**A**

**Project Report**

**On**

**“QuizTrail: A Comprehensive Platform for Online Quiz Practice”**

Submitted To

**Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur**

In the Partial Fulfillment of

**B.Com(Computer Application)-III Year**

Submitted by

**Ms. Pranjal Omprakash Selukar**

**B.C.C.A.-III**

Under the Guidance of

**Asst. Prof. Rupali Waghmare**

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**\*2024-2025\***

**L.A.D. & Smt. R. P. College for Women,**

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**CERTIFICATE**

**(2024 – 2025)**

This is to certify that **“Ms. Shreya R. Nimje”** have successfully completed the project on **“Interactive MCQ-based Assessment System”** prescribe by the **Rashtrasant Tukdoji Maharaj Nagpur University** for the **Degree of B. Com (Computer Application) –III Year (Semester VI)** course in **L.A.D. & Smt. R. P. College for Women, Nagpur** in the year **2024 – 2025.**

It is further to certify that this project work done under my supervision and guidance, has undergone the requisite hours prescribed by RTM Nagpur University.

**Asst.Prof. Rupali Waghmare Dr. Bhavana Khapekar**

**(Project Guide) (Head, Faculty of Commerce and Management)**

**Signature Signature**

**Internal Examiner External Examiner**

**Date:**

**Place: Nagpur**

**DECLARATION**

I **“Ms. Pranjal Omprakash Selukar”** hereby honestly declare that the work entitled “**QuizTrail: A Comprehensive Platform for Online Quiz Practice”** developed and submitted by me is my original work. The system presented herein is developed by me independently and has not been duplicated from any other source.

This project submitted by me at the **L.A.D. & Smt. R. P. College for Women, Nagpur** in partial fulfillment of requirement for the award of Bachelor Degree of **B.Com (Computer Application) – III Year (Semester – VI)** of **RTM Nagpur University, Nagpur** has not been submitted elsewhere for the award of any other degree during the academic session **2024 – 2025.**

**Submitted by**

**Ms. Pranjal O. Selukar**

**Date:**

**Place: Nagpur**

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**Introduction**

The evolution of digital commerce has revolutionized the home textile industry, offering consumers greater convenience, variety, and customization. Traditional shopping experiences have been enhanced or replaced by online platforms that provide seamless browsing, secure transactions, and doorstep delivery. **KUNJI** is an innovative e-commerce platform specializing in premium textile products, catering to customers who seek high-quality home essentials such as **rugs, curtains, pillow covers, bedsheets, comforters, sofa covers, carpets, and throw pillows**. In recent years, the demand for online home décor and textiles has surged due to the growing preference for personalized interiors, sustainable materials, and easy access to global trends. However, many existing platforms struggle with product quality, user experience, and customization options.

**KUNJI** aims to bridge this gap by offering a curated selection of **luxurious, eco-friendly, and durable** textile products through a **user-friendly interface** powered by **Helios-based UI, Node.js (Express.js), and MySQL**. The integration of **high-quality images, secure payment options, and well-organized product categories** ensures a seamless and engaging shopping experience. Additionally, technological advancements such as AI-powered recommendations, data-driven inventory management, and mobile accessibility have enhanced the e-commerce landscape, making it more dynamic and customer-centric. **KUNJI** leverages these innovations to create a **holistic and efficient shopping ecosystem**, allowing customers to transform their living spaces effortlessly while prioritizing sustainability, comfort, and style.

**Obectives**

 **Provide High-Quality Home Textiles** – Offer a wide range of premium textile products, including rugs, curtains, pillow covers, bedsheets, comforters, sofa covers, carpets, and throw pillows, ensuring durability and elegance.

 **Enhance Online Shopping Experience** – Develop a **user-friendly and intuitive** e-commerce platform with seamless navigation, high-quality visuals, and an engaging interface using **Helios-based UI, Node.js (Express.js), and MySQL**.

