the docker-compose.yml file or provide the required environment variables before running the services.

```
DATASOURCE_USERNAME="postgres"
DATASOURCE_PASSWORD="your_secure_password"
```

2. Run Docker Compose File
    - Navigate to the directory containing the docker-compose.yml file.

```
docker-compose up -d
```

In this way you will be able to use external Java-based services.

Technical Stack

- **Backend:** ASP.NET MVC, C#
- **Frontend:** Razor Views (CSHTML)
- **Authentication:** .NET Identity
- **External Services:**
    - Java-based Forgot Password Service
    - Java-based AI Chat Service integrated with ChatGPT API for products

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This e-commerce application is a solid foundation for scalable and AI-enhanced online shopping experiences. It demonstrates the effective use of .NET technologies and external service integrations.