

# E-commerce Project Documentation

## 1. Project Planning & Management

### Project Overview

The E-commerce project is a comprehensive online platform for selling products, designed to enhance the online shopping experience through a modern user interface and high performance. The platform allows users to easily browse products, add them to the shopping cart, and complete purchases securely. It also supports sellers in adding their products and managing sales efficiently, making it similar to platforms like Amazon, Noon, Jumia, and Souq.com.

### Expected Deliverables

- A fully functional web platform for product display and sales.
- Seamless and secure login and account creation.
- Advanced product search and categorization system.
- Ability to add products to the shopping cart and review them before purchase.
- Support for multiple secure payment methods.
- A professional and highly responsive user experience.

### Team Roles

- Hady Ali Mohamed (Leader): Banner, Products & Fetch API, Home Page.
- Mohamed Ashraf Khattab: Login / Sign up.
- Abdelrahman Magid El-Tarawy: Navigation.
- Aliaa Khaled Farouk: Cart.
- Maryam Mohamed Bahaa El-Din: SideBar.
- Sama Ahmed Abdel Fattah: Footer.

### Potential Risks & Mitigation Plan

- Inability to implement certain components: Researching solutions through various sources and testing multiple approaches until an optimal solution is found.
- Integration issues between components: Conducting frequent tests to ensure smooth system operation.

- Delivery delays: Establishing a clear timeline and adhering to scheduled deadlines.

### Key Performance Indicators (KPIs)

- Page load speed.
- Number of active daily users.
- Purchase completion rate.
- Number of detected and fixed errors.

## 2. Requirements Gathering

### Key Stakeholders & Their Requirements

- End Users: Need an easy-to-use interface, secure transactions, and a seamless browsing experience.
- Store Owners: Require a control panel to manage products and sales.
- Developers: Need a flexible system that can be easily expanded.

### User Stories & Use Cases

1. As a user, I want to create an account so that I can log in and make purchases easily.
2. As a user, I want to search for products efficiently using filters and categories.
3. As a user, I want to add products to my shopping cart and review them before purchasing.
4. As a user, I want to securely complete purchases using multiple payment methods.
5. As a user, I want to track my order after making a purchase.

## 3. System Analysis & Design

### Project Objectives

- Simplify the online shopping process.
- Provide a smooth and secure user experience.
- Support multiple sellers in adding their products.

### Technical Diagrams

- Use Case Diagram: Illustrates user interactions with the system.
- Software Architecture: The system follows the MVC Architecture.

- Database Design: Firebase will be used for data management.

#### 4. Technologies Used

##### Frontend

- React.js
- React Router
- Redux Toolkit
- Tailwind CSS
- HTML & CSS
- Bootstrap

##### Backend & Database

- Firebase (Authentication, Firestore, Storage)

##### Version Control & Repository

- GitHub as the main repository.
- GitFlow as a strategy for managing branches and modifications.

##### CI/CD

- GitHub Actions will be used for automation of deployment and testing.

#### 5. Testing & Quality Assurance

- Jest will be used for frontend component testing.
- Unit Testing and Integration Testing will be conducted.
- Bug reports will be recorded and fixed regularly to ensure quality improvements.

##### Quality Enhancement

- Regular code reviews to ensure adherence to standards.
- Performance optimization by reducing external requests and improving resource loading.
- Utilizing tools like Lighthouse for performance measurement and improvement.

## 6. Documentation & Presentation

### User Manual

- A document will be created to explain how to log in, search for products, purchase, and manage accounts.

### Technical Documentation

- A detailed explanation of system architecture, database design, and process management.

### Presentation & Video

- A presentation will be prepared to outline the project, challenges, and solutions.
- A video demonstration may be recorded to showcase project features practically.

### Conclusion

This documentation outlines all details of the E-commerce project, covering planning, implementation, testing, and documentation to ensure a comprehensive and user-friendly online shopping platform.