Software Development Design and Practice Project Proposal

Group nickname: Beff Jezos

Group members:

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1. Project Title & Introduction

- **Project Name:** Trendbol

- **Brief Overview:**

  o Trendbol is a modern e-trading platform where customers can browse products, place orders, and track transactions.

  o Sellers can list and manage their products with real-time inventory updates.

  o Admins have comprehensive control over transactions, user management, and platform oversight.

  o Secure authentication system with email verification.

  o Real-time order tracking and status updates.

2. Software Requirements Specification (SRS)

- **Functional Requirements:**

  o User authentication with email verification (Customer, Seller, Admin roles).

  o Product listing, Browse, and advanced search functionality.

  o Order placement and secure payment processing.

  o Real-time order tracking and transaction management.

  o Email notifications for order status updates and account activities.

  o User profile management and order history.

  o Admin dashboard for platform management.

  o Product inventory management for sellers.

- **Non-Functional Requirements:**

  o Scalable architecture for handling increasing user base.

  o Secure authentication using JWT tokens.

  o Responsive API design following REST principles.

  o Comprehensive error handling and logging.

  o Docker containerization for easy deployment.

  o CI/CD pipeline for automated testing and deployment.

3. Tech Stack

- **Backend:**
  - .NET 7.0
  - Entity Framework Core
  - SQL Server Express LocalDB (Development)
  - Docker for containerization
  - GitHub Actions for CI/CD
- **API Documentation & Testing:**
  - Swagger/OpenAPI
  - xUnit for unit testing
  - Postman for API testing
- **Security:**
  - JWT Authentication
  - Email verification system
  - Secure password hashing
- **Development Tools:**
  - Visual Studio 2022
  - Git for version control
  - Docker Desktop
  - GitHub for repository management

4. Team Responsibilities

- **Backend Development & Architecture:**
  - Mustafa Burak Loğoğlu
  - Süleyman Humartaş
- **Documentation & GitHub Management:**
  - Mustafa Burak Loğoğlu

5. Project Structure

- Clean Architecture implementation
- Repository pattern for data access
- Service layer for business logic
- Factory pattern for object creation

- Unit testing for core functionality

- Docker containerization

- CI/CD pipeline implementation

6. GitHub Repository

- **Repository URL:** https://github.com/Lucryle/Trendbol

- Main branch protection rules

- Automated testing and deployment

- Comprehensive documentation

7. Project Timeline

- **Week 1-3:** Project setup and basic architecture

- **Week 4-6:** Core functionality implementation

- **Week 7-9:** Testing and bug fixes

- **Week 10-11:** Docker and CI/CD implementation

- **Week 12:** Final debugging and documentation

8. Future Enhancements

- Monitoring and logging system implementation

- Performance optimization

- Additional security features

- Enhanced error handling

- Extended API documentation