Software Requirements Specification

FOR

RentMyCar

Submitted To:

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Chapter 1

1.1 Case Study

Recently our team observed that many of us want to travel inside and outside of Dhaka. Some cases are found against local CNG Cab Driver. People feel insecure when they travel alone. Some snatching occurred by drivers. There should be a proper solution regarding this issue.

1.2 Finding the Gap

In the existing market there is no proper software that ensures user confidentiality and give them proper security. In our system we give proper priority on user personal information. When user book car all the information is stored in the server.3.1

Chapter 2

2.1 Feasibility Analysis

2.1.1 Technical Feasibility: We are using Visual Studio IDE, asp .net MVC framework for developing our project. As two team members are involved with the project we need two workable PC. We are using Windows 10 Pro as operating system in each PC. Also database server is needed to store data in a secure way. We have sufficient technical expertise to convert our ideas into working systems. Hopefully, we are able to meet our technical capacity.

2.1.2 Economic Feasibility: While doing cost estimation it shows us the overall view of costs needed to successfully finish the project within deadline. Recommended software and hardware have to be bought. Project manager, developers, testers and all members associated with the project need payment. We have to pay for database server also. Overall, the viability and credibility of the project become disclosure after the cost estimation which shows the positive economic benefits. Analysis shows that investment to this project will be recovered within a year.

2.1.3 Legal Feasibility: Any part of the project doesn't go against the law of our country. We have analyzed whether our project goes against data protection acts as data storage playing the big role. Also this project is legally publishable and users can use the system without any hesitation. For more credibility we have the legal license from the government under this project.

2.1.4 Operational Feasibility: Everything is set up in such a way that the project will be finished within allotted time. From project manager to all associated stakeholders have given their time at any need. Any changes in project are manageable as project has designed in such a way to adapt every problem that arises. Strategies in project development have assured the viability of the project.

2.1.5 Scheduling Feasibility: The project has been scheduled for 4 months. The project is scheduled in such a way that from requirements gathering to implementation, testing maximum possible time has been assigned.

2.2 Cost Estimation

COST MANAGEMENT

3.1 Project cost Estimate

Wbs items	Units/hr	Cost/unit/hrs	Subtotals	Wbs level totals	%of total
1. Team Work					
Team Manager	900	200	180,000		
Team Members	2100	100	210,000	540,000	11.4%
Contractors (while 10% of software development & testing)			150,000		
2. Hardware					
Devices	80	10,000	800,000		
Servers	6	30,000	180,000	980,000	16.6%
3. Software					
Licensed Software	40	10,000	400,000	2300000	36.8%
Software Development			1,900,000		
4. Testing			200,000	200,000	4.02%
5. Training & Support				500,000	5.32%
Training Cost	25	1000	250,000		4.35%
Travel Cost	10	5000	50,000		
Project Team Members					
6. Others			100,000	100,000	2.20%
7. Reserve			1,000,000	1,000,000	19.31
Total Project Estimate Cost				5,620,000	

Figure 1: Cost estimation

2.3 Time Estimation

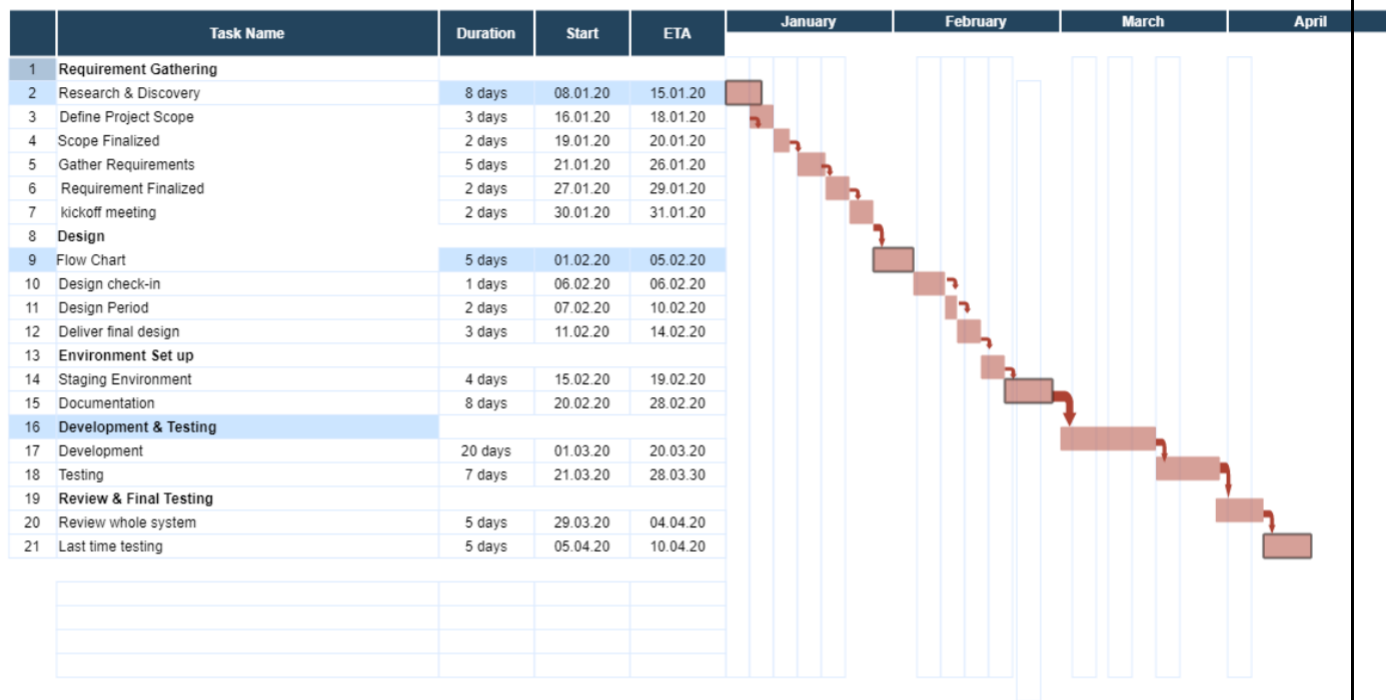|	Task Name	Duration	Start	ETA	January	February	March	April
1	**Requirement Gathering**							
2	Research & Discovery	8 days	08.01.20	15.01.20				
3	Define Project Scope	3 days	16.01.20	18.01.20				
4	Scope Finalized	2 days	19.01.20	20.01.20				
5	Gather Requirements	5 days	21.01.20	26.01.20				
6	Requirement Finalized	2 days	27.01.20	29.01.20				
7	kickoff meeting	2 days	30.01.20	31.01.20				
8	**Design**							
9	Flow Chart	5 days	01.02.20	05.02.20				
10	Design check-in	1 days	06.02.20	06.02.20				
11	Design Period	2 days	07.02.20	10.02.20				
12	Deliver final design	3 days	11.02.20	14.02.20				
13	**Environment Set up**							
14	Staging Environment	4 days	15.02.20	19.02.20				
15	Documentation	8 days	20.02.20	28.02.20				
16	**Development & Testing**							
17	Development	20 days	01.03.20	20.03.20				
18	Testing	7 days	21.03.20	28.03.30				
19	**Review & Final Testing**							
20	Review whole system	5 days	29.03.20	04.04.20				
21	Last time testing	5 days	05.04.20	10.04.20				

