

Mini Project-I (K24MCA18P)

Odd Semester

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SHOPPING WEBSITE

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Introduction

- E-commerce is the buying and selling of goods and services, or the transmitting of funds or data, over an electronic network, primarily the internet. These business transactions occur either as business-to-business ([B2B](#)), business-to-consumer ([B2C](#)), consumer-to-consumer or consumer-to-business.
- E-commerce is the application of information technology and communication technology to three basic activities related to commercial business, the three basic activities are as follows:
 - 1. Production and support- which includes assisting production, distribution, and maintenance of goods and services.
 - 2. Transaction preparation- which includes getting product information into the market-place and bringing buyers and sellers into contract with each other; and
 - 3. Transaction completion- which includes concluding transactions, transferring payments, and securing financial services.

Literature Review

- E-commerce revolutionized retail by offering digital platforms for shopping, evolving since the 1990s with web and payment technology advancements.
- User-centric design, intuitive navigation, and responsive interfaces are vital for successful shopping websites.
- Scalability, security, and performance are critical to efficiently handling concurrent users.
- Growth in digital payments, logistics integration, and AI-driven personalization enhances user satisfaction and competitive advantage.

Literature Review (Contd.)

- Modern trends include mobile-first designs, PWAs, and blockchain for secure transactions.
- Frameworks like React, Angular, and Vue.js with scalable back-ends (Node.js, Django, Laravel) are emphasized.
- Efficient data management leverages relational (MySQL, PostgreSQL) and NoSQL (MongoDB, Firebase) databases.
- Ethical concerns (data privacy, GDPR) and APIs for seamless third-party integrations are key focus areas.

Objective

- The main goal of e-commerce is to maximize customer reach and boost sales and profitability.
- E-commerce websites aim to sell products or services while also providing product information, reviews, and comparisons.
- Online stores reduce operational costs by eliminating the need for physical premises and related expenses.
- Platforms like Builderfly enable zero-cost business startups and allow customization for a unique customer experience.

Technology (Hardware Requirements)

- **Processor:** Quad-core or higher (e.g., Intel i5/i7 or equivalent AMD processors)
- **RAM:** Minimum 8GB (16GB recommended for testing and multitasking)
- **Storage:** SSD with at least 500GB for faster read/write operations
- **Network:** Stable broadband connection (minimum 10 Mbps) for seamless development and testing
- **Peripheral Devices:** High-resolution monitor, keyboard, mouse, and optional secondary display for efficient coding and debugging

Technology (Software Requirements)

- **Operating System:** Windows 10/11, macOS, or Linux-based systems
- **Development Tools:** Visual Studio Code, IntelliJ IDEA, or similar IDE
- **Front-End Frameworks/Libraries:** React.js, Bootstrap, or Tailwind CSS
- **Back-End Frameworks:** Node.js with Express.js or Django
- **Database:** MySQL, PostgreSQL, or MongoDB
- **Version Control:** Git with platforms like GitHub or GitLab
- **Testing Tools:** Selenium, Jest, or Postman for API testing
- **Design Tools:** Figma, Adobe XD, or Canva for UI/UX design

Modules

➤ User Authentication:

- User registration, login, and password management.
- OAuth integration for social media logins.

➤ Product Management:

- Adding, updating, and categorizing products.
- Dynamic search and filter options.

➤ Shopping Cart and Checkout:

- Add-to-cart functionality with quantity adjustment.
- Secure payment gateway integration.

➤ Order Management:

- Tracking order status and history.
- Notifications for order updates.

Modules (Contd.)

➤ Admin Panel:

- Dashboard for managing users, orders, and inventory.
- Analytics for sales performance and user activity.

➤ Recommendation Engine:

- Personalized product suggestions based on browsing and purchase history.
- AI/ML algorithms for recommendation refinement.

