

E-Commerce

A PROJECT REPORT

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BONAFIDE CERTIFICATE

Certified that this project report “E- Commerce” is the bonafide work of “Piyush Varshney, Shantanu Singh ,Prakhar Mittal , Harsh Sharma” who carried out the project work under my/our supervision.

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INTERNAL EXAMINER

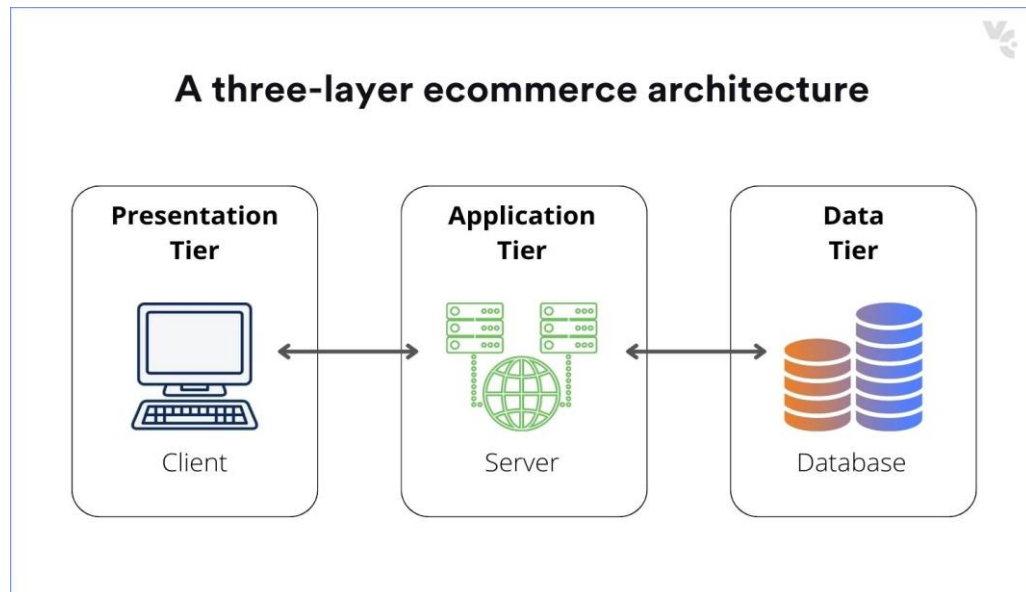
EXTERNAL EXAMINER

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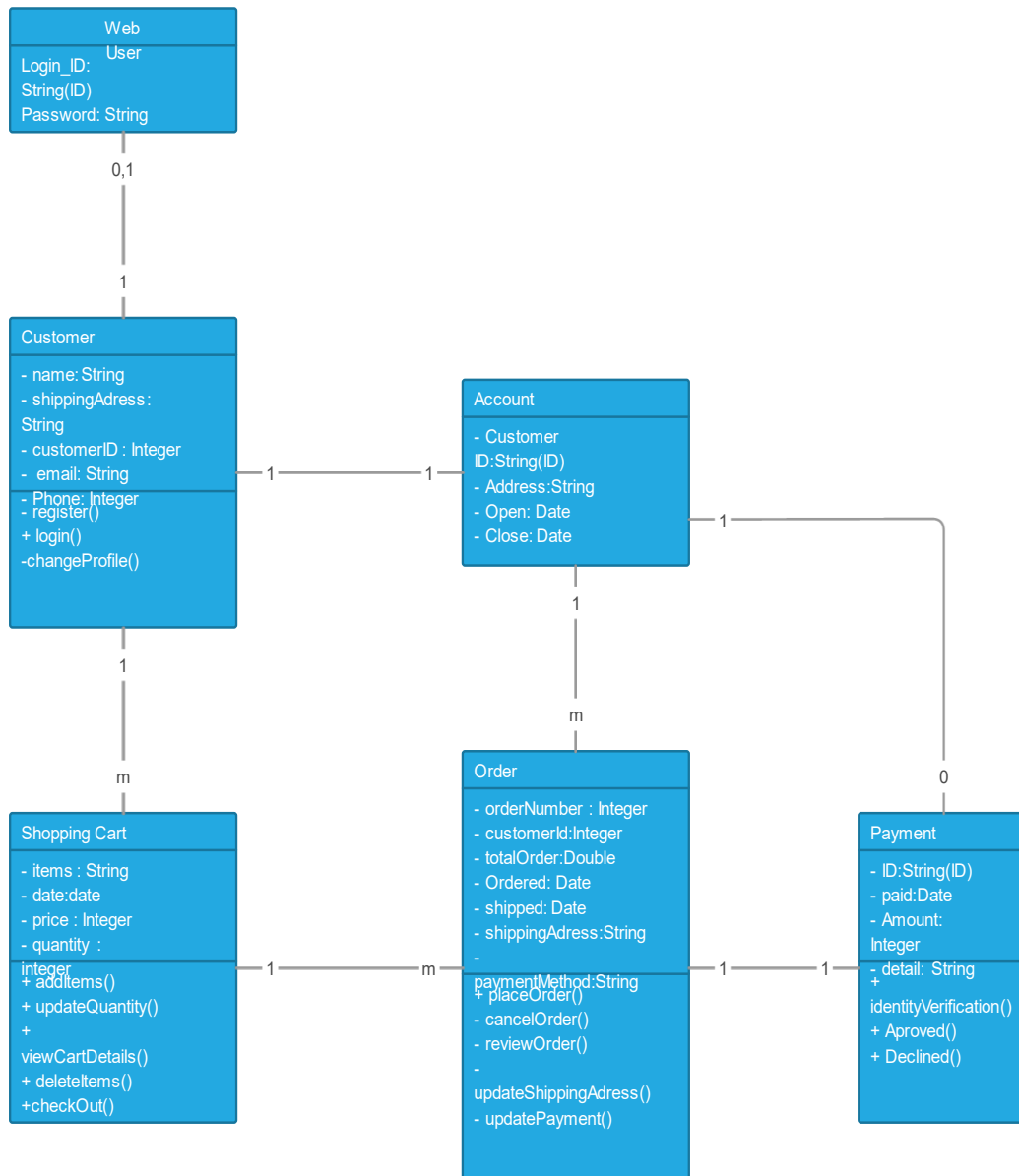
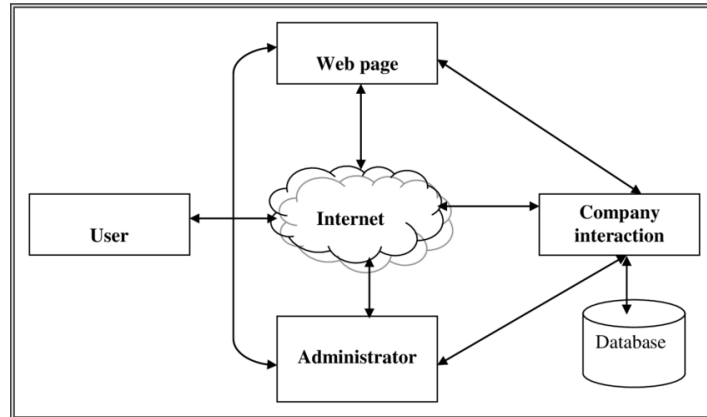
E-commerce Platform Architecture



ABSTRACT

The E-commerce Platform Development project aims to address the growing need for a user-friendly and efficient online shopping experience. This report presents a comprehensive overview of the project, including the identification of the client's requirements, the design flow, implementation details, and results analysis. The project concludes with key findings, deviations from expected results, and recommendations for future work.

GRAPHICAL ABSTRACT



ABBREVIATIONS

E-commerce - Electronic Commerce

UI - User Interface

API - Application Programming Interface

SQL - Structured Query Language

SYMBOLS

→ Indicates the flow or progression

Σ Represents summation or total

$\sqrt{}$ Denotes square root

\leq Indicates less than or equal to

\$ Indicates the price represented in Indian
Currency

INTRODUCTION

By ecommerce we mean buying and selling of products or services over electronic systems such as the Internet and other computer networks.

