E-Commerce Platform Documentation

Project Overview:

The E-Commerce platform is designed to simplify the buying and selling of technology products such as laptops, gaming PCs, and phones. It offers seamless shopping experience for customers and efficient management tools for administrators.

Project Name:

"E-Commerce Technology Products Platform"

Key Features

- **Product Management:** Browse, search, and filter technology products.
- **User Management:** Secure authentication and role-based access control.
- **Shopping Cart:** Add, update, or remove items with real-time calculations.
- **Order Processing:** Manage orders and track their status.
- **Responsive Design:** Optimized for desktops, tablets, and mobile devices.

Design Patterns Implemented

- **Singleton:**
  1. **Cart Manager:** Handles the shopping cart data across the entire user session to ensure consistency.
  2. **Payment Gateway:** Ensures consistent processing of payments (e.g., credit card, PayPal) by maintaining a single instance.

- **Factory:**
  1. **Product Types:** Creates products based on categories such as Electronics, Clothing, and Home Appliances.
  2. **Order Processing:** Creates different order handling processes (e.g., Standard, Express) based on the customer's choice.

- **Adapter:** Enables incompatible interfaces to work together (e.g., integrating external payment gateways).

- **Builder:** Simplifies the creation of complex objects (e.g., for constructing detailed product objects).

- **Proxy:** Provides a surrogate or placeholder to control access (e.g., for managing cached product details).

Information about the team

Project Team:

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Subject: Selected Labs in Software Engineering

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