Bus Reservation System

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Bus Reservation System

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A Report is submitted to the Department of Computer Science,

Bahria University, Islamabad

In partial fulfillment of requirement for the degree of BS (CS)

Certificate

We accept the work contained in this report as a confirmation to the required standard for the partial fulfillment of the degree of BS (CS).

Head of Department

Supervisor

Internal Examiner

External Examiner

Dedication

I would like to dedicate this project to my beloved family especially my mom and dad with their confidence in me to overcome the entire obstacle in my journey to success. This dedication also goes to my respected teachers who teaches and guides me in every situation and encouraged me throughout the project to complete in time.

Acknowledgements

First of all, I would like to thank ALLAH for giving me enough power, strength, health and energy to accomplish the project. After that, I am thankful to my parents who have helped me and supported me on each step. I am very much thankful to my project supervisor Ma'am Tooba Nasir who helped me throughout the project on each and every step to complete my project in time, without her help I would have never been able to complete the project.

My family, my teachers and specially my supervisor Ma'am Tooba Nasir have helped me polish my technical skills and learn new things as well as manage time.

Abstract

Travelling is a large growing business in Pakistan and other countries also. It becomes very difficult to keep bus services records. This project is very useful in bus reservation system. This project is an Android based application for smart phone users and web application for internet users and for administration to maintain system. This project is a system that provides bus transportation system, a facility to reserve seats, cancellation of seats and through this Android based application a user can check the time table of buses and with the help of this application a user can put his/her current location and check that where he/she is and trace the nearest bus stand.

The web application is created using ASP.Net. There is service based SQL database which is placed on server side and smart phone application which is based on android. Platform used are Microsoft Visual Studio for ASP.net, Eclipse for android development. The architecture that is used 2-Tier architecture in which the interface is directly connected to the database and the model used for the application is client-server model in which client interacts directly to the server.

This project is made to facilitate the users so that the user register their self can be able to reserve the seats, cancel the seats and be able to get the information about the seats or buses through internet and smart phones.

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Chapter # 1

Introduction

1.1 Introduction:

Travelling is a business which grows very fast in the World. It becomes difficult day by day to keep the buses record. This project is very useful for reservation of buses. This project is Web based and also an Android based application for smart phone users. This project provides bus transportation system a facility for reservation of seats, cancellation of seats and different type of enquiry which need an instant and quick reservation. Bus reservation is built for manage and computerized the traditional database, ticket booking and tracking bus and travel made easy. It maintains all data of users, bus details, and reservation details. Through this Android based application a user can check the time table of buses and with the help of this application a user can put his/her current location and check that where he/she is and trace the nearest bus stand from his/her current location.

1.2 Problem Description:

Current reservation systems are run completely on the transport service terminals. User access to the system and their own reservation details is dependent on the transport service clerks. This project is allow a user to make and/or cancel their own reservations, in addition to checking timetables, and get bus stop and terminal location information in relation to their own location information.

Furthermore, this project aims to increase time and cost efficiency for both the transport Service providers and their clientele, with the provision of a user friendly mobile application.

Some of the design and implementation consideration are as follows:

Regular backups and information updates Training of transport services employees

Disruption caused due to power or hardware failure or malfunction and network outage or customer location falling outside network coverage area.

1.3 Project Objectives:

A user friendly Android based application that can get the information about bus services, departure times and dates, available seats, and seat reservation. The user will be able to find nearest bus stops or stations by entering their own location information.

1.4 Project Scope:

This project involves the development of a web application and a smart phone application. The smart phone application is support the customer while taking their details, such as reservation and current location details, and pass those onto the web application. The web application is mostly support the clerical staff of the transportation services, in storing and dealing with customer requests for information, reservations, cancellations etc., in addition to providing information to customers.

For the first prototype, we plan to develop the mobile app for android phones. Further development of this project could possibly be extended to cater for other mobile platforms.

Chapter # 2

Literature Review

In this Project the customer get access through a cell phone by calling, through computers or reaching to the bus terminal. But in both situations the customer meets the employees whose working for the agency. If customer wants to reserve the seats then the customer will give some personal information and then customer will reserve seat that customer selected. Project aim is to reserve seats, cancelation of seats, seat status and service time. There are some of the limitations in the project that are written followings

1: Thicket can only be reserved by employee who is working for the agency a customer must go to employee for thicket reservation.

2: Three services for each direction will be covered in that project and timing are 9:00 am, 1:00, 8:00 pm.

After the completion of the project they were tested their project by different expert peoples then they realize that after testing there are many mistakes in the project. E.g. the customer can't make the reservation. The project is only web based. Admin can't add new employees.

It is a web-based application that allow visitors to check bus ticket availability. Buy bus travelling tickets and pay bus ticket online.

Bus ticket reservation enable the bus company customer to buy bus ticket online. Customer can buy ticket online customer can buy ticket through internet and pay for ticket through credit card. Very easy way to travel sometimes when you decide to travel and call to bus stand and then most of the time phone line is busy and you must be late and if you go to bus stand without reservation of seat then it will be the possibility that there is no available seat all seat are reserve already. So it is the facility that you can reserve ticket at home and check availability of seats and then you can travel fast.

People has to go to counter to buy ticket and ask for schedule and sometime need to queue up long time to get the bus ticket.

This project didn't provide web based buying ticket function, customer cannot buy ticket 24/7, customer cannot check availability of bus and their departure and arrival time and the staff of the bus company did not minimize because the staff always needed to buy a ticket.

Bus Guru United Kingdom's first Application to give user both the bus time and best routes. With Bus Guru you can plan your journey to perfection knowing which route will be tested and when your bus will arrive from the stop.

This application is only for journey planner not for reservation through android Up to the second info on all buses real time location.

To view nearest stops, buses or all buses stop around you.

Plan your journey estimate your shortest route and check bus time table. Find fastest buses and which is leaving first. For any bus stop put area code and check bus stop info. Saving bus stop name by tapping the route. View live bus diversions cancelation and closures. Bus Guru have a user friendly and easy to use interface for their users and this application is work on all 3G and ios 4.2 to ios 5. This application is very fast due to advanced caching technology and optimization.

Nowadays, the agencies which are running this business are taking important role in transportation. This project is designed for this type of agencies which are running the business of reservation for buses.

Our project shall make well connection between pages the users must enter the correct information and shall be able to do the reservations to the desired locations with the reliable fare.

Our aim is to help the peoples that they can make their own reservation at their home or where the customer is located and this make the customers happy and relax, no need to visit the terminals. We believe that we achieved our goals and our system gives the following facilities.