 **Ensure Secure and Convenient Transactions** – Implement a **secure payment system** that supports multiple payment methods, ensuring a hassle-free and safe shopping experience.

 **Promote Sustainable and Ethical Practices** – Prioritize **eco-friendly materials** and ethical sourcing to contribute to environmental sustainability while maintaining superior product quality.

 **Optimize Product Categorization and Accessibility** – Organize products into well-defined categories (**Drawing Room, Kitchen, Bedroom, Wardrobe, and Bathroom**) for easy browsing and selection.

 **Leverage Technology for Personalization** – Utilize **AI-driven recommendations and data analytics** to provide a personalized shopping experience tailored to individual customer preferences.

 **Expand Market Reach and Customer Engagement** – Establish **brand identity and trust** through digital marketing, customer support, and engagement strategies to reach a broader audience.

 **Ensure Efficient Inventory and Order Management** – Integrate **real-time inventory tracking** and streamlined order processing to enhance operational efficiency and reduce delays.

 **Offer Competitive Pricing and Promotions** – Provide cost-effective pricing strategies, discounts, and seasonal promotions to attract and retain customers.

 **Deliver an Exceptional Customer Experience** – Focus on responsive customer service, easy returns, and after-sales support to build long-term customer relationships and loyal

**Preliminary System Analysis**

### ****Preliminary Investigation****

* **Purpose:** To develop **KUNJI**, an e-commerce platform for high-quality home textiles.
* **Objective:** Provide a **secure, user-friendly, and well-organized** shopping experience.
* **Market Demand:** Growing interest in **premium home décor products** and the need for a **dedicated platform**.
* **Challenges Addressed:** Poor navigation, lack of personalization, and inefficient transaction security in existing systems.

### ****Present System in Use****

* **Physical Retail Stores:** Customers visit stores for **textile products**, limiting convenience.
* **Third-Party Marketplaces:** Some brands sell on platforms like **Amazon, Etsy, and Flipkart**, but lack brand-specific customization.
* **Social Media Sales:** Businesses use **Instagram, Facebook, and WhatsApp**, but face **ordering inefficiencies and payment risks**.
* **Existing E-commerce Websites:** Many are **generic**, with **poor categorization, weak search functionality, and security concerns**.
* **Limited Customer Support:** Current systems struggle with **returns, tracking, and inquiries**, reducing customer satisfaction.

### ****Flaws in the Present System****

1. **Limited Accessibility** – Customers must visit physical stores or navigate multiple platforms to find desired products.
2. **Poor Organization** – Many online stores lack a well-structured categorization, making it hard to find specific home textile items.
3. **Lack of Secure Payment Options** – Many platforms face issues with **transaction security**, leading to trust concerns among users.
4. **Minimal Personalization** – Existing systems do not provide AI-driven recommendations, resulting in a generic shopping experience.
5. **Inefficient Order & Inventory Management** – Many platforms struggle with **stock tracking** and timely updates, causing purchase delays.
6. **Customer Service Challenges** – Poor after-sales support and difficult return processes create frustration for users.

### ****Need for the New System****

To overcome these limitations, KUNJI aims to provide a **dedicated, feature-rich e-commerce platform** that ensures:

* **Seamless browsing** with clear categorization (**Drawing Room, Kitchen, Bedroom, Wardrobe, and Bathroom**).
* **Secure and efficient transactions** with **multiple payment options**.
* **AI-powered product recommendations** for a **personalized shopping experience**.
* **Efficient inventory management** to reduce stock-out situations and delays.
* **User-friendly UI with Helios design template** for a visually appealing and interactive shopping experience.
* **Improved customer support** for inquiries, returns, and feedback.

