DATABASE MANAGEMENT SYSTEM (DBMS) PROJECT REPORT

ONLINE RETAILER MANAGEMENT SYSTEM

Project Title: Online Retailer Management System
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ABSTRACT

The **Online Retailer Management System** is a web-based application that allows **retailers to register and list products**, while **users can browse and purchase** them. The project aims to simplify online selling and buying through a structured **database-driven approach**.

This system is built using **ReactJS for the frontend, Node.js for the backend, and MySQL for data management**. The application ensures secure user authentication and a streamlined shopping experience. The project effectively manages **user, retailer, and product information** while ensuring efficient data retrieval and storage.

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1. INTRODUCTION

1.1 Background of the Project

The growth of **e-commerce platforms** has changed the way businesses operate. Many small retailers struggle to establish an online presence due to **complex website development** and high costs. This project provides an **affordable, easy-to-use solution** where **retailers can list products and users can purchase them conveniently**.

1.2 Objectives

- Develop an **interactive, web-based platform** for online retailing.
- Allow **retailers to register, add, and manage products**.
- Enable **users to browse products, add them to a cart, and place orders**.
- Ensure **secure authentication** for both users and retailers.
- Store and manage data **efficiently using MySQL**.

1.3 Scope of the Project

- **Retailers can register, log in, add, and manage products.**
- **Users can register, log in, browse, and purchase products.**
- **Data is securely stored in MySQL and accessed via APIs.**
- **The system is built using ReactJS (frontend) and Node.js (backend).**

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2. SYSTEM ANALYSIS

2.1 Problem Statement

Retailers often face difficulties in setting up an **online store**. Managing inventory, handling customer interactions, and ensuring a **smooth shopping experience** can be challenging. This project **simplifies the process** by providing a **structured online system** for retailers and users.

2.2 Functional and Non-Functional Requirements

Functional Requirements

User Registration & Login
Retailer Registration & Login
Retailers can **add and manage products**
Users can **browse, add to cart, and purchase**
MySQL stores **users, retailers, and product details**

Non-Functional Requirements

Secure authentication & data storage
User-friendly **UI and navigation**
Efficient database queries for **fast responses**

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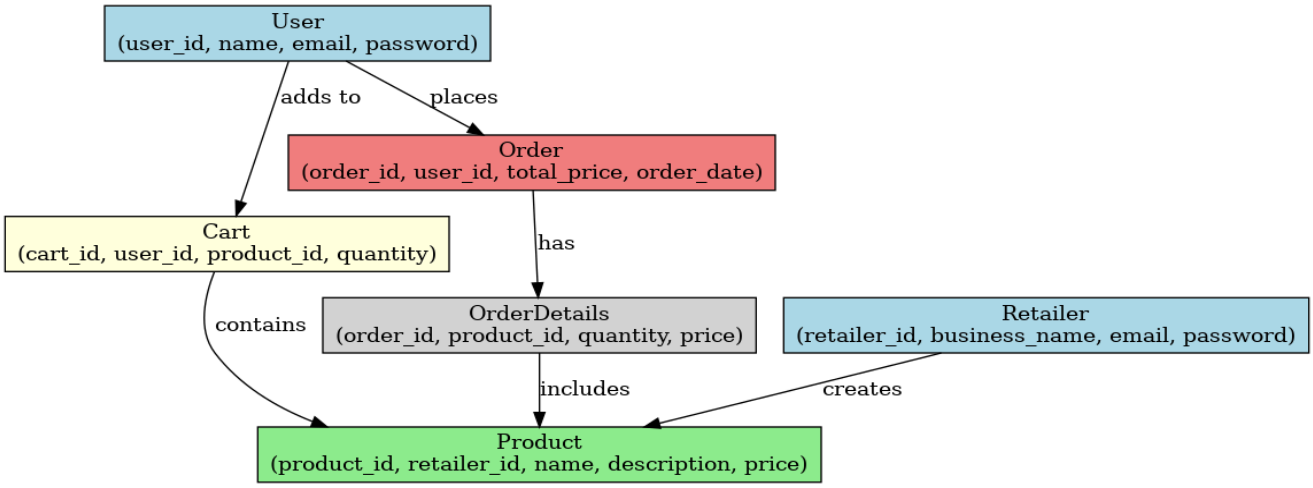
3. SYSTEM DESIGN

3.1 ER Diagram

Here's the **Entity-Relationship (ER) Diagram** for the project:

ER Diagram for Online Retailer Management System



3.2 Schema Design

Retailer Table

Column Name	Data Type	Description
id	INT (PK)	Unique ID for each retailer
businessName	VARCHAR	Name of the retailer
email	VARCHAR	Retailer's email (unique)
password	VARCHAR	Encrypted password

User Table

Column Name	Data Type	Description
id	INT (PK)	Unique ID for user
name	VARCHAR	Full name of the user
email	VARCHAR	Unique user email
password	VARCHAR	Encrypted password

Product Table

Column Name	Data Type	Description
id	INT (PK)	Unique product ID
retailer_id	INT (FK)	Retailer who listed it

name	VARCHAR	Product name
description	TEXT	Product description
price	DECIMAL	Product price

Cart Table

Column Name	Data Type	Description
id	INT (PK)	Unique cart ID
user_id	INT (FK)	User who owns the cart
product_id	INT (FK)	Product added to cart
quantity	INT	Quantity of product

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4. IMPLEMENTATION

4.1 Technologies Used

- **Frontend:** ReactJS
- **Backend:** Node.js + Express.js
- **Database:** MySQL

4.2 System Architecture

Frontend: ReactJS – Manages UI, user interactions
Backend: Node.js + Express – Handles API requests
Database: MySQL – Stores users, retailers, and products

4.3 Modules and Their Description

✔ **User Module:** User Registration, Login, Cart, and Purchase
✔ **Retailer Module:** Registration, Product Management
✔ **Cart Module:** Add to Cart, Remove from Cart, Checkout

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5. RESULTS AND DISCUSSION

5.1 Analysis of Outcomes

- The system successfully **allows users to browse and purchase products**.
- **Retailers can create and manage their product listings**.
- **MySQL efficiently stores and retrieves data**.
- The project provides a **fully functional online retail system**.

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6. CONCLUSION AND FUTURE SCOPE

6.1 Summary of Findings

The **Online Retailer Management System** provides a **structured platform for online retailing**, offering features such as **product listings, cart functionality, and secure authentication**. **Retailers can manage their products**, and **users can shop efficiently**.

6.2 Future Scope

Add **payment gateway** for online payments
Improve UI with **better design and animations**
Implement **order tracking and delivery management**

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7. REFERENCES

- ReactJS Documentation (react.dev)
- Node.js Official Docs (nodejs.org)
- MySQL Documentation (dev.mysql.com)
- Express.js Guide (expressjs.com)