An online store is a virtual store on the Internet where customers can browse the catalog and select products of interest. The selected items may be collected in a shopping cart. At checkout time, the items in the shopping cart will be presented as an order. At that time, more information will be needed to complete the transaction.

The **objective** of this project is to develop a general-purpose e-commerce store where any product (such as books, CDs, computers, mobile phones, electronic items, and home appliances) can be bought from the comfort of home through the Internet.

A good e-commerce site should present the following factors to the customers for better usability:

- Knowing when an item was saved or not saved in the shopping cart.
- Returning to different parts of the site after adding an item to the shopping cart.
- Easy scanning and selecting items in a list.
- Effective categorical organization of products.

DESIGN FLOW/PROCESS

Database Design:

Products Model: Contains information about each product, such as Name, Image, price, description, Average rating, Author, and Reviews.

```
const productSchema = new mongoose.Schema({
  name: {
    type: String,
    trim: true,
    required: true
  },
  img: {
    type: String,
    trim: true,
    default: '/images/product.jpg'
  },
  price: {
    type: Number,
    min: 0,
    default: 0
  },
  desc: {
    type: String,
    trim: true
  },
  avgRating: {
    type: Number,
    default: 0
  },
  author: {
    type: mongoose.Schema.Types.ObjectId,
    ref: 'User'
  },
  reviews: [
    {
      type: mongoose.Schema.Types.ObjectId,
      ref: 'Review'
    }
  ]
});
```

Review Model: Contains reviews submitted by users. Fields include rating, comment, timestamp, etc.

```
const mongoose = require('mongoose');

const reviewSchema = new mongoose.Schema({
  rating: {
    type: Number,
    min: 0,
    max: 5,
  },
  comment: {
    type: String,
    trim: true,
  }
}, {timestamps: true});

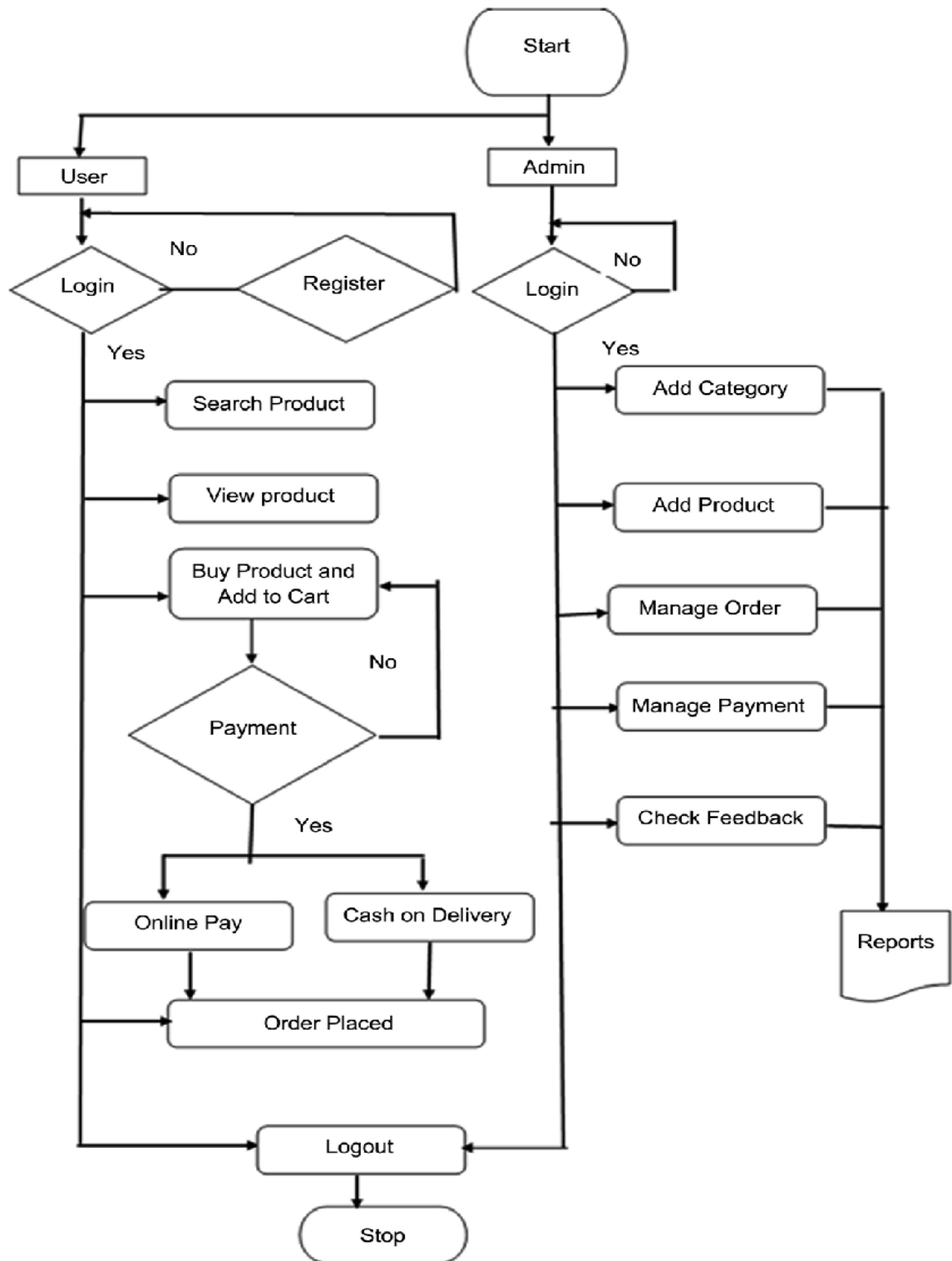
const Review = mongoose.model('Review', reviewSchema);

module.exports = Review;
```


