**Vehicle Repair Management System Use Case Diagram**

To develop a vehicle repair management system, a use case diagram is essential. A use case diagram provides a high-level view of the system's functionalities, helping to identify the actors involved, their roles, and the interactions they have with the system. This blog post will delve into the importance of a use case diagram in the development of a vehicle repair management system, highlighting the benefits of having such a system and how it can help streamline the repair shop's operations. So, whether you are a repair shop owner or a software developer, read on to discover the significance of a use case diagram in developing a vehicle repair management system.

**About the Project**

Information Technology has become an integral part of any kind of business in terms of automating business operations and transactions. The capstone project, entitled “Vehicle Repair and Maintenance Management System” is designed for vehicle repair and maintenance management automation. The said project will automate the vehicle garage’s operations and daily transactions. The system will automate operations such as managing vehicle repair and maintenance records, invoice records, customer records, transaction records, billing and payment records, and transaction records.

Managing a vehicle repair shop can be a daunting task. There are numerous vehicles to manage, repair orders to process, and technicians to coordinate. To manage all these tasks efficiently, a vehicle repair management system can come in handy. A vehicle repair management system helps streamline all the processes involved in running a repair shop, from managing customer requests to assigning repair orders to technicians and tracking inventory.

**What is Use Case Diagram?**

A use case diagram is a graphical representation of a system that shows the interactions between actors and the system's functionalities. In the context of a Vehicle Repair Management System, a use case diagram helps to identify the various actors involved, their roles, and how they interact with the system. These actors could include customers, repair shop owners, technicians, and suppliers.

The purpose of a use case diagram in the research and software development of a Vehicle Repair Management System is to provide a clear and concise overview of the system's functionalities, helping developers to understand the requirements of the system and how different components of the system interact with each other. It also helps in identifying potential areas of improvement and making informed decisions regarding the system's design and development.

**Use Case Diagram**



Team Member

Dashboard

Customer Info

Task Info

Task Details

Payment

Admin





Invoice

SMS/Notification

Customer

Reports

Database Backup

Shown above is the Vehicle Repair Management System Use case diagram design. The system has three user sides, the admin, the team member and the customer. The admin can access the entire core modules of the system. The team member can access the Dashboard, Task Info, Task Details, and SMS/Notification while the Customer can access the Task Details, Payment and SMS Notification.

**Use Cases**

The following are the discussions that describe how a user uses a system to accomplish a particular goal.

**Use Case:** Dashboard

**Actor(s):** Admin and Team Member

**Description:**

This feature is used to manage the details displayed in the dashboard.

**Successful Completion:**

1. The admin can search, add, update and remove dashboard details.
2. The team members can use this feature to view information in the dashboard.

**Alternative:** The team members can only view the dashboard; admin can access all dashboard details and manage it.

**Precondition:** The admin and the team member will login to access and manage the dashboard.

**Post Condition:** updated dashboard details

**Use Case:** Customer Info

**Actor(s):** Admin

**Description:**

This feature is used to manage the personal profile of the customers in the system.

**Successful Completion:**

1. Admin can search, add, update and remove a customer data or profile.

**Alternative:** Admin can register new customers or can update data for old customer

**Precondition:** New customer for registration, existing customer for updating

**Post Condition:** accepted customer registration and updated customer profile

**Use Case:** Task Info

**Actor(s):** Admin and Team Member

**Description:**

This feature is used to manage the information of the tasks for the vehicle repairment.

**Successful Completion:**

1. The team members can view the tasks for the repair of a specific vehicle.
2. Admin can search, add, update and remove a task information.

**Alternative:** The team member can only view and search task information; Admin can access and manage all of the task information.

**Precondition:** The admin and the team members will login first to access and manage the task information.

**Post Condition:** updated task information

**Use Case:** Task Details

**Actor(s):** Admin, Team Member and Customer

**Description:**

This feature is used to manage the details of the task for the vehicle repair.

**Successful Completion:**

1. The team member can view and update status of the task.
2. The Customer can only view task details and its status.
3. Admin can search, add, update and remove a task details.

**Alternative:** The team member and the customer can only view and update status of the tasks; Admin can access and manage all of the task details.

**Precondition:** The admin, team members and customers will login first to access and manage the task details.

**Post Condition:** updated task details

**Use Case:** Payment

**Actor(s):** Admin and Customer

**Description:**

This feature is used to manage the payment of the customers.

**Successful Completion:**

1. Customers can upload a proof of payment (receipt, deposit slip, etc).
2. Admin can verify the payment done by the client.

**Alternative:** None

**Precondition:**

1. Customer will need to login first in order to access the feature.
2. Admin will need to login also to manage the payment transactions.

**Post Condition:** updated list of verified customer payment.

**Use Case:** Invoice

**Actor(s):** Admin

**Description:**

This feature is used to manage the invoice for the vehicle repair shop.

**Successful Completion:**

1. Admin can search, add, update and remove invoice data.

**Alternative:** None

**Precondition:** The admin will login first to access the invoice module.

**Post Condition:** updated invoice information

**Use Case:** SMS/Notification

**Actor(s):** Admin, Team Member and Customer

**Description:**

This feature is used to manage the details of the SMS/Notification details of the system.

**Successful Completion:**

1. The team member and the customer can view SMS/Notifications from the system.
2. Admin can search, add, update and remove SMS/Notification details.

**Alternative:** The team member and the customer can only view SMS/Notification; Admin can access and manage all of the SMS/Notification

**Precondition:** The admin, team members and customers will login first to access and manage the SMS/Notification module.

**Post Condition:** updated SMS/Notification details

**Use Case:** Reports

**Actor(s):** Admin

**Description:**

This feature is used to view and print the reports in the system.

**Successful Completion:**

1. Admin can view, print and export the report of the system.

**Alternative:** None

**Precondition:**

1. Admin will need to login to access the reports.

**Post Condition:** hard and soft copy of the report of the system.

**Use Case:** Database Backup

**Actor(s):** Admin

**Description:**

This feature is used to manage the backup database of the system.

**Successful Completion:**

1. The admin can add, edit, and update database backup information.

**Alternative:** None

**Precondition:** Admin will create and connect the backup database.

**Post Condition:** new backup database.

**Summary**

The capstone project, entitled “Vehicle Repair and Maintenance Management System” is designed for vehicle repair and maintenance management automation. The said project will automate the vehicle garage’s operations and daily transactions. Shown above is the Vehicle Repair Management System Use case diagram design. The system has three users, the admin, the team member and the customer. The admin can access the entire core modules of the system. The team member can access the Dashboard, Task Info, Task Details, and SMS/Notification while the Customer can access the Task Details, Payment and SMS Notification. In summary, a use case diagram plays a crucial role in the research and software development of a Vehicle Repair Management System, providing a visual representation of the system's functionalities and aiding in the understanding of the system's requirements and interactions.