SRS Report
For
Software Requirement Engineering

Software Engineering Department

"Online Taxi Service"

Submitted By

M.Ahmed	**2018-SE-197**
Soban Baig	**2018-SE-201**

Sir Syed University of Engineering & Technology

Table of Contents

INTRODUCTION

Transport is an integral part of our social living. The modern society cannot run without transport facilities. There are many companies who give transport services to the individual and corporate clients. In the current system, the client first contacts with the transport company for getting transport service. The company then books the vehicle for him on the requested date and time and then sends the vehicle to his place at the time. The Online taxi booking system is the online service which will automate the process of booking a taxi and will facilitate both the client and the company with reduced time and efforts. First the company will register his vehicles and the vehicles to the system. Then the client will request for booking a vehicle on his required date and time, providing all necessary information. The fare will be calculated and client should confirm it. Then the employee will serve the client on the specific date and time. Finally the client will have an opportunity to give a feedback for the service he got. The company can check it and take appropriate action for the future improvements.

PURPOSE

The purpose of this SRS document is to specify software requirements of the Online Taxi Booking. It is intended to be a complete specification of what functionality the system provides. The main purpose of the system is to automate the process of booking a taxi online. Specific design and implementation details will be specified in a future document.

Document Conventions

- Items that are intended to stay in as part of your document are in **bold**
- Explanatory comments are in *italic* text.
- Plain text is used where you might insert wording about your project

PROJECT SCOPE

This project's aim is to automate the system, calculating the fare, collecting fare, collecting all necessary information of the client and then serve the client. The data used by the system is stored in a database that will be the centre of all information held clients and employees and the base for the remainder of the process after the initial application has been made. This enables things to be simplified and considerably quickened, making the jobs of the people involved easier. It supports the current process but centralizes it and makes it possible for decisions to be made earlier and easier way.

Goals

The main goal of the system is to automate the process carried out in the organization with improved performance and realize the vision of online booking. Some of the goals of the system are listed below:

- Manage large number of client details.
- Manage all details of clients who registered and requested for getting the service.
- Create employee accounts and maintain the data's effectively.
- View all the details of the clients and employees.
- Showing available vehicles to book for the client.
- Calculating and showing the fare to client before booking.
- Create the statistical reports to facilitate the finance department work.
- Getting the feedback from the client to facilitate future improvement.

Objectives of the Proposed System:

The aim of the proposed system is to address the limitations of the current system. The requirements for the system have been gathered from the defects recorded in the past and also based on the feedback from users of previous metrics tools. Following are the objectives of the proposed system:

- **Reach to geographically scattered clients.** One of the important objectives of the online booking system is communicate with all the clients scattered geographically.
- **Automate the process of booking.** The system will reduce the time and effort of the clients and employees and automate the process of booking.
- **Centralized data handling**. Transfer the data smoothly to all the departments involved and handle the data centralized way.
- **Reduced manpower**. Reduce the manpower needed to perform the booking and serving clients.
- **Cost cutting**. Reduce the cost involved in the booking process.
- **Operational efficiency**. Improve the operational efficiency by improving the quality of the process.

Abbreviations

- **Booking:** The request of a client to serve with a vehicle on a specified date and time.
- **Roster:** The task of the employer to serve in the specified week.
- **Course Prospectus:** Course Prospectus contains all the details about the course and schedule of the course. It is generated by the Superior Persons like Register in the College.
- **Maintenance:** Clients' information's are maintained in a separate Log for maintenance.
- **Registration:** The clients are registered to the system while request a booking. The employees are registered by the admin
- **Deletion:** The admin can delete any employee or client.
- **Client Log:** Client information's are maintained in a separate log for future reference and retrieved for any contacting Purpose.
- Google drive
- MacroMedia DreamWeaver CS6 to be used for coding.
- Microsoft Windows 98/ME/XP/7
- For internal communication with client email is be used.
- HTML: Used for the development and maintenance of the group web page.
- Install shield: Package to be used to simplify the installation process of the software.
- MySQL Database Server
- TCP/IP**:** Transmission Control Protocol/Internet Protocol, the suite of communication protocols used to connect hosts on the Internet. TCP/IP uses several protocols, the two main ones being TCP and IP.