1) Provide web-based and android-based buying ticket function
2) Customer can buy ticket anytime 24/7
3) To check availability of bus, departure and arrival time
4) To ease bus ticket payment
5) To minimize number of staff at ticket box

Project is very significant because e-ticket is very safer, cheaper, reliable way. The profit for the bus company will be increased because online system attract customer and no need to hire employee because ticket will be sold online in efficient way.

Users of the project:

1. **Admin:**

   1.1 Make Reservations

   Admin can make reservations.

   1.2 Cancel Reservations

   Admin can cancel the bookings.

   1.3 Add, Edit or Delete Routes

   Admin can easily add routes, delete routes or edit the route if the routes changed.

   1.4 Booking Details

   Admin can be able to see the booking seats and their details.

   1.5 Add, Edit or delete Booking

   Admin can be able to do bookings or edit bookings for changing and can delete the booking.

   1.6 Update System

   Admin should update the system on regular basis because if any changing has been made in the system then the system shows the updated information.

2. **Employee:**

   2.1 Make Reservation

   Employee can be able to book the seats.

   2.2 Cancel Reservation

   Employee can cancel the bookings.

2.3 Booking Details

Employee can be able to access the booking details of any customer and can also be make changings in the booking.

2.4 Add, Edit or Delete Booking

Employee can be able to add the reservations for the customers and edit their details for update and can also be able to delete the reservations.

3. Customer:

3.1 Signup

Customer should sign up and make account on the website and a customer would be able to make only one account on the same information.

3.2 Login

Customer should login into his/her account to access the information

3.3 Make Reservation

Customer can make the new reservation to their desired location and time.

3.4 Cancel Reservation

Customer can cancel the reservation after accessing their account before the departure time.

3.5 Change Password

Customer can change the password of their account.

3.6 Check Status

Customer can check the status of their reservation.

Chapter # 3

System Specifications

3.1 Introduction

3.1.1 Purpose of this document

The main purpose of this document is to describe the functional requirements of our project called Bus Reservation System (Android application), and its constraints. The document is also intended for all application users who need to understand the requirements of the application. They will include the project evaluation team, end users, project supervisor and developers. This document also targets future developer who will be interested in carrying forward this project for their academic or business purpose.

3.1.2 Scope of this document:

This document will help the developers to understand in detail that what they are supposed to build and also will be very helpful for future enhancement in the system.

3.1.3 Overview

This project aims is to develop an Android application. The main purpose of our project is to facilitate our users. Bus reservation is a system that provides the facility to reserve seats, cancellation of seats and different type of enquiries which need feedback from an instant, and quick reservations. Bus reservation is built for management and computerization of the traditional databases developed for such systems, ticket booking and tracking buses and public traveling habits. These databases maintain user data, bus detail including schedules and technical maintenance details; and reservation details. Through this Android based application a user will be able to check the time table of buses, enter their current location and trace the nearest bus stops. In addition, we will also develop a web application for admin, where they will be able to update information about buses.

A person would be to do the following task.

- Visit the site

- Can do Registration.
- Change password.
- Can see his/her current reservations and details.
- If the customer is outside, can be able to find the nearest terminal.
- Can be able to check timetable of all available buses.

3.1.4 Business Context

Our application is not sponsored by any third organization. This application is just for academic purpose and its copy rights reserve to Bahria University Islamabad.

3.2 General Description

The basic purpose of our application is to facilitate our users. User will go through the sign up process because user can also buy or reserve tickets after the login process. And user can only be login if he/she signed up.

3.2.1 Product Functions

This part of the software requirement specification (SRS) describes the function of our application.

3.2.2 User Characteristics

The user must be a smart phone user. The user of this application is expected to have some knowledge of smart phones and the user must know how to use android application.

3.2.3 User Problem Statement

Current reservation systems are run completely on the transport service terminals. User access to the system and their own reservation details is dependent on the transport service clerks. This project will facilitate or allow a user to make and/or cancel their own

reservations, in addition to checking timetables, and get bus stop and terminal location information in relation to their own location information. Application users are totally independent not dependent to go to bus terminal for reservation and checking time table or schedule of buses.

3.2.4 User Objectives

The most important objective of user will be facilitate user so they just open smart phone application and checking time table checking nearest location or nearest bus terminal and reserve seat or cancel seat.

3.2.5 General Constraints

The main purpose of this application is to facilitate users, getting some personal information from users so that provide security to users. So that no user can access the personal information of another user and every user communicate with system safely and communication between user and server is fully secure.

3.3 Functional Requirements

In this part we will be discuss about functional requirements of our application. Requirements are divided into functional requirements interface requirement and non-functional requirements. Functional requirements are

3.3.1 Sign up

Description:

When users will run this application then users will have two options.

The system shall provide signup to user

The system shall provide signup to admin

Criticality

Signup is most critical requirement of our web application. After signup user will be able to use the application and to communication with the system. Application cannot take actions and help the users to update their requirements until it has information of its users.

Technical issues

One user can have multiple accounts

Cost and schedule

It is the first task in the system

Risks

User won't be able to sign up in the following condition:

If the server is down.

If the internet connection is not available.

Dependencies with other requirements

Without signup admin won't be able to manage the system and the user won't be able to use the application.

3.3.2 Login

The system shall provide login to user

Criticality

Login is most critical requirement of our web application. After login user will be able to use the application and to communication with the system.

Technical issues

Malicious user login or unauthentic user try to access the login

Cost and schedule

There is no such cost involved and after signup the users will be able to login their accounts

Risks

User won't be able to access their account in the following condition:
If the server is down.
If the internet connection is not available.

Dependencies with other requirements

Without login admin won't be able to manage the system and the customer won't be able to use the application.

3.3.3 Admin

The system shall manage the users account

The system shall manage the tickets

The system shall manage the bus information

The system shall manage the bus route

Criticality

If the admin won't maintains the information or unable to update the system then the users face difficulties and can't get the latest and true information of the reservation system. The user face difficulties to reserve the tickets.

Technical issues

Malicious user login or unauthentic user try to access the login

Cost and schedule

There is no such cost involved and when the admin is login in the system he will update all the information in the system.

Risks

Admin won't be able to update the information in the following condition:

If the server is down.

If the internet connection is not available.

Dependencies with other requirements

Without login admin won't be able to manage the system or to up to date the system and the customer won't get the true or up to dated information.

3.3.4 User

This system will offer two options to the user either is he/she has account or not, if user don't have any account then user must go through the sign up process. In sign up process user will fill a simple form. Form will contain only few text boxes, radio buttons and check boxes. In form user will have to provide the information like their CNIC number, cell number, name, e-mail id, age and gender etc. so that conformation message send to user when user reserve a seat or cancel seat.

Criticality

Signup requirement is most critical requirement of our web application. Application cannot take actions and help the users to update their requirements until it has information of its users.

