

# **SOFTWARE ENGINEERING**

**Project Online Vehicle Showroom**

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# Online Vehicle Showroom

## Abstract

The “**Online Vehicle Showroom**” a web application is intended to provide complete solutions for vendors (Seller) as well as customers (Buyers) through a single gateway i.e. using the internet as the sole medium. It will enable vendors to put their vehicles online for shopping, customer to browse through the System and purchase the vehicles online without having to visit the showroom physically. If users fail to find the vehicle of their choice they can put their request, whenever vehicle of their choice is available, they will be informed by Email/ SMS. The system also provides the facility of advertisements and discussion forum as well.

## PROJECT OVERVIEW

This online system facilitates the users to sale and purchases their vehicles. Sellers who want to sale their vehicles they have to register and then provide their vehicle’s information from basic features to extra features along with vehicle’s photos. Buyers can view vehicle’s information of their choice. The system has following features:

### **User Registration**

Users have to register before buying, selling, placing ads, placing bids and taking part in discussion forum through user registration form.

### **Selling & Buying Vehicles**

Sellers provide their vehicle’s information from basic features to extra features along with vehicle’s photos. Buyers can view vehicle’s information of their choice.

### **Sending Email/SMS**

This module provides the facility to sellers/buyers to inform by e-mail as well as SMS. It means that whenever a buyer’s choice not found he/she can put request and if his/her choice is uploaded then the informed by email/SMS.

### **User Friendly Search**

This module provides the facility to visitors to search the vehicles of their particular choice.

No account management or registration is done for visitors.

If any visitor selects any vehicle to purchase then it will treat as a buyer and will be registered.

### **Discussion Forum**

Sellers and buyers can discuss their issues about vehicles such as price (actual market value), faults, fraud cases, vehicle industry updates, motor shows and related events etc.

### **Advertisements**

Any user can place advertisement including general ads, vehicle sale ad, vehicle buying ad and bid ad.

### **Web server:**

IIS (Internet Information server is used as a Web server)

### **Microsoft SQL Server**

To maintain information of the system SQL Database Server 2005 will be used.

### **Database:**

Database component is used to store the information of users and also, to maintain the log of sending and receiving Emails.

### Performance Requirements

- Response time for a sending and receiving the SMS and Emails - average: maximum: 30 seconds. A response time sending one E-mail or receiving one SMS.
- Throughput – an average of 2 transactions per minute.
- Capacity– the system can communicate with 100 mobile users at the same time.
- Degradation mode - If the system is degraded when we exceed 100 mobile users, we will remain in the normal mode of operation with longer response time.

### Safety Requirements

The following is a list of the safety requirements to indicate how the system shall prevent any possible threat to system. The system can send the E-mails to the required persons. The system should have ability to check for required person from the database.

### Security Requirements

The following is a list of security requirements that indicate how the system shall protect itself and its sensitive data and communications from accidental, malicious, or unauthorized access, use, modification, or destruction.

- The system shall not permit unauthorized persons to access or participate in any activity started by the server and client.
- The system shall not allow confidential data stored in the system's database to be accessed, whether directly or indirectly, by client (mobile) users.

**Only the authorized person can access the database connected with the Server. Access person can update or delete it.**

### Software Quality Attribute

#### Reliability

No interruption should be occurring while sharing information with each other.

#### Flexibility

Any module should be enhanced and added.

#### Performance & Ease of use

The Software will user friendly and enhance performance while conducting Risk Assessment.

#### Maintainability

Any module can be maintainable individually. The application will be easy to maintain and upgrade due to the use. The application will be developed in modular structure so it will be easy to manipulate the development process, testing, and maintainability.

#### Portability

The system can run on all kinds of mobile phones.

#### Database

System can have small database which can store the E-mail address as well as the phone numbers of corresponding E-mails. The database can also maintain the history of E-mail to SMS and SMS to E-mails conversions.

## Stake Holders

### Primary actor

1. Customer

### Secondary actors

1. Admin

2. Receptionist
3. Sales Manager
4. Mechanics
5. Cashier
6. Staff

## Requirement

### Functional

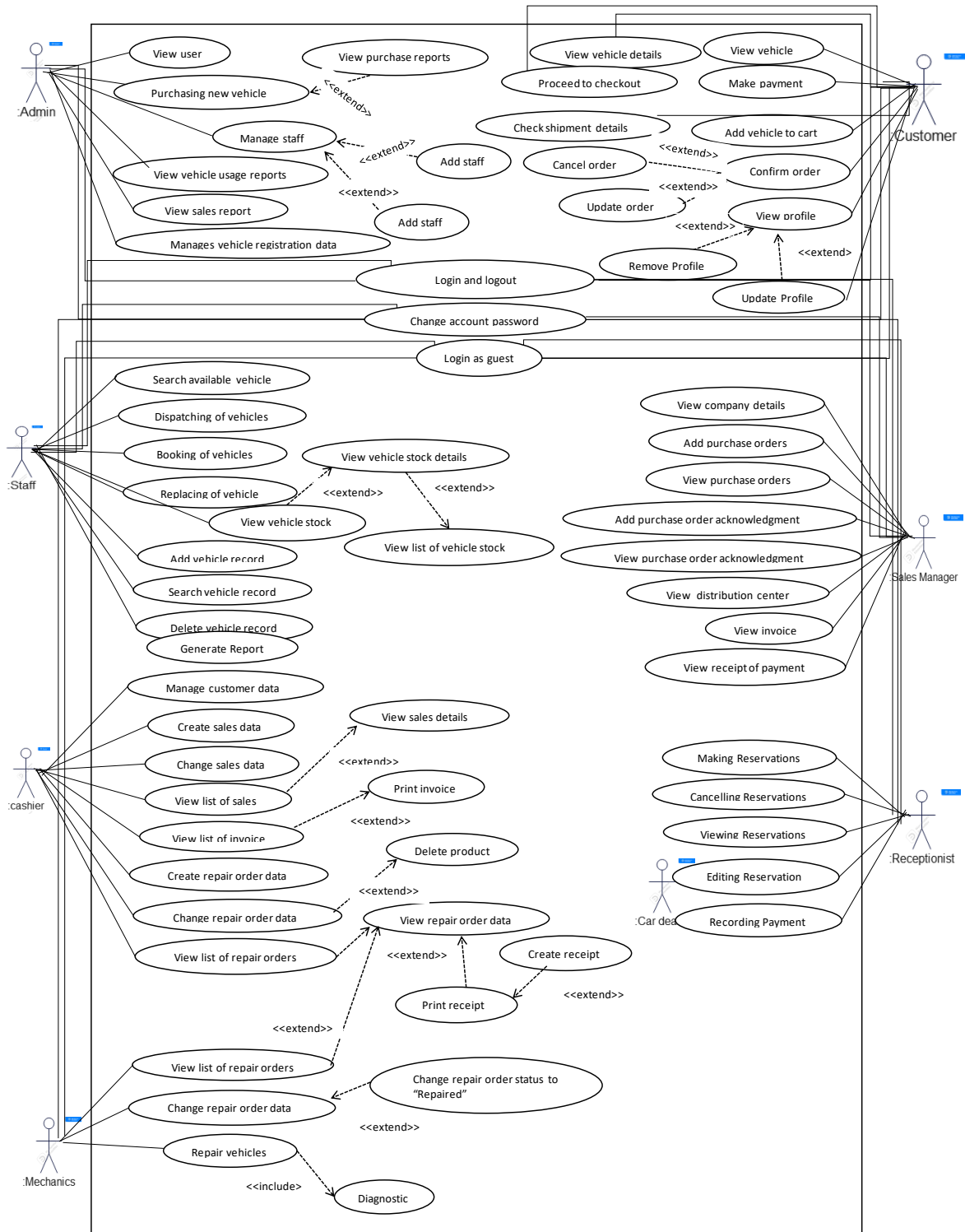
- Login Authentication
- View,Update,insert,delete (admin)
- Manage records
- Add to cart and checkout
- Transaction process
- Payment details
- Sales details
- Employee details
- Stock Details
- Third party integration
- Mobile friendliness
- Vehicles Specification

### Non-Functional

- Useability
- Security
- Performance
- Scalability
- Maintainability



# Usecase Diagram



## Fully Dressed UseCases

Admin

View User (Admin)

Use Case Section	Comment
Use Case name	View User
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Admin
Stake holder and their interest	<b>Admin:</b> The main Administrator. <b>Interest:</b> To Manage users.
Precondition	Admin Authentication.
Success guarantee	Admin will view users after authentication.
Main success scenario	See all user details.
Special requirement	Authorized admin.
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	Remove un-authorized users.

Manage Staff (Admin)

Use Case Section	Comment
Use Case name	Manage Staff
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Admin
Stake holder and their interest	<b>Admin:</b> The main Administrator. <b>Interest:</b> To Manage staff.
Precondition	Admin Authentication.
Success guarantee	Admin will view staff after authentication. Admin will manage staff data.
Main success scenario	Manage staff details.
Extension	Remove staff. Add staff.
Special requirement	Authorized admin.
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	When new staff join then add data, when remove then remove data.

Login and Logout admin (Admin)

Use Case Section	Comment
Use Case name	Login and Logout admin
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Admin
Stake holder and their interest	<b>Admin:</b> The main Administrator. <b>Interest:</b> Authorization
Precondition	Username, password.
Success guarantee	Admin authenticated and logged in to system.
Main success scenario	Admin Logged in. Admin logout.
Special requirement	Authorized admin data.
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	Admin details verified then logged in.

Change account password admin (Admin)

Use Case Section	Comment
Use Case name	Change account password admin
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Admin
Stake holder and their interest	<b>Admin:</b> The main Administrator. <b>Interest:</b> update password
Precondition	Authentication.
Success guarantee	Admin password updated.
Main success scenario	Admin password updated.
Special requirement	Authorized admin.
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	Admin can change their old password.

Add new vehicles (Admin)

Use Case Section	Comment
Use Case name	Add new vehicles
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Admin
Stake holder and their interest	<b>Admin:</b> The main Administrator. <b>Interest:</b> Add new vehicles for stock.
Precondition	Admin Authentication.
Success guarantee	Admin will purchase vehicles.
Main success scenario	Stock will be increase.
Extension	Create and view report.
Special requirement	Authorized admin.
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	When stock is going to be end the admin purchase new vehicles to fill up the needed stock.

[View vehicle usage report \(Admin\)](#)

Use Case Section	Comment
Use Case name	View Vehicle usage report
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Admin
Stake holder and their interest	<b>Admin:</b> The main Administrator. <b>Interest:</b> To inspect the vehicles.
Precondition	Admin Authentication.
Success guarantee	Admin will create a report about vehicle usage.
Main success scenario	Collected all data about vehicle performance.
Special requirement	Authorized admin.
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	When new vehicle came the admin inspect and check the usage report.

[View sales report \(Admin\)](#)

Use Case Section	Comment
Use Case name	View sales report.
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Admin
Stake holder and their interest	<b>Admin:</b> The main Administrator. <b>Interest:</b> To check sales report.
Precondition	Admin Authentication.
Success guarantee	Admin will view sales report to check performance.
Main success scenario	Admin will see the details of every sale.
Special requirement	Authorized admin.
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	Admin will see the sales report and add new methods to increase performance.



Manage Vehicles registration data (Admin)

Use Case Section	Comment
Use Case name	Manage vehicles registration data
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Admin
Stake holder and their interest	<b>Admin:</b> The main Administrator. <b>Interest:</b> To manage registration of vehicles.
Precondition	Admin Authentication.
Success guarantee	Admin will manage data of registered vehicles.
Main success scenario	Vehicle registration data will be saved.
Special requirement	Authorized admin.
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	Whenever new vehicle registered the admin will collect all the information and manages it together.

Customer

Register (Authorized customer)

Use Case Section	Comment
Use Case name	Register
Scope	Online Vehicle Showroom
Level	Sub function
Actor	customer
Stakeholders and their interest	<b>customer:</b> Pass username and password. <b>Interest:</b> To register themselves.
Precondition	Need username and password.
Success guarantee	Created a user id.
Main success scenario	<ul style="list-style-type: none"><li>• User id created.</li><li>• User can Log in with authentication.</li></ul>
Special requirement	Valid user name.
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	When the customer opens the system then login themselves.

## View Vehicle (Authorized customer)

Use Case Section	Comment
Use Case name	View the vehicle's condition
Scope	Online Vehicle Showroom
Level	Sub function
Actor	customer
Stakeholders and their interest	<b>customer:</b> The registered & authorized person <b>Interest:</b> To check the vehicle's condition and to comment
Precondition	Authorized customer If the customer checks the vehicle and put the comments
Success guarantee	To check the vehicle's condition and to put comments
Main success scenario	<ul style="list-style-type: none"> <li>Inspect the vehicle if the seller wants to put comments about the condition.</li> <li>Log in and place the comments</li> </ul>
Extension	<ul style="list-style-type: none"> <li>Check new vehicles</li> <li>Comment about the vehicle</li> </ul>
Special requirement	The registered & authorized customer
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	When the customer checks the vehicles and the dealer/Agent deals with the customer

## View Vehicle's Details (Authorized customer)

Use Case Section	Comment
Use Case name	View vehicle's Details
Scope	Online Vehicle Showroom
Level	Sub function
Actor	customer
Stakeholders and their interest	<b>customer:</b> The registered & authorized person <b>Interest:</b> To check the vehicle's condition and to comment
Precondition	Authorized customer If the customer checks the vehicle and put the comments
Success guarantee	To check the vehicle's condition and to put comments
Main success scenario	<ul style="list-style-type: none"> <li>Inspect the vehicle if the seller wants to put comments about the condition.</li> <li>Log in and place the comments</li> </ul>
Extension	<ul style="list-style-type: none"> <li>Check new vehicles</li> <li>Comment about the vehicle</li> <li>Full detail check about the vehicle</li> </ul>
Special requirement	The registered & authorized customer
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	When the customer checks the vehicle's specification and the dealer/Agent deals with the customer.

## Make Payments (Authorized customer)

Use Case Section	Comment
Use Case name	Make Payments Details
Scope	Online Vehicle Showroom
Level	Sub function
Actor	customer
Stakeholders and their interest	<b>customer:</b> The registered & authorized person <b>Interest:</b> To check the vehicle's condition and to comment
Precondition	Authorized customer After selecting the product and confirming detail about the product
Success guarantee	To check the vehicle's condition and to put comments
Main success scenario	<ul style="list-style-type: none"> <li>Inspect the vehicle if the customer wants to select products.</li> <li>Log in and place the comments</li> </ul>
Extension	<ul style="list-style-type: none"> <li>Check new vehicles</li> <li>Comment about the vehicle</li> <li>Full detail to make the payment method</li> </ul>
Special requirement	Make sure the payment and verification
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	When the customer selected the Vehicles and communication About the payment method

Proceed to checkout (Authorized customer)

Use Case Section	Comment
Use Case name	Proceed to checkout
Scope	Online Vehicle Showroom
Level	Sub function
Actor	customer
Stakeholders and their interest	<b>customer:</b> The registered & authorized person <b>Interest:</b> To check the vehicle's condition and to comment
Precondition	Authorized customer After selecting the product and confirming detail about the product
Success guarantee	To check the vehicle's condition and to put comments
Main success scenario	<ul style="list-style-type: none"> <li>Inspect the vehicle if the customer wants to select products.</li> <li>Log in and place the comments</li> </ul>
Extension	<ul style="list-style-type: none"> <li>Check new vehicles</li> <li>Comment about the vehicle</li> <li>And check out the product</li> </ul>
Special requirement	Selected the product's checkout Add to the cart
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	When the customer selected the Vehicles or confirmation and checkout add to cart

## Add vehicles to cart (Authorized customer)

Use Case Section	Comment
Use Case name	Add vehicles to the cart
Scope	Online Vehicle Showroom
Level	Sub function
Actor	customer
Stakeholders and their interest	<b>customer:</b> The registered & authorized person <b>Interest:</b> To check the vehicle's condition and to comment
Precondition	Authorized customer After selecting the product and confirming detail about the product
Success guarantee	To check the vehicle's condition and to put comments
Main success scenario	<ul style="list-style-type: none"> <li>Inspect the vehicle if the customer wants to select products.</li> <li>Log in and place the comments</li> </ul>
Extension	<ul style="list-style-type: none"> <li>Selected the product and add to the cart</li> <li>And make sure the confirmation</li> </ul>
Special requirement	Selected the product's checkout Add to the cart
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	When the customer selected the Vehicles or confirmation and checkout add to the cart

## Check shipments details (Authorized customer)

Use Case Section	Comment
Use Case name	Check shipments detail
Scope	Online Vehicle Showroom
Level	Sub function
Actor	customer
Stakeholders and their interest	<b>customer:</b> The registered & authorized person <b>Interest:</b> To check the vehicle's condition and to comment
Precondition	Authorized customer After selecting the product and confirming detail about the product
Success guarantee	To check the vehicle's condition and to put comments
Main success scenario	<ul style="list-style-type: none"> <li>• After selecting the processed and all shipment details are generated.</li> <li>• Log in and place the comments</li> </ul>
Extension	<ul style="list-style-type: none"> <li>• And check out the product</li> <li>• Comment and restricted</li> </ul>
Special requirement	Selected the product's checkout Add to the cart
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	When the customer selected the Vehicles or confirmation and checkout add to cart and automatically generated shipment slip.



## Confirm order (Authorized customer)

Use Case Section	Comment
Use Case name	Confirm order
Scope	Online Vehicle Showroom
Level	Sub function
Actor	customer
Stakeholders and their interest	<b>customer:</b> The registered & authorized person <b>Interest:</b> To check the vehicle's condition and to comment
Precondition	Authorized customer After selecting the product and confirming detail about the product
Success guarantee	To check the vehicle's condition and to put comments
Main success scenario	<ul style="list-style-type: none"> <li>After selecting the processed and all shipments details showroom confirmation message to send the mail.</li> <li>Log in and place the comments</li> </ul>
Extension	<ul style="list-style-type: none"> <li>And check out the product</li> <li>Comment and restricted</li> </ul>
Special requirement	Selected the products and confirmation message
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	When the customer selected the Vehicles and generated the confirmation message

## Cancel order (Authorized customer)

Use Case Section	Comment
Use Case name	Cancel order
Scope	Online Vehicle Showroom
Level	Sub function
Actor	customer
Stakeholders and their interest	<b>customer:</b> The registered & authorized person <b>Interest:</b> To check the vehicle's condition and to comment
Precondition	Authorized customer After selecting the product and confirming detail about the product
Success guarantee	To check the vehicle's condition and to put comments
Main success scenario	<ul style="list-style-type: none"> <li>After selecting the products if we should have some problem then you have to cancel the confirmation order</li> <li>Log in and place the comments</li> </ul>
Extension	<ul style="list-style-type: none"> <li>And check out the product is canceled.</li> <li>Comment and restricted</li> </ul>
Special requirement	Selected the products and confirmed the canceled order.
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	When the customer selected the Vehicles and canceled the order to send the message.

## Update order (Authorized customer)

Use Case Section	Comment
Use Case name	Update order
Scope	Online Vehicle Showroom
Level	Sub function
Actor	customer
Stakeholders and their interest	<b>customer:</b> The registered & authorized person <b>Interest:</b> To check the vehicle's condition and to comment
Precondition	Authorized customer After selecting the product and confirming detail about the product
Success guarantee	To check the vehicle's condition and to put comments
Main success scenario	<ul style="list-style-type: none"> <li>• After selecting the products if we should have some problems then you update the order</li> <li>• Log in and place the comments</li> </ul>
Extension	<ul style="list-style-type: none"> <li>• And check out the product update.</li> <li>• Comment and restricted</li> </ul>
Special requirement	Selected the products and confirmed the updated order.
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	When the customer selected the Vehicles and updates the order to send the message.

Use Case Section	Comment
Use Case name	View profile
Scope	Online Vehicle Showroom
Level	Sub function
Actor	customer
Stakeholders and their interest	<b>customer:</b> The registered & authorized person <b>Interest:</b> To check the vehicle's condition and to comment
Precondition	Authorized customer The customer should have a registration and login account
Success guarantee	To check the vehicle's condition and to put comments
Main success scenario	<ul style="list-style-type: none"> <li>• Before login, the customer should view the profile</li> <li>• Log in and place the comments</li> </ul>
Extension	<ul style="list-style-type: none"> <li>• Customer view the profile it can delete and update the profile</li> <li>• Comment and restricted</li> </ul>
Special requirement	Login successfully and it can view the profile.
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	When the customer has a view profile, it should have a login and registration process.