Figure 2: Time estimation

Chapter 3

3.1 Introduction

This project is designed so as to be used by Car Rental Company specializing in renting car to customers. It is an online system through which customers can view available cars, register, view profile and book cars.

3.2 Aims & Objectives

- To produce a web-based system that allow customer to register and reserve car online and for the company to effectively manage their cars rental business.

- To ease customer's task whenever they need to rent a car.

3.3 Motivation

A car rental is a vehicle that can be used temporarily for a fee during a specified period. Getting a rental car helps people get around despite the fact they do not have access to their own personal car or don't own a car at all. The individual who needs a car must contact a rental car company and contract out for a car. This system increases customer retention and simplify vehicle and staff management.

3.4 Stakeholders

Admin, Company, Customer

Chapter 4

4.1 Functional Requirements

FR-01	Login and Logout
Description	User will be able to login and logout to the system with valid user credentials.
Stakeholders	Admin, Company, Customer
Priority	High

FR-02	Pick up info
Description	Customer can input pick up location, pick up date, drop out date.
Stakeholders	Customer
Priority	High

FR-03	Choose Car
Description	Customer can choose car
Stakeholders	Customer
Priority	High

FR-04	Booking
Description	Customer can book car.
Stakeholders	Customer
Priority	High

FR-05	Cancel
Description	Customer can cancel booking
Stakeholders	Customer
Priority	Medium

FR-06	Search
Description	Customer can search car brand
Stakeholders	Customer
Priority	Medium

FR-07	Send Feedback
Description	Car company & Customer send feedback
Stakeholders	Company, Customer
Priority	Medium

FR-08	Add Company
Description	Admin can add car company
Stakeholders	Admin
Priority	High

FR-09	Remove Company
Description	Admin can remove any company
Stakeholders	Admin
Priority	High

FR-10	Transaction
Description	Admin can check transaction
Stakeholders	Admin
Priority	Medium

FR-11	Monitoring
Description	Admin can check Company & Customer Activity
Stakeholders	Admin
Priority	Medium

FR-12	Get Feedback
Description	Admin can check feedback
Stakeholders	Admin
Priority	Medium

FR-13	View Report
Description	Admin can view report in the system.
Stakeholders	Admin
Priority	Medium

FR-14	Add new Driver
Description	Car company can add new driver.
Stakeholders	Company
Priority	Medium

FR-15	Add New Car
Description	Car Company add new Car.
Stakeholders	Company
Priority	Medium

FR-16	User registration
Description	Admin, Customer, Company must be registered.
Stakeholders	Admin, Customer, Company
Priority	High

FR-17	Remove Car
Description	Car Company remove their Car at any time.
Stakeholders	Company
Priority	Medium

FR-18	Maintenance & Service
Description	Company can maintenance & service their car
Stakeholders	Company
Priority	Medium

FR-19	Sales & Report
Description	Company Can view Sales Report.
Stakeholders	Company
Priority	Medium

4.2 Non-functional Requirement

4.2.1 Performance Requirements

This requirement specifies a performance requirement or system performance. How many second it may take to response or complete a process.

4.2.1.1 Speed and Latency Requirements

The system is required a speed when user want to change one page to another page.

PR-01	The new page will respond within 2 second.
Description	While the user's browsing the system the new page will show within 2 seconds. Sometimes it also depends on the user's internet connection speed.
Stakeholder	Admin, Company, Customer

4.2.1.2 Precision and Accuracy Requirements

In this system has no precision and accuracy requirements.

4.2.1.3 Capacity Requirements

The system can be managed all of information and process of the user.

PR-02	Initially, the system will store 50,000 user information.
Description	The details information of Customer, Car Company.
Stakeholder	Admin, Company,Customer

4.2.2 Dependability Requirements

In this system here some functional requirements depend on another functional requirement, such as Add new Driver, Add new Car, Remove Car, Maintenance & Service and sales report depend on add company requirement. Transaction & View Report depend on customer Car booking.

4.2.2.1 Reliability and Availability

If we consider this system and analysis the all of functional requirement here are some reliability issue, such as a doctor's prescription can't be edited by another doctor.

DR-01	The system must be available 24x7.
Description	The system must be available 24 hours in a day. The system must be updated regularly if needed.
Stakeholders	Admin, Customer, Company

4.2.2.2 Robustness and Fault Tolerance Requirements

The system will almost ensure 0% crush in any single minor error and don't give any wrong calculation.

DR-02	The system handles over access and system errors.
Description	Sometimes multiple users can over access to this system. The system Can handle multiple user access.
Stakeholders	N/A

4.2.2.3 Safety Critical Requirements

In this system there are no specific safety critical requirement

4.2.3 Maintainability and Supportability

Supportability is not required for this system but in case if any course curriculum is update then it will need to change the calculation system.

4.2.3.1 Maintenance Requirements

MS-01	The system helps to Company for rent their car.
Description	In this system Admin can remove company at any time.
Stakeholders	Admin

4.2.3.2 Supportability Requirements

System support provider needs specific technical knowledge for the update and provides support about this system. Developer need required knowledge about data flow technique.