Technical issues

The form which application will offer in signup process must be attractive and responsive on all type of devices, so that it attracts its users to get all important information and design also must motivate the user to use this application.

Cost and schedule

There is no such cost involved in this project. Neither there is any hardware involved nor did we suppose to buy any tool for the implementation.

Risks

The user won't be able to do sign up process if the server is down or the internet is not available.

8

Dependencies with other requirements

The user won't be able to access the information if the sign up process failed.

3.4 Interface Requirements

Interface of the system should be user friendly, we try our best that the user of this system should not face any difficulty. The hardware for this system is not so big aur complicated simple smart phones and computer can be able to avail the services.

3.4.1 User Interfaces

This project is based on web based and android. So the user interface shall be compatible with all the browsers and android phones.

3.4.2 Hardware Interfaces

An android device is needed to run the system or application. And this application can also be run on the computer.

3.4.3 Communications Interfaces

The system shall use wide area network for communication.

3.4.4 Software Interfaces

Internet browser should be installed in the devices through which the application is going to be accessed. System should communicate to the Database server for authentication of the users.

3.5 Performance Requirements

The performance of this system depends upon the following:

- Internet Speed
- Memory Requirement

If the user which uses this application should be well aware with android phones or computer, and on the other hand the performance is also depends on the speed of the internet, and the link must not be down to access the information.

The reservation of seats will not take much memory in the data base. But the data base must have enough memory for unlimited users.

3.6 Design Constraints

While designing this system we would keep in mind the specifications of the general smart phones.

3.7 Other Non-Functional Attributes

3.7.1 Security

The system shall not allowed unauthentic user

The system shall not display the confidential information.

3.7.2.1 Usability

3.7.2.1 GUI

GUI includes icons, text boxes and buttons

3.7.3 Reliability

The system shall not crash on wrong input.

3.7.4 Maintainability

The system shall maintainable and the system shall up to date

3.7.5 Portability

The system shall portable on the android devices and with different operating systems.

3.7.6 Extensibility

The system shall be upgradable any up gradation can be done easily in the system.

3.7.7 Application Affinity/Compatibility

The system shall compatible on all the android devices and computers/laptops.

3.7.8 Efficiency

This involves accuracy, timeliness and comprehensiveness to the system output.

3.7.9 Flexibility

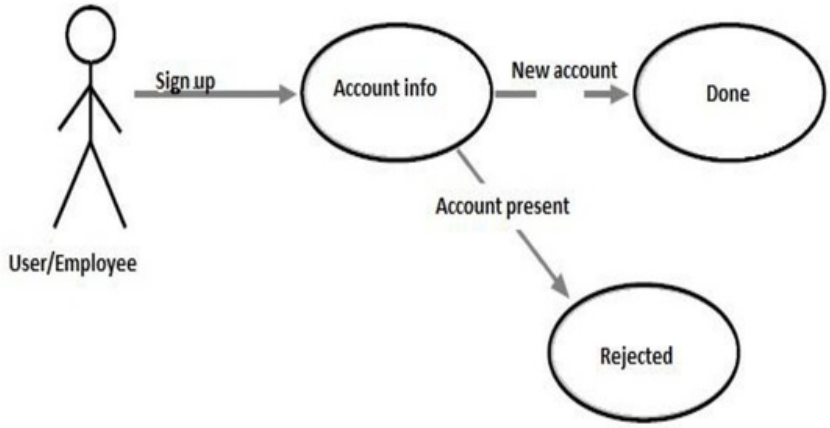
The system shall modifiable and the system can be update according to the user's need.

3.8 Operational Scenarios

3.8.1 Sign up

When new user want to get the information he will fulfill a sign up form and give the personal details then new account creates.

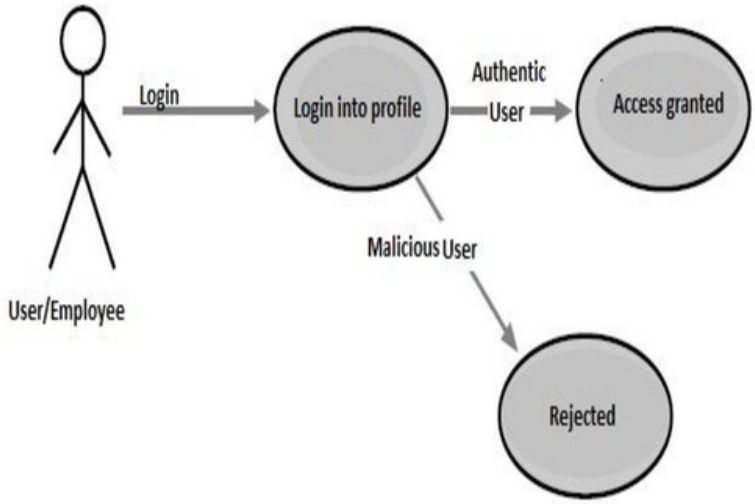
If the user registered himself before then the request for signup is rejected.



3.8.2 Login

Only authentic user will get an access to their account/profile.

Any malicious user shall have no access to the account.



3.8.3 Admin:

Admin login into their account and manage the following information:

1. Admin can add new user, edit information about user and can delete the user.
2. Admin can add time tables, update time tables and can delete time tables.
3. Admin can add routes, update routes and can delete the routes.
4. Admin can cancel the reservation.
5. Admin can access the booking detail of the user.

3.8.4 User:

User can do following task:

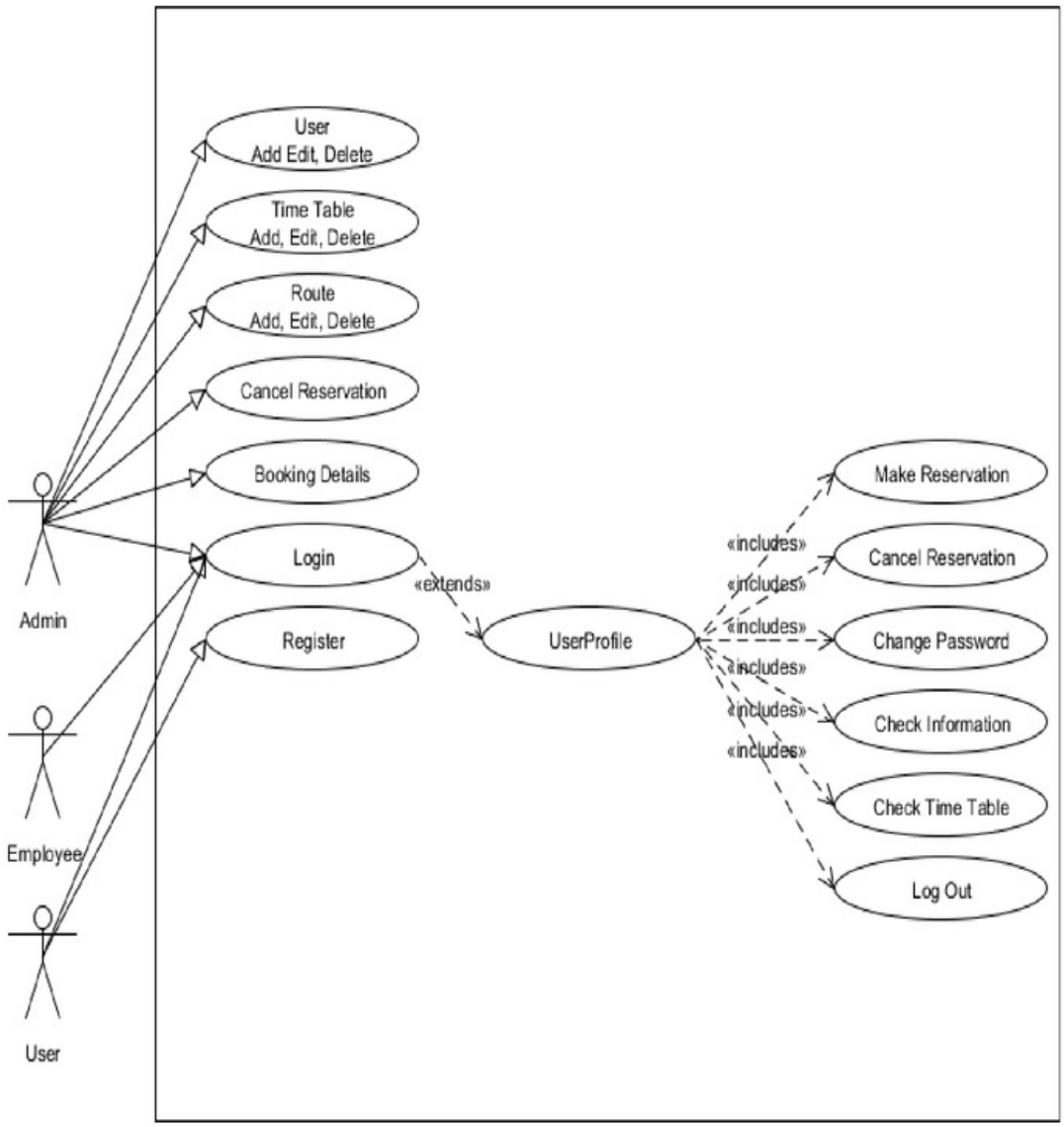
1. User shall login to the account.
2. User can make reservation to their desired location.
3. User can also cancel the reservation.
4. User can change their account's password.
5. User can check the information about the reservation.

3.8.5 Employee:

Employee can do the following tasks.

1. Employee shall login to the account.
2. Employee can make the reservations.
3. Employee can also cancel the reservation.
4. Employee can change their account's password.
5. Employee can check the information about the reservation.

When the admin, user and employee login into their account they will get access to their profiles and do other tasks which they want. All the users must pass the login process to get further access to their accounts if the login failed then the access is denied.



3.9 Preliminary Budget

There is no defined budget for this project.

3.10 Appendices

3.10.1 Sign up:

Sign up refers to, any user who want to get the information of the reservation system must be the member of the organization.

The organization must have the information of the user and when user completes the sign up process then the user have access to the system.

Through sign up process the system is safe from any malicious users.

3.10.2 Login system:

A login refers to the credentials required to obtain access the information about the booking.

3.10.3 Admin:

Admin manage the database and manage all the information of the buses, routes, users/employees.

3.10.4 User:

Any person who want to get the information of the system and avails the services.

3.10.5 Abbreviations:

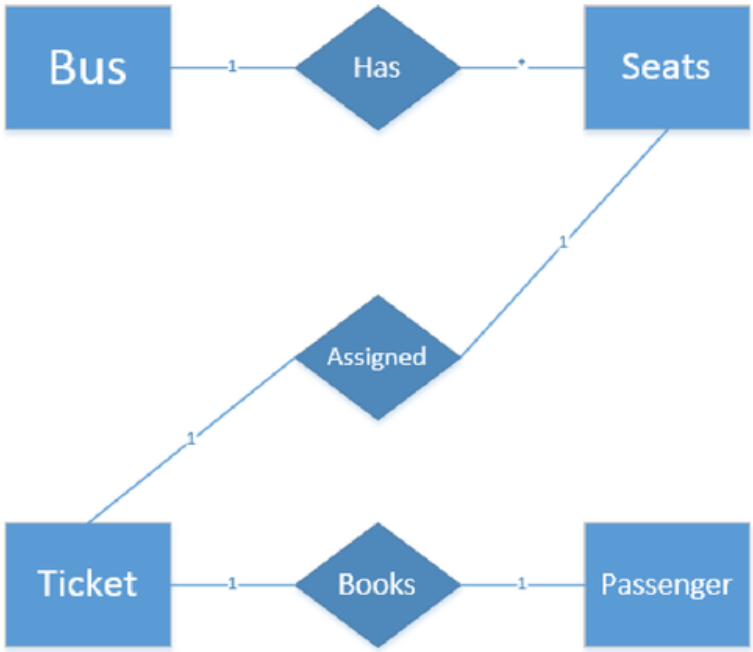
GUI (Graphical User Interface)