## Sales Manager

View company detail (Authorized sale manager)

Use Case Section	Comment
Use Case name	View company details
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Sales Manager
Stakeholders and their interest	<b>Manager:</b> The manager manages all records such as sales, customer and reception, etc. <b>Interest:</b> To check the vehicle's condition and to comment
Precondition	Authorized manager When all records are in order in condition to manage.
Success guarantee	To check the good vehicle's condition to check out the customer
Main success scenario	<ul style="list-style-type: none"><li>Engage the team and inspired the productivity</li><li>Log in and place the comments</li></ul>
Extension	<ul style="list-style-type: none"><li>The manager could have good skills used to manage all rules to failure and success</li><li>If the call record is managed and view all the company detail.</li></ul>
Special requirement	The manager should have availability and longtime connectivity to the system
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	When the manager applies the good skill to the company and manages all time frequently

## Add Purchase order (Authorized sale manager)

Use Case Section	Comment
Use Case name	Add Purchase order
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Sales Manager
Stakeholders and their interest	<p><b>Manager:</b> The manager manages all records such as sales, customer records, reception records, etc.</p> <p><b>Interest:</b> To check the vehicle's condition and to comment</p>
Precondition	<p>Authorized manager</p> <p>When all records are in order condition to manager</p>
Success guarantee	Managers check the good vehicle's condition to check out the customer.
Main success scenario	<ul style="list-style-type: none"> <li>• Agent buys a product and the manager handover</li> <li>• They can apply to add order purchase</li> <li>• Log in and place the comments</li> </ul>
Extension	<ul style="list-style-type: none"> <li>• The manager could have good skills used to manage all rules to failure and success</li> <li>• If all records are managed and view all the company detail.</li> </ul>
Special requirement	The manager should have availability and longtime connectivity to the system
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	If the manager adds a purchase order, they get to have constant time to add to the cart.

View Purchase order (Authorized sale manager)

Use Case Section	Comment
Use Case name	View Purchase order
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Sales Manager
Stakeholders and their interest	<p><b>Manager:</b> The manager manages all records such as sales, customer records, reception records, etc.</p> <p><b>Interest:</b> To check the vehicle's condition and to comment</p>
Precondition	<ul style="list-style-type: none"> <li>• Authorized manager</li> <li>• If the manager checks the view purchase order and they can log in successfully</li> <li>• When all records are in order condition to manager</li> </ul>
Success guarantee	Managers check the good vehicle's condition to check out the customer.
Main success scenario	<ul style="list-style-type: none"> <li>• If we can view the whole product, it can have selling and not selling</li> <li>• Agent buys a product and the manager handover</li> </ul>
Extension	<ul style="list-style-type: none"> <li>• A manager can view the purchase list successfully if there have saved the records</li> <li>• If all records are managed and view all the company detail.</li> </ul>
Special requirement	It should have availability and longtime connectivity to the system
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	If the manager views the purchase order, they can have generated a slip automatically and with another side download button, the slip is downloaded successfully by using the internet.

## Add Purchase order acknowledgment (Authorized sale manager)

Use Case Section	Comment
Use Case name	Add Purchase order acknowledgment
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Sales Manager
Stakeholders and their interest	<p><b>Manager:</b> The manager manages all records such as sales, customer records, reception records, etc.</p> <p><b>Interest:</b> To check the vehicle's condition and to comment</p>
Precondition	<p>Authorized manager</p> <p>When all records are in order condition to manager</p>
Success guarantee	Managers check the good vehicle's condition to check out the customer.
Main success scenario	<ul style="list-style-type: none"> <li>The manager can have added a purchase order to the acknowledgment message sent to the manager</li> <li>They can apply to add order purchase</li> </ul>
Extension	<ul style="list-style-type: none"> <li>Managers could have good skills used to manage all rules to failure and success</li> <li>If records are managed and view all purchasing orders in detail</li> </ul>
Special requirement	Managers should have availability and longtime connectivity to the system
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	If the manager adds purchase order acknowledgment, they get to have constant time to send the message



Use Case Section	Comment
Use Case name	View Purchase order acknowledgment
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Sales Manager
Stakeholders and their interest	<p><b>Manager:</b> The manager manages all records such as sales, customer records, reception records, etc.</p> <p><b>Interest:</b> To check the vehicle's condition and to comment</p>
Precondition	<ul style="list-style-type: none"> <li>• Authorized manager</li> <li>• If the manager checks the view purchase order acknowledgment and they can log in successfully.</li> </ul>
Success guarantee	Managers check the good vehicle's condition to check out the customer.
Main success scenario	<ul style="list-style-type: none"> <li>• If we can view the whole product, it can have selling and not selling</li> <li>• Agent buys a product and the manager handover</li> </ul>
Extension	<ul style="list-style-type: none"> <li>• Managers can view the purchase list successfully if there have saved the records</li> <li>• If all records are managed and view all the company detail.</li> </ul>
Special requirement	It should have availability and longtime connectivity to the system
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	If the manager views the purchase order acknowledgment, they can have generated a slip automatically and with another side download button, the slip is downloaded successfully by using the internet.

View distribution center (Authorized sale manager)

Use Case Section	Comment
Use Case name	View distribution center
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Sales Manager
Stakeholders and their interest	<p><b>Manager:</b> The manager can view the distribution center record.</p> <p><b>Interest:</b> To check the vehicle's condition and to comment</p>
Precondition	<ul style="list-style-type: none"> <li>Authorized manager</li> <li>When all records are in order condition to manager</li> </ul>
Success guarantee	Managers check the distribution center the products are set in their place
Main success scenario	<ul style="list-style-type: none"> <li>If we can view the whole product, and check the record of the distribution center</li> <li>Agent buys a product and the manager handover</li> </ul>
Extension	<ul style="list-style-type: none"> <li>Managers can view the purchase list successfully if there have saved the records</li> <li>If all records are managed and view all the company detail.</li> </ul>
Special requirement	It should have availability and longtime connectivity to the system
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	Manager view Distribution centers are more like all-in-one logistics operations that <b>store, pick, pack, and ship products to fulfill customer orders</b>

View invoice (Authorized sale manager)

Use Case Section	Comment
Use Case name	View Invoice
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Sales Manager
Stakeholders and their interest	<p><b>Manager:</b> The manager can have viewed the sale and purchase invoice</p> <p><b>Interest:</b> To purchase the online buying the product</p>
Precondition	<ul style="list-style-type: none"> <li>Authorized manager</li> <li>When all records are in order condition to manager</li> </ul>
Success guarantee	The manager checks all records to the customer to sale invoice slip is generated.
Main success scenario	<ul style="list-style-type: none"> <li>If we can view the whole product, and check the record of different products</li> <li>The customer buys a product and the manager manages all records and confirmation customer the order is picked the slip is generated to purchase invoice</li> </ul>
Extension	<ul style="list-style-type: none"> <li>Managers can view the purchase list successfully if there have saved the records</li> <li>If all records are managed and view all the company detail.</li> </ul>
Special requirement	It should have availability and longtime connectivity to the system
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	Manager view invoices as invaluable tool for accounting. It <b>helps both the seller and the buyer to keep track of their payments and amounts owed</b>

View reception of payments (Authorized sale manager)

Use Case Section	Comment
Use Case name	View reception of payment
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Sales Manager
Stakeholders and their interest	<p><b>Manager:</b> The manager can have viewed the sale and purchase invoice</p> <p><b>Interest:</b> To purchase the online buying the product</p>
Precondition	<ul style="list-style-type: none"> <li>Authorized manager</li> <li>When all records are in order condition to manager</li> </ul>
Success guarantee	Managers check the all-reception payments record and sales.
Main success scenario	<ul style="list-style-type: none"> <li>If the manager can view all reception record manages and generates</li> <li>If we can view the whole product, and check the record of different products</li> </ul>
Extension	<ul style="list-style-type: none"> <li>Managers can view the purchase list successfully if there have saved the records</li> <li>If the call record is managing and view all the company detail.</li> </ul>
Special requirement	It should have availability and longtime connectivity to the system
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	Manager can have payment receipt is a <b>document given to a customer as proof of full or partial payment for a product or service</b>

## Cashier

### Manage customer data (Cashier)

Use Case Section	Comment
Use Case name	Manage customer data
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Cashier
Stake holder and their interest	<b>cashier:</b> The registered person <b>Interest:</b> To Manage the data of customer
Precondition	Authorized cashier If the cashier receives data of customer, it will be managed in system
Success guarantee	To Manage the data of customer
Main success scenario	Manage and enter the data of customer
Extension	<ul style="list-style-type: none"><li>• Take the details or data from customer</li><li>• Enter and manage the data in system</li></ul>
Special requirement	The registered & authorized cashier
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	When customer purchase the vehicle and want its data registration in company.

## Create sales data (Cashier)

Use Case Section	Comment
Use Case name	Create sales data
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Cashier
Stake holder and their interest	<b>cashier:</b> The registered person <b>Interest:</b> To create sales data
Precondition	Authorized cashier If the sales generate in the showroom the cashier will create the data about the sale.
Success guarantee	Creation of sales data
Main success scenario	When sales generate the data should be create
Special requirement	The registered & authorized cashier
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	When the sales of vehicle happen in showroom the cashier will create the sales data.

## Change sales data (Cashier)

Use Case Section	Comment
Use Case name	Change sales data
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Cashier
Stake holder and their interest	<b>cashier:</b> The registered person <b>Interest:</b> To change the sales data
Precondition	Authorized cashier If the cashier has data of sales, then cashier can also change that data
Success guarantee	To Change the data of sales
Main success scenario	Data changed
Special requirement	The registered & authorized cashier
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	When the sales data already created it can be changed afterwards.

## View list of sales (Cashier)

Use Case Section	Comment
Use Case name	View list of sales
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Cashier
Stake holder and their interest	<b>cashier:</b> The registered person <b>Interest:</b> To View the sales list
Precondition	Authorized cashier If the cashier receives data of customer, it will be managed in system and can be view in list
Success guarantee	To see the sales list
Main success scenario	Sales will be shown in list
Extension	Cashier can also see the details of sales list
Special requirement	The registered & authorized cashier
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	Whenever the cashier wants any sales data to change or view it will be shown in list.



View list of invoices (Cashier)

Use Case Section	Comment
Use Case name	View list of invoices
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Cashier
Stake holder and their interest	<b>cashier:</b> The registered person <b>Interest:</b> To view list of invoices
Precondition	Authorized cashier List of invoices can be view by cashier after the sales
Success guarantee	Invoice list will be generated and view be cashier
Main success scenario	Invoice list will be generated
Extension	Cashier can also print the invoice list
Special requirement	The registered & authorized cashier
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	When the cashier wants to see the delivery information, price and insurance information then invoice list will be generated by cashier.

### Create repair order data (Cashier)

Use Case Section	Comment
Use Case name	Create repair data
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Cashier
Stake holder and their interest	<b>cashier:</b> The registered person <b>Interest:</b> To create repair data
Precondition	Authorized cashier If the repairing of vehicle is done then repair data is created
Success guarantee	Creation of repair data
Main success scenario	When vehicle is repaired then repair data is created
Special requirement	The registered & authorized cashier
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	When the repairing of vehicle happens in showroom the cashier will create the repair data.

## View list of repair order (Cashier)

Use Case Section	Comment
Use Case name	View list of repair order
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Cashier
Stake holder and their interest	<b>cashier:</b> The registered person <b>Interest:</b> To view list of repair order
Precondition	Authorized cashier List of repairs can be view by cashier after the repairing
Success guarantee	Repair list will be generated and view be cashier
Main success scenario	Repair list will be generated
Extension	Cashier can also print the Repair list View Repair order data Create receipt
Special requirement	The registered & authorized cashier
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	When the cashier wants to see details of repairing after repairing of vehicle it can be viewed in list.

## Mechanic

### View list of repair order (Mechanic)

Use Case Section	Comment
Use Case name	View list of repair order
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Mechanic
Stake holder and their interest	<b>Mechanic:</b> The registered and authorized person <b>Interest:</b> To view list of repair order
Precondition	Authorized Mechanic List of repairs can be view by cashier after the repairing
Success guarantee	Repair list will be generated and view be mechanic
Main success scenario	Repair list will be generated
Extension	Mechanic can also print the Repair list View Repair order data Create receipt
Special requirement	The registered & authorized Mechanic
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	When the Mechanic wants to see details of repairing after repairing of vehicle it can be viewed in list.

## Change repair order data (Mechanic)

Use Case Section	Comment
Use Case name	Change repair order data
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Mechanic
Stake holder and their interest	<b>Mechanic:</b> The registered person <b>Interest:</b> To change the repair order data
Precondition	Authorized Mechanic If the mechanic has data of repairing then mechanic can also change that data
Success guarantee	To Change the repair order data
Main success scenario	Data changed
Special requirement	The registered & authorized mechanic
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	When the repair order data already created it can be changed afterwards.

## Staff

### Search available vehicle (Staff)

Use Case Section	Comment
Use Case name	Search available vehicle
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Staff
Stake holder and their interest	<b>Staff:</b> the crater manufacturer and seller. <b>Interest:</b> To search the available vehicle
Precondition	Authorized Staff Staff can search the availability of any vehicle
Success guarantee	To search all the operations
Main success scenario	Manage and enter the data of vehicles
Special requirement	The registered & authorized staff
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	Search the vehicle availability on the demand of the customer

## Dispatch of vehicle (Staff)

Use Case Section	Comment
Use Case name	Dispatch of vehicle
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Staff
Stake holder and their interest	<b>Staff:</b> the crater manufacturer and seller. <b>Interest:</b> To dispatch the ordered vehicle.
Precondition	Authorized Staff Staff can dispatch the ordered vehicle
Success guarantee	Dispatching of ordered vehicle
Main success scenario	Dispatchment of order after confirmation
Special requirement	The registered & authorized staff
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	Maintenance for a new <i>car is</i> also a guarantee of the owner <i>Repairs</i> are made in the <i>event</i> of a <i>vehicle</i> breakdown

## Booking of vehicles (Staff)

Use Case Section	Comment
Use Case name	Booking of vehicle
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Staff
Stake holder and their interest	<b>Staff:</b> the crater manufacturer and seller. <b>Interest:</b> The Booking of vehicle.
Precondition	Authorized staff Manage the booked vehicle details.
Success guarantee	To confirm the data of booked vehicle
Main success scenario	Data stored
Special requirement	The registered & authorized staff
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	agreement <i>auto</i> generate and <i>book</i> work orders and ensure the preferred resource



## Replacing of vehicle (Staff)

Use Case Section	Comment
Use Case name	Replacing of vehicle
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Staff
Stake holder and their interest	<b>Staff:</b> the crater, manufacturer and seller. <b>Interest:</b> The Replacing of vehicle.
Precondition	Authorized staff Manage the replacing of vehicle.
Success guarantee	The invoice is generated after the replacing of the vehicle
Main success scenario	Sales will be shown in list
Special requirement	The registered & authorized staff
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	Whenever the manager wants any sales data to change or view it will be shown in list.

## View vehicle stock (Staff)

Use Case Section	Comment
Use Case name	View vehicle stock
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Staff
Stake holder and their interest	<b>Staff:</b> the crater, manufacturer and seller. <b>Interest:</b> view the stock of vehicle.
Precondition	Authorized staff Manage the stock of vehicle. View the vehicle stock list
Success guarantee	The complete list of the vehicle is generated.
Main success scenario	The complete stock of the vehicle will be shown in the list
Extension	staff can also see the details of vehicle list View vehicle stock
Special requirement	The registered & authorized Staff
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	have the option of providing the user with a means to control the <i>frequency</i> of updates when content <i>is auto</i> -updating

## Add vehicle record (Staff)

Use Case Section	Comment
Use Case name	Add vehicle record
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Staff
Stake holder and their interest	<b>Staff:</b> the crater, manufacturer and seller. <b>Interest:</b> add the record of the vehicle.
Precondition	Authorized staff Manage the record vehicle. Update vehicle record. Add the details of the new vehicle.
Success guarantee	The complete list of the vehicle is updated
Main success scenario	The updated stock of the vehicle will be shown in the list
Special requirement	The registered & authorized Staff
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	have the option of providing the user with a means to control the <i>frequency</i> of updates when content <i>is auto</i> -updating

search vehicle record (Staff)

Use Case Section	Comment
Use Case name	Search vehicle record
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Staff
Stake holder and their interest	<b>Staff:</b> the crater, manufacturer and seller. <b>Interest:</b> search the record of the vehicle.
Precondition	Authorized staff Manage the record vehicle. search vehicle record.
Success guarantee	After searching he details of the vehicle is shown
Main success scenario	The detail of the vehicle will be shown in the list
Special requirement	The registered & authorized Staff
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	have the option of to search and see the details of the search vehicle.

### Delete vehicle record (Staff)

Use Case Section	Comment
Use Case name	Delete vehicle record
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Staff
Stake holder and their interest	<b>Staff:</b> the crater, manufacturer and seller. <b>Interest:</b> add the record of the vehicle.
Precondition	Authorized staff Manage the record vehicle. Delete vehicle record. Delete the details of the any vehicle.
Success guarantee	The complete detail of the vehicle is deleted
Main success scenario	The updated stock of the vehicle will be shown in the list
Special requirement	The registered & authorized Staff
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	have the option of to delete the record of the vehicle.

## Receptionist

### Making Reservation (Receptionist)

Use Case Section	Comment
Use Case name	Making Reservation
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Receptionist
Stake holder and their interest	<b>Receptionist:</b> greeting, welcoming, and directing <b>Interest:</b> <i>provide information to visitors, clients, or stakeholders in a company</i>
Precondition	Authorized Receptionist View the details of the customer in the system. Highlights the features of the showroom. Explain the features of the vehicles
Success guarantee	<i>that your customers' calls will be answered promptly and handled with professionalism and care.</i>
Main success scenario	Address people with their first name Apologize for making them wait
Special requirement	The registered & authorized customer
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	have the option of to add new customer into the list.

### Canceling Reservation (Receptionist)

Use Case Section	Comment
Use Case name	Canceling Reservation
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Receptionist
Stake holder and their interest	<b>Receptionist:</b> greeting, welcoming, and directing <b>Interest:</b> <i>provide information to visitors, clients, or stakeholders in a company</i>
Precondition	<i>Cancelling the reservation in the system. Updating the system for accommodation availability.</i> <i>Confirming the guest about the cancellation.</i>
Success guarantee	<i>front desk agent</i> provides cancellation codes as a reference of his/her cancellation.
Main success scenario	influence <i>cancellation</i> behavior with respect
Special requirement	The registered & authorized customer
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	have the option to cancel and remove the user from the list.

viewing Reservation (Receptionist)

Use Case Section	Comment
Use Case name	viewing Reservation
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Receptionist
Stake holder and their interest	<b>Receptionist:</b> greeting, welcoming, and directing <b>Interest:</b> <i>provide information to visitors, clients, or stakeholders in a company</i>
Precondition	viewing the <i>reservation</i> in the system. Updating the system for accommodation availability.
Success guarantee	Show the complete detail of the customer.
Main success scenario	<i>A receptionist can quickly enter phone and walk-in reservations in the availability calendar.</i>
Special requirement	The registered & authorized customer
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	have the option to view and edit the user from the list.