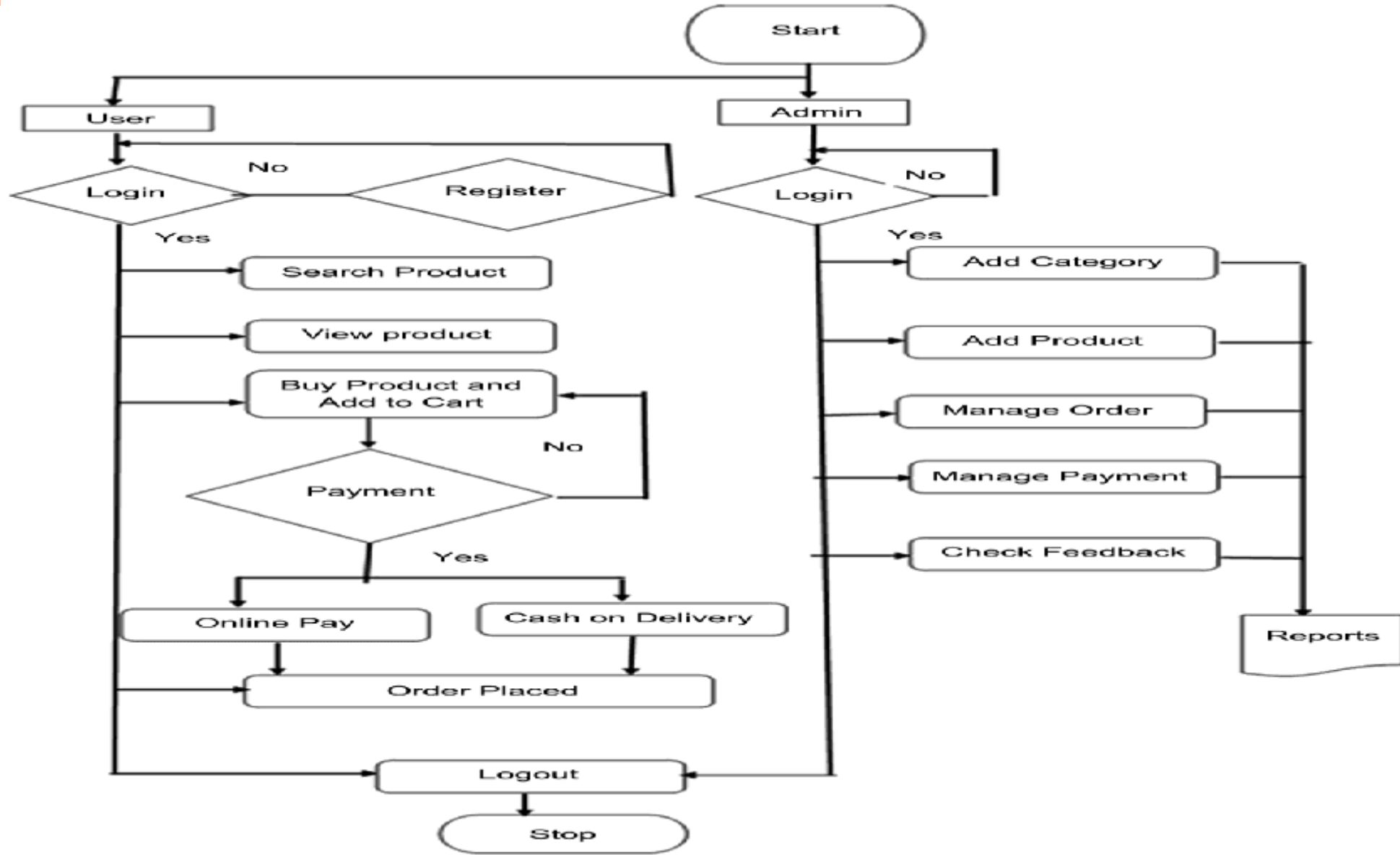
➤ Customer Support:

- Chatbot or live chat functionality.
- FAQs and ticket management system.

➤ Responsive Design:

- Mobile and desktop compatibility.
- Progressive Web Application (PWA) support.

Workflow/Gantt Chart



Reports

➤ User Reports:

- Registered user details and activity logs.

➤ Sales Reports:

- Daily, weekly, and monthly sales analysis.
- Revenue and profit breakdowns.

➤ Inventory Reports:

- Stock status and alerts for low inventory.

➤ Traffic Reports:

- Website traffic analysis using integrated analytics tools.

References

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