Chapter # 4

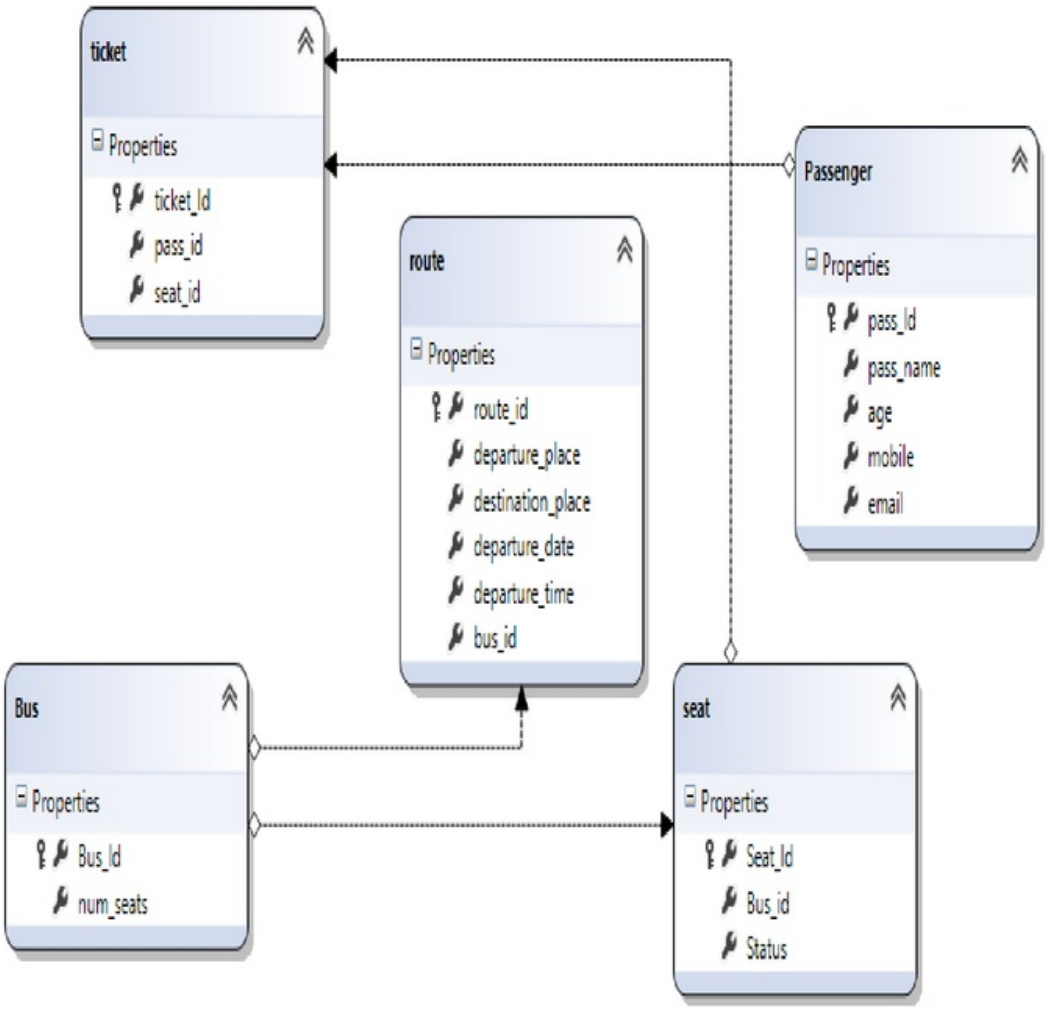
System Design

4.1 ER Diagram:

The users access the desired bus according to their route and timing. The bus has seats and users selects the seats which they want. When the users selects the bus and seats and then seats assigned the tickets to the users and users will give their complete information and ticket books the passenger. There is one to one relation in bus and passenger. One bus has seat. One seat assigns one ticket and one ticket books one passenger.