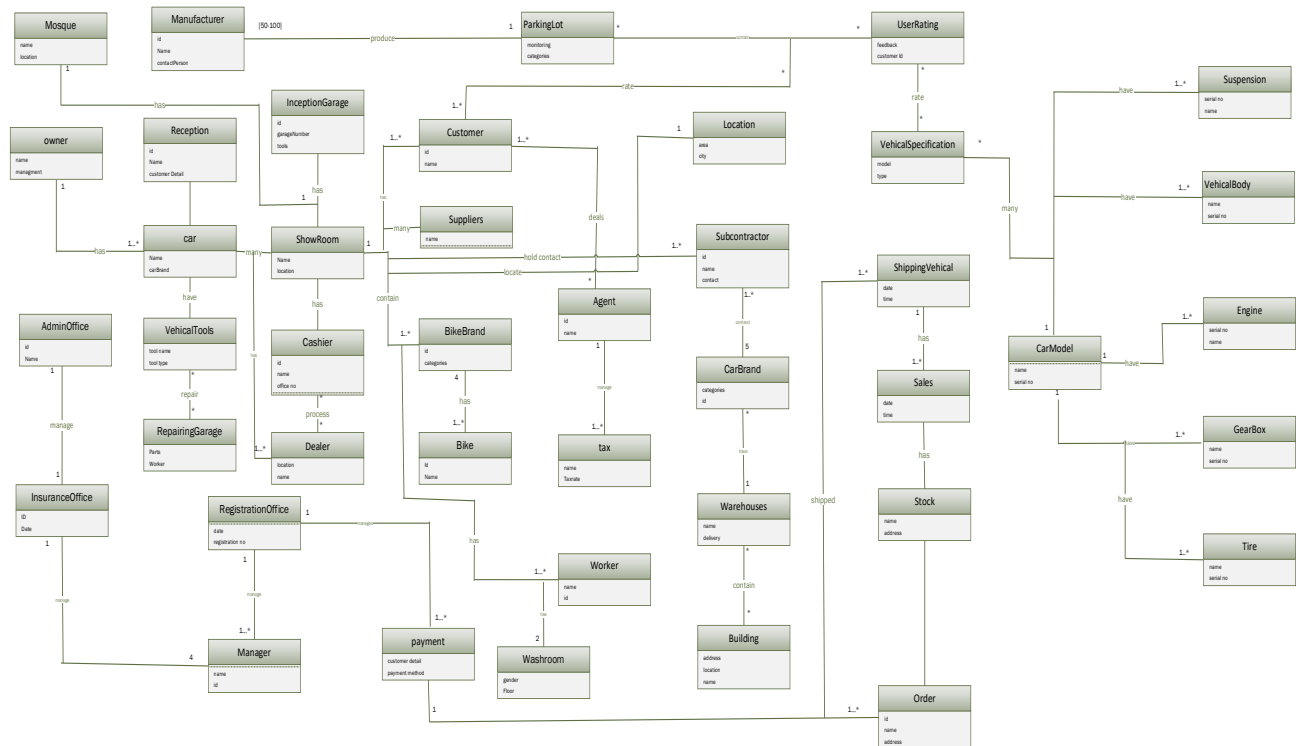
## Editing Reservation (Receptionist)

Use Case Section	Comment
Use Case name	Editing Reservation
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Receptionist
Stake holder and their interest	<b>Receptionist:</b> greeting, welcoming, and directing <b>Interest:</b> <i>provide information to visitors, clients, or stakeholders in a company</i>
Precondition	Editing the <i>reservation</i> in the system. Updating the system for accommodation availability.
Success guarantee	Edit the complete detail of the customer in the list. Edit according to the requirement of the customer.
Main success scenario	<i>A receptionist can quickly Edit the given details of the customer and update the list according to the changing.</i>
Special requirement	The registered & authorized customer
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	have the option to edit the user from the list.

## Recording Payment (Receptionist)

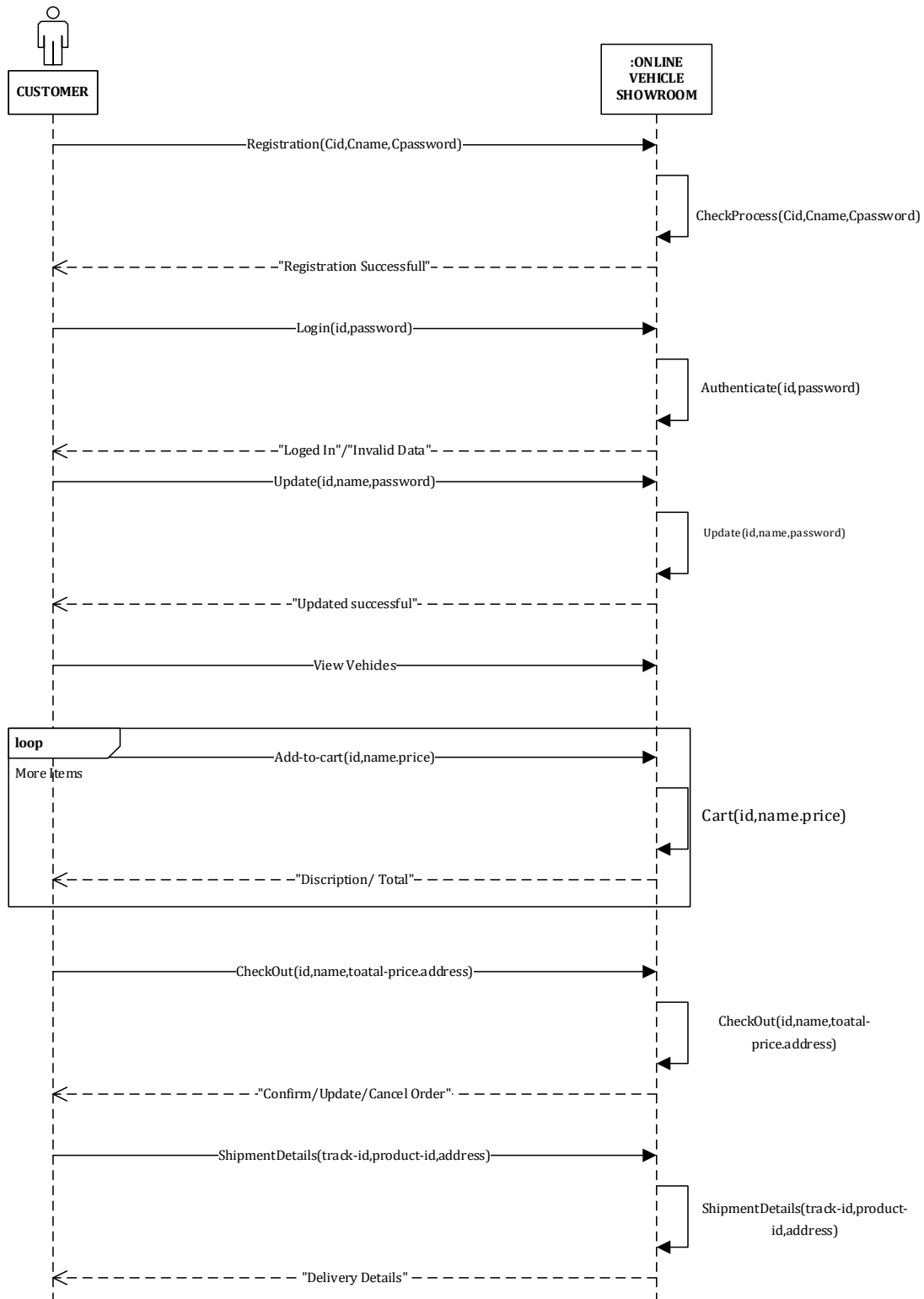
Use Case Section	Comment
Use Case name	Recording Payment
Scope	Online Vehicle Showroom
Level	Sub function
Actor	Receptionist
Stake holder and their interest	<b>Receptionist:</b> greeting, welcoming, and directing <b>Interest:</b> <i>provide information to visitors, clients, or stakeholders in a company</i>
Precondition	Record the payment in the system. Updating the system for accommodation availability.
Success guarantee	Edit the complete payment detail of the customer in the list. Edit according to the requirement of the customer. Make invoice according to the payment amount.
Main success scenario	<i>A receptionist can quickly Edit the invoice of the customer and update the list according to the changing.</i>
Special requirement	The registered & authorized customer
Technology and data variation list	Internet connection, HTML, CSS, JAVA, ASP
Frequency of occurrence	have the option to record the payment of the user and make invoice.

## Domain Model



# System Sequence diagram

## Customer



## Operation Contracts

### *Contract CO1: Registration(Cid,Cname,Cpassword)*

Operations: CheckProcess(Cid,Cname,Cpassword)

Cross references: Process use case

Preconditions: None

Postcondition: -A condition of Cid, Cname, Cpassword was created (Instance creation)

- Login was associated with a register (association formed)
- Attributes of Cid, Cname, Cpassword were initialized
- User created and register successfully

### *Contract CO2: Login(id,password)*

Operations: Authenticate(id,password)

Cross references: Process use case

Preconditions: User have an id and password

Postcondition: -A condition of “logged in” \”invalid Data”was created  
(Instance creation)

- If id and password authenticated then customer logged in and move to the next activity.
- If id and password not correct then show an error “Invalid Data”.

### *Contract CO3: Update(id,name,password)*

Operations: Update(id,name,password)

Cross references: Process use case

Preconditions: Customer have authenticated data.

Postcondition: -A condition of “Update Info”was created (Instance creation)

- User enter updated information then alert box shows “Updated successfully”.

#### *Contract CO4: View Vehicles*

Operations: View Vehicles

Cross references: Process use case

Preconditions: Authenticated user logged in

Postcondition: -A condition of “View Vehicles” (Instance creation)

- User can view all vehicles and process the next step.

#### *Contract CO5: Add-to-cart(id,name,price)*

Operations: Add-to-cart(id,name,price)

Cross references: Process use case

Preconditions: Authenticated user logged in, User view the items.

Postcondition: -A condition of “Add-to-cart” (Instance creation)

- User can add more than one item
- A Description and total bill created.

#### *Contract CO6: CheckOut(id,name,toatal-price,address)*

Operations: CheckOut(id,name,toatal-price,address)

Cross references: Process use case

Preconditions: Authenticated user logged in, User view the items, User add items to the cart.

Postcondition: -A condition of “CheckOut” (Instance creation)

- Three options "Confirm/Update/Cancel Order" shown user can select one.
- On confirm the order placed.
- On Update user can remove or add more items.
- On Cancel the selected order canceled.

#### *Contract CO7: ShipmentDetails(track-id,product-id,address)*

Operations: ShipmentDetails(track-id,product-id,address)

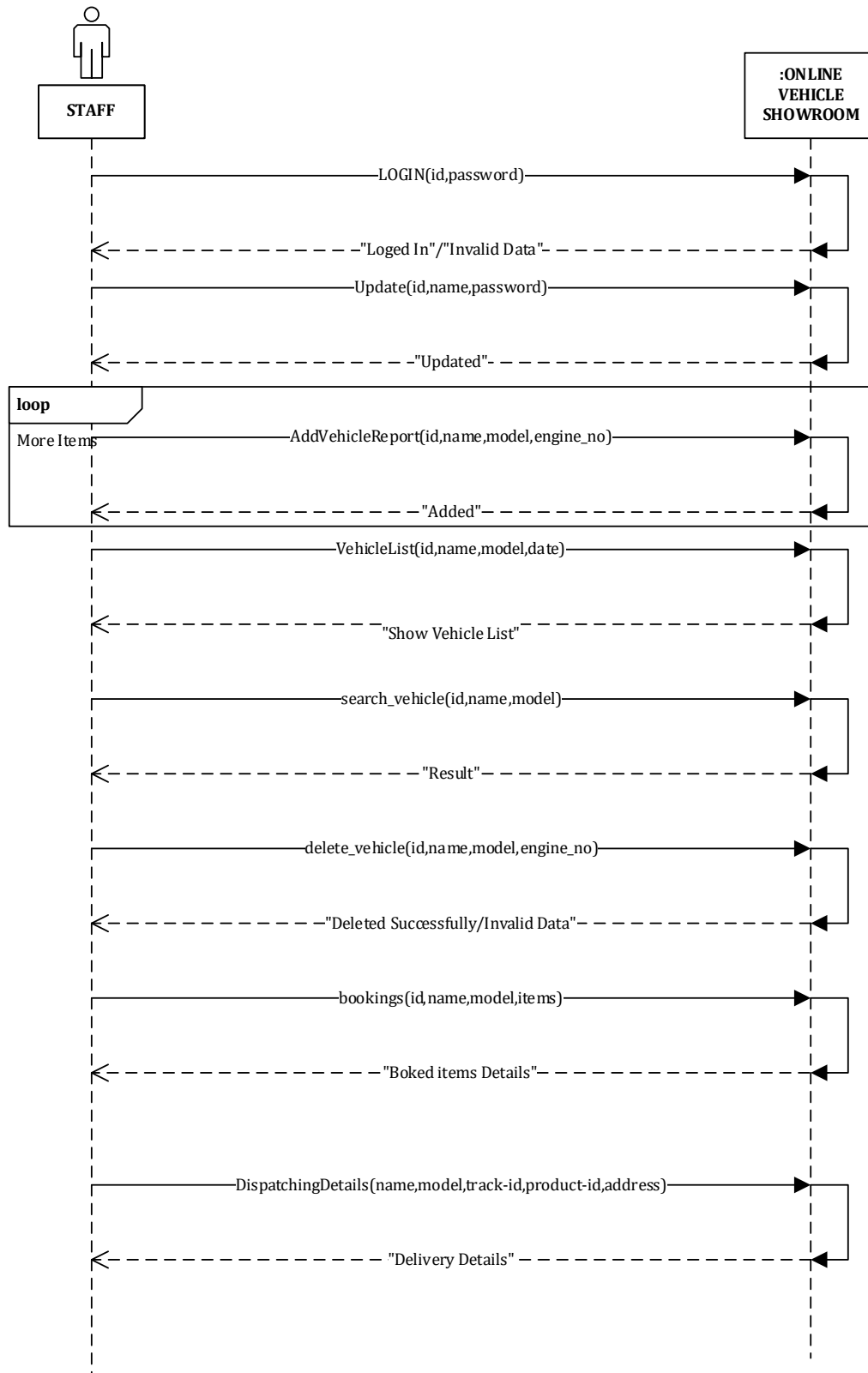
Cross references: Process use case

Preconditions: Authenticated user logged in, User view the items, User add items to the cart. User confirmed the order.

Postcondition: -A condition of “ShipmentDetails” (Instance creation)

- Delivery Details Given to customer as well as in the delivery section.

## Staff



## Operation Contracts

### *Contract CO1: Login(id,password)*

Operations: Authenticate(id,password)

Cross reference: Process use case

Preconditions: Staff member has an id and password

Postcondition: -A condition of “logged in” \”invalid Data” (Instance creation)

- If id and password authenticated then staff member logged in and move to the next activity.
- If id and password not correct then show an error “Invalid Data”.

### *Contract CO2: Update(id,name,password)*

Operations: Update(id,name,password)

Cross reference: Process use case

Preconditions: Staff member has authenticated data.

Postcondition: -A condition of “Update Info” (Instance creation)

- Staff member enter updated information then alert box shows “Updated successfully”.

### *Contract CO3: AddVehicleReport(id,name,model,engine\_no)*

Operations: AddVehicleReport(id,name,model,engine\_no)

Cross references: Process use case

Preconditions: Authenticated Staff member logged in. Show vehicle list.

Postcondition: -A condition of “AddVehicleReport” (Instance creation)

- Staff member can view all vehicles and add report against their id.
- A message shows “Added” when report added successfully.



*Contract CO4: VehicleList(id,name,model,date)*

Operations: VehicleList(id,name,model,date)

Cross reference: Process use case

Preconditions: Authenticated Staff member logged in.

Postcondition: -A condition of “VehicleList” (Instance creation)

- Detailed vehicle list show.

*Contract CO5: search\_vehicle(id,name,model)*

Operations: search\_vehicle(id,name,model)

Cross references: Process use case

Preconditions: Authenticated staff member logged in, view vehicles list.

Postcondition: -A condition of “search\_vehicle” (Instance creation)

- Against the unique id vehicle show.

*Contract CO6: delete\_vehicle(id,name,model,engine\_no)*

Operations: delete\_vehicle(id,name,model,engine\_no)

Cross references: Process use case

Preconditions: Authenticated staff member logged in, view vehicles list.

Postcondition: -A condition of “delete\_vehicle” (Instance creation)

- Against the id of vehicles, the vehicles delete.
- If id is wrong it shows an message “Invalid Data”.

*Contract CO7: bookings(id,name,model,items)*

Operations: bookings(id,name,model,items)

Cross references: Process use case

Preconditions: Authenticated staff member logged in, view vehicles list.

Postcondition: -A condition of “bookings” (Instance creation)

- Against the id of vehicles, the vehicles booking details shown.

*Contract CO8: DispatchingDetails(name,model,track-id,product-id,address)*

Operations: DispatchingDetails(name,model,track-id,product-id,address)

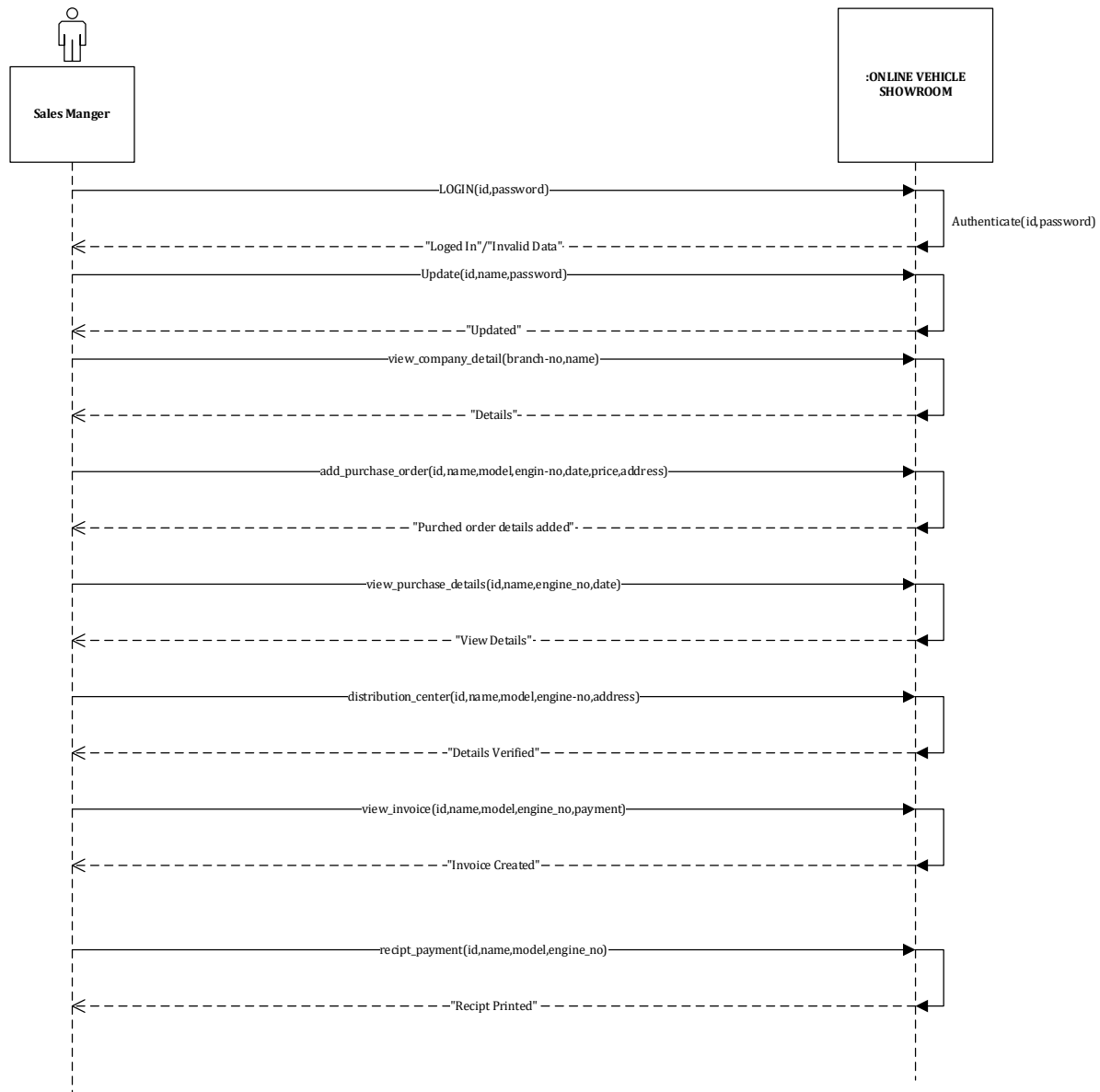
Cross references: Process use case

Preconditions: Authenticated staff member logged in, view all booking details.

Postcondition: -A condition of “DispatchingDetails” (Instance creation)

- Against the id of vehicles, the vehicles dispatch to the given details.
- Delivery details shown.

## Sales Manager



## Operation Contracts

### *Contract CO1: Login(id,password)*

Operations: Authenticate(id,password)

Cross reference: Process use case

Preconditions: Sales Manager has an id and password

Postcondition: -A condition of “logged in” \”invalid Data” (Instance creation)

- If id and password authenticated then sales manager logged in and move to the next activity.
- If id and password not correct then show an error “Invalid Data”.