Benefits of the system

As with most real world activities, there are numerous benefits to using a software system taxi booking. The most apparent to this project is the unification of the entire process. Another benefit of a software system is the use of a central database. This database is the basis for all actions in the system and can be trivially updated and used to aid in all of the system's processes, meaning all of the required information is stored in one central location and thus is easily accessible. This is a far more reasonable storage method than a paper-based file system, where the time of traveling to and physically searching the records for the required information could be a burden. Human error could also be a factor in that mistakes could be made in the filing process which would not occur in a well written database system and mistakes or changes on physical records can be messy to correct. Software systems are also much faster at performing certain tasks than humans, meaning that time can be saved performing processes such as sending communication e-mails, creating recommendations and the comparison of applications. This also means that these tasks can be done solely by the system, freeing up those involved to perform more important tasks. In the long term, if methods or minor details concerning booking system, this can be reflected in potentially minor changes to the code of the system, to retrain employees rather than having regarding the new practices.

References

http://msdn.microsoft.com/en-us/library/ms130214
http://www.chambers.com.au/glossary/software_requirements_specification.php
http://ac.aup.fr/~croda/SampleStudentsWork/cs348/finalProjectS07/final%20presentation/final/Volere_Specifications_FV.pdf

Technologies

- Google drive
- Macromedia Dreamweaver CS6
- Microsoft Windows 98/ME/XP/7
- For internal communication with client email is be used.
- HTML: Used for the development and maintenance of the group web page.
- Install shield: Package to be used to simplify the installation process of the software.
- MySQL Database Server

Overview

SRS will include two sections.

Overall Description will describe major components of the system, interconnection and external interfaces.

Specific Requirements will describe the functions of actors, their role in the system and constraints.

Overall Description: The rest of this document will give further details on the overall product description, including the hardware, software, and communications interfaces, product functions, user characteristics, and any assumptions that will be made.

Specific Requirements: The document will also include the specific requirements needed. These will include the functions, performance, design, and software attributes. This document is organized in a logical manner and is easy to follow. Readers should refer to the table of contents, appendices, or index if looking for something in specific. Otherwise, reading this document from start to finish will start with a vague description and get more specific and detailed as changing sections and reading further.

Overall Description

Product Perspective

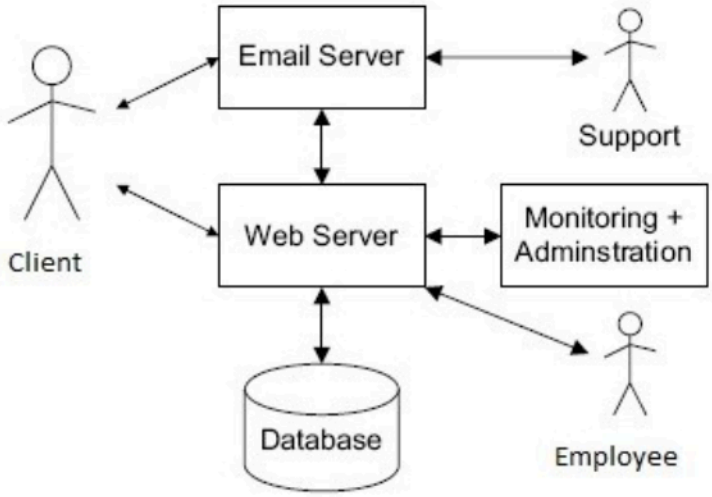


Figure 1: Model of the System

- The web pages (XHTML) are present to provide the user interface on customer client side. Communication between customer and server is provided through HTTP/HTTPS protocols.
- The Client Software is to provide the user interface on system user client side and for this TCP/IP protocols are used.
- On the server side web server is EJB and database server is for storing the information.