4.2 Class Diagram:

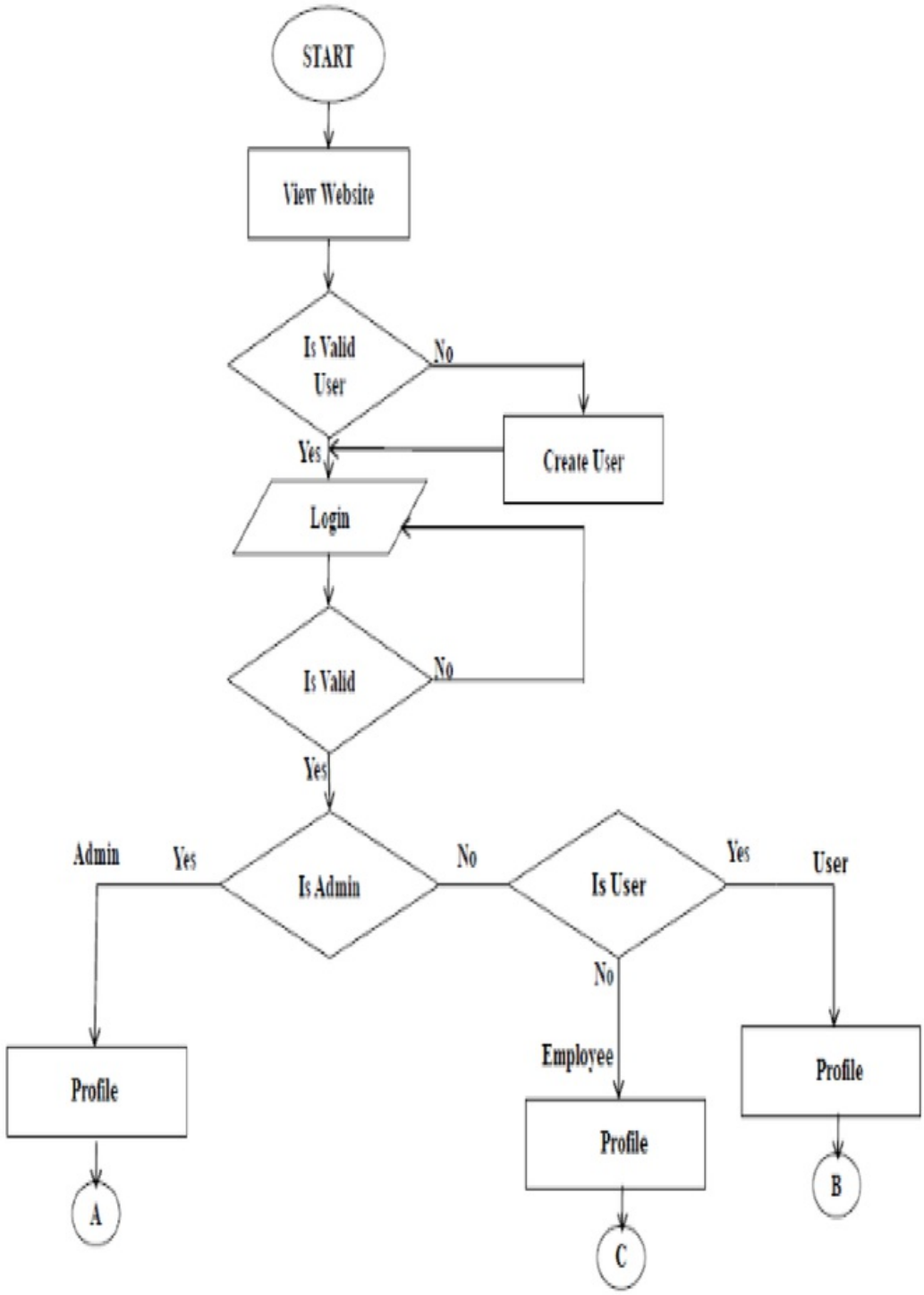


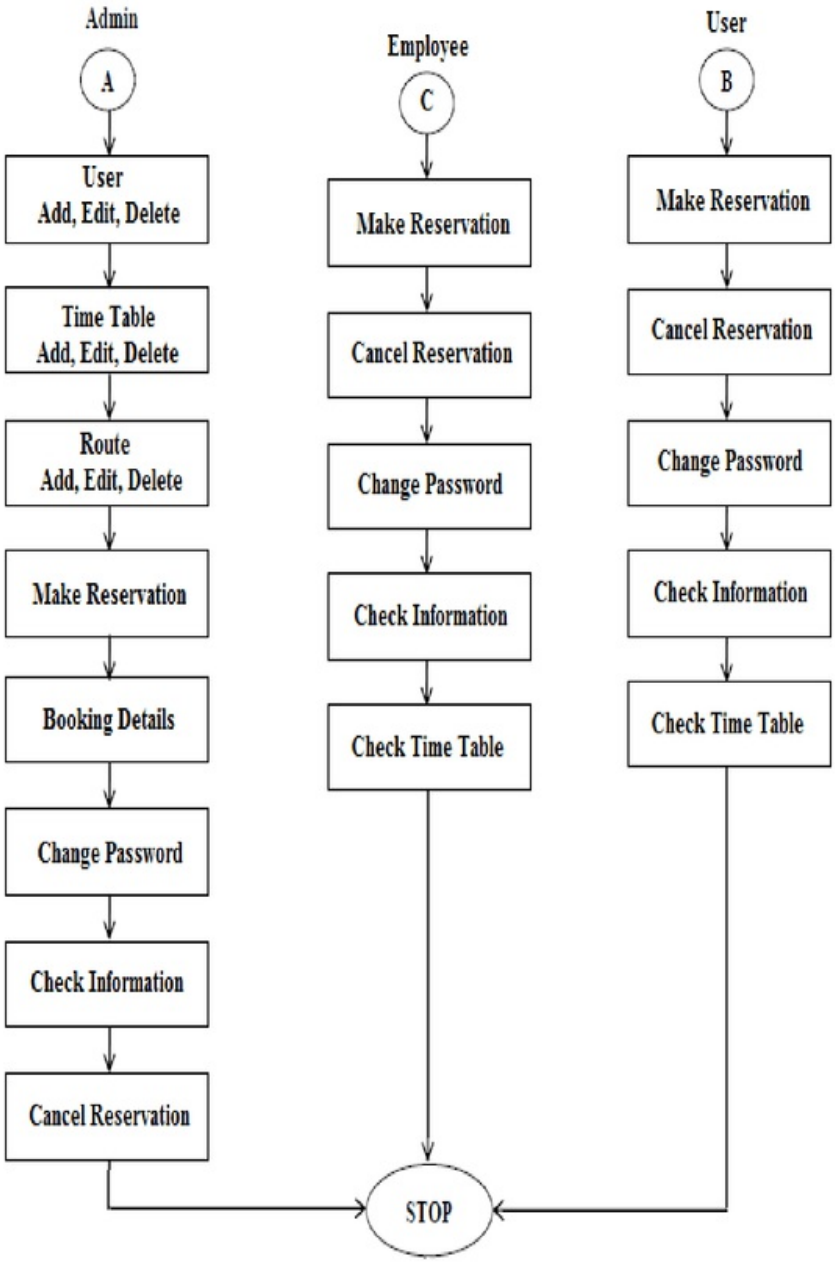
4.3 System State Diagram:

The users must start to use the system and view website. If the user is valid who is going to access the system then the request forward towards the login process. If the user is invalid then the request goes toward the create user and then user full fills a form in which the user should give the correct information for registration. After the success full registration process the user can be able to login. Then the user should login if the login is valid the request for login is approved and if the login is incorrect then the request forward to the login again.

After successful login if the user is admin then the request goes toward the admin page, if the user is not admin then the request goes towards the user or employee page. If the user is employee then the employee will get the access to their account and if the user is a normal user not the admin and the employee then the user will get access to their profiles.

After successful login to their profiles the user shall be able to do their tasks.


START
View Website
Is Valid User
No
Create User
Yes
Login
Is Valid
No
Yes
Admin
Yes
Is Admin
No
Is User
Yes
User
No
Employee
Profile
Profile
Profile
A
B
C


Admin
A
User
Add, Edit, Delete
Time Table
Add, Edit, Delete
Route
Add, Edit, Delete
Make Reservation
Booking Details
Change Password
Check Information
Cancel Reservation
Employee
C
Make Reservation
Cancel Reservation
Change Password
Check Information
Check Time Table
User
B
Make Reservation
Cancel Reservation
Change Password
Check Information
Check Time Table
STOP