### *Contract CO2: Update(id,name,password)*

Operations: Update(id,name,password)

Cross reference: Process use case

Preconditions: Sales manager has authenticated data.

Postcondition: -A condition of “Update Info” (Instance creation)

- Sales manager enter updated information then alert box shows “Updated successfully”.

### *Contract CO3: view\_company\_detail(branch-no,name)*

Operations: view\_company\_detail(branch-no,name)

Cross references: Process use case

Preconditions: Authenticated Sales manager logged in.

Postcondition: -A condition of “view\_company\_detail” (Instance creation)

- Sales manager can see the details of the branches.

### *Contract CO4: add\_purchase\_order(id,name,model,engin-no,date,price,address)*

Operations add\_purchase\_order(id,name,model,engin-no,date,price,address)

Cross reference: Process use case

Preconditions: Authenticated Sales manager logged in.

Postcondition: -A condition of “add\_purchase\_order” (Instance creation)

- Approve information and add purchased order details.

*Contract CO5: view\_purchase\_details(id,name,engine\_no,date)*

Operations: view\_purchase\_details(id,name,engine\_no,date)

Cross references: Process use case

Preconditions: Authenticated Sales manager logged in.

Postcondition: -A condition of “view\_purchase\_details” (Instance creation)

- Show details of purchased stock.

*Contract CO6: distribution\_center(id,name,model,engine-no,address)*

Operations: distribution\_center(id,name,model,engine-no,address)

Cross references: Process use case

Preconditions: Authenticated Sales manager logged in. Purchased details.

Postcondition: -A condition of “distribution\_center” (Instance creation)

- Verify the details and approve.

*Contract CO7: view\_invoice(id,name,model,engine\_no,payment)*

Operations: view\_invoice(id,name,model,engine\_no,payment)

Cross references: Process use case

Preconditions: Authenticated Sales manager logged in. Purchased details. Verified order.

Postcondition: -A condition of “view\_invoice” (Instance creation)

- Create invoice of Order.

*Contract CO8: receipt\_payment(id,name,model,engine\_no)*

Operations: receipt\_payment(id,name,model,engine\_no)

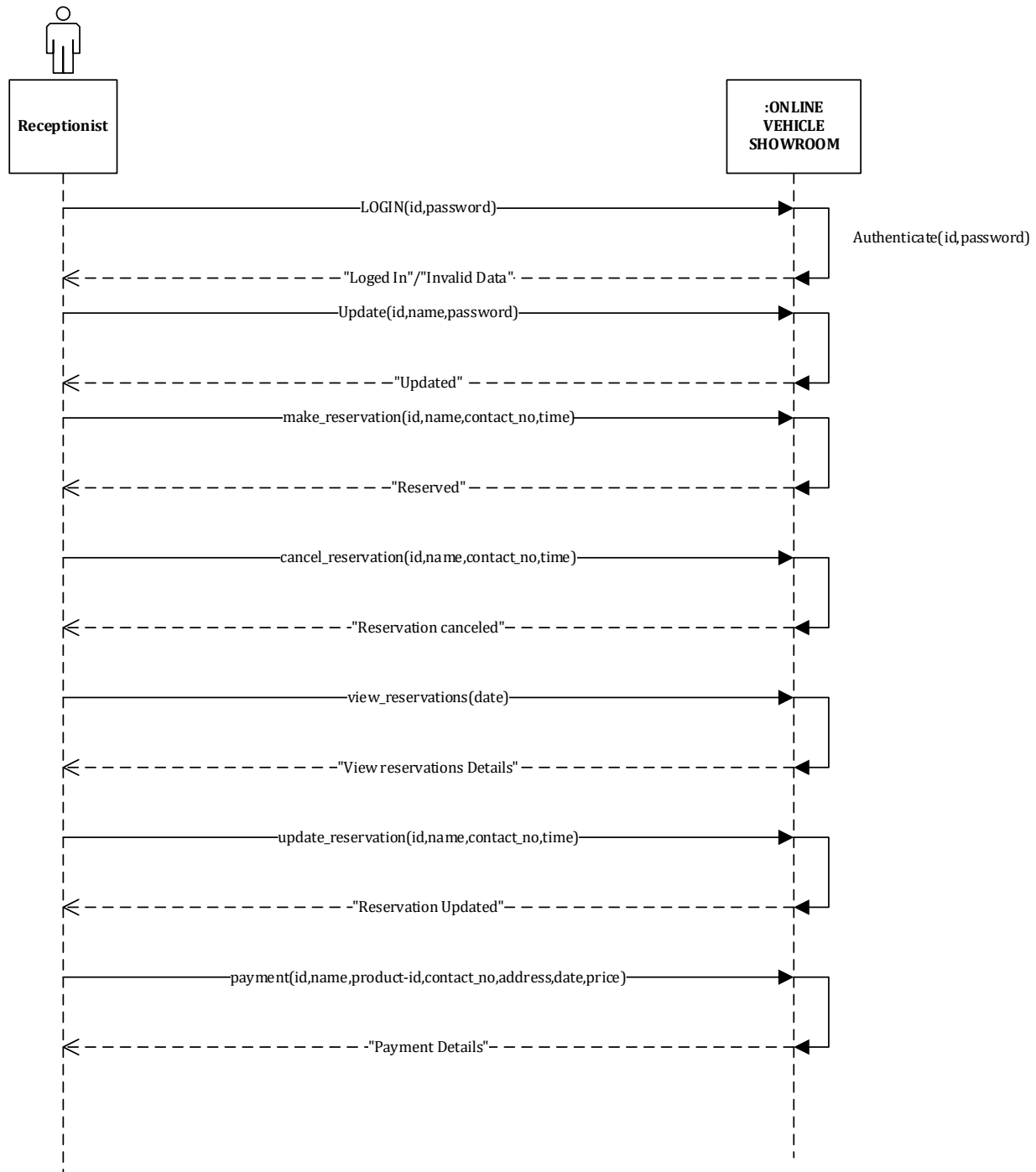
Cross references: Process use case

Preconditions: Authenticated Sales manager logged in. Purchased details. Verified order. Invoice created.

Postcondition: -A condition of “receipt\_payment” (Instance creation)

- Receipt Printed of payment details.

## Receptionist



## Operation Contracts

*Contract CO1: LOGIN(id, password )*

Operations: LOGIN(id, password)

Cross references: Process use case

Preconditions: None

Postcondition: -A condition of id, password was created

(Instance creation)

- L was associated with a register
- (association formed)
- Attributes of id,password were initialized

*Contract CO2: "logged In" / "Invalid Data"*

Operations: "logged in" \ "invalid Data"

Cross references: Process use case

Preconditions: update(id,name,password)

Postcondition: -A condition of "logged in" \ "invalid Data" was created

(Instance creation)

- L was associated with a register
- (association formed)
- Attributes of "logged in" \ "invalid Data" were initialized

*Contract CO3: "Updated"*

Operations: "updated"

Cross references: Process use case

Preconditions: make\_reservation(id,name,password)

Postcondition: -A condition of "updated" was created

(Instance creation)

- L was associated with a register
- (association formed)
- Attributes of "updated" were initialized

*Contract CO4: "Reserved"*

Operations: "Reserved"

Cross references: Process use case

Preconditions: Cancel\_reservation(id,name,contact\_no,time)

Postcondition: -A condition of "Reserved"was created

(Instance creation)

- L was associated with a register
- (association formed)
- Attributes of "Reserved"were initialized

*Contract CO5: "Reservation canceled"*

Operations: "Reservation canceled"

Cross references: Process use case

Preconditions: view\_reservations(date)

Postcondition: -A condition of "Reserved"was created

(Instance creation)

- L was associated with a register
- (association formed)
- Attributes of "Reservation canceled"were initialized

*Contract CO6: "View Reservations Details"*

Operations: "View Reservation Details"

Cross references: Process use case

Preconditions: update\_reservation(id,name,contact\_no,time)

Postcondition: -A condition of "View Reservation Details"was created

(Instance creation)

- L was associated with a register
- (association formed)
- Attributes of "View Reservation Details"were initialized



*Contract CO7: "Reservations Updated"*

Operations: "Reservation Updated"

Cross references: Process use case

Preconditions: payment(id,name,product\_id,contact\_no,address,date,price)

Postcondition: -A condition of "Reservation Updated"was created

(Instance creation)

- L was associated with a register
- (association formed)
- Attributes of "Reservation Updated"were initialized

*Contract CO8: "Payment Details"*

Operations: payment details

Cross references: Process use case

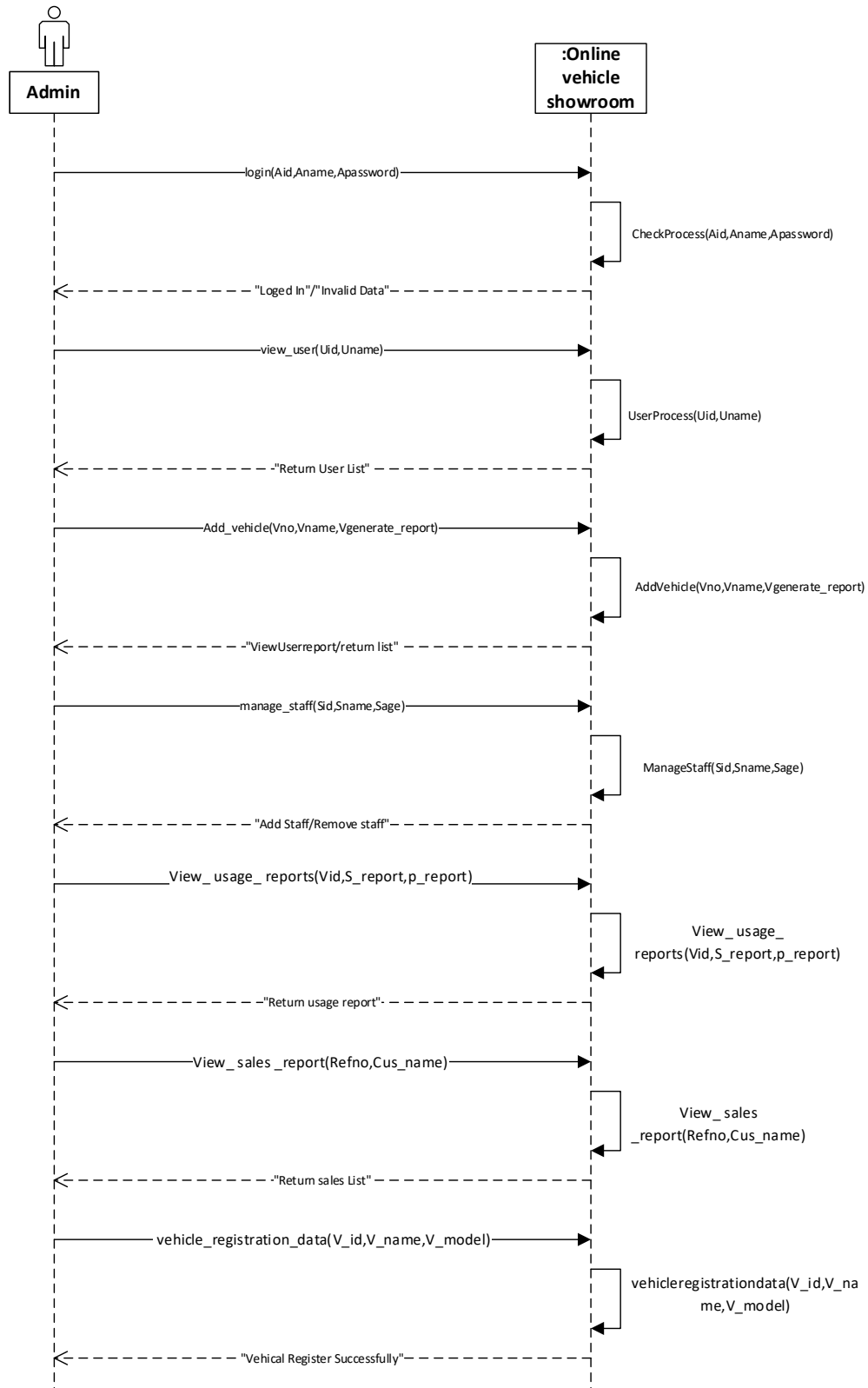
Preconditions: None

Postcondition: -A condition of Payment Details was created

(Instance creation)

- L was associated with a register
- (association formed)
- Attributes of Payment Details were initialized

## Admin



## Operation Contracts

### *Contract CO1: login(Aid, Aname, Apassword)*

Operations: login(Aid, Aname, Apassword)

Cross references: Process use case

Preconditions: None

Postcondition: -A condition of Aid, Aname, Apassword was created (Instance creation)

- L was associated with a register (association formed)
- Attributes of Aid, Aname, Apassword were initialized

### *Contract CO2: "logged in" \ "invalid Data"*

Operations: "logged in" \ "invalid Data"

Cross references: Process use case

Preconditions: view\_user(Uid, Uname)

Postcondition: -A condition of "logged in" \ "invalid Data" was created

(Instance creation)

- L was associated with a register
- (association formed)
- Attributes of "logged in" \ "invalid Data" were initialized

### *Contract CO3: "Return User List"*

Operations: "Return User List"

Cross references: Process use case

Preconditions: Add\_vehicle(Vno, Vname, Vgenerate\_Report)

Postcondition: -A condition of "Return User List" was created (Instance creation)

- L was associated with a registered (association formed)
- Attributes of "Return User List" were initialized

*Contract CO4: "ViewUserreport\returnlist"*

Operations: "ViewUserreport\returnlist"

Cross references: Process use case

Preconditions: manage\_staff(Sid,Sname,Sage)

Postcondition: -A condition of "ViewUserreport\returnlist" (Instance creation)

- L was associated with a register (association formed)
- Attributes of "ViewUserreport\returnlist" were initialized

*Contract CO5: "Add Staff\Remove Staff"*

Operations: "AddStaff\RemoveStaff"

Cross references: Process use case

Preconditions: view\_user\_report(Vid,S\_report,p\_report)

Postcondition: -A condition of "AddStaff\RemoveStaff" (Instance creation)

- L was associated with a register (association formed)
- Attributes of "AddStaff\RemoveStaff" were initialized
- AddStaff\RemoveStaff was associated with a customer in showroom(associated format)

*Contract CO6: "Remove Usage Report"*

Operations: "Remove Usage Report"

Cross references: Process use case

Preconditions: view\_sales\_report(Refno,Cus\_name)

Postcondition: -A condition of "Remove Usage Report" (Instance creation)

- L was associated with a register (association formed)
- Attributes of "Remove Usage Report" were initialized
- Remove Usage Report was associated with a customer in showroom(associated format)

*Contract CO7: "Rerurn sales List"*

Operations: "Rerurn sales List"

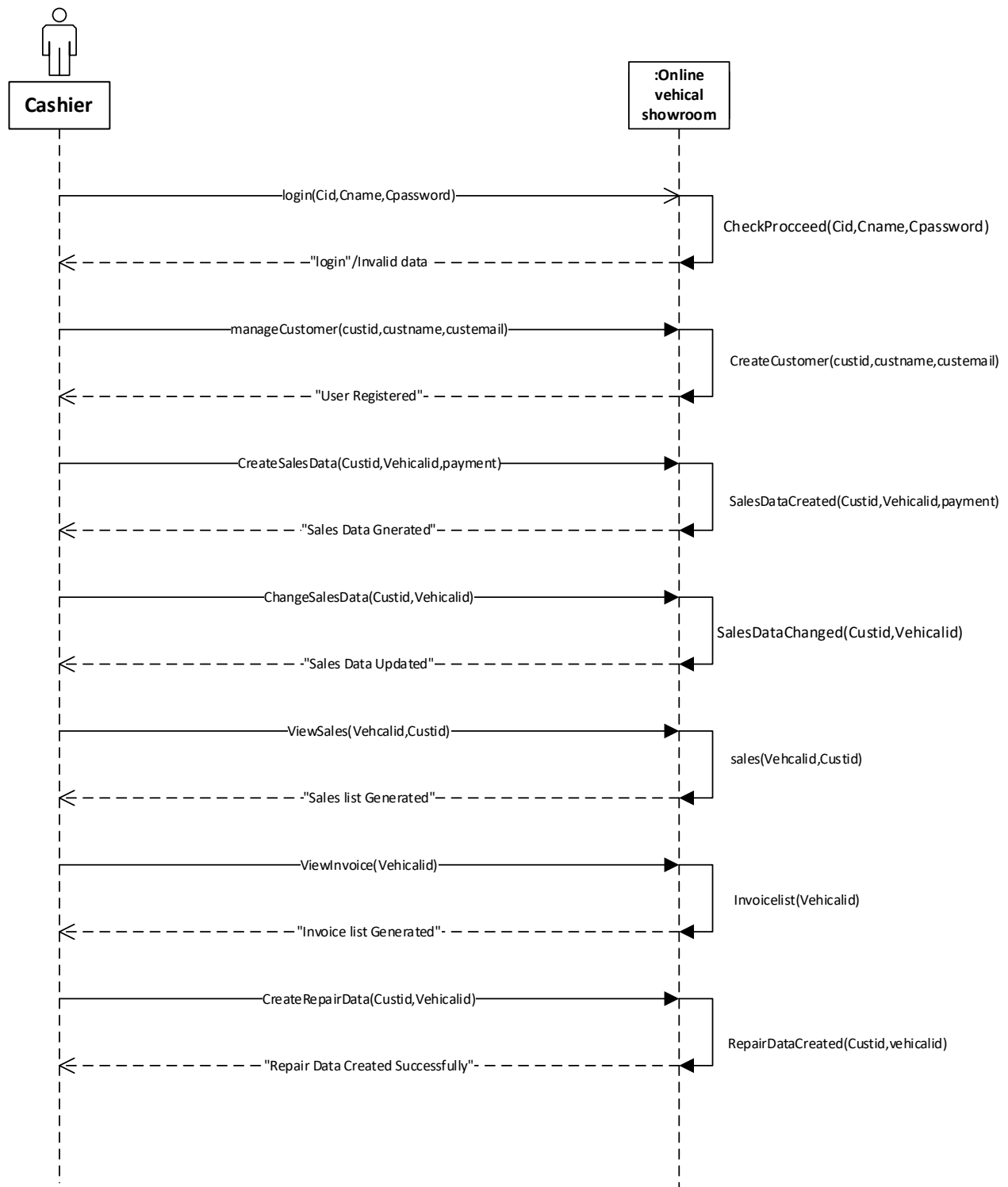
Cross refrences: Process use case

Preconditions: vehicle\_registration\_data(Vid,Vnamr,Vmodel)

Postcondition: -A condition of "Rerurn sales List" (Instance creation)

- L was associated with a register (association formed)
- Attributes of "Rerurn sales List" were initialized
- Rerurn sales List was associated with a customer in showroom(associated formet)

## Cashier



## Operation Contracts

*Contract CO1: "login(Cid,Cname,Cpassword)"*

Operations: "login(Cid,Cname,Cpassword)"

Cross references: Process use case

Preconditions: "logged in" \ "invalid Data"

Postcondition: -A condition of login(Cid,Cname,Cpassword)"was created

(Instance creation)

- L was associated with a register
- (association formed)
- Attributes of login(Cid,Cname,Cpassword)"were initialized

*Contract CO2: "manage customer(custid, cust name,cust email)"*

Operations: "manage customer(cust id,Cust name,Cust email)"

Cross references: Process use case

Preconditions: "User Registered"

Postcondition: -A condition of "manage customer(cust id,Cust name,Cust email)"was created

(Instance creation)

- L was associated with a register
- (association formed)
- Attributes of "manage customer(cust id,Cust name,Cust email)"were initialized

*Contract CO3: "Create salesData(custid,vehical id, payment)"*

Operations: "Create salesData(custid,vehical id, payment)"

Cross references: Process use case

Preconditions: "Sales Data Generated"

Postcondition: -A condition of "Create salesData(custid,vehical id, payment)"was created

(Instance creation)

- L was associated with a register
- (association formed)
- Attributes of "Create salesData(custid,vehical id, payment)"were initialized

*Contract CO4: "ChangeSalesData(Custid,Vehical id)"*

Operations: "ChangeSalesData(Custid,Vehical id)"

Cross references: Process use case

Preconditions: "Sales Data Updated"