User Model: Stores user information like Email, Username, Password, Cart, Wishlist.

```
const userSchema = new mongoose.Schema({
  email: {
    type: String,
    trim: true,
    required: true
  },
  role: {
    type: String,
    default: 'buyer'
  },
  cart: [
    {
      type: mongoose.Schema.Types.ObjectId,
      ref: 'Product'
    }
  ],
  wishlist: [
    {
      type: mongoose.Schema.Types.ObjectId,
      ref: 'Product'
    }
  ]
})
```

Flow Chart



RESULTS ANALYSIS AND VALIDATION

1. Authentication Testing:

Test user registration, login, logout functionalities.

Verify authentication tokens or sessions.

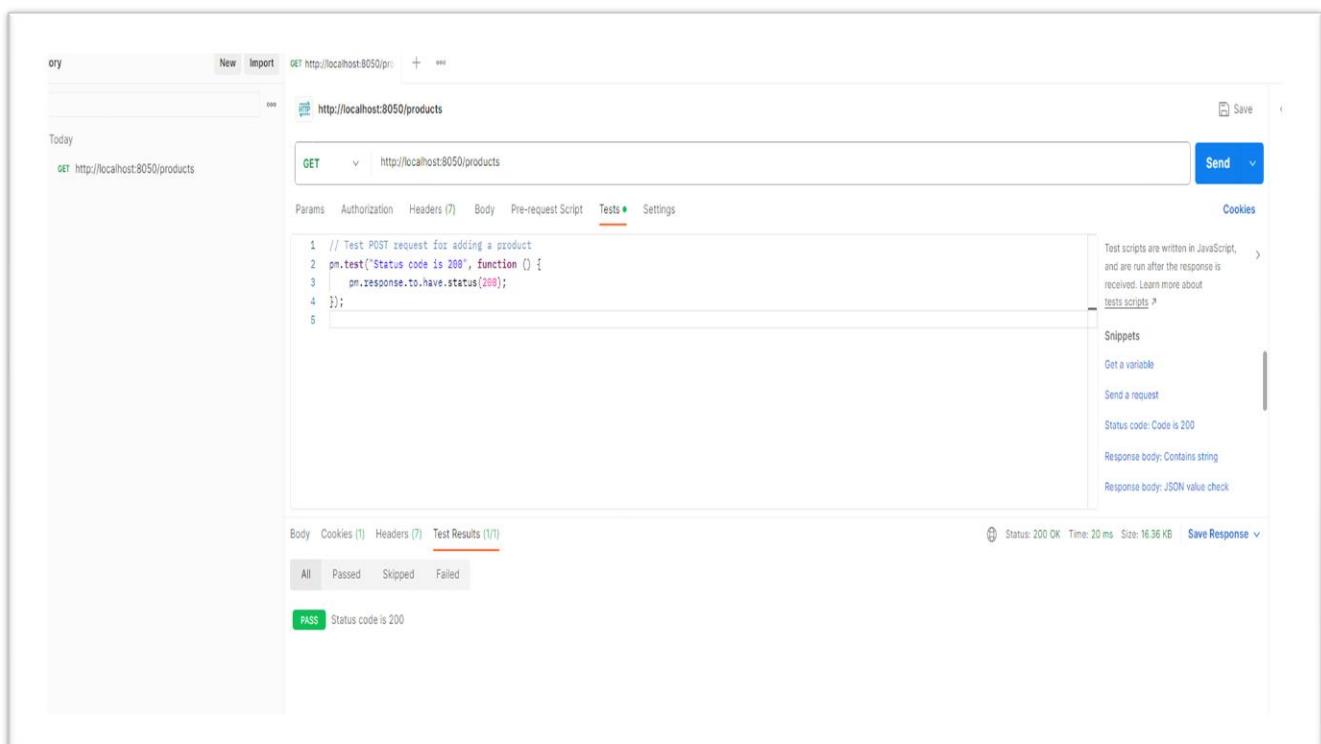
2. Product Testing:

Test CRUD (Create, Read, Update, Delete)

operations for products. Ensure proper

authorization checks (e.g. only admins can create /update/ delete products).

Postman Testing and Results



Implementation of Solution

Modern engineering tools are utilized to implement the chosen design. This includes the creation of analysis reports, design drawings, schematics, solid models, and testing protocols. The chapter provides insights into the project management and communication strategies employed during the implementation phase.

CONCLUSION

