

Al-Mukhtar Store: Project Plan Document & Analysis & Design

This document outlines the initial planning and detailed analysis phases for the development of the "Al-Mukhtar Store" e-commerce platform.

Part 1: The Planning Phase

1. Project Description and Evaluation

1.1 What is the project idea?

The project is to create "Al-Mukhtar Store," a modern, user-friendly e-commerce website. This online platform will specialize in selling various electronic items, including mobile phones, headphones, chargers, and other accessories. It will allow customers to browse products, place orders, and make payments online.

1.2 Why does the client need it?

- **Expand Market Reach:** Attract customers from across the country, not just the local area.
- **Increase Sales:** Operate 24/7, capturing sales outside of traditional business hours.
- **Stay Competitive:** Match competitors who have a strong online presence.
- **Improve Customer Convenience:** Offer a seamless and convenient shopping experience from the comfort of customers' homes.

2. Feasibility Study

2.1 Technical Feasibility

- **Tools & Technologies:** The required technologies are mature and widely available. We can use modern frameworks like React.js for the front end and Node.js for the back end, or leverage established e-commerce platforms such as Shopify or WooCommerce that offer robust, pre-built solutions.
- **Team Capability:** Our team has the necessary skills in web development, database management, and UI/UX design to successfully build and deploy this project.

2.2 Economic Feasibility

- **Budget:** The initial budget appears sufficient for the core functionalities required, with detailed

breakdown in Section 4.

- **Cost Justification:** The investment is justified by the significant potential return. The store will open new revenue streams, increase overall sales volume, and enhance the brand's market position, making the initial cost a worthwhile long-term investment.

2.3 Operational Feasibility

- **Client Capacity:** The client currently operates inventory management and customer service processes. We will work with them to adapt these for the online model, including training on managing online orders, updating product listings, and handling digital customer inquiries. The system will be designed with a simple admin panel to facilitate this.

3. Project Plan

3.1 Main Objective

To design, develop, and deploy a fully functional, secure, and scalable e-commerce website for Al-Mukhtar Store within the agreed timeline and budget.

3.2 Scope of the Project

- **Storefront:** Product catalog with categories and search, user account registration/login, shopping cart, secure checkout with payment gateway, and order history.
- **Admin Panel:** Product management (add/edit/delete), inventory tracking, order management, and customer data overview.

3.3 Expected Deliverables

1. A fully deployed and functional e-commerce website.
2. Complete source code and technical documentation.
3. An admin panel training manual and a live training session for the client.

4. Initial Budget Estimate

Item	Estimated Cost (Approx.)	Description
Creating wireframes, mockups, and style guide	\$1,500	UI/UX Design
Front-end and back-end coding	\$7,000	Development
Server costs and domain registration (1 year)	\$300	Hosting & Domain
Integration fees and initial setup	\$200	Payment Gateway Setup

Ensuring the website is bug-free and secure	\$1,000	Testing & QA
Total Initial Cost	\$10,000	Core project development cost

5. Team Formation and Responsibilities

Role	Responsibilities
Project Manager	Oversees the entire project, manages timeline, budget, and communication
UI/UX Designer	Designs the user interface and ensures a positive user experience
Frontend Developer	Builds the client-facing part of the website users interact with
Backend Developer	Builds the server, database, and application logic
QA Engineer	Tests the application to find and report bugs before launch

6. Initial Timeline

Key Activities	Duration	Phase
Requirement gathering, feasibility study	1 week	Analysis
Wireframing, mockups, UI/UX design	2 weeks	Design
Front-end and back-end coding, database setup	6 weeks	Development
Bug fixing, performance, and security testing	2 weeks	Testing
Server setup, launch, and post-launch monitoring	1 week	Deployment
Total	12 weeks	

7. Risk Assessment and Management

Mitigation Plan	Potential Risk
Implement a formal change request process requiring client approval.	Scope Creep: Client requests new features mid-project, delaying timeline.
Select a reputable payment gateway with strong documentation and allocate testing time.	Payment Gateway Integration Issues: Technical problems connecting to the payment provider.

8. Communication and Follow-up Plan

- Methods:

- Weekly video calls every Monday to discuss progress and blockers.
- Email for formal documentation and decisions.
- Shared communication channel (e.g., Slack) for informal day-to-day questions.

- Frequency: Formal communication weekly.

- Reporting: Concise progress report emailed to the client after each weekly meeting summarizing achievements and next steps.

9. Management and Tracking Tools

- Task Management: Trello or Jira for task tracking through stages (To Do, In Progress, Done).
- Communication: Slack or Microsoft Teams for internal communication and client check-ins.
- Code Management: Git and GitHub for version control to enable collaborative coding without conflicts.

Part 2: The Analysis Phase

1. General Analysis of the Project

1.1 What problem is the store trying to solve?

The store addresses limited physical access by removing geographical and time constraints, enabling the business to serve a wider audience and operate continuously.

1.2 What is the main objective of the project from the customer's perspective?

To provide a simple, fast, and secure way to browse, compare, and purchase electronic products online with reliable delivery.

1.3 What are the most prominent challenges during system analysis? How will you address them?

- Challenge: Eliciting all specific business rules (e.g., complex shipping calculations, tax variations, promotion rules).