Postcondition: -A condition of "Create salesData(custid,vehical id, payment)"was cereated

(Instance creation)

- L was associated with a register
- (association formed)
- Attributes of "Create salesData(custid,vehical id, payment)"were initialized

*Contract CO5: "ViewSales(veh calid,custid)"*

Operations: "ChangeSalesData(Custid,Vehical id)"

Cross references: Process use case

Preconditions: "Sales list Generated"

Postcondition: -A condition of "ChangeSalesData(Custid,Vehical id)"was cereated

(Instance creation)

- L was associated with a register
- (association formed)

Attributes of "ChangeSalesData(Custid,Vehical id)"were initialized

*Contract CO6: "ViewIn voice(vehical id)"*

Operations: "ViewIn voice(vehical id)"

Cross references: Process use case

Preconditions: "In voice list Generated"

Postcondition: -A condition of "ViewIn voice(vehical id)"was cereated

(Instance creation)

- L was associated with a register
- (association formed)

Attributes of "ViewIn voice(vehical id)"were initialized



*Contract CO7: "Create Repair Data(cust id,vehical id)"*

Operations: "Create Repair Data(cust id,vehical id)"

Cross references: Process use case

Preconditions: "Repair Data Created Successfully"

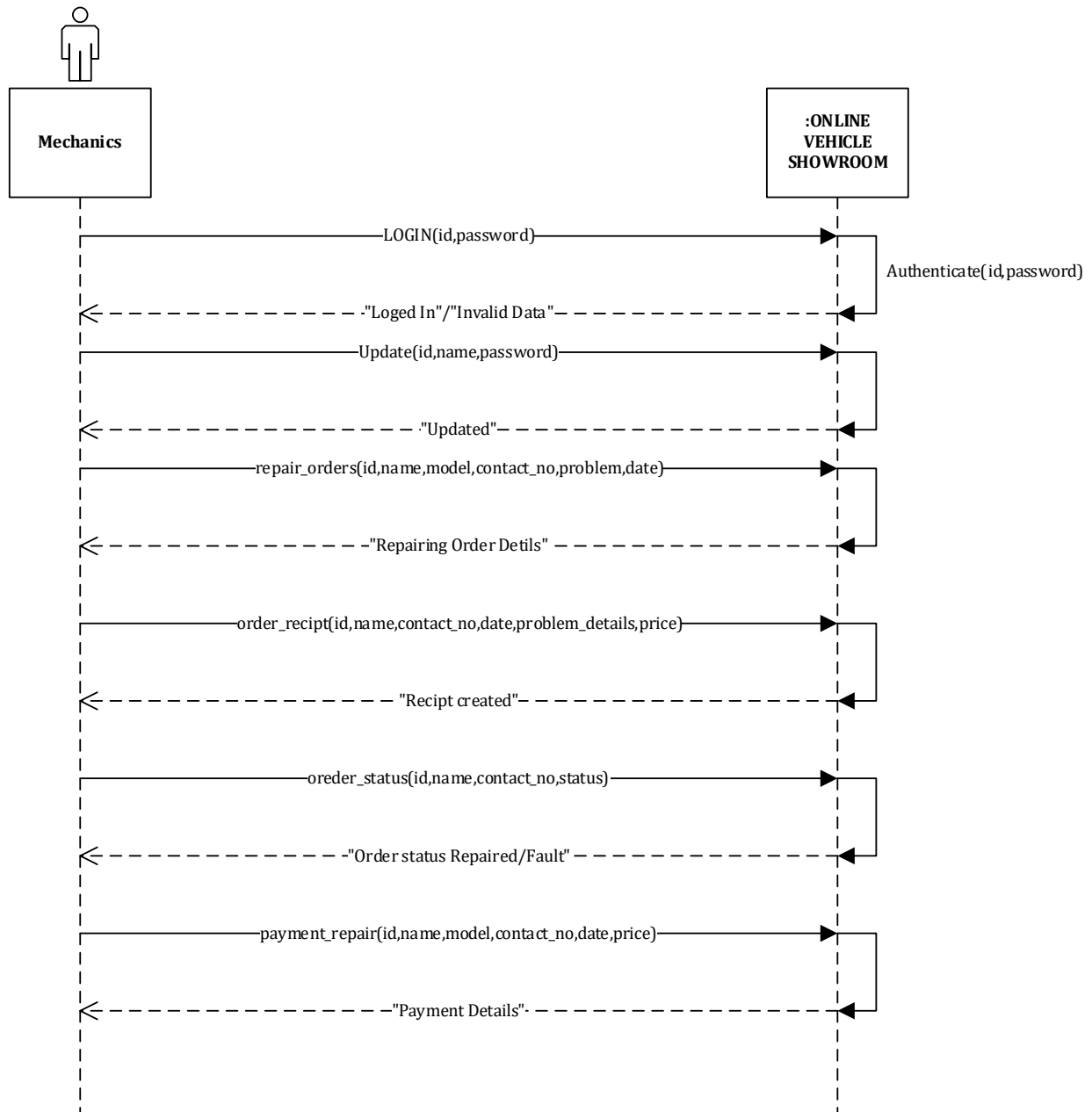
Postcondition: -A condition of "Create Repair Data(cust id,vehical id)"was cereated

(Instance creation)

- L was associated with a register
- (association formed)

Attributes of "Create Repair Data(cust id,vehical id)"were initialized

## Mechanics



## Operation Contracts

### *Contract CO1: Login(id,password)*

Operations: Authenticate(id,password)

Cross reference: Process use case

Preconditions: Mechanic has an id and password

Postcondition: -A condition of “logged in” \”invalid Data” (Instance creation)

- If id and password authenticated then sales manager logged in and move to the next activity.
- If id and password not correct then show an error “Invalid Data”.

### *Contract CO2: Update(id,name,password)*

Operations: Update(id,name,password)

Cross reference: Process use case

Preconditions: Mechanic has authenticated data.

Postcondition: -A condition of “Update Info” (Instance creation)

- Sales manager enter updated information then alert box shows “Updated successfully”.

### *Contract CO3: repair\_orders(id,name,model,contact\_no,problem,date)*

Operations: repair\_orders(id,name,model,contact\_no,problem,date)

Cross references: Process use case

Preconditions: Authenticated Mechanic logged in.

Postcondition: -A condition of “repair\_orders” (Instance creation)

- Mechanic can see order details.

### *Contract CO4: order\_receipt(id,name,contact\_no,date,problem\_details,price)*

Operations order\_receipt(id,name,contact\_no,date,problem\_details,price)

Cross reference: Process use case

Preconditions: Authenticated Mechanic logged in. Order details.

Postcondition: -A condition of “order\_receipt” (Instance creation)

- Add details and create a receipt.

*Contract CO5: order\_status(id,name,contact\_no,status)*

Operations: order\_status(id,name,contact\_no,status)

Cross references: Process use case

Preconditions: Authenticated Mechanic logged in. Order details.

Postcondition: -A condition of “order\_status” (Instance creation)

- Show status of order repaired or faulty.

*Contract CO6: payment\_repair(id,name,model,contact\_no,date,price)*

Operations: payment\_repair(id,name,model,contact\_no,date,price)

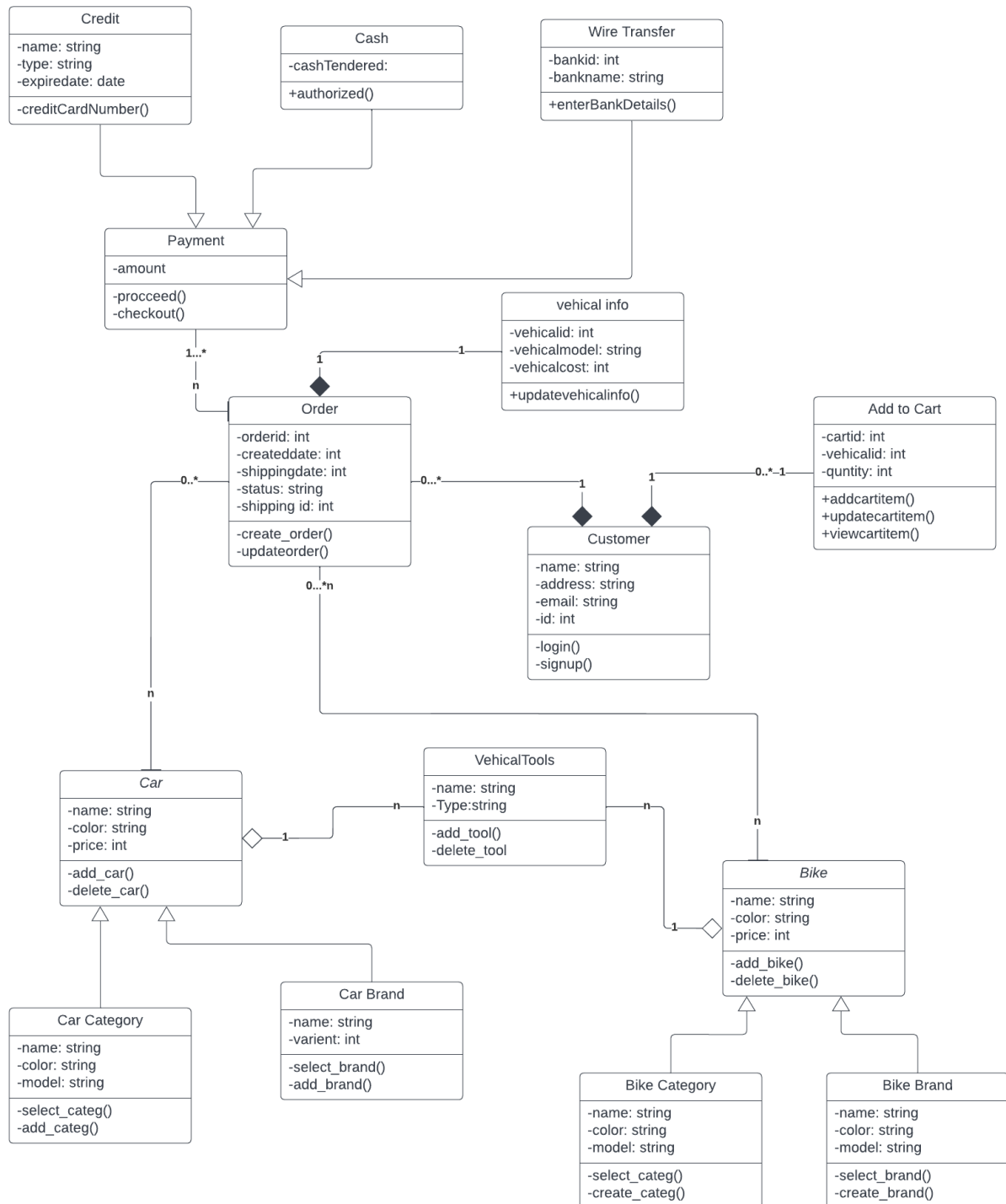
Cross references: Process use case

Preconditions: Authenticated Sales manager logged in. Order details. Order status.

Postcondition: -A condition of “payment\_repair” (Instance creation)

- Show payment details.

## Class Diagram



## Test Cases

### Sign up test cases

Test Case ID	Test Case Description	Test steps	Test Data	Expected result	Actual result	Status
TU01	Check Customer sign up with valid Data	Go to site  Enter First name  Enter last name  Enter Email  Enter Phone number  Enter Password  Click Register	<b>First name</b> Bilal <b>Last name</b> Shafiq <b>Email</b> <a href="mailto:Bilal33@gmail.com">Bilal33@gmail.com</a> <b>Phone number</b> +9234535624 <b>Password</b> Bilal123* (Password should be character, numeric, and special character use compulsory)	User should register into a database  Move to the login	As Expected,	Pass
TU02	Check Customer sign up with invalid Data	Go to site  Enter First name  Enter last name  Enter Email  Enter Phone number  Enter Password  Click Register	<b>First name</b> 23Bilal <b>Last name</b> 67Shafiq <b>Email</b> <a href="mailto:Bilal3@gmail.com">Bilal3@gmail.com</a> <b>Phone number</b> +923453@\$98 <b>Password</b> Bilal1 (Password should be character, numeric, and special character use compulsory)	User should not register into a database  And again, registration process	As Expected,	Fail

Login test cases

Test Case ID	Test Case Description	Test steps	Test Data	Expected result	Actual result	Status
TU01	Check Customer Login with valid Data	Go to site  Enter Email  Enter Password  Click Login	<b>Email</b> <a href="mailto:Bilal33@gmail.com">Bilal33@gmail.com</a> <b>Password</b> Bilal123*	User should Login into an application	As Expected,	Pass
TU02	Check Customer Login with invalid Data	Go to site  Enter Email  Enter Password  Click login	<b>Email</b> <a href="mailto:Bilal@gmail.com">Bilal@gmail.com</a> <b>Password</b> Bilal123	User should not Login into an application	As Expected,	Fail

### Add to cart Test cases

Test Case ID	Test Case Description	Test steps	Test Data	Expected result	Actual result	Status
TU01	Check whether the add-to-cart button is clickable	Pressing the add-to-cart button	1,2,3.....so on <b>OR</b> Restricted only (10 item at a time) order	User should add quantity into the shopping cart	As Expected,	Pass
TU02	Check whether the add-to-cart button is clickable or not	Pressing the add-to-cart button	No data	User should not add quantity	As Expected,	Fail



### Shopping cart test cases

Test Case ID	Test Case Description	Test steps	Test Data	Expected result	Actual result	Status
TU01	Add one item to the cart and verify.	Pressing the add-to-cart button	<b>Id</b> = numeric value <b>Product name</b> = string <b>Quantity</b> = numeric value <b>Price</b> = numeric value <b>Total price</b> =numeric value	Show the all-total result to product add-to-cart	As Expected,	Pass
TU02	Increase the quantity of the item from the cart and verify.	Press the quantity button to increase the product item	1,2,3.....so on <b>OR</b> Restricted only (10 item at a time) order	User should add the quantity (item)	As Expected,	Pass
TU03	Remove some items from the cart and verify	Press the remove button to deleting the specific cart item	Increment value to decrement value	User should remove item	As Expected,	Pass

[Update cart](#)

Test Case ID	Test Case Description	Test steps	Test Data	Expected result	Actual result	Status
TU01	Check whether the update button is clickable	Pressing the update button	1,2,3.....so on <b>OR</b> Restricted only (10 item at a time) order	User should add quantity into the shopping cart	As Expected,	Pass
TU02	Check whether the update button is clickable or not	Pressing the update button	No data	User should not add quantity	As Expected,	Fail

Proceed to checkout test cases

<b>Test Case ID</b>	TU01
<b>Test Case Description</b>	Check Users can access the Checkout-Page only after adding the product to the cart.
<b>Test steps</b>	Click the add-to-cart button to add the product.
<b>Test Data</b>	1,2,3.....so on <b>OR</b> Restricted only (10 items at a time) order
<b>Expected result</b>	User should add the quantity to the shopping cart
<b>Actual result</b>	As expected,
<b>Status</b>	Pass

<b>Test Case ID</b>	TU02
<b>Test Case Description</b>	Check that the mandatory fields of the checkout address page are filled.
<b>Test steps</b>	<p>Click the button to proceed to checkout</p> <ul style="list-style-type: none"><li>• Enter First name</li><li>• Enter last name</li><li>• Enter Email</li><li>• Enter Phone number</li><li>• Enter Address</li></ul>
<b>Test Data</b>	<ul style="list-style-type: none"><li>• <b>First name</b> Bilal</li><li>• <b>Last name</b> Shafiq</li><li>• <b>Email</b> <a href="mailto:Bilal33@gmail.com">Bilal33@gmail.com</a></li><li>• <b>Phone number</b> +9234535624</li><li>• <b>Address</b> UMT Johar town block C-!!</li></ul>
<b>Expected result</b>	<ul style="list-style-type: none"><li>• User should enter customer detail successfully</li><li>• User click place order button to the order</li></ul>
<b>Actual result</b>	As expected,
<b>Status</b>	Pass

<b>Test Case ID</b>	TU03
<b>Test Case Description</b>	Check error message is displaying when the user fills invalid input details in the mandatory fields.
<b>Test steps</b>	<ul style="list-style-type: none"> <li>• Enter First name</li> <li>• Enter last name</li> <li>• Enter Email</li> <li>• Enter Phone number</li> <li>• Enter Address</li> </ul>
<b>Test Data</b>	<ul style="list-style-type: none"> <li>• <b>First name</b> 2344bila</li> <li>• <b>Last name</b> 6*qwerty</li> <li>• <b>Email</b> Bilal33gmail-com</li> <li>• <b>Phone number</b> \$%qw12456</li> <li>• <b>Address</b> @#\$lahore</li> </ul>
<b>Expected result</b>	Displaying the error message to all/specific field to enter the invalid data
<b>Actual result</b>	As expected,
<b>Status</b>	Fail

Place order test cases

Test Case ID	Test Case Description	Test steps	Test Data	Expected result	Actual result	Status
TU01	Check whether the place order button is clickable	Pressing the place order button	All customer detail	User should display message place order successfully	As Expected,	Pass
TU02	Check whether the place order button is clickable or not	Pressing the place order button	No data	User should not display message place order	As Expected,	Fail

### Dashboard test cases

Test Case ID	Test Case Description	Test steps	Test Data	Expected result	Actual result	Status
TU01	Check whether the whole dashboard component	Admin login the page and move into dashboard	Sales Customer Today orders Profit	Admin should show all components	As Expected,	Pass
TU02	Check whether the whole dashboard Component or not	Admin should not login successfully	No data	It doesn't show the component	As Expected,	Fail

### Product test cases

Test Case ID	Test Case Description	Test steps	Test Data	Expected result	Actual result	Status
TU01	Check whether the add products button is clickable	Pressing the add Products button	Name Categories Brand Quantity Cost price Sale price Uploaded image	Admin should add product to the table	As Expected,	Pass
TU02	Check whether the add Products button is clickable or not	Pressing the add Product button	No data	Admin should not add product to the table	As Expected,	Fail
TU03	Check the added product to see the table	Pressing the product button	Id Image Name Category Brand Quantity Cost price Sale price Action	Admin should See the product table	As Expected,	Pass
TU04	Check the removing product to the table	Pressing the remove button	Id Image Name Category Brand Quantity Cost price Sale price Action	Admin should deleting the product table (or specific product)	As Expected,	Pass

### Categories test cases

Test Case ID	Test Case Description	Test steps	Test Data	Expected result	Actual result	Status
TU01	Check whether the add categories button is clickable	Pressing the add categories button	Categories name	Admin should add categories to the table	As Expected,	Pass
TU02	Check whether the add categories button is clickable or not	Pressing the add categories button	No data	Admin should not add categories to the table	As Expected,	Fail
TU03	Check the added categories to see the table	Pressing the product button	Id Name action	Admin should See the categories table	As Expected,	Pass
TU04	Check the removing categories to the table	Pressing the remove button	Id Name action	Admin should deleting the product table (or specific product)	As Expected,	Pass