System Interfaces

- **Client on Internet:** Web Browser, Operating System (any)
- **Client on Intranet:** Client Software, Web Browser, Operating System (any)
- **Web Server:** Apache, Operating System (any)
- **Data Base Server:** MySQL, Operating System (any)
- **Development End:** HTML, MySQL, OS (Windows), Web server.

Hardware Interfaces

Communication Interface

- Client on Internet will be using HTTP/HTTPS Protocol.
- Client on intranet will be using TCP/IP protocol.

External Interface Requirements

Hardware Interfaces:

Server side hardware

- Hardware recommended by all the software needed.
- Communication hardware to serve client requests

Client side hardware

- Hardware recommended by respective client's operating system and web browser.
- Communication hardware to communicate the server.

Software Interface

Server side software

- Web server software, Apache
- Server side scripting tools:PHP
- Database tools: My SQL
- Compatible operating system: Linux, Windows
- Client side software
- Web browser supporting JavaScript, refer Browser Compatibility 2.3.1

Third Party Software Interfaces

- None

Communication Protocol

Following protocols are required to be permitted on the server side

- HTTP incoming request
- HTTPS incoming request if secure gateway is implemented

Following protocols are required to be permitted on the client side

- HTTP outgoing request
- HTTPS outgoing request if secure gateway is implemented

Assumption and Dependency

1. Username is valid email addresses of respective user
2. Administrator has the authority to add/delete employee accounts.
3. Administrator has the authority to delete client.

Memory Constraints

- **Hardware memory:** The growth of Clients is unpredictable; to resolve the future problems occurs while enhancing the system is controlled by larger memory as possible. So the memory constraint in the server side is extended up to 1TB.

Site Adaptation requirements

- No site adaptation is necessary in this project. Because the Online Booking system is portable. The entire system is transported to wherever it is needed. No external dependencies are in place and operation of the system will never change due to location.

Product Features

Some of the features are identified for the software. They are listed below:

- **View Available Vehicles:** The client must able to see all details about the available vehicles without any constraints.
- **Calculate Fare:** The client must be available to check the fare they should pay for the vehicles.
- **Feedback:** The administrator can able to see the feedback given by each client so that he can take appropriate actions for future improvement.
- **Report Generation:** The system supports generation of reports based on different criteria.
- **Record maintenance:** The system also must keep track the statistical reports of daily activities of the online booking.
- **Discount Offer:** The admin can create discount codes and the client can get discount on fares using the codes.

User Classes and Characteristics

User Characteristics

The client should have the basic idea to operate (use) the system and he already has the experience to work in the internet (browser). Default Language is English.

User Classes

Some of the users identified for this system through use case analysis are listed below:

- Clients
- Employees
- Administrators

Design and Implementation Constraints

Some of the design and implementation constraints identified are listed below:

- Clients or employees do not have any rights to edit any data in the system.
- Client pays the service fees in BPAY, DD or MO to hire the vehicle.
- Online Payment facility may be restricted if the Company not want this facility for some reasons.
- This system is not support distributed database Facility.
- System is limited to HTTP/HTTPS Protocols.

User Documentation

- Online documentation facility is available for the clients to assess them for the easy use.
- A specific document should be prepared for the maintenance of the system and should say the system in easiest way.

Assumptions and Dependencies

- Vehicles are already purchased and available for use.
- Roles and responsibilities are already established.
- Administrator is already created.

Apportioning of Requirements

It is possible in the future that a few additional features be implemented into this system.

- **Management System:** This will allow the system to manage effectively the other resources in the easiest way.
- **Training Facility:** This will allow effectively train the staffs and improve the quality of service in the company.

System Requirements and Analysis:

The following sections will introduce the numerous requirements of the system from the point of view of different users and will introduce a number of decisions that have been made regarding implementation. These sections also attempt to somewhat describe the role of each user group in the system, discussing their individual roles through the functions they can perform.

User Interface

The user interface for this system will have to be simple and clear. Most importantly, the ages must be easy to read, easy to understand and accessible. The color scheme should be appropriate to provide familiarity with the Company and there should be no contrast issues.

Client View Functionality:

Registration and Login System: Clients will carry out their own registration, providing the system with a way to associate a user to their request(s). This will enable the system to display personalized information when the user logs in and certain information, such as name and address, to be added to each booking request automatically..

