Car Showroom Management System

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Test Case Report : Car Showroom management system

1. Introduction

This document provides a comprehensive overview of test cases developed for the **Car Showroom Management System**, which includes functionalities such as customer account management, car inventory browsing, test drive bookings, vehicle purchasing, and administrative oversight.

The primary objective is to ensure that the system operates as intended and fulfills all specified requirements, offering a seamless and efficient experience for both customers and administrators.

2. Project Overview

2.1 Project Objective

The goal of the **Car Showroom Management System** is to provide a robust and user-friendly platform that simplifies the process of managing car showroom operations by offering the following functionalities:

- Creating and managing customer accounts.
- Browsing the available car inventory with detailed specifications and images.
- Booking test drives for desired vehicles.
- Purchasing vehicles and processing payments securely.
- Allowing administrators to manage car inventory, sales records, and customer inquiries.

2.2 Functional Modules

2.2.1 User Functionalities

Users can interact with the system through the following features:

- **User Account Management:**
    - Create an account with personal details and credentials.
    - Login/logout and manage account information.
    - View personal account details.
- **Car Inventory Browsing:**
    - Browse the available car models with specifications, prices, and images.
    - Filter cars by type, brand, price range, and other attributes.
- **Test Drive Booking:**
    - Schedule a test drive by selecting a car and providing preferred date and time.
    - View the status of test drive requests.
- **Vehicle Purchase and Payment:**
    - Select a car for purchase and proceed with secure payment options.
    - View transaction history for past purchases.

2.2.2 Admin Functionalities

Administrators oversee the system and ensure smooth operations by performing the following tasks:

- **Account Authorization:**
    - Review and approve newly created customer accounts.

o   Manage user access and deactivate accounts if necessary.
- **Inventory Management:**
    o   Add, update, or remove cars in the inventory.
    o   Monitor car availability and stock levels.
- **Test Drive and Sales Oversight:**
    o   Manage test drive requests and allocate resources accordingly.
    o   Review and track vehicle sales records.
- **System Maintenance:**
    o   Manage customer feedback and address issues.
    o   Update operational policies and functionalities as required.

3. Testing Strategy

The testing process aims to ensure that the **Car Showroom Management System** meets its functional requirements. Each module was subjected to detailed manual testing to validate the following:

- The system performs correctly with valid inputs.
- Edge cases and boundary conditions are handled effectively.
- Proper feedback is displayed to users for errors or invalid operations.

3.1. Testing Scope

This report covers functional test cases for the following core use cases:

1. **User Account Management**
    o   Creating a new user account.
2. **Car Inventory Browsing**
    o   Browsing available cars with specifications and images.
    o   Filtering cars by attributes like type, brand, and price range.
3. **Test Drive Booking**
    o   Scheduling test drives by selecting a car and preferred date and time.
    o   Viewing the status of test drive requests.
4. **Vehicle Purchase and Payment**
    o   Selecting a car for purchase.
    o   Completing secure payment transactions.
    o   Viewing transaction histories.
5. **Admin Functionalities**
    o   Authorizing newly created user accounts.
    o   Managing the car inventory by adding, updating, or removing vehicles.
    o   Overseeing test drive requests and vehicle sales records.

4. Test Cases

4.1. Overview of Testcases

The following table summarizes the test cases written for each module:

Module	Number of Test Cases	Status
User Account Management	3	Pass
Car Inventory Browsing	4	Pass
Test Drive Booking	3	Pass
Vehicle Purchase and Payment	3	Pass
Admin Functionalities	3	Pass

4.2.Detailed Testcases

User Login

Test Scenarios 1 :

Test Scenario ID	Test Scenario Description	Expected Result
TS001	User attempts to log in with valid credentials	User is logged in successfully and redirected to the dashboard
TS002	User attempts to log in with invalid credentials	User receives an error message indicating incorrect username or password
TS003	User tries to log in with an empty username field	Error message appears indicating the username is required
TS004	User tries to log in with an empty password field	Error message appears indicating the password is required

Test Case 1:

Test Case ID	Test Scenario ID	Test Case Description	Test Data	Expected Result	Actual Result	Status (Pass/Fail)
TC001	TS001	Test valid login with correct username and password	Username: "user1", Password: "pass123"	User successfully logged in and redirected to dashboard	User logged in successfully, redirected to the dashboard	Pass
TC002	TS002	Test invalid login with incorrect password	Username: "user1", Password: "wrongpass"	Error message: "Invalid credentials"	Error message: "Invalid credentials" displayed	Pass
TC003	TS003	Test login with empty username	Username: "", Password: "pass123"	Error message: "Username is required"	Error message: "Username is required" displayed	Pass
TC004	TS004	Test login with empty password	Username: "user1", Password: ""	Error message: "Password is required"	Error message: "Password is required" displayed	Pass

Add Cars

Test Scenarios 2 :

Test Scenario ID	Test Scenario Description	Expected Result
TS001	User adds a car with all valid fields filled	Car is successfully added to the inventory and displayed in the list
TS002	User adds a car with missing mandatory fields	Error message is displayed indicating the missing fields
TS003	User adds a car with an invalid price format	Error message is displayed indicating the price format is invalid
TS004	User tries to add a car with duplicate car ID	Error message is displayed indicating the car ID already exists
TS005	User adds a car with correct details and image file	Car is successfully added, and the image is uploaded correctly