### Brand test cases

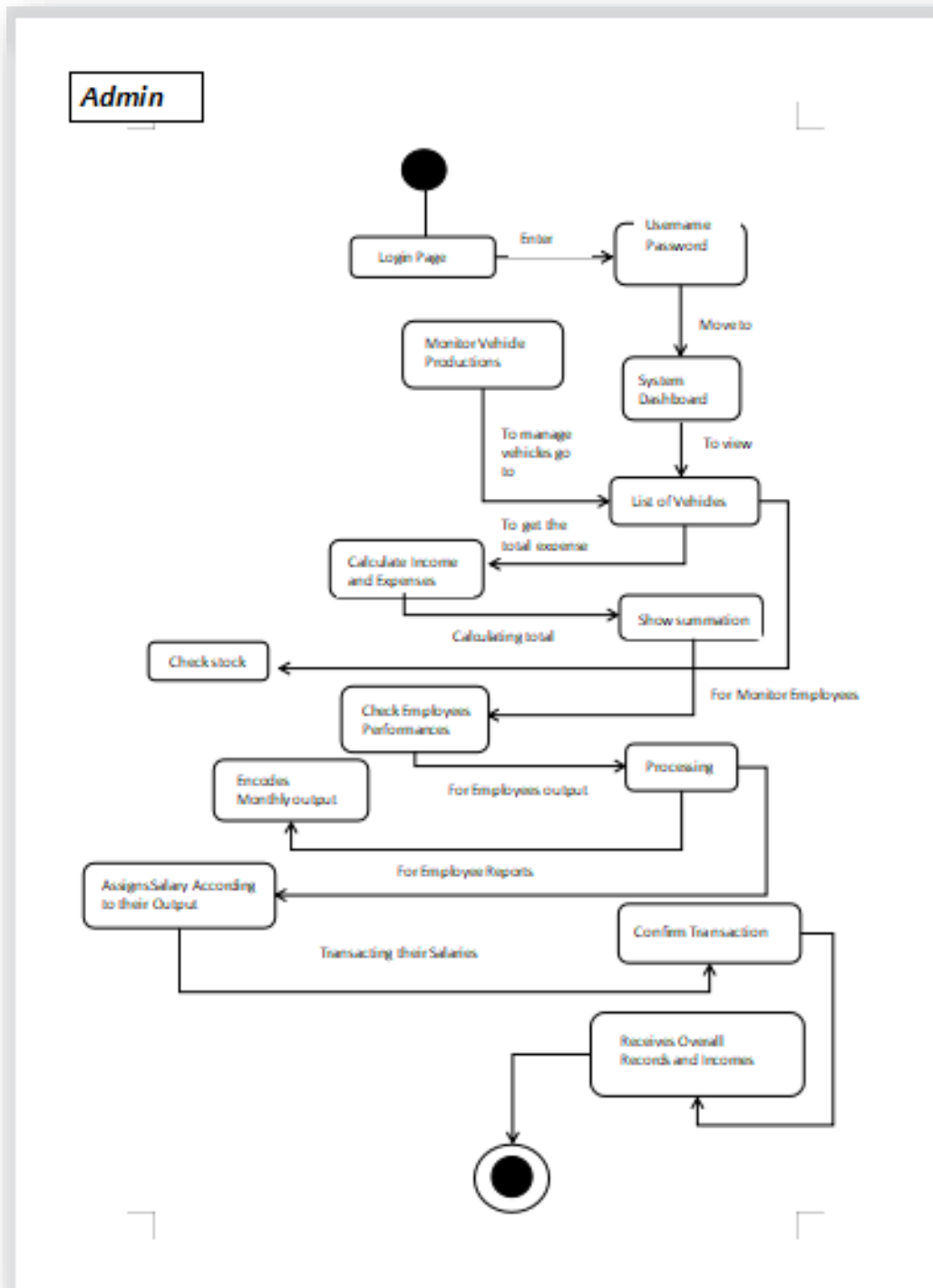
Test Case ID	Test Case Description	Test steps	Test Data	Expected result	Actual result	Status
TU01	Check whether the add Brand button is clickable	Pressing the add Brand button	Brand name	Admin should add Brand to the table	As Expected,	Pass
TU02	Check whether the add Brand button is clickable or not	Pressing the add Brand button	No data	Admin should not add Brand to the table	As Expected,	Fail
TU03	Check the added Brand list to see the table	Pressing the Brand list button	Id Name action	Admin should See the categories table	As Expected,	Pass
TU04	Check the removing brand to the table	Pressing the Brand button	Id Name action	Admin should deleting the product table (or specific product)	As Expected,	Pass

### Order test cases

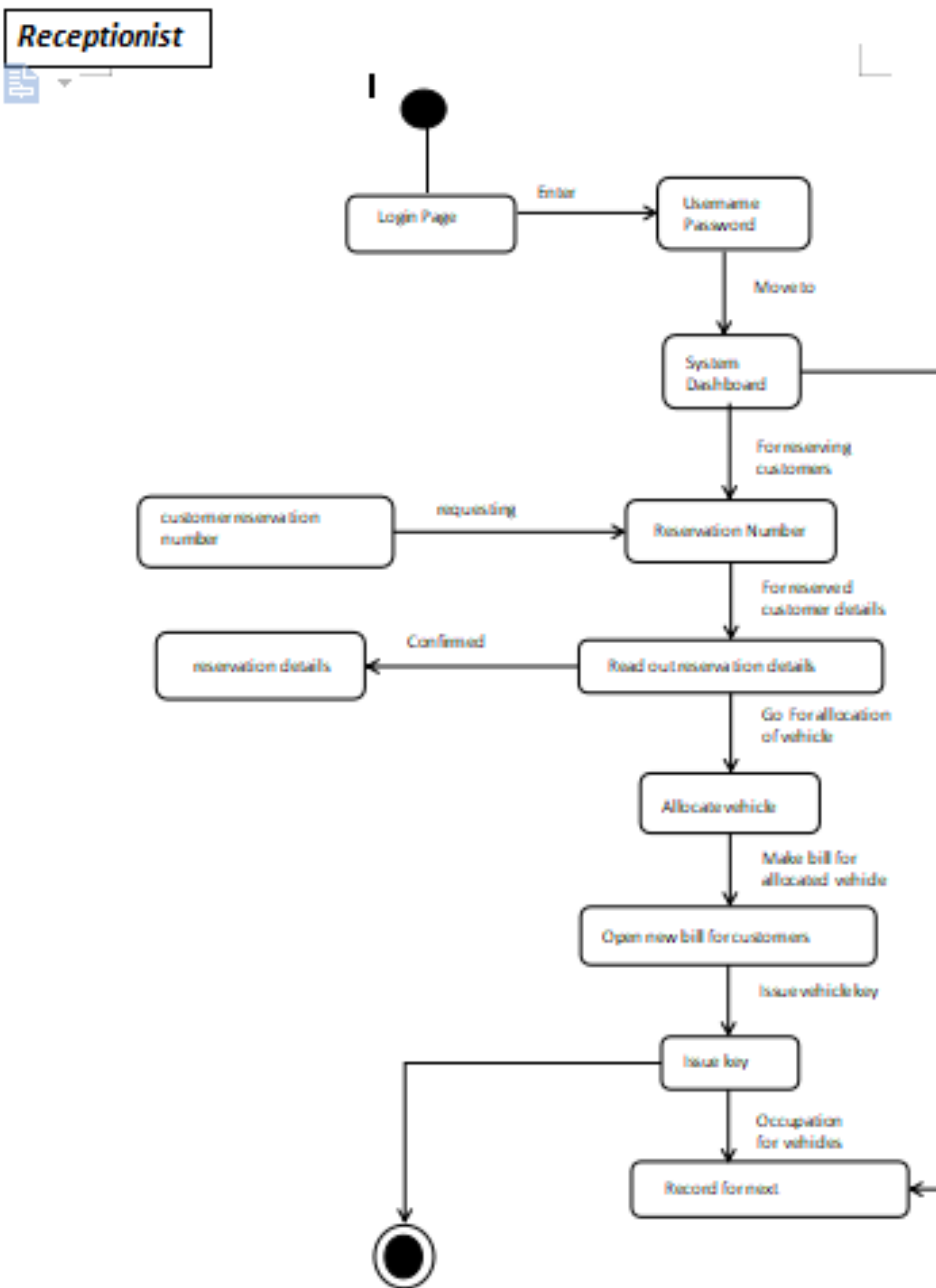
Test Case ID	Test Case Description	Test steps	Test Data	Expected result	Actual result	Status
TU01	Check whether the order table	Go to site Login Go to dashboard	Record /order	Admin should see all order to being the customer	As Expected,	Pass
TU02	Check whether the doesn't show	Go to site Doesn't Login	No data	Admin should not see the order	As Expected,	Fail