Globalization Support

List of Locale

The system will be in US English, although the application and their options will be in US English. Hence the application and their options are to be in Unicode format.

Content to be localized

The following table lists all the possible area in the system and also mentions whether that area should support Globalization.

Booking System: The booking process will be as straightforward as possible, using an intuitive form layout, with the necessary information being completed in stages.

Update Details: Employees and clients will all have the ability to update their personal details at any time. Clients, however, will also be able to update their booking details. After the user has confirmed the update, an e-mail is dispatched with the original and new details as confirmation. The only time an booking will be locked for editing will be when an employee is employed to serve the client.

Admin View Functionality:

Perform weekly roster of Employees :The administrator must be able to select and update the roster a week ahead based on the availability of each employees who further book their individual availability a week ahead.

Print reports annually, weekly, and daily: Providing administrator to print the weekly, annually and monthly reports for his organization based on the time frame selected.

Check feedbacks: The administrator will be able to check the feedback posted by the clients .

Send newsletters: The administrator shall be able to send the newsletters regarding new promotions if any.

Manage user portfolio: The administrator will provide access to new users and shall be able to delete the employees no longer working for the organization.

System

Statistics: If the administrator so wishes, they should be able to view statistics gathered by the system regarding bookings. These statistics should be displayed on a page with individually expandable sections, such as extending the number of bookings from the past year to the past two years.

Report Generation: Generate reports based on the selected criteria.

FUNCTIONAL OR SPECIFIC REQUIREMENTS:

The system should satisfy the following requirements:

Administrator Aspect

1. Perform weekly roster of Employees
2. Print reports annually, weekly, and daily
3. Check feedbacks
4. Send newsletters
5. Manage user portfolio
6. Changing the super password.

Employee Aspect

1. Logging into the system.
2. To check their rosters.
3. Maintain daily logs
4. Select availability.
5. Check online bookings

Client Aspect:

1. Make a booking
2. Check their booking status
3. Fair calculation
4. Driver history
5. Changing password.
6. Resetting of forgotten password.

Analysis

1. Authenticating users based on username and password.
2. Keeping session track of user activity.
3. Recording client's request for booking.
4. Checking whether the vehicle is available for booking.
5. Keeping history of courses bookings.
6. Keeping record of feedbacks received from the clients.

Mailing

1. Temporary password will be mailed to the user incase the user forgets the password.
2. Newsletters should go the clients email addresses.
3. The client should get notification email of the booking while confirmed.

Performance Requirements

Some Performance requirements identified is listed below:

- The database shall be able to accommodate a minimum of 10,000 records of clientts.
- The software shall support use of multiple users at a time.
- There are no other specific performance requirements that will affect development.

Security Requirements

Some of the factors that are identified to protect the software from accidental or

malicious access, use, modification, destruction, or disclosure are described below. Specific requirements in this area could include the need to:

- Utilize certain cryptographic techniques
- Keep specific log or history data sets
- Assign certain functions to different modules
- Restrict communications between some areas of the program
- Check data integrity for critical variables
- Later version of the software will incorporate encryption techniques in the user/license authentication process.
- Communication needs to be restricted when the application is validating the user or license. (i.e., using https).

Portability Requirements

Some of the attributes of software that relate to the ease of porting the software to other host machines and/or operating systems. This may include:

Apache is used to develop the product. So it is easiest to port the software in any environment.

Maintainability

The user will be able to reset all options and all stored user variables to default settings.

Reliability

Some of the attributes identified for the reliability is listed below:

- All data storage for user variables will be committed to the database at the time of entry.
- Data corruption is prevented by applying the possible backup procedures and techniques.

Usability requirements

Some of the usability requirements identified for this system are listed below:

- A logical interface is essential to an easy to use system, speeding up common tasks.
- Error prevention is integral to the system and is provided in a number of formats from sanity checks to limiting free-text input.

Availability

All cached data will be rebuilt during every startup. There is no recovery of user data if it is lost. Default values of system data will be assigned when necessary.