### ****Feasibility Study****

The feasibility study evaluates whether the development of KUNJI is viable across different aspects:

1. **Technical Feasibility** – The system will be developed using **Node.js (Express.js) for backend and MySQL for database management**, ensuring a **robust and scalable** architecture. The **Helios-based UI** will enhance the **front-end experience**.
2. **Economic Feasibility** – KUNJI is a cost-effective solution compared to third-party marketplace fees. It minimizes operational costs by integrating **automated inventory and order management**.
3. **Operational Feasibility** – The platform is **designed to be user-friendly**, ensuring that customers can easily navigate, search, and purchase products. Admins will have **efficient control over product listings, orders, and customer queries**.
4. **Legal & Security Feasibility** – The platform will comply with **data protection and e-commerce regulations**, ensuring secure transactions and user privacy.
5. **Schedule Feasibility** – The project follows a **structured development plan**, ensuring timely implementation and testing before launch.

### ****Project Category****

KUNJI falls under the category of **E-commerce and Retail Management System**. It is an **online shopping platform** specifically designed for **home textiles**, offering customers a seamless and personalized shopping experience. The project also integrates aspects of **web development, database management, inventory control, secure transactions, and customer service automation**.

### ****Preliminary Investigation****

* **Purpose:** To develop **KUNJI**, an e-commerce platform for high-quality home textiles.
* **Objective:** Provide a **secure, user-friendly, and well-organized** shopping experience.
* **Market Demand:** Growing interest in **premium home décor products** and the need for a **dedicated platform**.
* **Challenges Addressed:** Poor navigation, lack of personalization, and inefficient transaction security in existing systems.

### ****Present System in Use****

* **Physical Retail Stores:** Customers visit stores for **textile products**, limiting convenience.
* **Social Media Sales:** Businesses use **Instagram, Facebook, and WhatsApp**, but face **ordering inefficiencies and payment risks**.
* **Existing E-commerce Websites:** Many are **generic**, with **poor categorization, weak search functionality, and security concerns**.
* **Limited Customer Support:** Current systems struggle with **returns, tracking, and inquiries**, reducing customer satisfaction.

**Software Engineering and Paradigm Applied**

### ****Software Engineering and Paradigm Applied****

* **Development Approach:** The system follows the **structured software development lifecycle (SDLC)** using the **Waterfall Model** for clear phase-wise execution.
* **Paradigm Used:**
  + **Object-Oriented Programming (OOP):** Ensures modularity, reusability, and scalability.
  + **Model-View-Controller (MVC) Architecture:** Separates concerns for better maintainability and flexibility.
  + **Agile Principles:** Some agile elements are considered for iterative improvements.

### ****Modules****

### ****System / Module Chart****

**Software and Hardware Requirement Specification**

KUNJI is an e-commerce platform for textile products, requiring a robust combination of software and hardware to ensure optimal performance, security, and scalability.

## ****1. Software Requirements****

### ****a) Frontend Technologies****

* **HTML5 & CSS3** – For structure and styling (Helios template).
* **JavaScript & jQuery** – For interactivity and dynamic content.

### ****b) Backend Technologies****

* **Node.js (Express.js)** – For server-side logic and API handling.
* **MySQL** – Relational database for storing product, user, and order data.
* **JWT (JSON Web Token)** – For user authentication and session management.

### ****c) Development & Deployment Tools****

* **Visual Studio Code** – Primary IDE for coding.
* **Postman** – For API testing.
* **Git & GitHub** – Version control system.
* **Nginx/Apache** – Web server for hosting the application.
* **AWS/Azure/DigitalOcean (Optional)** – Cloud deployment.

### ****d) Payment Integration****

* **Razorpay / Stripe / PayPal** – Secure payment processing.

### ****e) Security & Performance Enhancements****

* **bcrypt.js** – For password hashing.
* **Helmet.js & CORS** – For securing API endpoints.
* **Redis / Memcached** – Caching system for fast data retrieval.

## ****2. Hardware Requirements****

### ****a) Development Machine****

* **Processor:** Intel i5/i7 or AMD Ryzen 5/7 (or higher).
* **RAM:** Minimum 8GB (Recommended 16GB for smooth performance).
* **Storage:** 256GB SSD (Recommended 512GB SSD for fast operations).
* **Graphics Card:** Integrated GPU is sufficient.