This e-commerce project successfully met its objectives by delivering a robust and user-friendly platform that streamlined the online shopping experience. Despite facing challenges such as User Experience Optimization, Security Concerns. The project team effectively mitigated these issues through employing robust encryption protocols and conducting usability tests, gathered user feedback, and iteratively improved the UI/UX design based on user preferences and behavior.

Future Work

1.Feature Enhancement: Continued

refinement of Shop Bazaar involves feature Enhancement. The team aims to iterate on the application, incorporating additional functionalities that enhance the overall user experience.

2.Technological Advancements: To stay at the forefront of innovation, future work will entail staying abreast of technological stack, ensuring that Shop-bazaar remains compatible with the latest frameworks and industry standards.

REFERENCES

- Coding Blocks Website and Tutorials
<https://online.codingblocks.com/app/app/classroom>
- Bootstrap Documentation
<https://getbootstrap.com/docs/4.0/components>
- Express Documentation
<https://expressjs.com/en/5x/api.html>

Git Hub Links

1. <https://github.com/Piyushvarshney12/Mini-Project>
2. https://github.com/PrakharMittal-79/MINI_PROJECT
3. https://github.com/Shantanu3Singh/Mini_Project
4. <https://github.com/TechHarsh0210/E-Commerce>

Video-Link

<https://drive.google.com/file/d/10vOVNn4eJy3WgvyT4VL25SGTLrfr08Jx/view?usp=sharing>