4.4 Activity Diagrams

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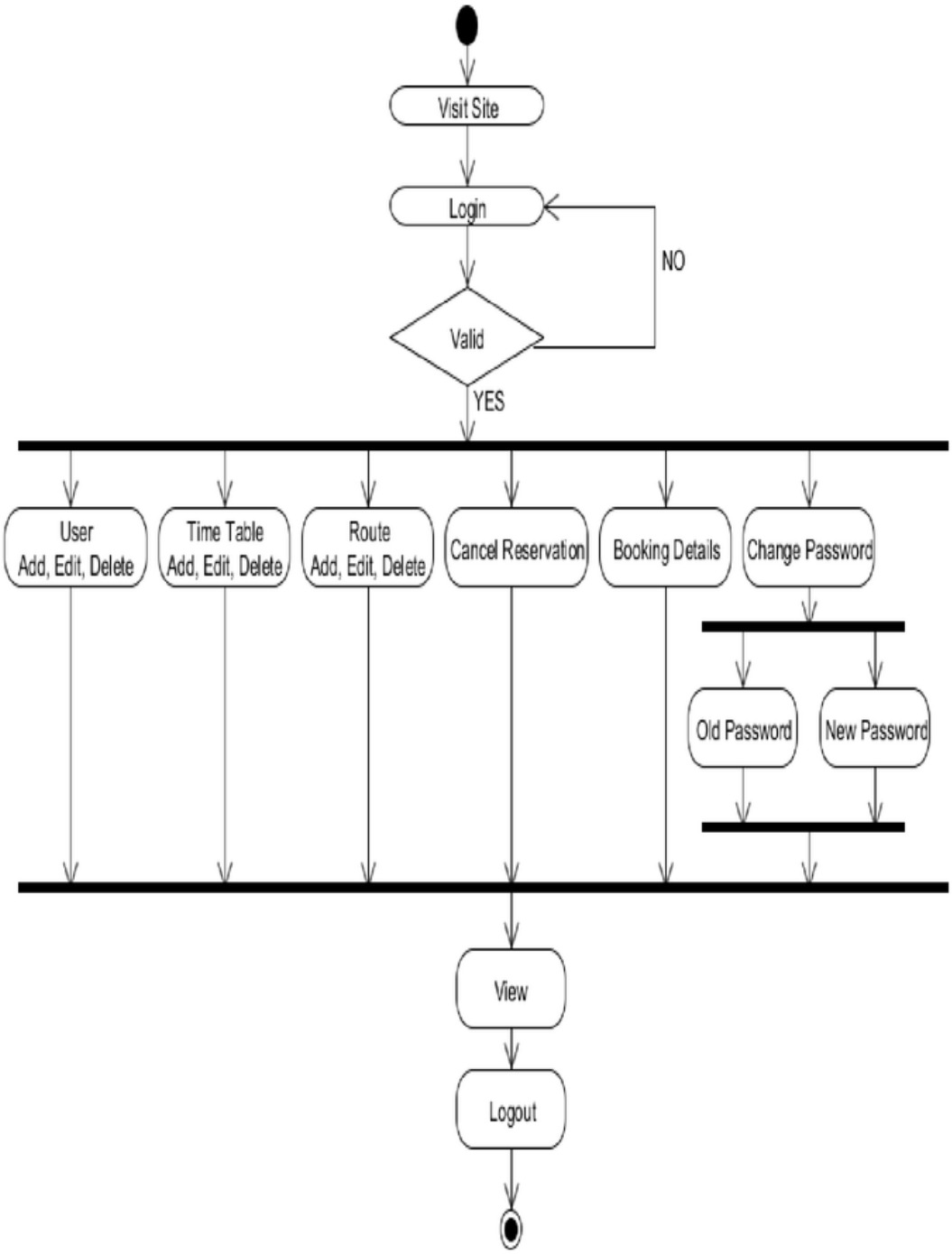
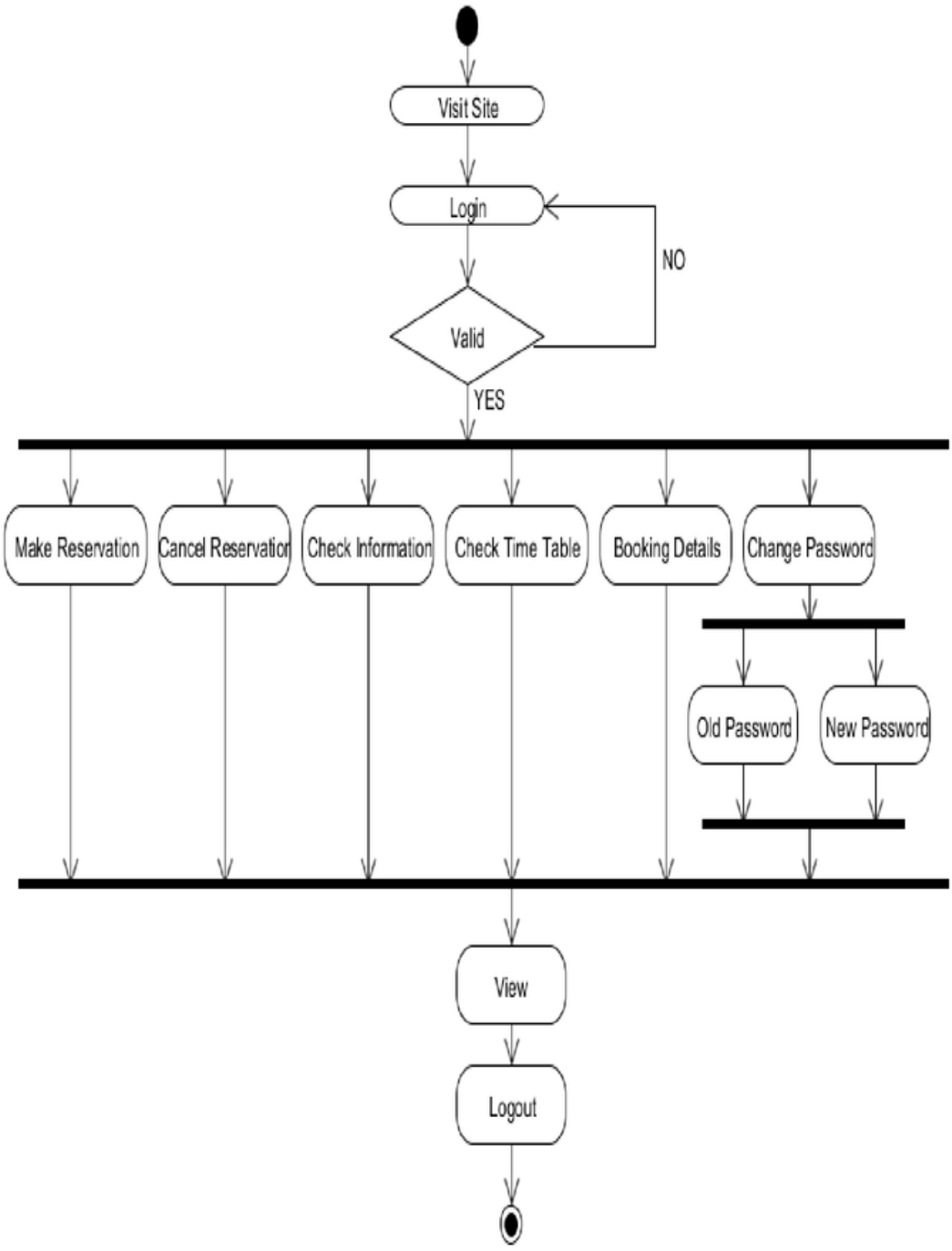
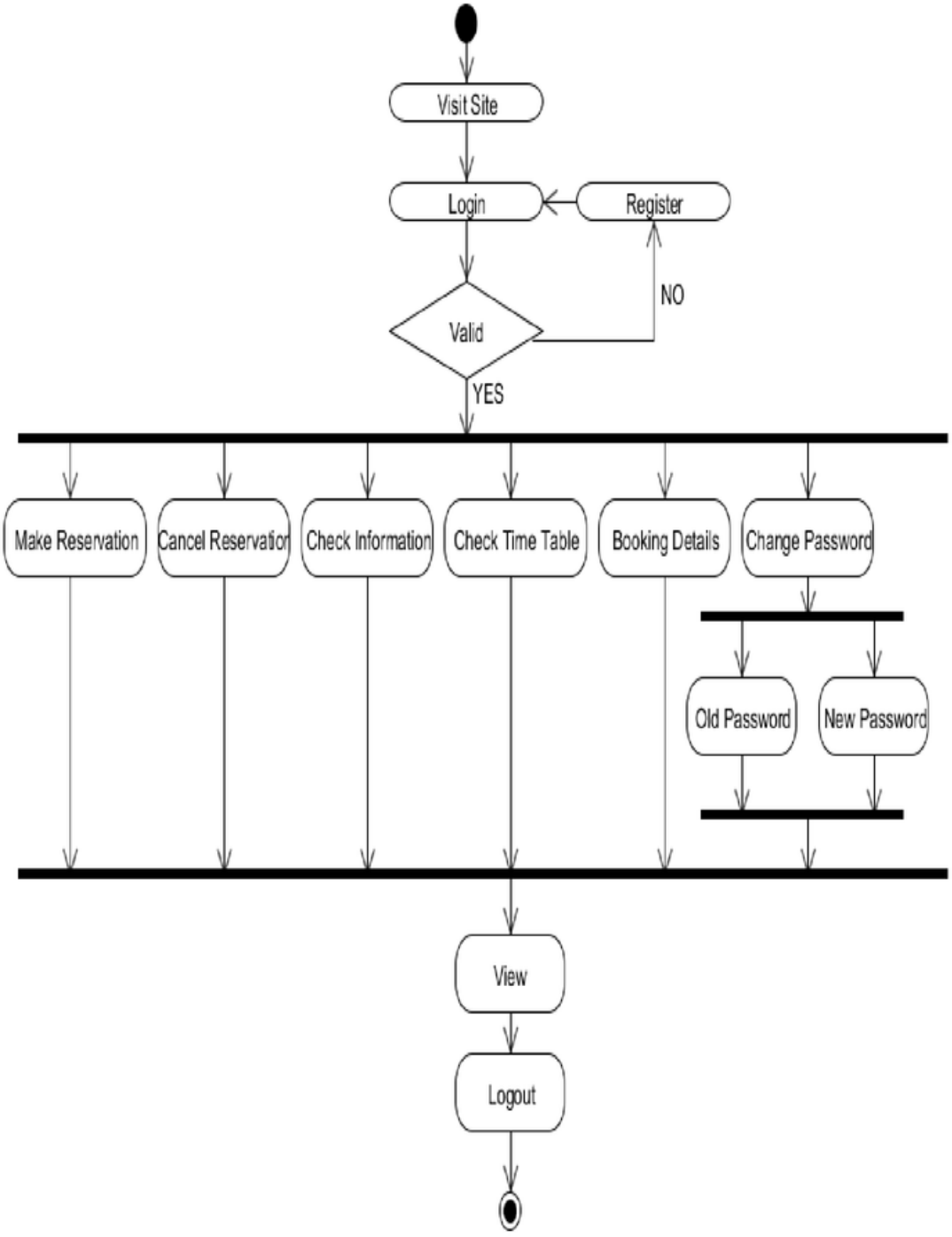
4.4.1 Activity Diagram for Admin