Software System Attributes

There are a number of attributes of software that can serve as requirements. It is important that required attributes by specified so that their achievement can be objectively verified. The following items provide a partial list of examples.

The input system will allow for inputting numbers, operands, special symbols and letters of the alphabet.

Change Management Process

As a team, we will update and evaluate our SRS document every week as we make changes in our design and requirements. We will add new detailed information which will include: research, references, charts and graphs, and more specifications and requirements that we find along the way in the designing and implementation of the product.

Technologies:

- This section lists all the technologies for the web based system.
- PHP scripting for server side scripting as it has a very strong support for XML and MySQL.
- XML as database format: The database's performance requirements are not very high and the ability to have custom fields in case the application form needs to add more than expected requirement. This is limited in any other database management system where we have to first specify the maximum number of fields.
- Apache as web server has a tight integration with PHP and is also available for various popular platforms.

Software

- Macromedia Dreamweaver
- PHP

Hardware

The recommended hardware specified by the respective software would suffice the needs. The memory and processing power needed would increase as the number of users increase. The estimated hardware requirements are as specified.

Server

The minimum hardware as recommended by all of the software required on server side say web server, operating system and development software

- Processing speed of 1.6 GHz
- 1 GB of RAM Network interface

Client

The minimum hardware as recommended by all of the software required on client side say web browser, operating system

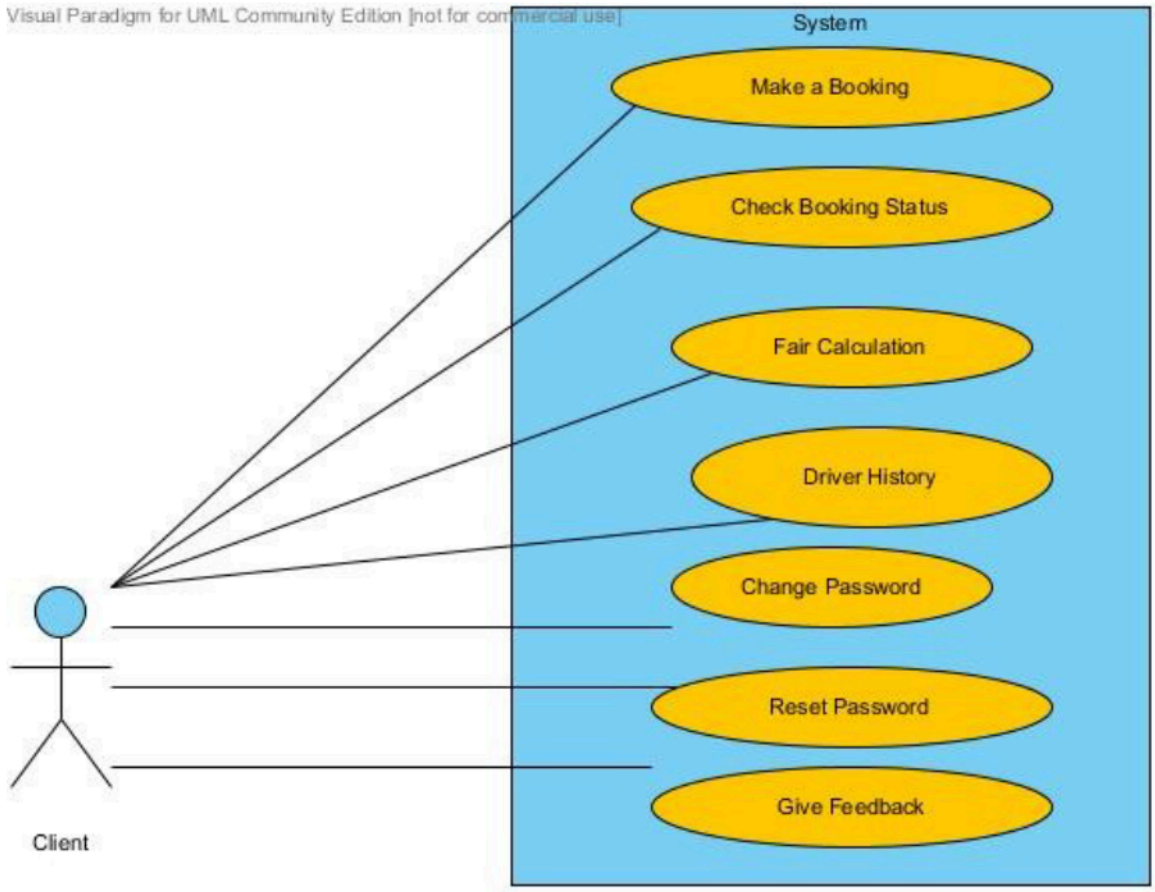
- Minimum hardware depending on the operating system used
- True color visual display unit
- User peripherals for better interaction