4.2.3.3 Adaptability Requirements

There are no specific adaptability requirements.

4.2.4 Security Requirements

Security requirement that are strictly followed are given below:

- Username/Key that is used to access the system for an individual has to be unique.
- If anyone access another Customer account by hacking or any other way, the admin instantly get notification and can stop the access.
- All data that are sensitive will be encrypted while passing through online.

4.2.4.1 Access Requirements

SR-01	System provide security strategy.
Description	The system is designed in a way that allows all modules to access the mechanism that provide security services.
Stakeholders	Admin, Company, Customer

4.2.4.2 Integrity Requirements

Information of users may be stolen that's why all username/key are stored in encrypted form.

4.2.4.3 Privacy Requirements

The system is based on large database as all users' information are there. So privacy of data should be maintained strictly. Unauthorized access can destroy the database and all users' information and other things will be lost. If anyone got Customer username and password he/she can booking Car. Also have to keep in mind one can remove company using admin username, so privacy here is also important.

SR-02	All data will be protected.
Description	Users' information are very crucial and so privacy is ensured here.
Stakeholders	Admin, Company, Customer

4.2.5 Usability and Human Integrity Requirements

How the users feel comfortable to use and overall their engagement with this system are defined here.

4.2.5.1 Ease of Use Requirements

UH-01	The system is very much user friendly.
Description	Admin can Add Company, Remove Company. Customer can easily book the car. Company can easily Add their Car.
Stakeholders	Admin, Company, Customer

4.2.5.2 Understand-ability and Politeness Requirements

This part indicates that those features that will be added in future will be understandable.

UH-02	The feature of RentMyCar.Com
Description	Every feature will be understandable to the user of this system. They easily can catch the newly added features.
Stakeholders	Admin, Company, Customer

4.2.5.3 Accessibility Requirements

AR-1: Log in as an Admin

AR-2: Log in as a Customer

AR-3: Log in as a Company

AR-4: Log out as a Admin

AR-5: Log out as a Customer

AR-6: Log out as a Company

4.2.5.4 User Documentation

UH-03	The system developer documentation
Description	Requirements of user documentation have been identified. Team works with this system are included here.
Stakeholders	System Developer

4.2.6 Look and Feel Requirements

The system is very much interactive with the user and user feels comfortable when using it. The look of the system is not weird and user easily finds every feature.

4.2.6.1 Appearance Requirements

Appearance of every page should be obvious to the user. What can be accessible and what can't be should be clear.

LF-01	Labels of mandatory fields must be indicated with asterisk sign.
Description	When a field with an asterisk sign left behind the user will be notified with a Red Cross symbol.
Stakeholders	Admin, Company, Customer

4.2.7 Operational and Environmental Requirements

How to operate the system is defined here. The essential capabilities, performance measures are also identified.

4.2.7.1 Expected Physical Requirements

There are no specific expected physical requirements.

4.2.7.2 Requirement for Interfacing with Adjacent System

There is no specific interfacing with adjacent system requirements.

4.2.7.3 Release Requirements

There are no specific release requirement.

4.2.8 Legal Requirements

Rules and regulations have to be maintained. Any illegal activities are strictly controlled.

4.2.8.1 Compliance Requirements

There are no specific compliance requirements.

4.2.8.2 Standard Requirements

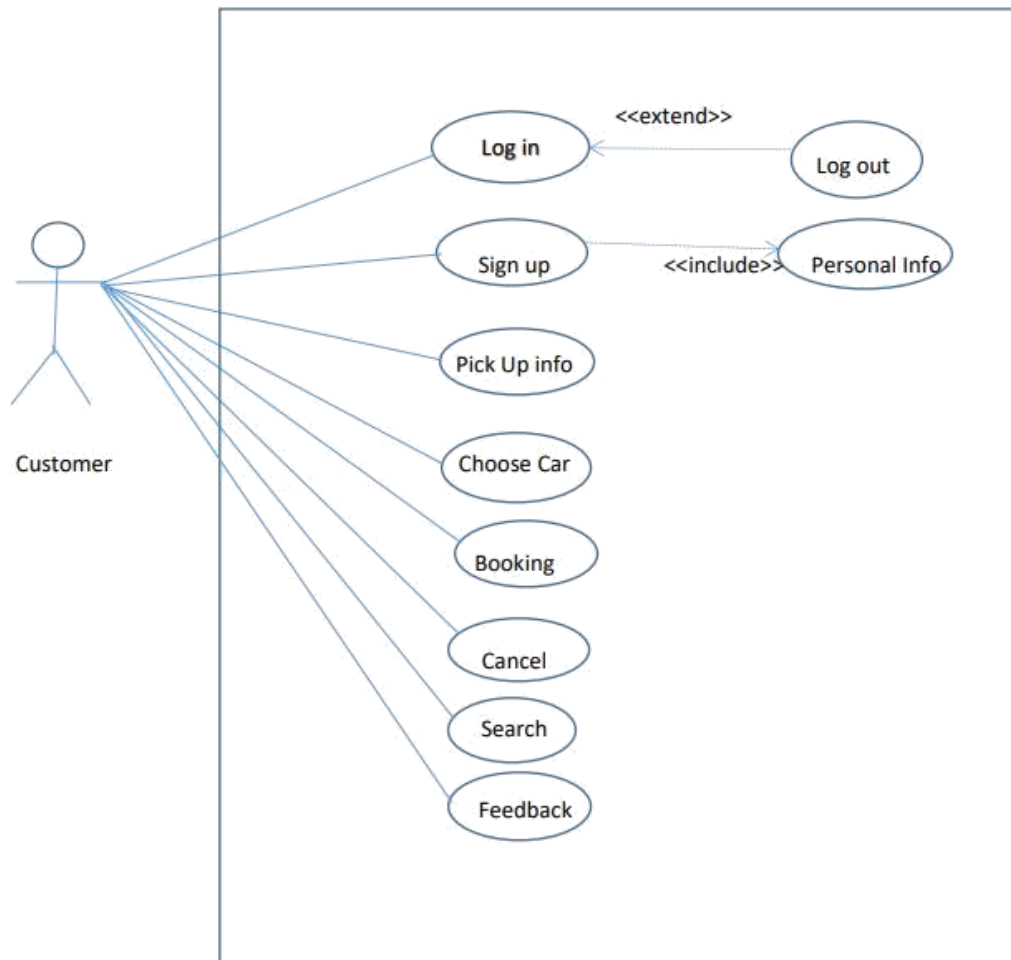There are no specific standard requirements.