## State chart

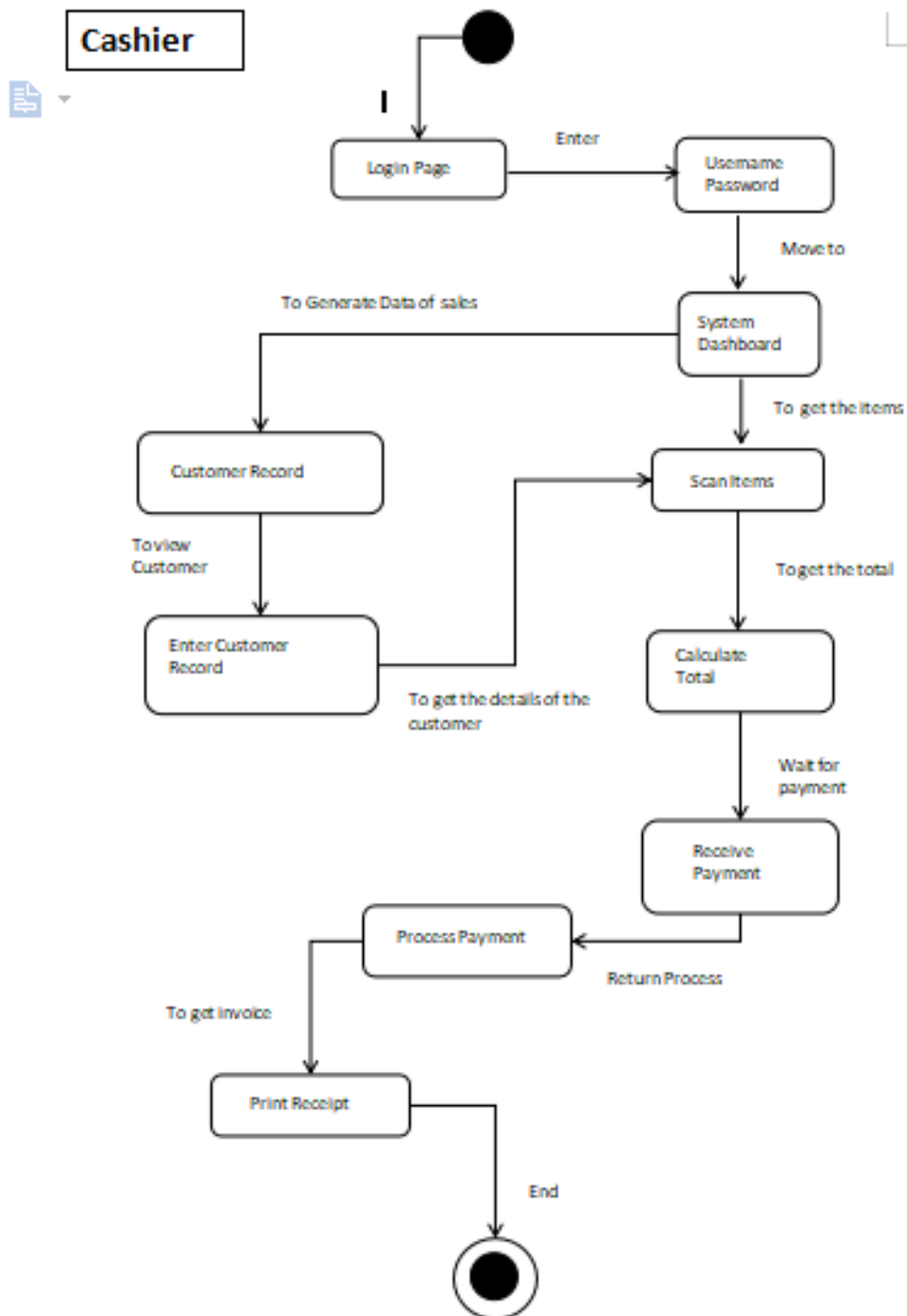
### Admin



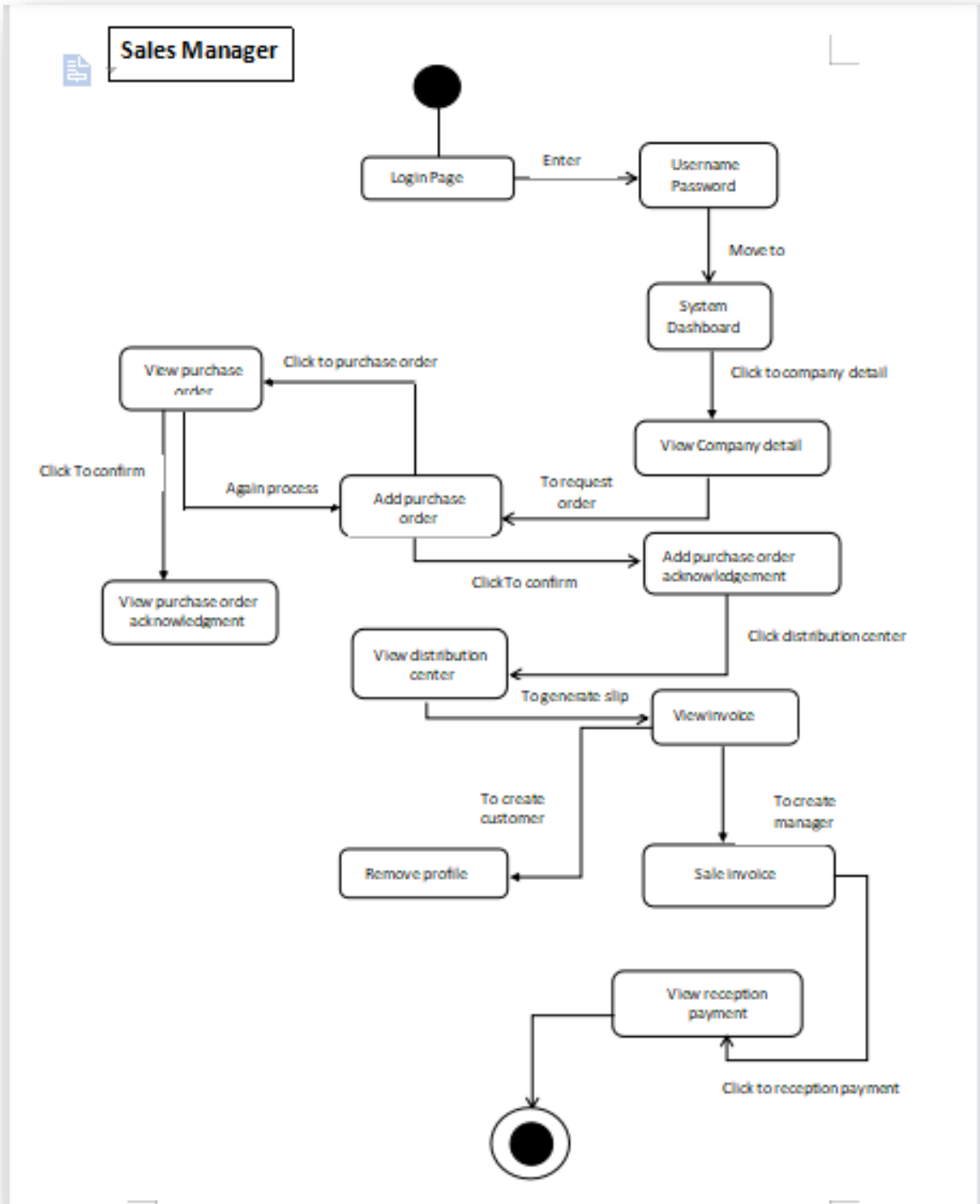
## Receptionist



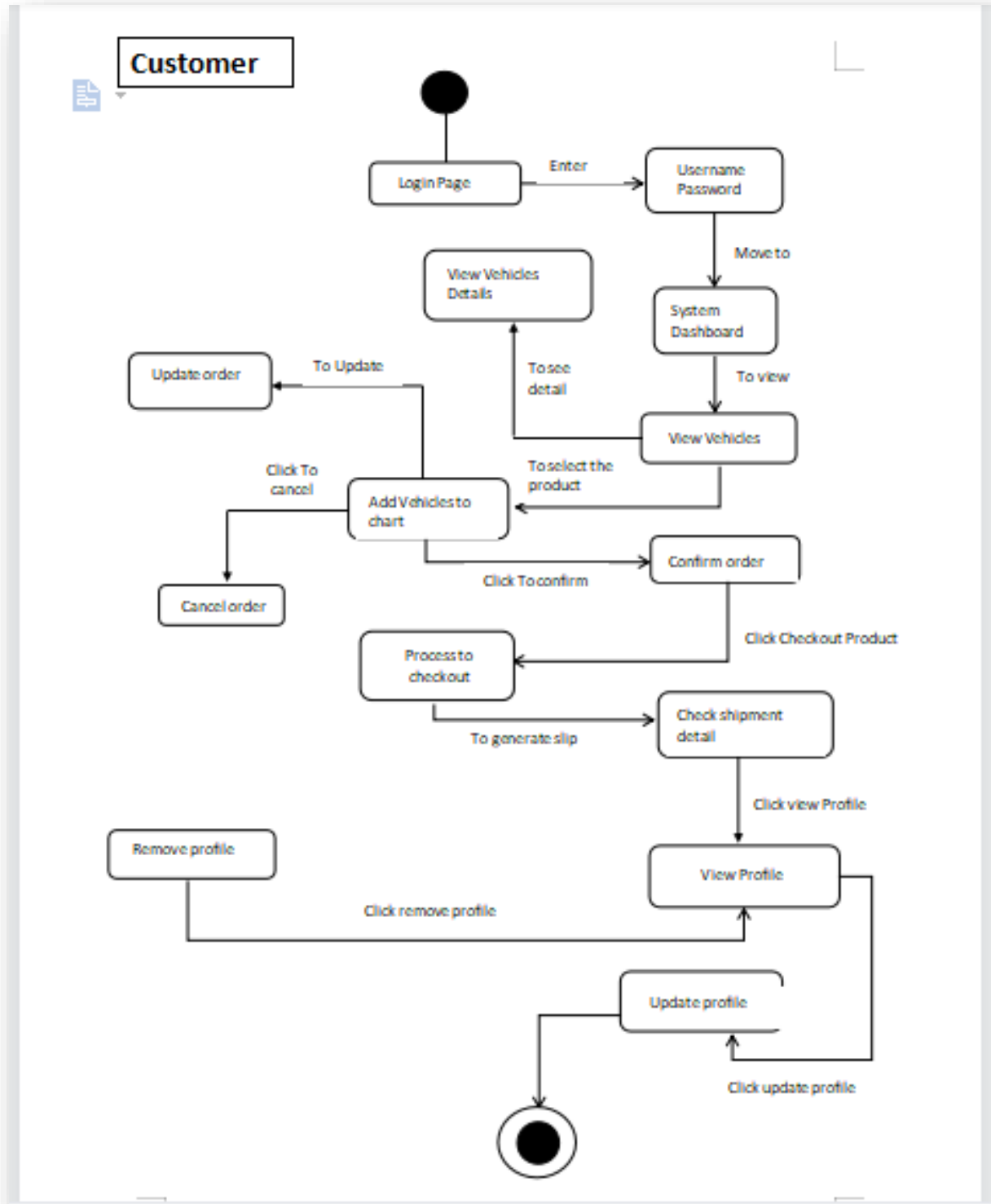
## Cashier



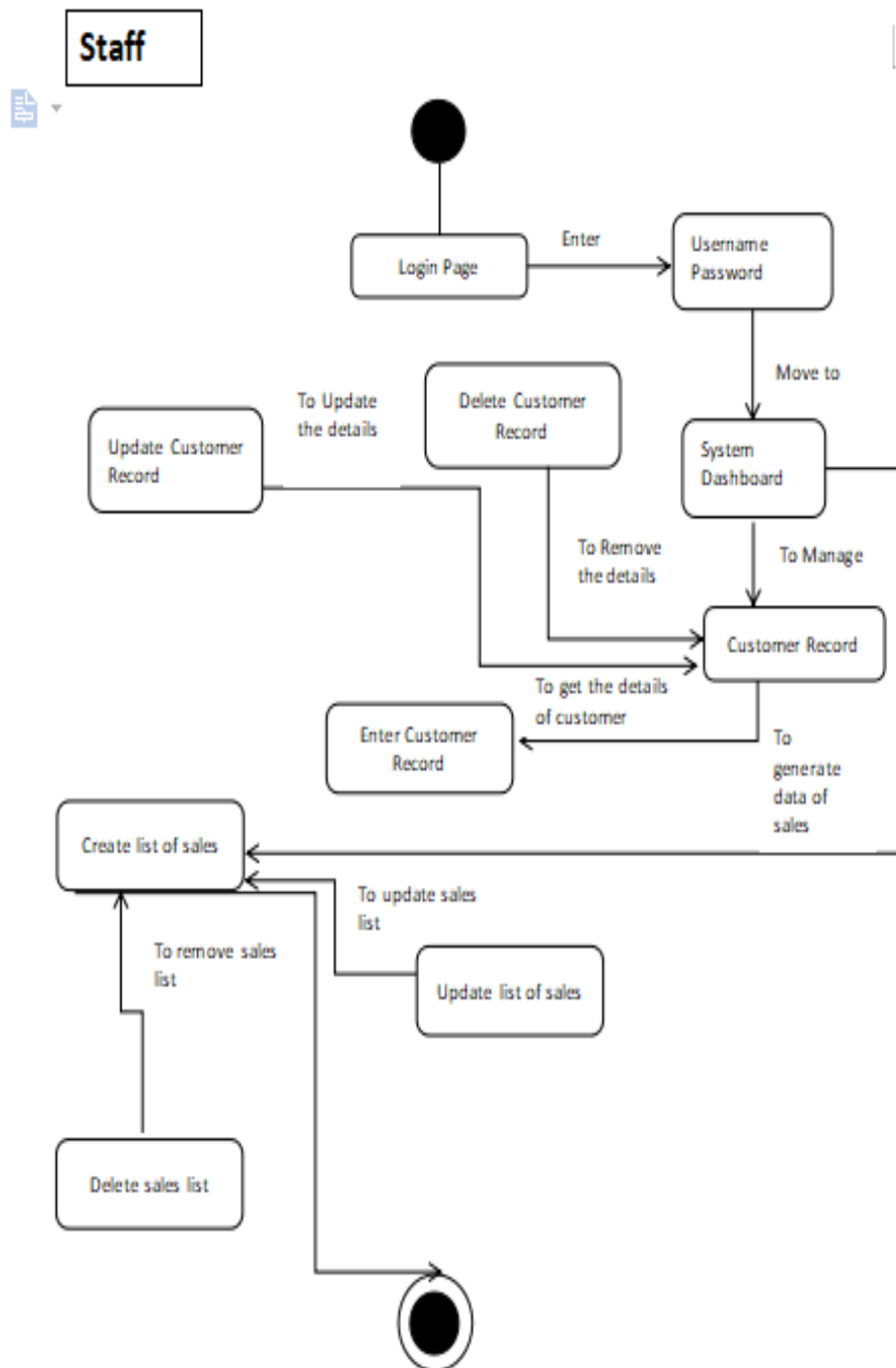
## Sales Manager



## Customer



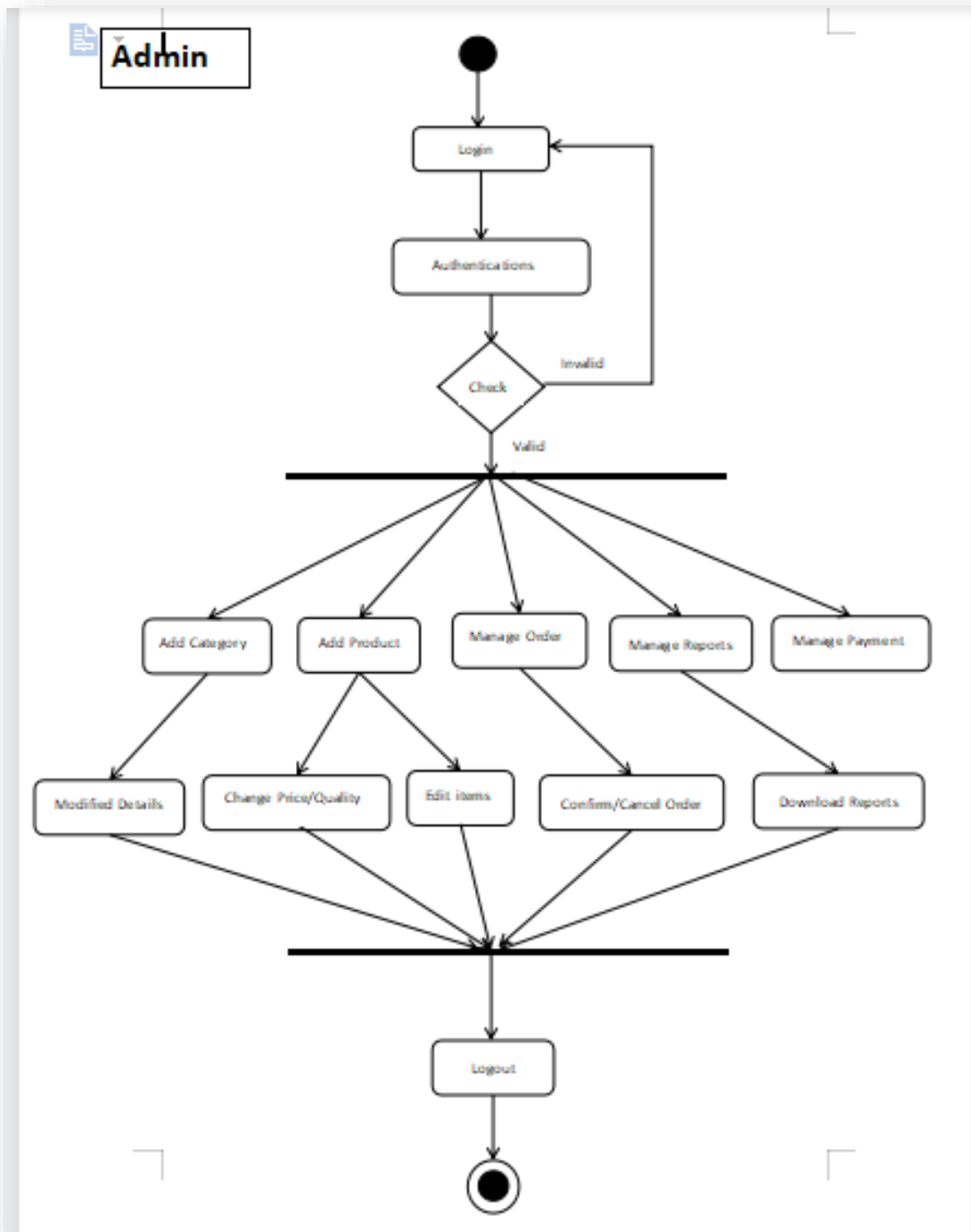
## Staff



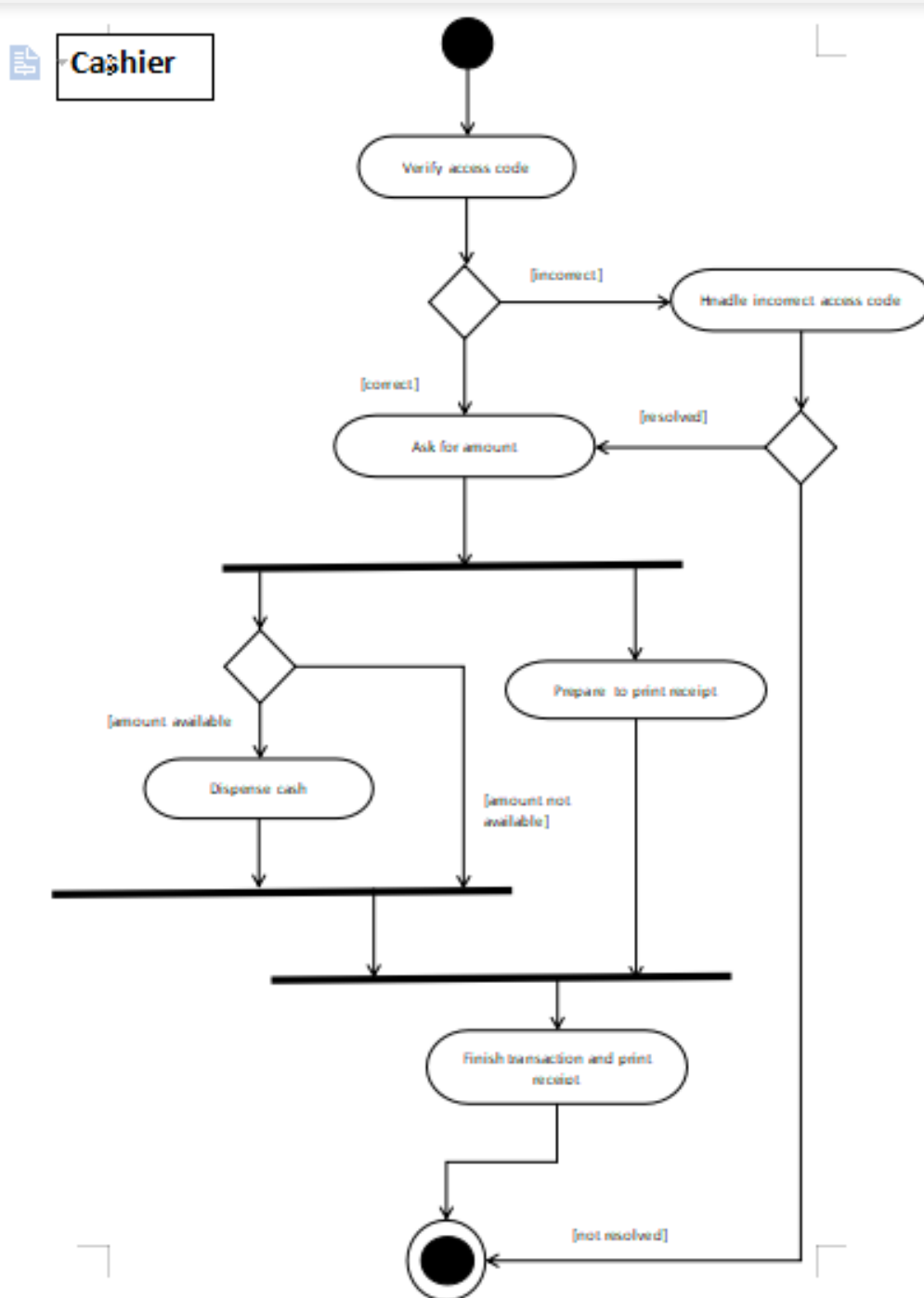


## Activity Diagram

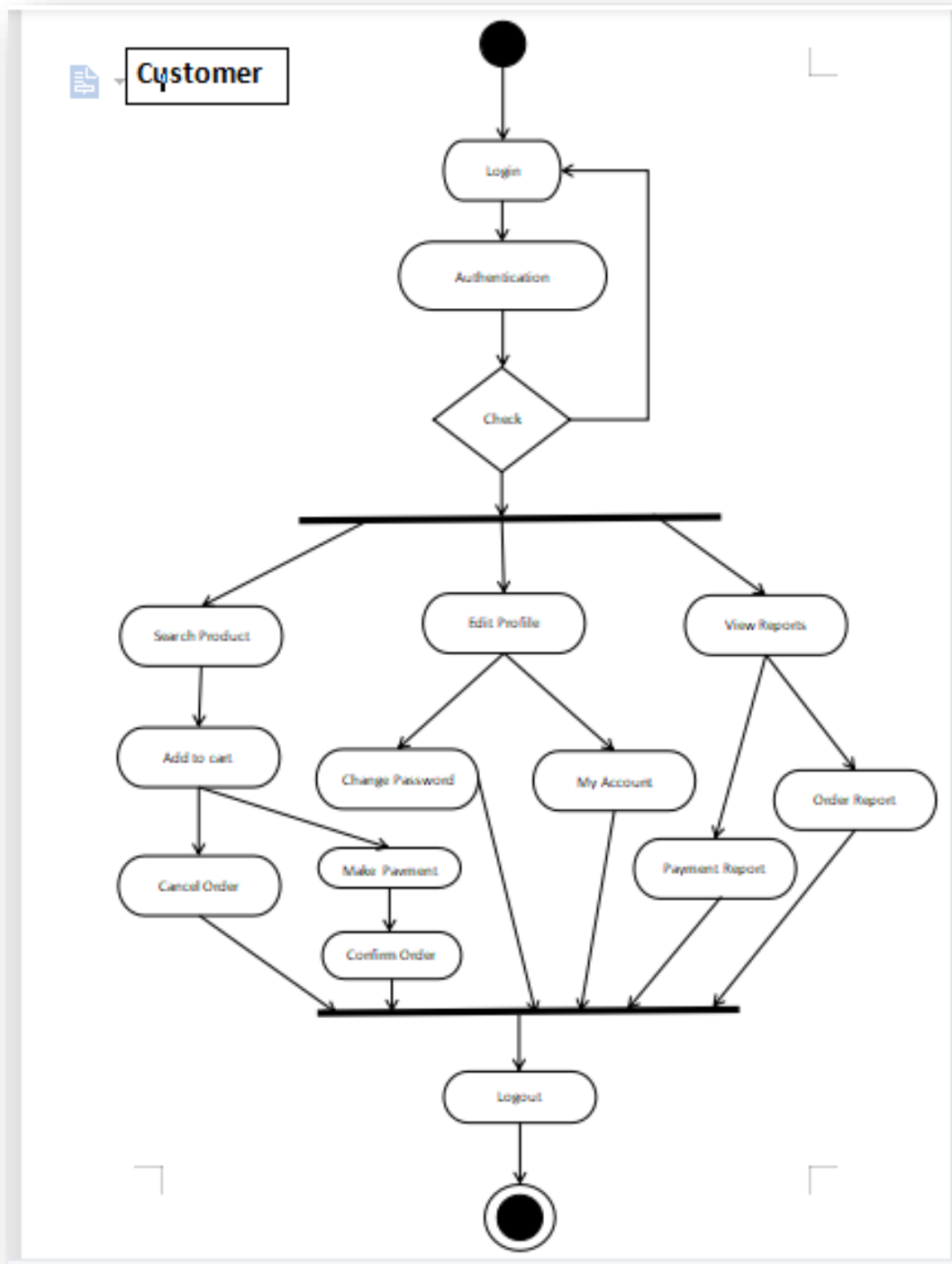
### Admin



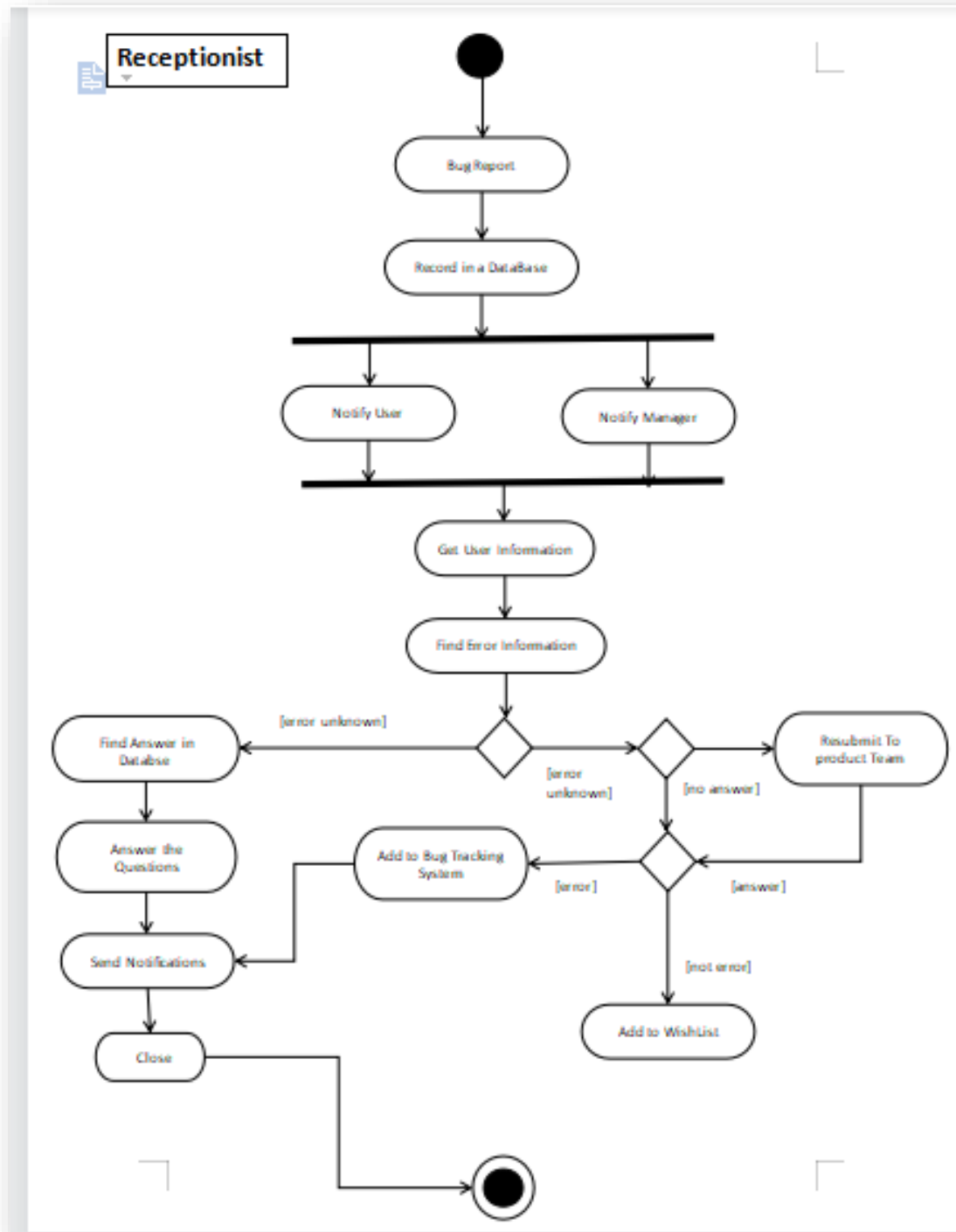