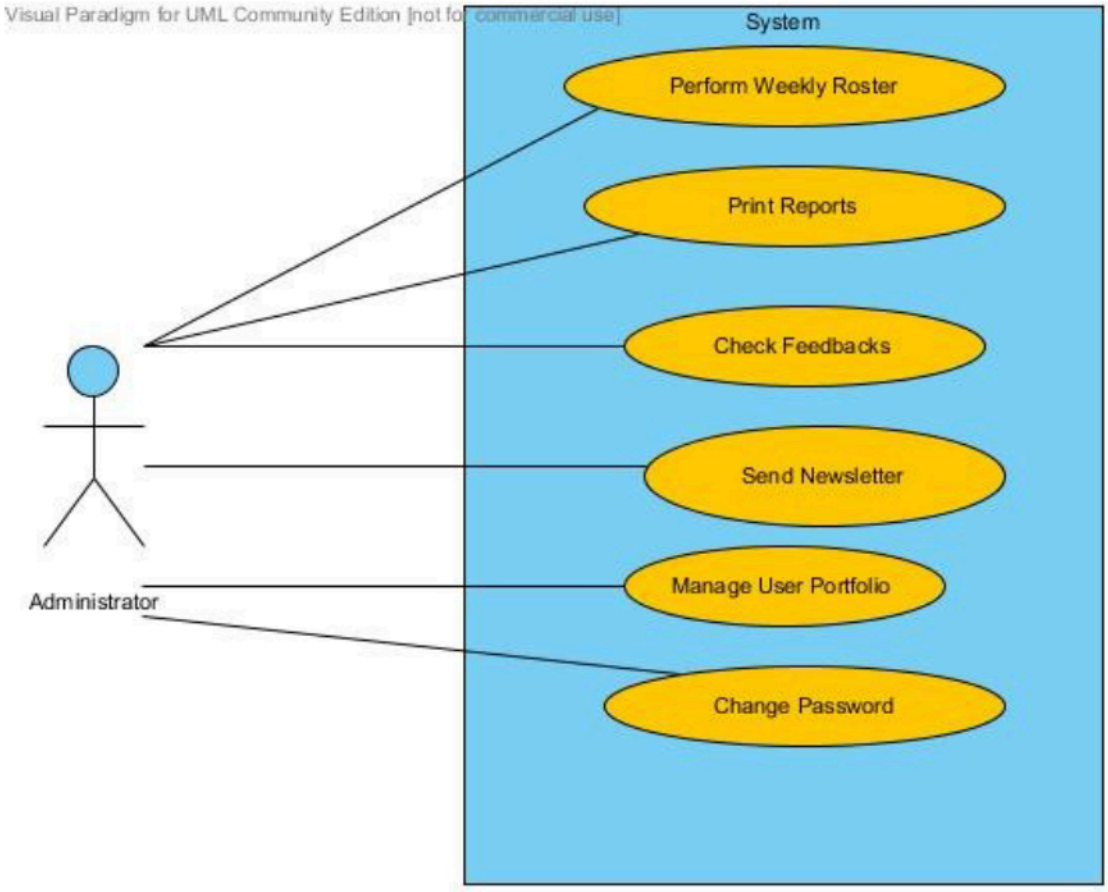
Supporting information

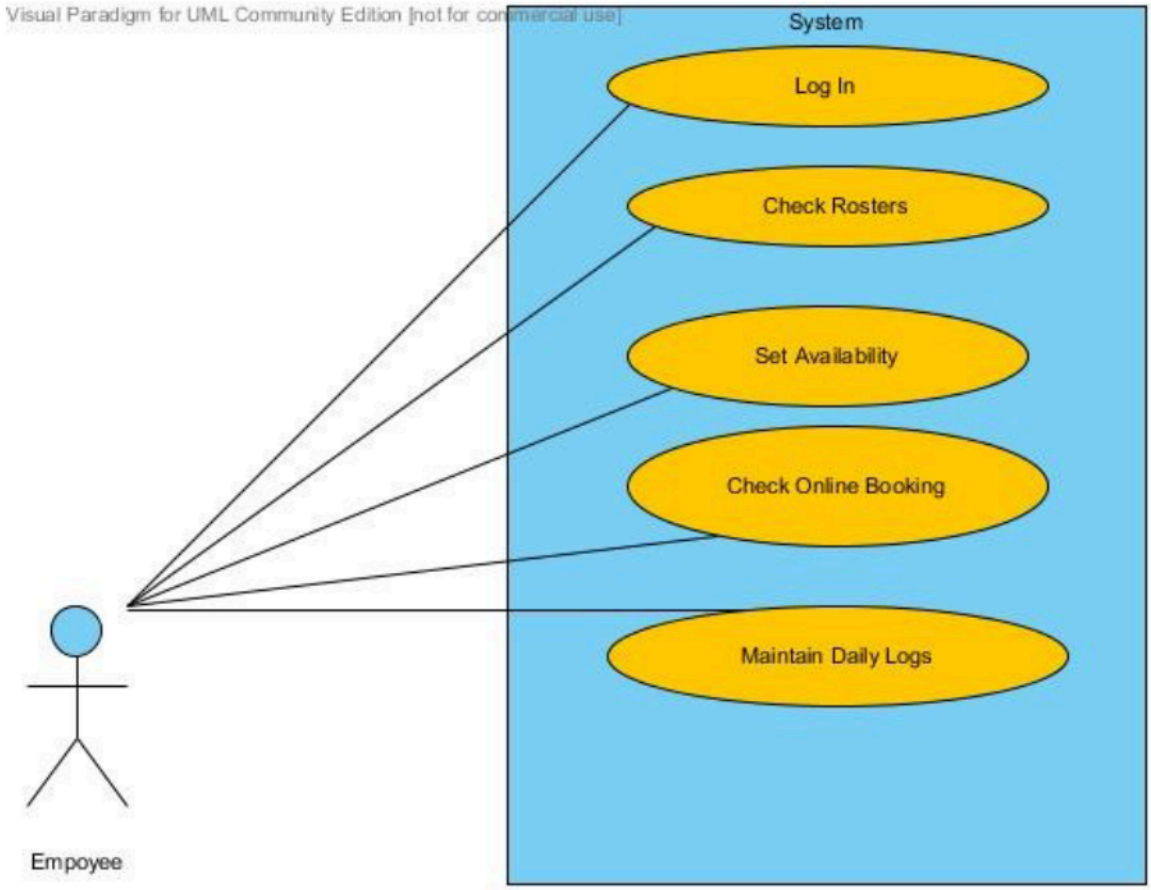
Appendix A: Glossary

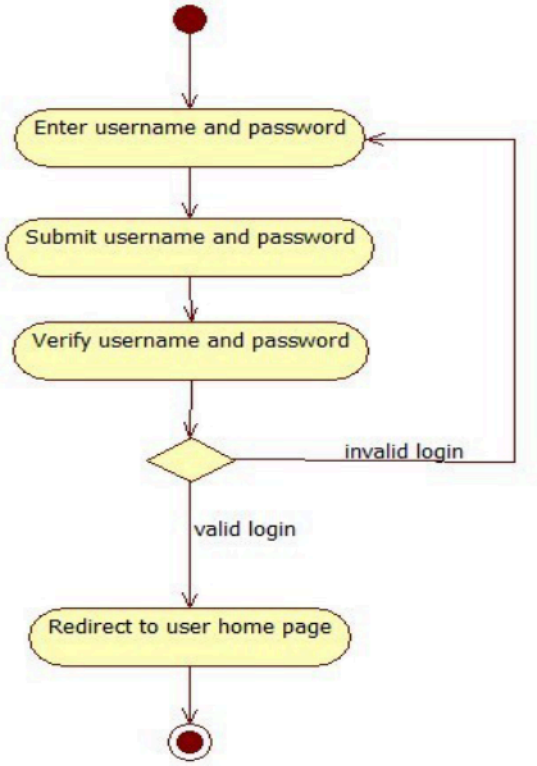
- **Fleet** – Fleet vehicles are groups of motor vehicles owned or leased by a business or government agency, rather than by an individual or family**.**
- **Booking -** Reservation of vehicles for a specific date and time.