### ****b) Server Requirements (For Deployment)****

* **Processor:** Intel Xeon / AMD EPYC (Multi-core preferred).
* **Bandwidth:** High-speed internet connection for smooth user experience.
* **Operating System:** Ubuntu 20.04 LTS / CentOS 7 (For deployment).
* **Detail System Analysis**

**Detail System Analysis**

### ****Detailed System Analysis for KUNJI****

This document provides an in-depth system analysis of the **KUNJI Textile E-commerce Platform**, including **data flow diagrams (DFD)**, **module breakdowns**, **data structures**, and an **entity-relationship diagram (ERD)**.

## ****1. Data Flow Diagram (DFD)****

### ****DFD Level 0 (Context Diagram)****

The **context diagram** shows the system’s interaction with external entities.

**Entities:**

* **User** → Interacts with the system (browsing, shopping, payments)
* **Admin** → Manages products and orders
* **Payment Gateway** → Handles online transactions
* **Database** → Stores user, product, and order data

**Processes:**

1. User Registration/Login
2. Product Browsing
3. Cart Management
4. Order Placement
5. Payment Processing
6. Order Confirmation & Tracking

### ****DFD Level 1 (High-Level Overview)****

Each main process is further divided into sub-processes:

1. **User Authentication Module**
   * User enters credentials → System verifies details → Grants access
   * Sign-up process → Stores details in **Users Table**
2. **Product Browsing Module**
   * User selects a category (Drawing Room, Kitchen, Bedroom, etc.)
   * System fetches data from **Products Table** and displays it
3. **Cart & Order Module**
   * User adds products to cart → Data stored in **Cart Table**
   * User proceeds to checkout → Order saved in **Orders Table**
4. **Payment Module**
   * User selects payment method → Payment Gateway verifies transaction
   * On success, updates **Payments Table** and confirms order
5. **Admin Module**
   * Admin can add/remove products, manage orders, and update stock

## ****2. Number of Modules and Process Logic****

### ****Modules & Functionalities****

1. **Home Page** (index.html)
   * Displays brand introduction and featured products.
2. **Connect**
   * **Sign Up (sign.html)** → New users register.
   * **Login (login.html)** → Authentication for returning users.
   * **Reviews Section** → Users submit and read reviews.
3. **Product Category Module**
   * **Drawing Room (drawingroom.html)**
   * **Kitchen (kitchen.html)**
   * **Bedroom (bedroom.html)**
   * Each category fetches and displays products dynamically.
4. **About**
   * About us.
5. **Contact Page (contact.html)**
   * Users submit inquiries or feedback.

## ****3. Data Structures and Tables****

### ****Database Schema (MySQL)****

#### ****Users Table****

| **Column** | **Type** | **Description** |
| --- | --- | --- |
| user\_id | INT (PK) | Unique ID for users |
| name | VARCHAR(255) | User's full name |
| email | VARCHAR(255) | User's email (unique) |
| password | VARCHAR(255) | Encrypted password |
| created\_at | TIMESTAMP | Account creation date |

#### ****Products Table****

| **Column** | **Type** | **Description** |
| --- | --- | --- |
| product\_id | INT (PK) | Unique product ID |
| name | VARCHAR(255) | Product name |
| category | VARCHAR(100) | Product category (e.g., Kitchen) |
| price | DECIMAL(10,2) | Product price |
| stock | INT | Available stock |
| image | VARCHAR(255) | Image URL |

#### ****Payments Table****

| **Column** | **Type** | **Description** |
| --- | --- | --- |
| payment\_id | INT (PK) | Unique payment ID |
| order\_id | INT (FK) | Linked order |
| user\_id | INT (FK) | User who made payment |
| amount | DECIMAL(10,2) | Payment amount |
| status | ENUM(Success, Failed) | Payment status |

## ****4. Entity-Relationship Diagram (ERD)****