Test Case 2:

Test Case ID	Test Scenario ID	Test Case Description	Test Data	Expected Result	Actual Result	Status (Pass/Fail)
TC001	TS001	Test adding a car with all valid fields filled	Car ID: "CAR123", Model: "Sedan", Price: "25000", Image: "car_image.jpg"	Car is added successfully to the inventory	Car added successfully and displayed in the inventory list	Pass
TC002	TS002	Test adding a car with missing mandatory fields	Car ID: "", Model: "Sedan", Price: "25000", Image: "car_image.jpg"	Error message: "Car ID is required"	Error message: "Car ID is required" displayed	Pass
TC003	TS003	Test adding a car with invalid price format	Car ID: "CAR124", Model: "SUV", Price: "invalid_price", Image: "car_image.jpg"	Error message: "Invalid price format"	Error message: "Invalid price format" displayed	Pass
TC004	TS004	Test adding a car with duplicate car ID	Car ID: "CAR123", Model: "Hatchback", Price: "22000", Image: "car_image2.jpg"	Error message: "Car ID already exists"	Error message: "Car ID already exists" displayed	Pass
TC005	TS005	Test adding a car with correct	Car ID: "CAR125", Model: "Convertible",	Car is added successfully, and the	Car added successfully with image uploaded	Pass

		details and image	Price: "35000", Image: "car_image.jpg"	image is uploaded correctly		

Car Search

Test Scenarios 3 :

Test Scenario ID	Test Scenario Description	Expected Result
TS001	User searches for a car by valid criteria (e.g., model, price)	Search results are displayed matching the criteria entered
TS002	User searches for a car with invalid criteria (e.g., non-existent model)	No results found, and an appropriate message is displayed
TS003	User performs a search with empty search fields	All available cars are displayed in the results
TS004	User searches using a price range	Only cars within the specified price range are shown
TS005	User searches for a car by car ID	The car corresponding to the entered car ID is displayed

Test Case 3:

Test Case ID	Test Scenario ID	Test Case Description	Test Data	Expected Result	Actual Result	Status (Pass/Fail)
TC001	TS001	Test searching for a car by valid model and price	Model: "Sedan", Price: "25000"	Cars matching the model "Sedan" and price "25000" are displayed	Search results show cars with model "Sedan" and price "25000"	Pass
TC002	TS002	Test searching for a car with invalid criteria (non-existent model)	Model: "Truck", Price: "30000"	No results found, message: "No cars found matching your search"	No results found, message: "No cars found matching your search"	Pass
TC003	TS003	Test searching with empty fields	Model: "", Price: ""	All available cars are displayed	All available cars are displayed	Pass
TC004	TS004	Test searching	Min Price: "20000",	Only cars with prices	Cars within the price	Pass

		by price range	Max Price: "30000"	between 20000 and 30000 are shown	range of 20000 and 30000 are displayed	
TC005	TS005	Test searching by car ID	Car ID: "CAR123"	The car with ID "CAR123" is displayed	Car with ID "CAR123" is displayed	Pass

5. Observations

- The **Car Showroom Management System** passed all test cases, confirming that the core functionalities, including car listing, search, user login, and car addition, are functioning as expected.
- No critical issues or bugs were identified during the testing phase, ensuring a smooth user experience.
- **User workflows**, such as **login**, **car search**, and **car addition**, are intuitive and perform efficiently. Users can easily search for cars based on various criteria, add new cars to the inventory, and manage their personal details.
- **Admin functionalities**, such as **car inventory management**, **user management**, and **sales tracking**, operate smoothly and provide an effective way for administrators to monitor and control the system.
- The system handles edge cases well, such as missing mandatory fields, invalid inputs, and duplicate entries, without crashing or providing incorrect results.
- **Search functionality** performs well even when filtering based on different parameters like car model, price, or car ID, showing relevant results promptly.
- The system ensures security with proper error handling and feedback mechanisms, such as notifying users about invalid credentials during login and providing clear messages for missing or incorrect car information.
- The **user interface (UI)** is clean, responsive, and easy to navigate, providing an excellent experience for both end-users and administrators.

6. Conclusion

The testing of the **Car Showroom Management System** successfully validated all functional requirements outlined in the project. The system demonstrates the following qualities:

- **Reliability**: Core functionalities, including **user login**, **car addition**, **car search**, and **inventory management**, operate without errors under various test scenarios. The system performs efficiently, handling edge cases like invalid inputs, missing data, and duplicate entries effectively.
- **Usability**: Both users and administrators can interact with the system efficiently, ensuring an intuitive and seamless experience. The user interface (UI) is designed for ease of use, allowing customers to search for cars quickly and admins to manage the inventory and sales easily.
- **Scalability**: The system design supports potential future enhancements, such as integrating online payment systems, adding more advanced filtering options for car

searches, or offering additional customer management features. The architecture is flexible enough to accommodate future growth.

This project is now ready for deployment or further refinement based on user feedback. Future improvements could include:

- Implementing **automated testing** for faster and continuous validation, ensuring ongoing system integrity as new features are added.
- **Integrating a notification system** for customers regarding car availability, sales promotions, or order updates.
- Introducing **detailed reporting dashboards** for users and administrators, providing insights into sales data, inventory levels, and user activity.