Chapter 5

5.1 Use Case

Figure 3: Use case for Customer
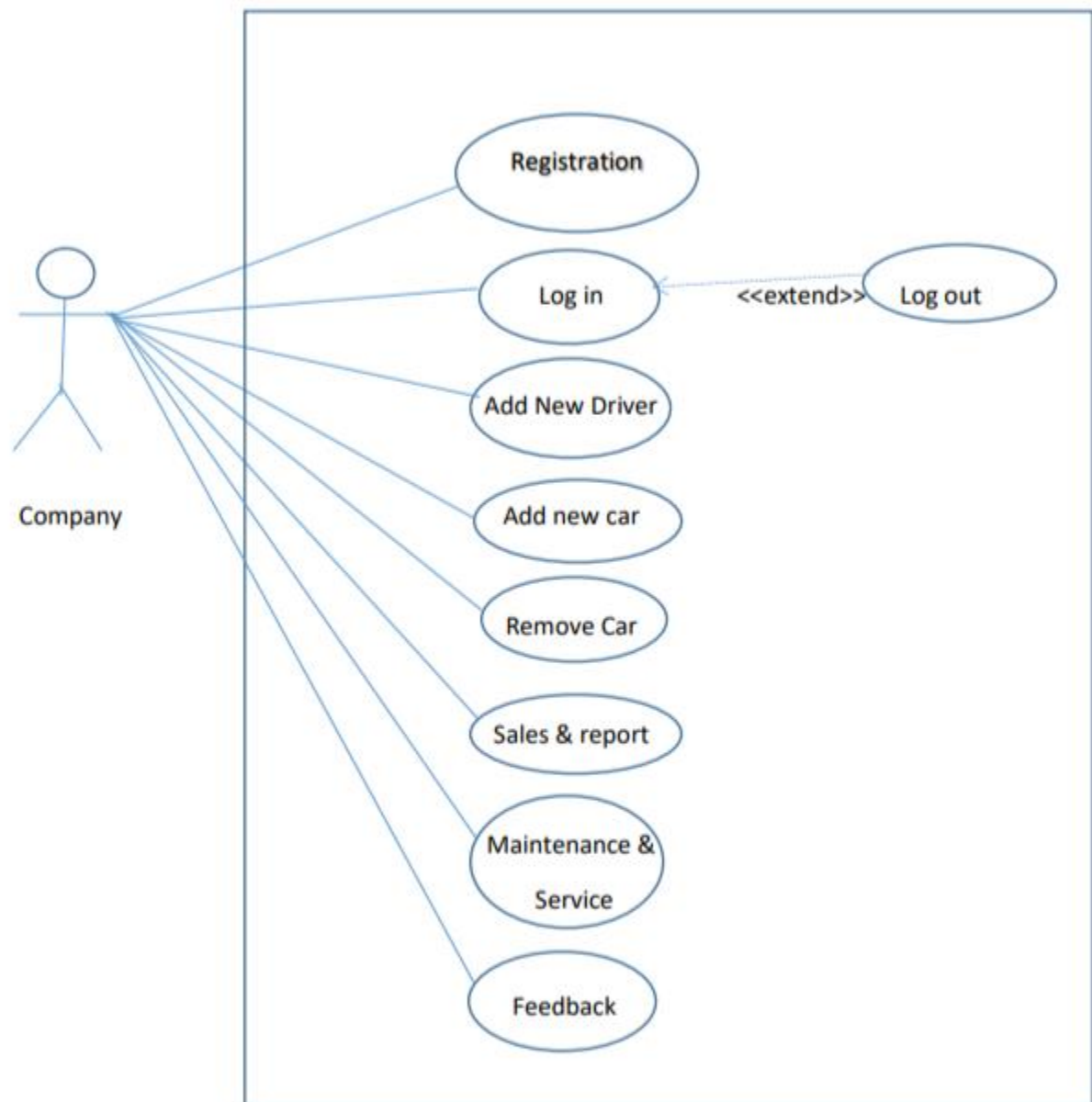
Figure 4: Use case for Car Company

Figure 5: Use case for Admin

5.2 Use Case Description

Use Case Name	Sign Up
Actor	Admin, Company, Customer
Description	Admin, Company, Customer should login to access the system.
Precondition	Admin ,Company, Customer must be on registration page
Trigger	By clicking on add Register button
Flow of Events	• Admin click sign in button • Admin will click Register button • Admin will select criteria of new user and add new company and enter their credentials
Post Condition	A new user/Company will be added into the system

Use Case Name	Login
Actor	Admin, Company, Customer
Description	Actor will log into the system by using their credentials
Precondition	Actor must be on login page
Trigger	By clicking login button
Flow of Events	• User will be on login page • User will enter their credentials • User will click login button
Post Condition	Actor will be logged in

Use Case Name	Pick up Info
Actor	Customer
Description	User can be input pick up location, pick up date, drop-off date.
Precondition	User will be logged in
Trigger	By clicking search available car & price.
Flow of Events	• User will be click on pick up info page • User can be input pick up info.
Post Condition	User will be able to see available car & price..

Use Case Name	Choose Car
Actor	Customer
Description	Customer can choose car according to company and price
Precondition	Customer must be on home info page
Trigger	By clicking search button user can choose car
Flow of Events	• Click search button • Show available Cars & Company
Post Condition	Customer can able to choose car his/her car

Use Case Name	Booking
Actor	Customer
Description	Customer can book the car/cars
Precondition	Customer must be completed log in page
Trigger	By clicking book button customer can be booking car/cars.
Flow of Events	• Customer click book button • The car/cars is booked
Post Condition	Customer can book cars

Use Case Name	Cancel
Actor	Customer
Description	Customer can cancel booking at any time
Precondition	Customer must be Sign up
Trigger	By clicking cancel button
Flow of Events	• Customer click cancel button • Rentals is canceled
Post Condition	Customer car cancel the booking.