Solution: Conduct structured interviews and workshops with the client; document and get confirmation on all rules before proceeding.

- Challenge: Client's requirements may be vague or change during development.

Solution: Use an iterative approach with early prototypes to get concrete feedback and refine requirements, avoiding late-stage large changes.

2. Defining Requirements

2.1 Functional Requirements (What the system does)

- Users must be able to create an account and log in.
- The system must display products with images, descriptions, and prices.
- Users must be able to search and filter products by category.
- Users must be able to add items to a shopping cart.
- The system must provide a secure checkout process.
- Admins must be able to add, update, and remove products.
- Admins must be able to view and manage orders.

2.2 Non-functional Requirements (How the system performs)

- Performance: All pages should load in under 3 seconds.
- Security: All user data and transactions must be encrypted using SSL.
- Usability: The website must be intuitive and easy to navigate for non-technical users.
- Compatibility: The site must be fully responsive and work correctly on all major browsers and devices.

2.3 Business Requirements (The Why)

- Increase overall sales by 25% within the first year.
- Expand customer base beyond the immediate city.
- Reduce in-store workload for simple product inquiries.

2.4 User Requirements (What the user needs)

- As a customer, I need to easily find the phone case I'm looking for.
- As a customer, I need to know my payment information is safe.
- As an admin, I need a simple way to update product stock levels.

3. Roles in the Analysis Phase

Role	Responsibility
System Analyst	Leads the analysis phase, gathers, analyzes, and documents all requirements.
Client	Primary source of information, defines business rules, and gives final approval.
End-User (Sample)	Provides feedback on user journey and features to ensure real-world needs .

4. Documentation Requirements

4.1 Software Requirements Specification (SRS) Document

A comprehensive document containing all functional and non-functional requirements. It acts as the single source of truth for the project, ensuring alignment between client and development team.

4.2 Use Case Diagrams

Visual representations of how different users (actors) interact with the system to achieve specific goals (e.g., a customer placing an order). Useful for clarifying functional requirements and ensuring no user interaction is overlooked.

5. Methods for Gathering Requirements

5.1 Methods to be Used

- Interviews: One-on-one and group interviews with the client and key stakeholders.
- Prototyping: Creating interactive wireframes or mockups that show the layout and user interface flow (non-functional prototypes).

5.2 Why We Chose These Methods

- Interviews allow deep understanding of the client's needs and processes with opportunity for real-time clarification.
- Prototyping turns abstract ideas into tangible visuals early on, which helps gather targeted feedback and reduces the risk of building the wrong solution.

Functional Requirements

1. Account Creation and Login
2. Viewing Product Details
3. Searching and Filtering by Category
4. Adding a Product to the Cart
5. Completing the Purchase

Detailed Scenarios of Core Functionalities

1. Account Creation and Login

Scenario: A new user visits the online store and clicks on the "Create Account" button. They enter their full name, email address, and a password, then click "Register." The system validates the data and sends a confirmation email. After activating the account via the email link, the user can log in using their credentials and is redirected to the store's homepage.

2. Viewing Product Details

Scenario: The user browses the homepage or searches for a specific item. Upon clicking on the product image, they are taken to the product detail page, which includes multiple images, a comprehensive description, specifications, price, and availability status. From this page, the user can click "Add to Cart" to purchase the item.

3. Searching and Filtering by Category

Scenario: Using the top search bar, the user enters a product name (e.g., "Bluetooth Headset"). They can refine results using the sidebar filters such as category ("Accessories"), price range, or brand. After clicking the search button, matching results are displayed to the user.

4. Adding a Product to the Cart

Scenario: On the product detail page, the user clicks the "Add to Cart" button. A notification confirms the item has been added successfully. The user can choose to "Continue Shopping" or "Go to Cart." On the cart page, they can update the product quantity or remove it entirely.

5. Completing the Purchase

Scenario: From the cart page, the user clicks "Checkout" and is redirected to the payment page. They choose a payment method (credit card or cash on delivery), enter the shipping address, and confirm the order. The system creates a new order, deducts product stock, sends a success notification, and generates an electronic invoice.

UML Classes - Left-to-Right Layout

Class	Attributes	Methods	Relationships
User	id, name, email, password	register(), login(), updateProfile()	Owns Cart, Owns Order, Receives Notification
Address	Id ,street,city, zipcoode,isdefault	setAsDefault() updateinfo(street, city, zipCode) formatForShipping() delete()	Belongs to Use
Orderitem	priceSnapshot ,quantity	getSubtotal() updateQuantity(newQuantity) getProductDetails()	Belongs to Order, References one Product
Product	id,name, description, price, stock, category	getDetails(), updateStock()	Belongs to Category
Category	id, name	getProducts()	Has many Product
Cart	id, userId, items	addItem(), removeItem(), calculateTotal()	Belongs to User, Contains many CartItem
CartItem	productId, quantity	updateQuantity()	Belongs to Cart, References one Product
Order	id,userId,items, status, paymentMethod	placeOrder(), cancelOrder()	Belongs to User, Contains many CartItem, Has one Payment
Payment	id,orderId,amount, method, status	process()	Belongs to Order
Notification	id, userId, message, type,createdAt, isRead	send(), markAsRead(), delete()	Belongs to User, Automatically sent by the system

