PROJECT SYNOPSIS

Project Title: E-Commerce

PROJECT SYNOPSIS

ON

E-Commerce

(PAPER CODE: 604)

SUBMITTED BY

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In partial fulfilment of the requirements for the award of Degree

Of

BACHELOR IN COMPUTER APPLICATIONS

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UNDER THE GUIDANCE OF

Sanu kumar

ARYABHATTA KNOWLEDGE UNIVERSITY, PATNA

INTERNATIONAL SCHOOL OF MANAGEMENT, PATNA

PROJECT SYNOPSIS APPROVAL

ON

E-Commerce

PREPARED BY

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IS EXAMINED AND APPROVED

Mr Sanu Kumar

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I. DECLARATION

I, Keshav Kumar a student of the **Department of Computer Science and Engineering** at **ISM,** hereby solemnly declare that the project entitled **"E-Commerce"** submitted in partial fulfillment of the requirements for the award of the degree of Bachelor of Computer Application is my own original work. This project was carried out by me under the guidance and supervision of Mr. Sanu Kumar, whose advice and support have been invaluable throughout the course of this work.

I further declare that:

1. No part of this project has been submitted earlier by me or any other person for any degree, diploma, or certificate at this or any other institution.
2. All sources of information and assistance have been duly acknowledged in the text and reference list.
3. Except where otherwise indicated by proper citation, the content of this report is entirely my own creation.

I understand that any breach of this declaration may render my project liable to disciplinary action under the rules of the University/Institute.

Signature of the Candidate

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II. ACKNOWLEDGEMENT

I would like to express my heartfelt gratitude to my project guide, **Mr. Sanu Kumar,** for his ongoing guidance, encouragement, and insightful feedback during the development of "E-commerce." His expertise in system design and user engagement has been instrumental in shaping the platform's core architecture and feature set, even as the project remains a work in progress.

I also extend my thanks to the **Department of Computer Science and Engineering** at **ISM** for providing access to the department's computing facilities and for fostering an environment that encourages experimentation and innovation. Special appreciation goes to the laboratory staff for their prompt technical support, which has allowed me to iterate rapidly on early prototypes.

A sincere note of thanks to my classmates and friends—especially those who volunteered as early testers—for their valuable suggestions on usability, feature ideas, and bug reports. Your willingness to explore pre-release builds and share candid feedback has helped me identify priorities and plan the next development milestones.

Finally, I am grateful to my family for their patience and moral support throughout this journey. Their understanding of the iterative nature of software development has given me the space to focus on building and refining E-Commerce features step by step.

As this project continues to evolve, I remain indebted to everyone who has contributed their time, expertise, and encouragement to bring E-Commerce closer to its vision as a fun, chill community for students.

INTRODUCTION

An E-Commerce Web Application, Or E-Commerce Website, Is A Virtual Store Where Customers Can Buy And Sell Products And Services Online. E-Commerce Websites Allow Businesses To Process Orders, Manage Shipping, And Provide Customer Service. An E Commerce Website Is One That Allows People To Buy And Sell Physical Goods, Services, And Digital Products Over The Internet Rather Than At A Brick-And-Mortar Location

OBJECTIVES

Ecommerce Drives Profitable Growth By Expanding Customer Reach, Reducing Cost-To-Serve, And Creating Differentiated Customer Experiences. Utilizing This Powerful Tool Wisely Has Become Eminently Important For Business-To-Business (B2B) Companies. The Objective Of An E-Commerce Web Application Is To Provide A Platform That Facilitates Online Buying And Selling Of Goods Or Services. It Serves Businesses And Customers By Enabling Seamless Transactions, Enhancing User Experience, And Optimizing Business Operations. Here Are The Key Objectives:

1. Convenience for Customers

- Provide a user-friendly interface for easy navigation, product discovery, and purchase.
- Enable 24/7 accessibility for shopping without geographical or time restrictions.
- Offer multiple payment options for flexibility and convenience.

2. Increased Reach and Accessibility

- Expand market reach by connecting businesses with a broader audience globally or locally.
- Allow small and medium-sized enterprises to compete effectively in a digital marketplace.

3. Streamlined Business Operations

- Automate inventory management, order processing, and payment handling.
- Provide tools for customer relationship management (CRM), analytics, and reporting.

- Integrate with third-party services like shipping, payment gateways, and marketing tools.

4. Enhanced User Experience

- Deliver personalized recommendations and promotions based on customer preferences.
- Ensure a secure and fast checkout process
- . • Provide robust customer support features, including chatbots, FAQs, and ticketing systems.

5. Cost Efficiency

- Reduce overhead costs compared to physical stores (e.g., rent, staffing).
- Implement targeted marketing and advertising to maximize ROI.

6. Data Collection and Analysis

- Gather data on user behavior, preferences, and purchasing trends.
- Use analytics to improve products, services, and marketing strategies.

7. Building Brand Loyalty

- Provide features like loyalty programs, discounts, and exclusive offers.
- Maintain consistent communication through newsletters and notifications.

8. Scalability

- Facilitate growth by accommodating increasing traffic, products, and customers without major disruptions.
- Adapt to changing market trends and consumer behavior through continuous updates.

REQUIREMENTS AND ANALYSIS:

Requirements Specification: E-Commerce will require features for user registration, product listing, order management, and payment processing.