Use Case Name	Send Feedback
Actor	Customer , Company
Description	Customer , Company can send feed back
Precondition	Admin must be sign up
Trigger	Get Feedback button
Flow of Events	• Click on Get Feedback Button • Customer & Company Feedback is shown
Post Condition	Send feedback report

Use Case Name	Search
Actor	Customer
Description	Search Car
Precondition	User must be on sing up page
Trigger	By clicking search button
Flow of Events	• Click on search button • The available cars is shown
Post Condition	Customer car search cars according to prices

Use Case Name	Add Company
Actor	Admin
Description	Admin can add new company in the system
Precondition	Admin must be sign up
Trigger	By clicking add new company button

Flow of Events	• Admin click add new company • Check Company details • Company is added
Post Condition	A new Company is entered in the system

Use Case Name	Remove Company
Actor	Admin
Description	Remove company from the system
Precondition	Admin must be sign up
Trigger	By clicking remove company
Flow of Events	• Admin will click Remove company • Company is removed
Post Condition	Admin can be able to remove company

Use Case Name	Transaction
Actor	Admin
Description	Admin can check transaction
Precondition	Admin should be transaction page
Trigger	By clicking Transaction Button
Flow of Events	• Admin will be transaction page & click transaction • Transaction report is shown
Post Condition	Admin can be able to transaction

Use Case Name	Monitoring
Actor	Admin
Description	Admin can check Company and Customer activity
Precondition	Company must be on medicine page
Trigger	By clicking monitor button
Flow of Events	• Admin click monitor button • The result is shown
Post Condition	Admin can be able to monitor

Use Case Name	Get Feedback
Actor	Admin
Description	Admin can check feed back
Precondition	Admin must be sign up
Trigger	Get Feedback button
Flow of Events	• Click on Get Feedback Button • Customer & Company Feedback is shown
Post Condition	Admin able to see feedback report

Use Case Name	View Report
Actor	Admin
Description	Admin will be able to view the report
Precondition	Admin must be on log in page
Trigger	By clicking view report
Flow of Events	• Admin click on view report • The output shown on the screen
Post Condition	Admin able to view the report of the system.

Use Case Name	Add new Driver
Actor	Company
Description	Company can Add new Driver
Precondition	Company must be on registered
Trigger	By clicking Add Driver
Flow of Events	• Company will be on report page • Company will click on Add Driver button
Post Condition	A new driver will be added.

Use Case Name	Add new Car
Actor	Company
Description	Company can add new car
Precondition	Company must be logged in.
Trigger	By clicking order add car button.
Flow of Events	• Company clicked add new car. • The car info will be checked. • Car is added in the system.
Post Condition	A new car will be submitted to the company

| Use Case Name	Remove Car
Actor	Company
Description	Company can remove car.
Precondition	Company must be logged in.
Trigger	By clicking Remove Car button.
Flow of Events	• Company clicked on remove car button • Get Notification for sure. • Car is Remove.
Post Condition	Company will be redirected to their homepage after remove.

Use Case Name	Maintenance & Service
Actor	Company
Description	Company can service & maintenance their car.
Precondition	Car should be available in the company.
Trigger	By clicking maintenance & Service button
Flow of Events	• Click on maintenance & service button. • View report.
Post Condition	Company will be redirected to their homepage after execution

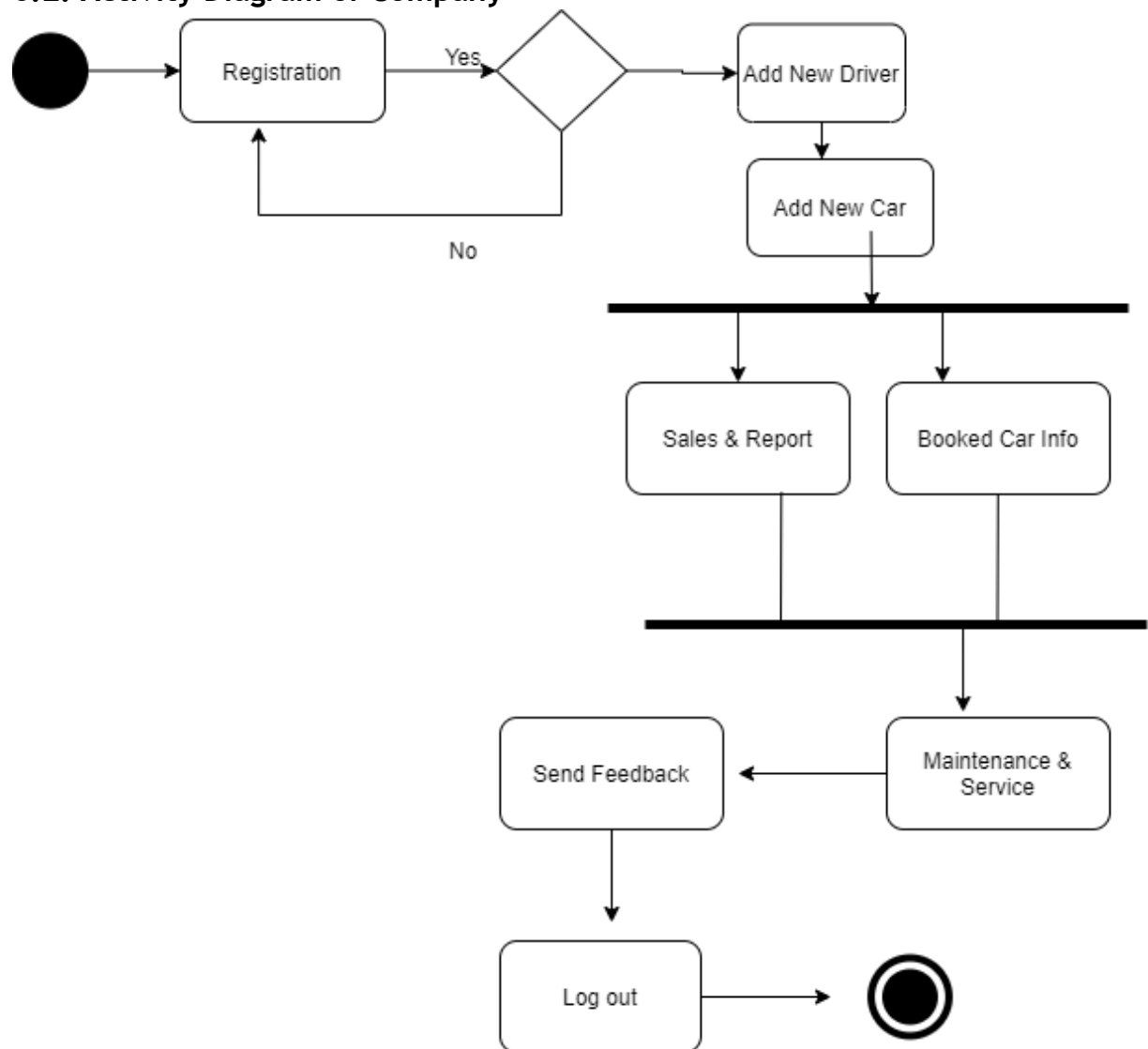| Use Case Name	Sales Report
Actor	Company
Description	Company can review sales report
Precondition	Company must have some transaction
Trigger	By entering see sales report page
Flow of Events	• Company will be sales report page • View sales Report
Post Condition	Company will be redirected to their homepage after execution