## Cashier



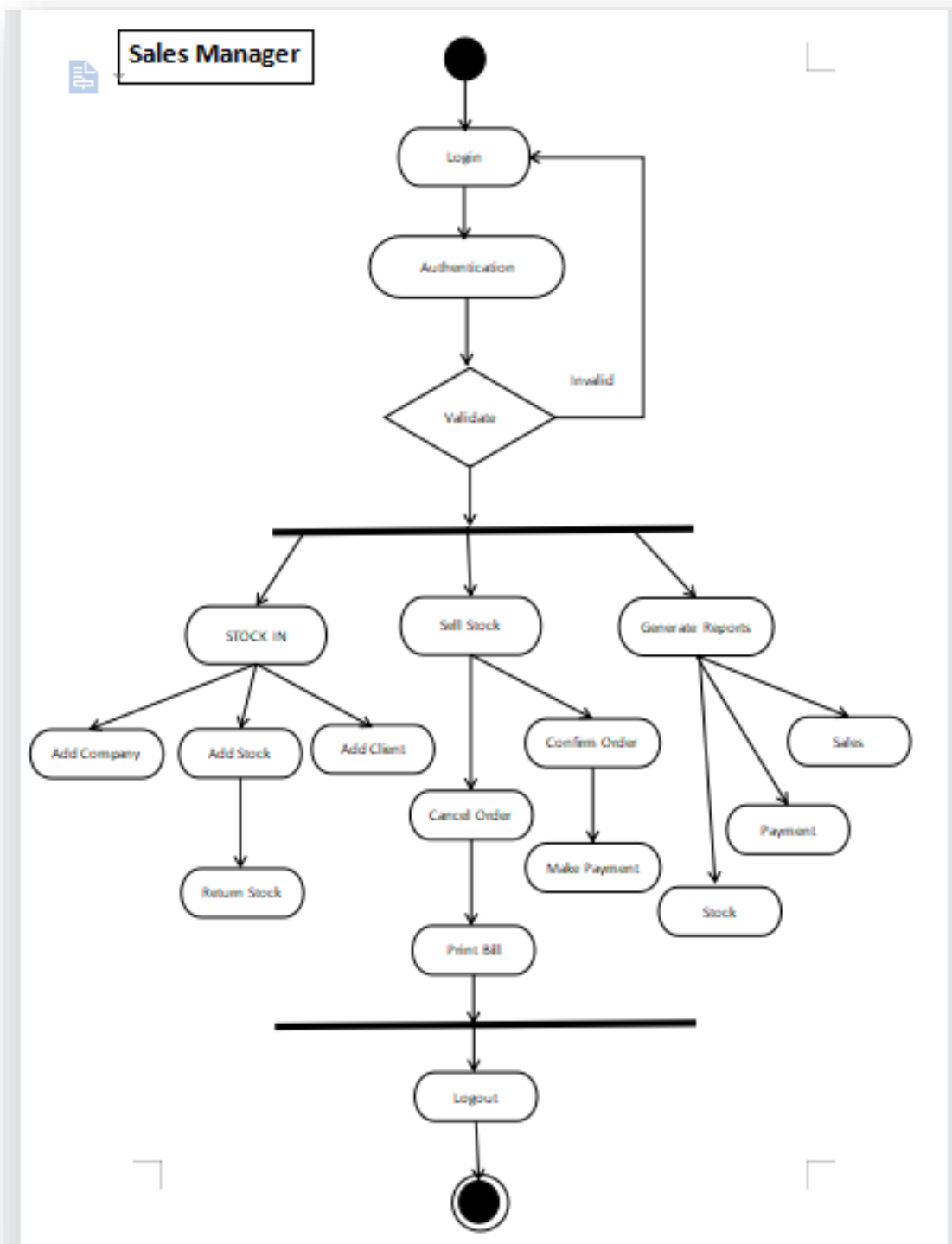
## Customer



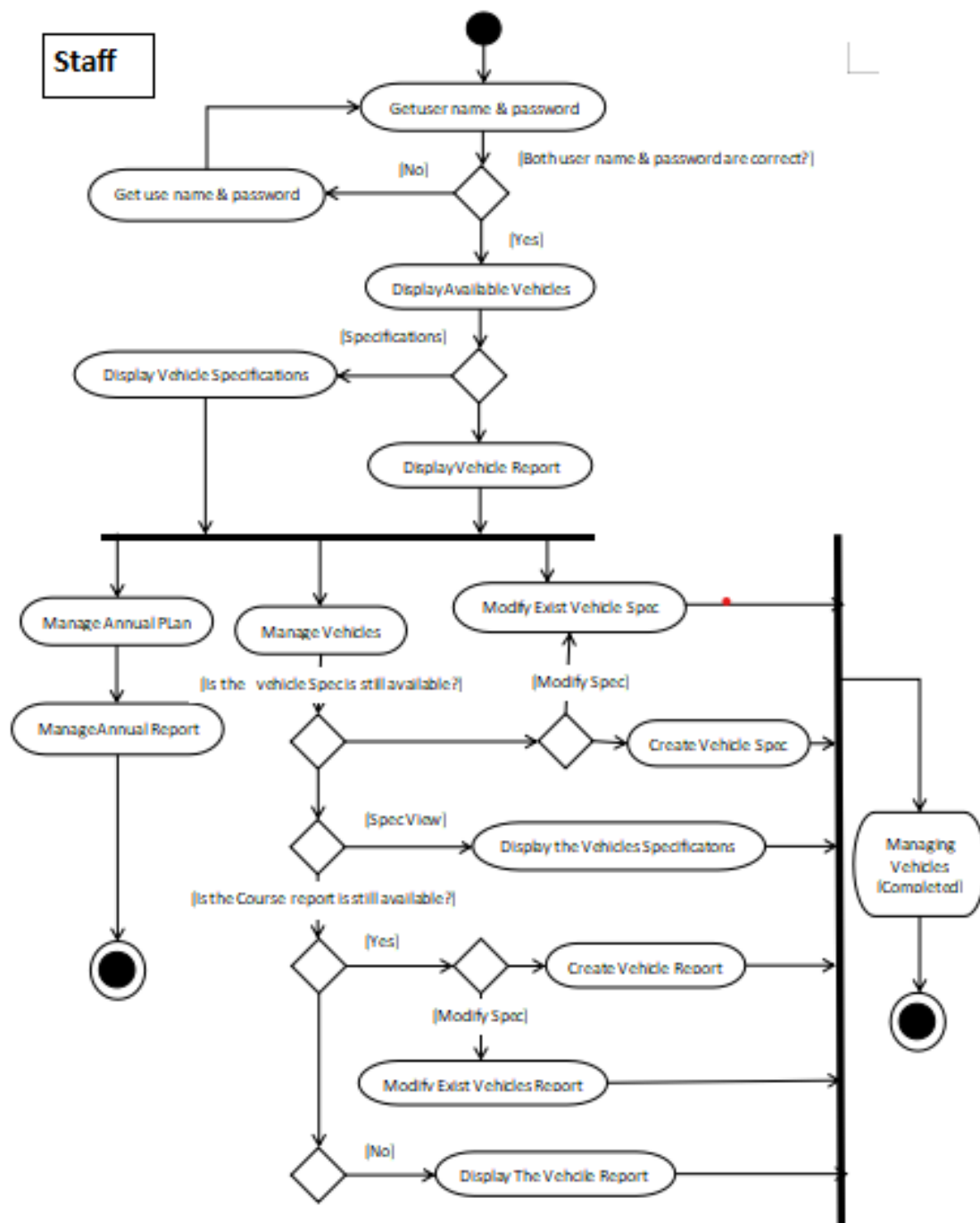
## Receptionist



## Sales Manager

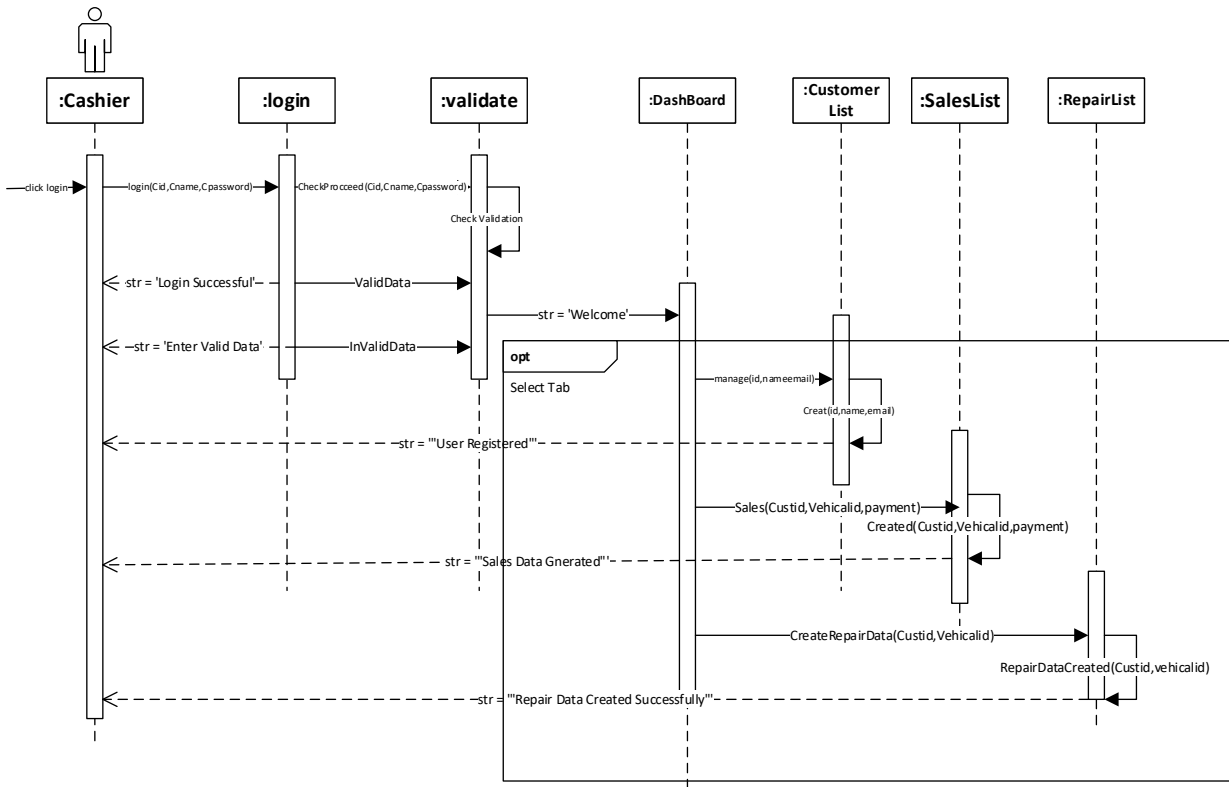


## Staff

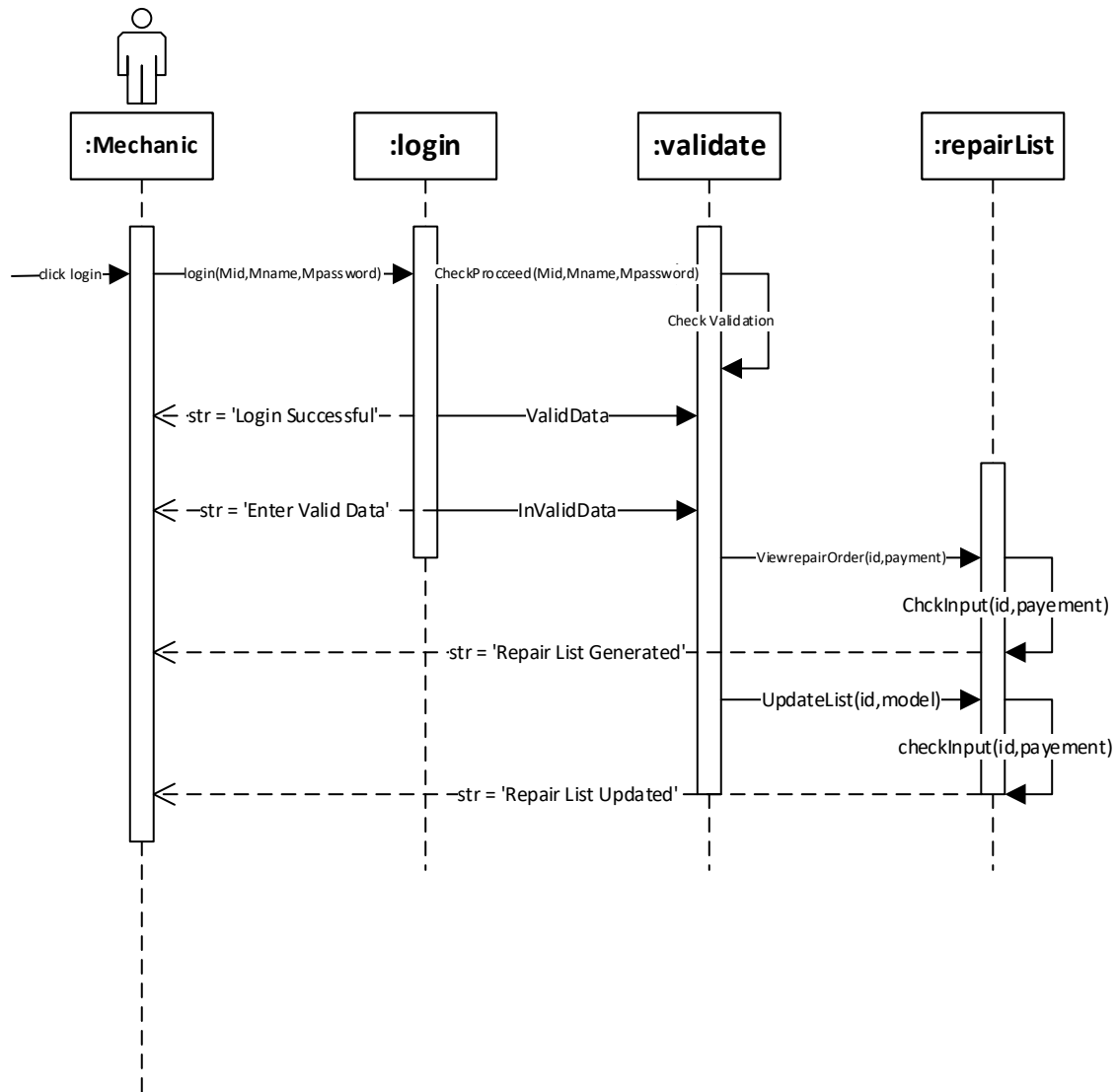


# Sequence Diagram

## Cashier

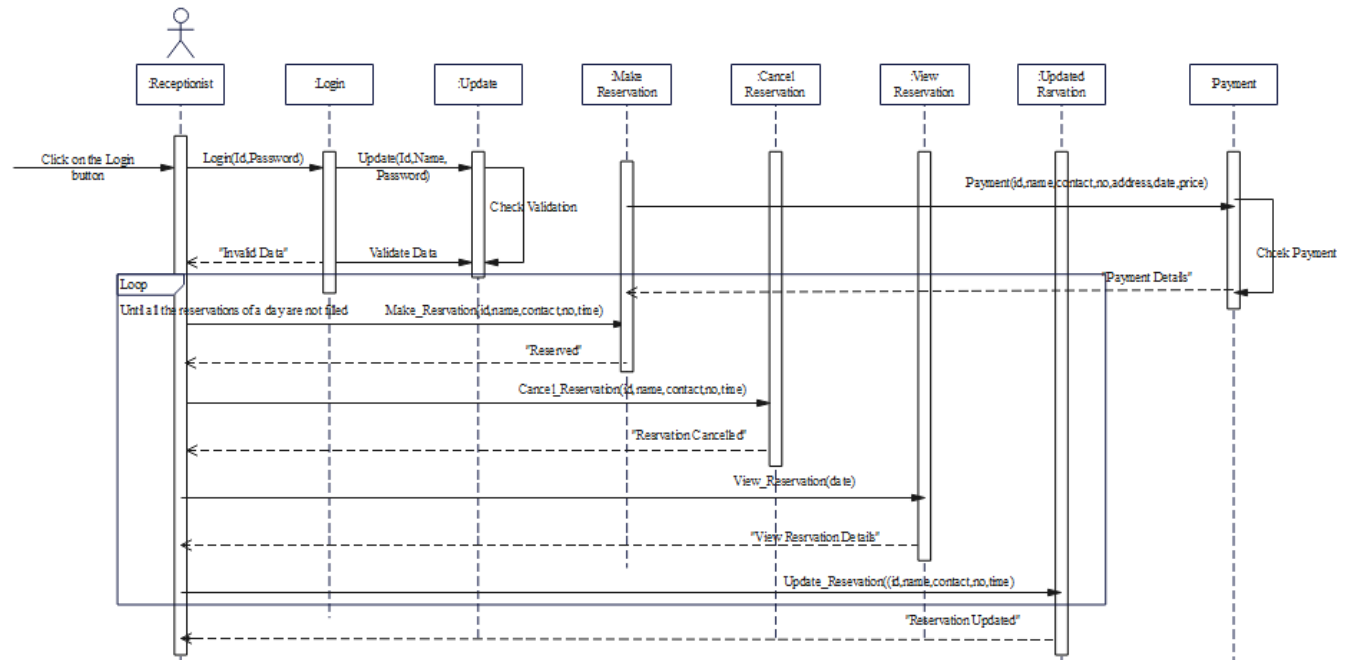


## Mechanics

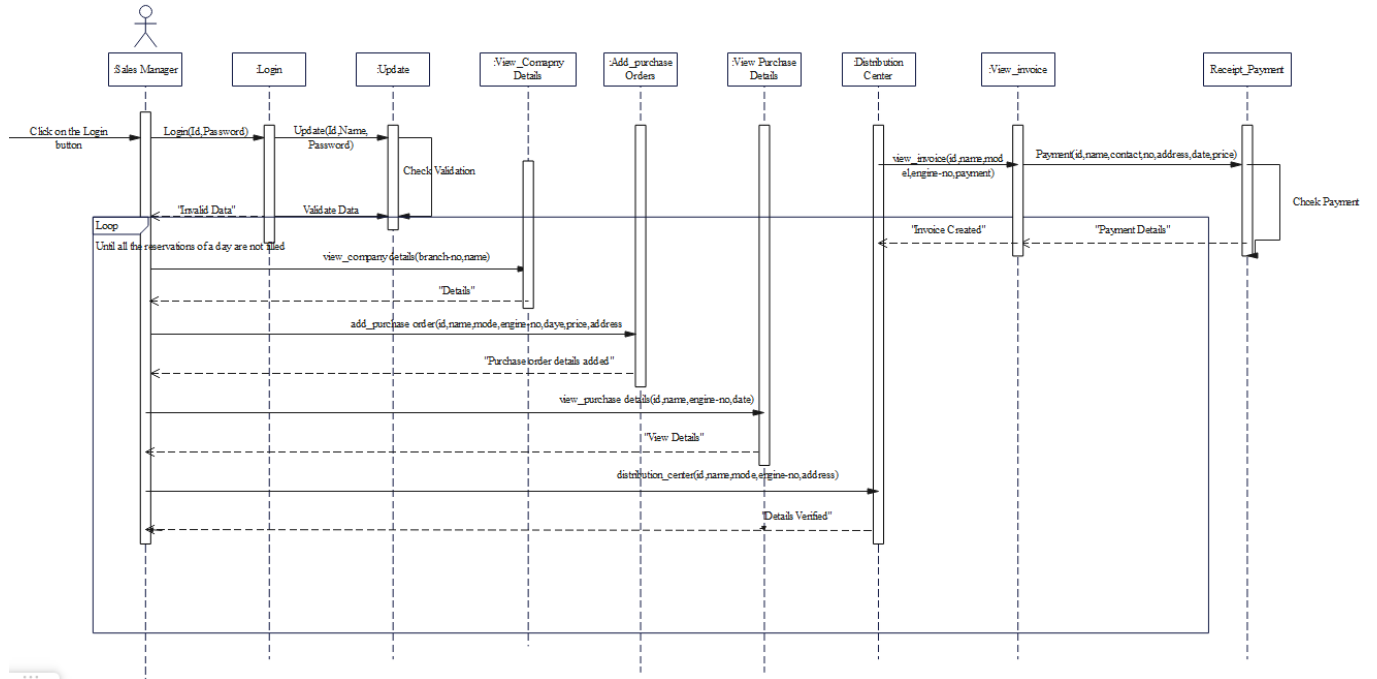




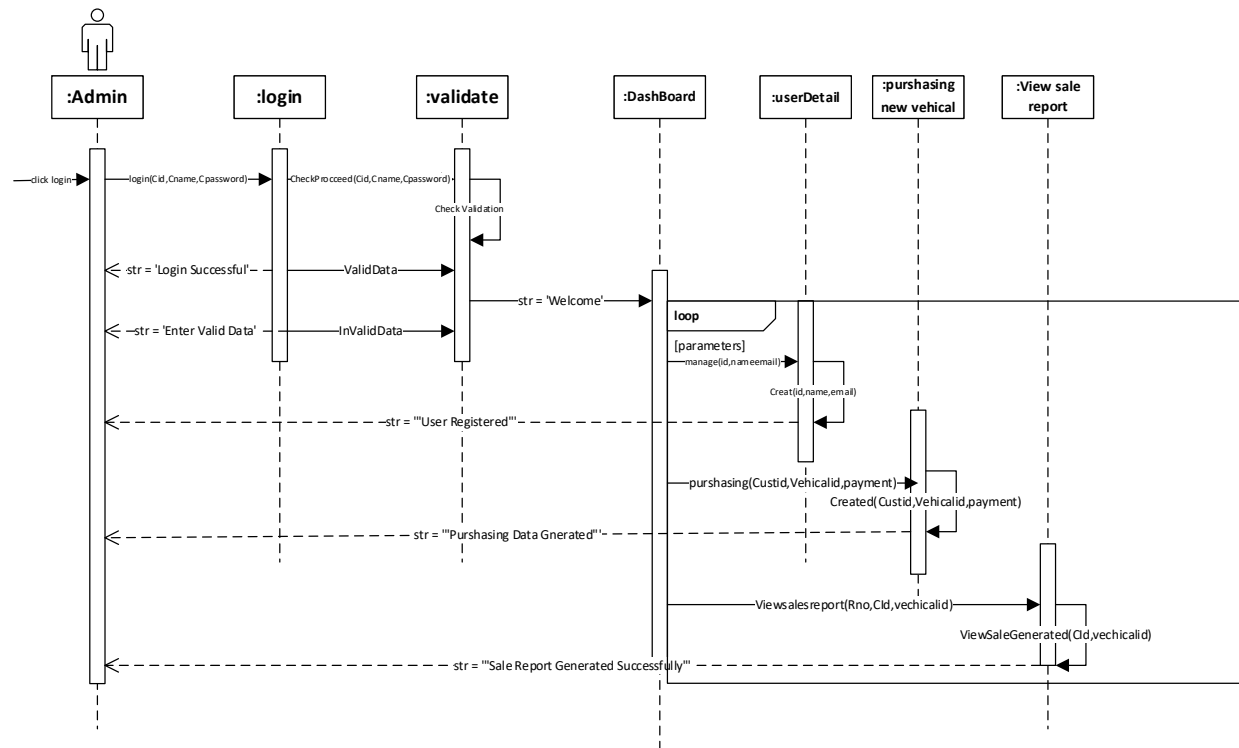
## Receptionist



Sales Manager



## Admin



## Customer