Tools, Platforms, and Languages Used:

Application	Web Application
Client-Side/ Front-End	HTML, CSS, JavaScript
Back-End	Django

Database Default Django db_sqlite_3

Software and Hardware Requirements: -

Minimum Hardware Requirements: -

(For PC / Laptop Users):

Processor	Intel i3
Ram	1 GB
Hard Disk Drive	500 GB
Cache Memory	1024 KB
Peripheral devices	Monitor, Keyboard, Mouse

Minimum Software Requirements: -.

(For PC/Laptop Users):

Operating System	Windows, Linux, MacOS web
Web Browser	Chrome, Safari, Brave, Edge etc.
Internet	Wired or Wireless

SYSTEM ANALYSIS

Existing System

The current E-commerce operations are either **handled manually** or through **basic, non-integrated platforms**. Many small businesses rely on social media platforms or offline methods for order taking, inventory management, and customer interaction, which leads to inefficiencies.

Limitations of the existing system:

- No centralized platform for products, orders, and customers
- Manual tracking of orders and inventory
- Limited payment methods
- Lack of customer engagement features like reviews, recommendations, or wishlists
- No real-time stock updates or order status tracking
- Poor scalability and reporting capabilities

Proposed System

The proposed E-commerce system is a **fully automated, web-based platform** designed to handle all business operations in a streamlined and efficient manner. It provides an integrated environment for buyers, sellers, and administrators.

Key Features:

- User registration and secure login system
- Product listing with search, filter, and categories
- Shopping cart and order management system
- Online payment integration (UPI, cards, net banking)
- Inventory management with real-time stock updates
- Admin dashboard for managing users, products, and orders
- Customer reviews and ratings system
- Order tracking and notification via email/SMS

Benefits:

- Improved user experience and engagement
- Increased automation and reduced manual effort
- Better order accuracy and inventory control
- Scalability for future growth (new features, more users)

- Enhanced security and data integrity

SYSTEM DESIGN

S.D.L.C. in E-Commerce

The **Software Development Life Cycle (SDLC)** is a systematic process used to design, develop, test, and deploy a software application. In the context of an **E-Commerce System**, SDLC ensures that the platform is built with user requirements in mind, functions efficiently, and can scale as the business grows. The following phases outline how SDLC is applied to an e-commerce application:

1. Requirement Gathering and Analysis

- Identify business needs, target audience, and key features (e.g., product listings, shopping cart, payment gateway).
- Conduct meetings with stakeholders (e.g., business owners, customers).
- Document both functional and non-functional requirements.

2. System Design

- Create architectural and detailed design specifications.
- Design UI/UX prototypes, database schemas, and system workflows.
- Decide on technology stack (frontend, backend, database, payment APIs).

3. Implementation (Coding)

- Developers begin writing code based on the design documents.
- Frontend and backend components are developed in parallel.
- Payment systems, authentication, and database operations are integrated.

4. Testing

- Perform unit, integration, system, and user acceptance testing.
- Identify and fix bugs or logical errors.
- Test performance, usability, and security (e.g., SQL injection, data breaches).

5. Deployment

- Deploy the application to a live environment (using platforms like AWS, Vercel, or Heroku).
- Ensure configurations for production are secure and optimized.
- Set up domains, SSL certificates, and continuous deployment pipelines.

6. Maintenance

- Monitor the live system for errors or performance issues.
- Regularly update the platform with bug fixes, security patches, or new features.
- Gather user feedback to improve system functionality.

Importance of SDLC in E-Commerce:

- Ensures a **structured development process** with clear milestones.
- Helps **minimize development risks** and costly rework.
- Promotes **user-focused design and functionality**.
- Supports **scalability and long-term maintainability** of the platform.

FUTURE SCOPE

The E-commerce industry is continuously evolving with advancements in technology, changing consumer behavior, and increasing digital penetration. The future scope of the proposed e-commerce system includes a wide range of potential enhancements and expansions to meet future demands and improve overall user experience.

1. Mobile App Integration

Developing native mobile applications for Android and iOS platforms will allow customers to shop on the go, increasing convenience and boosting engagement.

2. Artificial Intelligence & Personalization

Implementing AI algorithms can help provide personalized product recommendations, dynamic pricing, and predictive search, enhancing the shopping experience and increasing sales conversions.

3. Chatbots & Virtual Assistants

Integrating AI-powered chatbots for customer support can offer 24/7 assistance, handle FAQs, and resolve common issues without human intervention.

4. Advanced Analytics and Reporting

Adding detailed analytics dashboards can help administrators and sellers monitor sales performance, user behavior, and inventory levels, enabling data-driven decision-making.

5. Augmented Reality (AR) Features

AR technology can allow users to preview products (e.g., clothing, furniture) in a real-world environment, making online shopping more interactive and reliable.

6. Multi-Vendor Marketplace

Upgrading the platform to support multiple vendors can transform it into a full-scale marketplace like Amazon or Flipkart, allowing third-party sellers to list their products.

7. Internationalization

Adding multi-language and multi-currency support will help expand the platform to global markets, attracting international customers.

8. Blockchain for Secure Transactions

Future integration of blockchain technology can enhance security, ensure transparent transactions, and help with fraud prevention.

9. Subscription-Based Services

Implementing features like subscriptions or memberships (e.g., Amazon Prime) can promote customer loyalty and generate recurring revenue.

10. Green & Sustainable E-Commerce

Incorporating eco-friendly practices such as carbon footprint tracking, green delivery options, and sustainable packaging will align the platform with growing environmental concerns.