Chapter 6

6.1: Activity Diagram of Admin
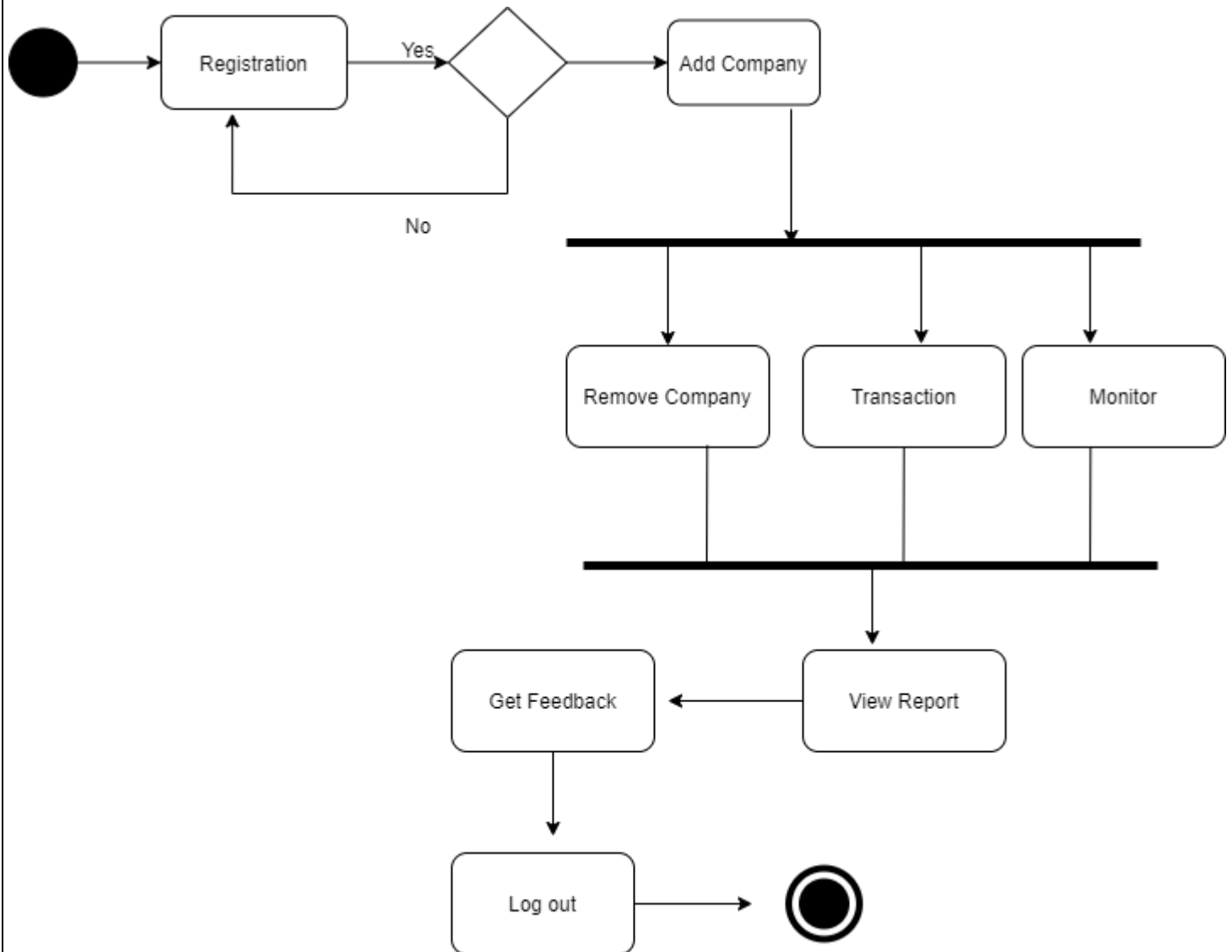
6.2: Activity Diagram of Company