- **Employee –** The drivers of the vehicles serving the client with the vehicle.

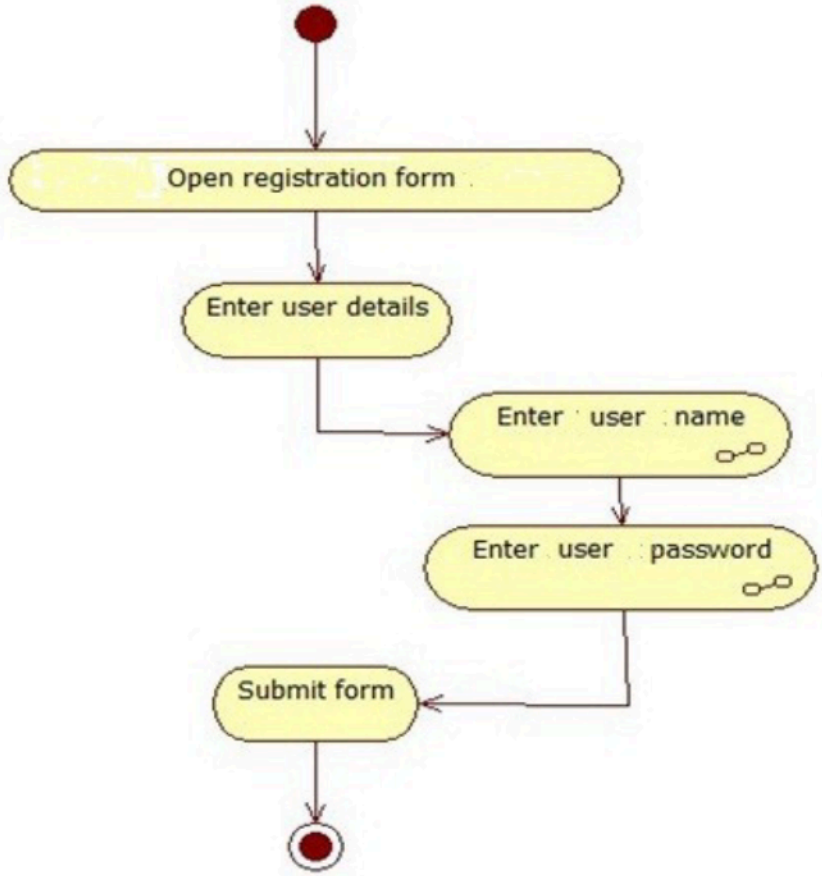
Case Diagrams




Visual Paradigm for UML Community Edition [not for commercial use]
System
Perform Weekly Roster
Print Reports
Check Feedbacks
Send Newsletter
Manage User Portfolio
Change Password
Administrator


Visual Paradigm for UML Community Edition [not for commercial use]
System
Log In
Check Rosters
Set Availability
Check Online Booking
Maintain Daily Logs
Empoyee


Enter username and password
Submit username and password
Verify username and password
invalid login
valid login
Redirect to user home page


Open registration form
Enter user details
Enter user name
Enter user password
Submit form