6.3: Activity Diagram of Customer

```
  ●───▶ Registration ──Yes──▶ ◇ ────────▶ Add Pick Up
          ▲                                information
          │                                     │
          └──────No──────────┘                  ▼
                                            Choose Car
                                                 │
                                                 ▼
  ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━

    View Car List    Booking    Search Car    Cancel Booking

  ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━

                       Send Feedback

         Log out ──────▶ ◉
```
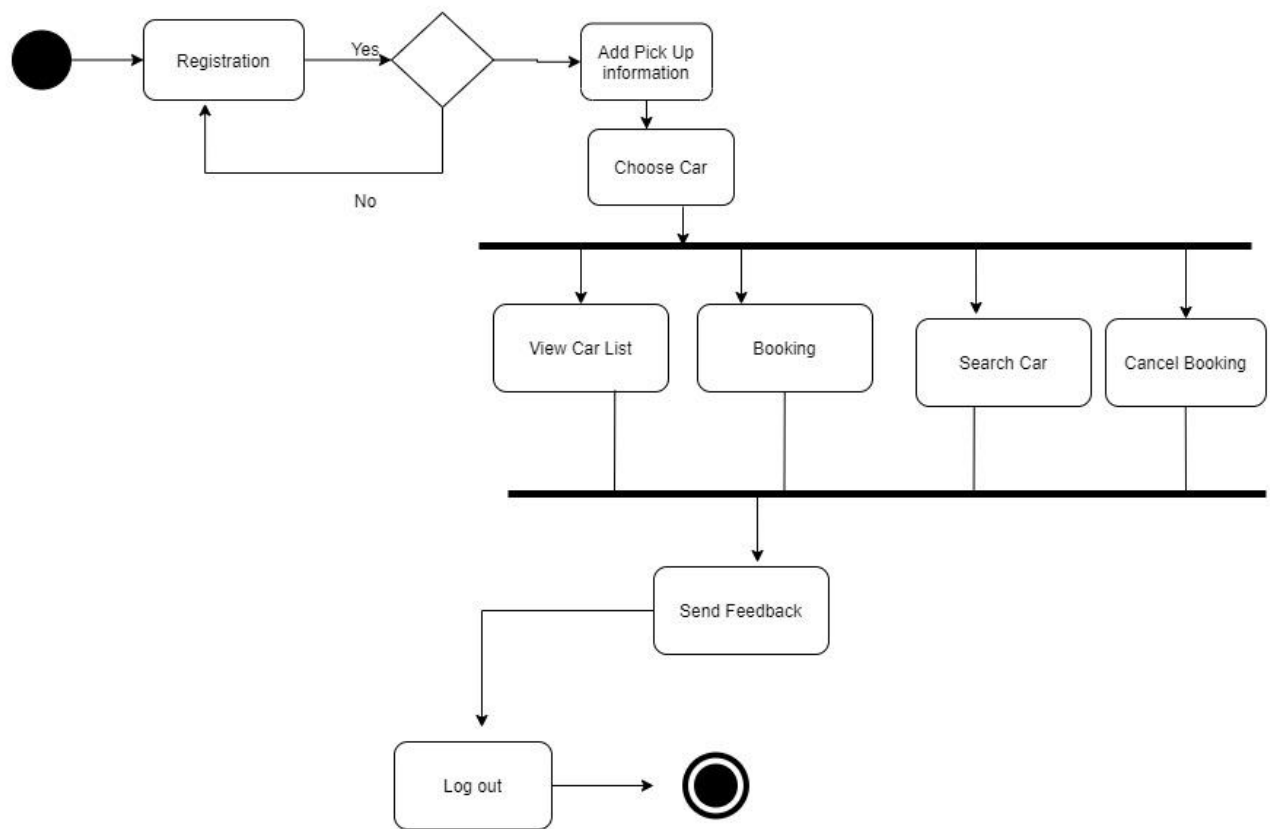
6.4: **Sequence Diagram FOR Customer:**
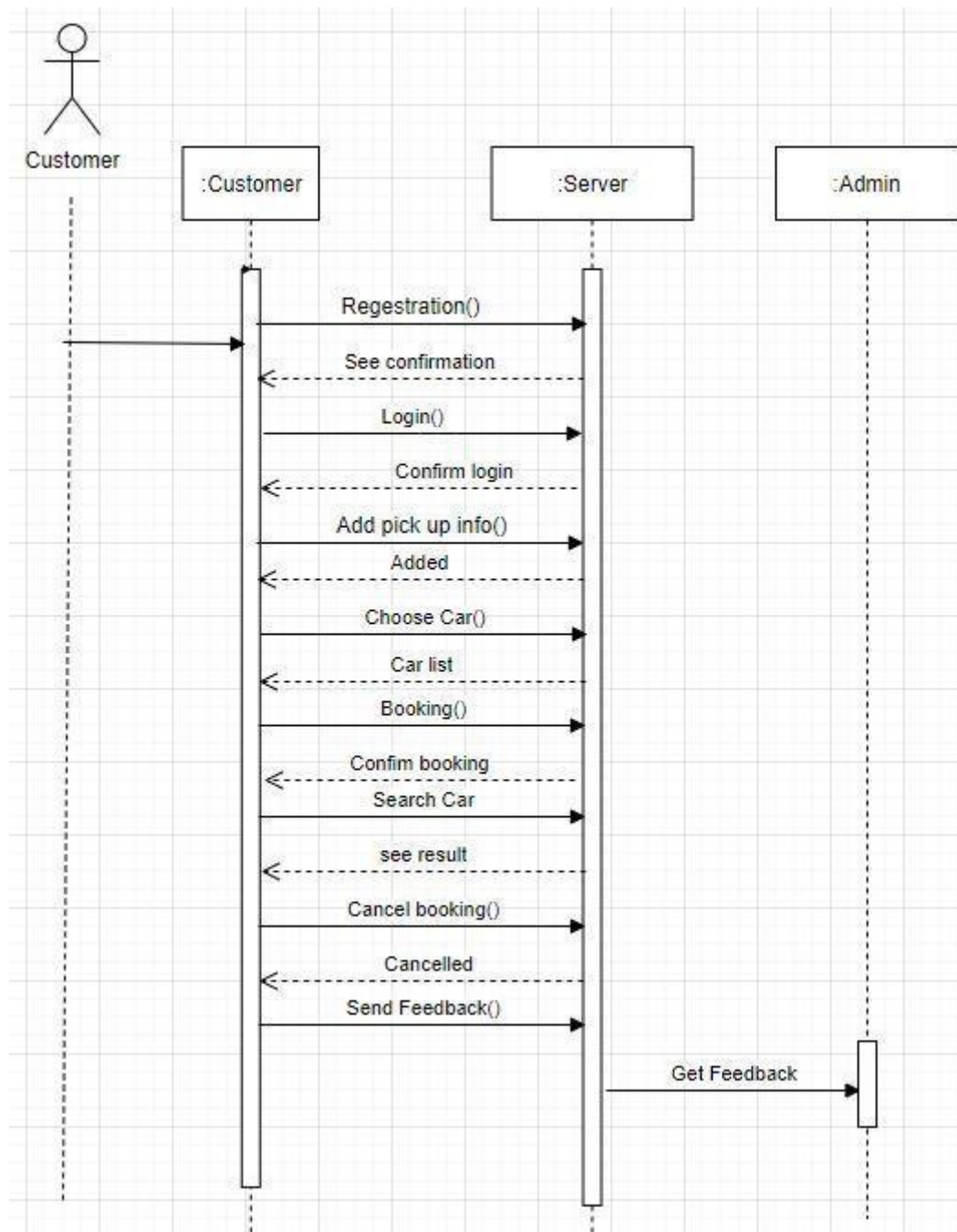
6.5: Sequence Diagram FOR Company:
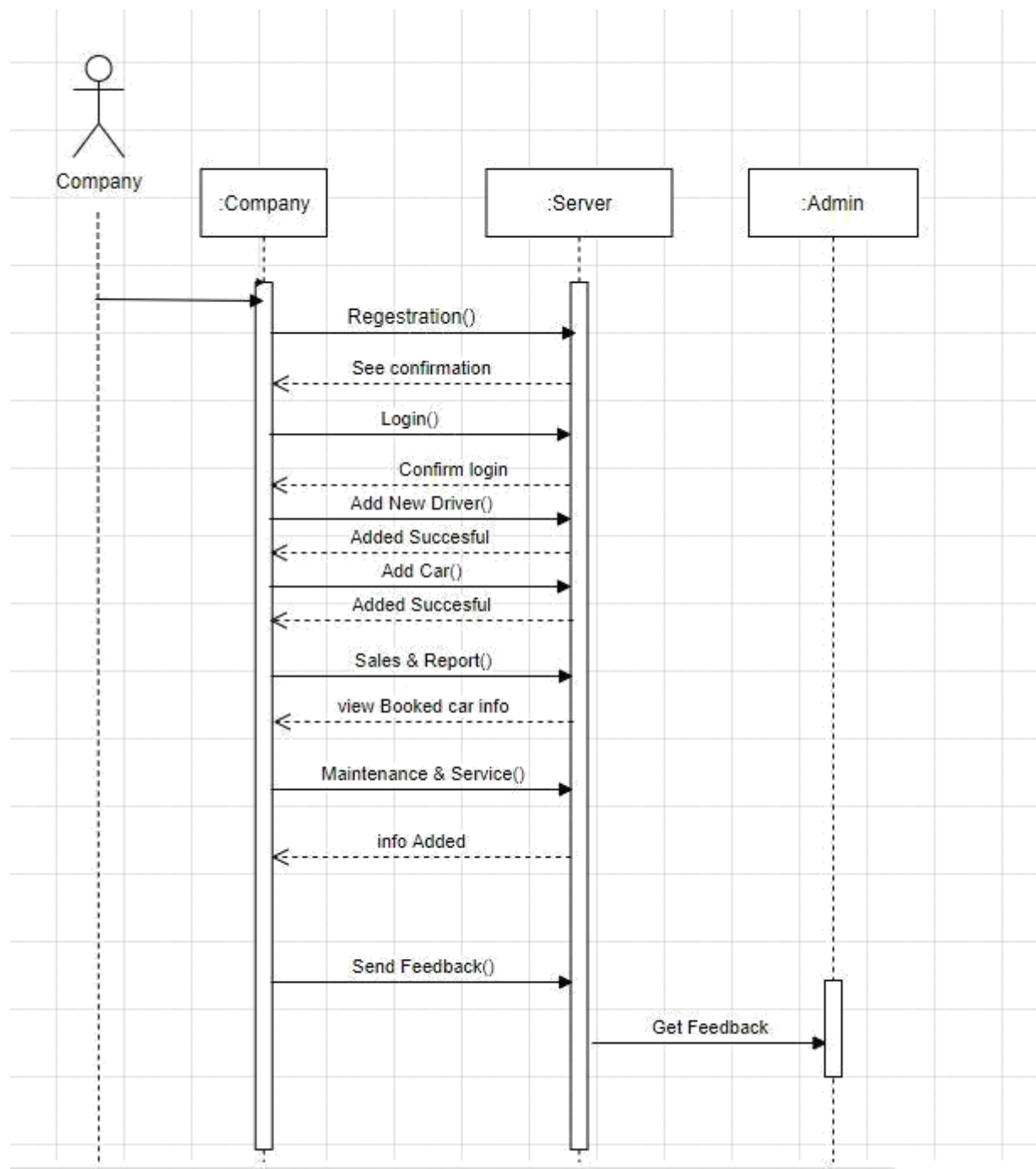
6.6: Sequence Diagram FOR Admin:

Admin

:Admin

:Server

Regestration()

See confirmation

Login()

Confirm login

Add New Company()

Added Succesful

See transaction()

View transaction

Monitor system()

see whole system

See report()

view report

See Feedback()

Get feedback

7.0: Class Diagram

Registration
+ Id : int
+ Name : String
+ Email : String
+ Password : String
+ Phone : String

Admin
+ Add Company ()
+ Remove Company ()
+ Transaction ()
+ Monitor ()
+ Get Feedback ()
+ View Report ()

Car
+ Carid : int
+ Car Name : String
+ Car Model : String
+ Car Reg : String

Company
+ cid : int
+ License : String
+ Add New Driver ()
+ Remove Driver ()
+ Add car ()
+ Remove car ()
+ Maintenance ()
+ Sales Report ()

User
+ First Name : String
+ Last Name : String
+ Pickup Location : String
+ Drop off location : String
+ search car ()
+ Give feed back ()
+ Show All car ()
+ Booking ()
+ Cancel booking ()
+ Show Drivers info ()

Driver
+ Id : int
+ Name : String
+ Address : String
+ Phone : String
+ NID : String
+ License : String
+ Search ()
+ user Rating ()
+ car Rent ()

Transaction
+ Tid : int
+ Tamount : float
+ Get transaction ()

1   1..*   1   1..*

7.1: Reference:

1) https://www.w3schools.in/laravel-tutorial/
2) https://www.tutorialspoint.com/laravel/index.htm
3) https://www.phptpoint.com/laravel-introduction/