4.4.2 Activity Diagram for Employee



4.4.3 Activity Diagram for User



4.5 Sequence Diagrams

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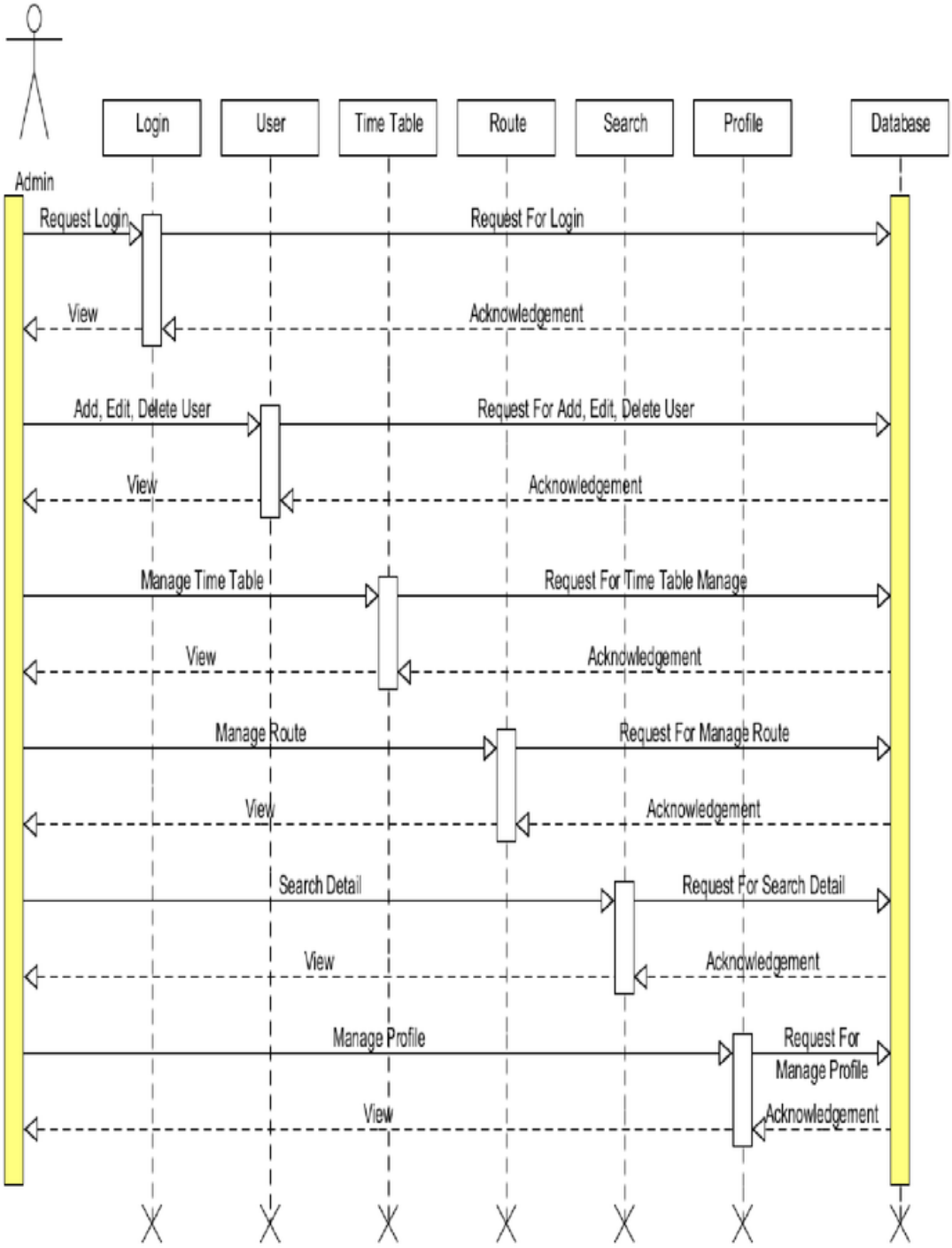
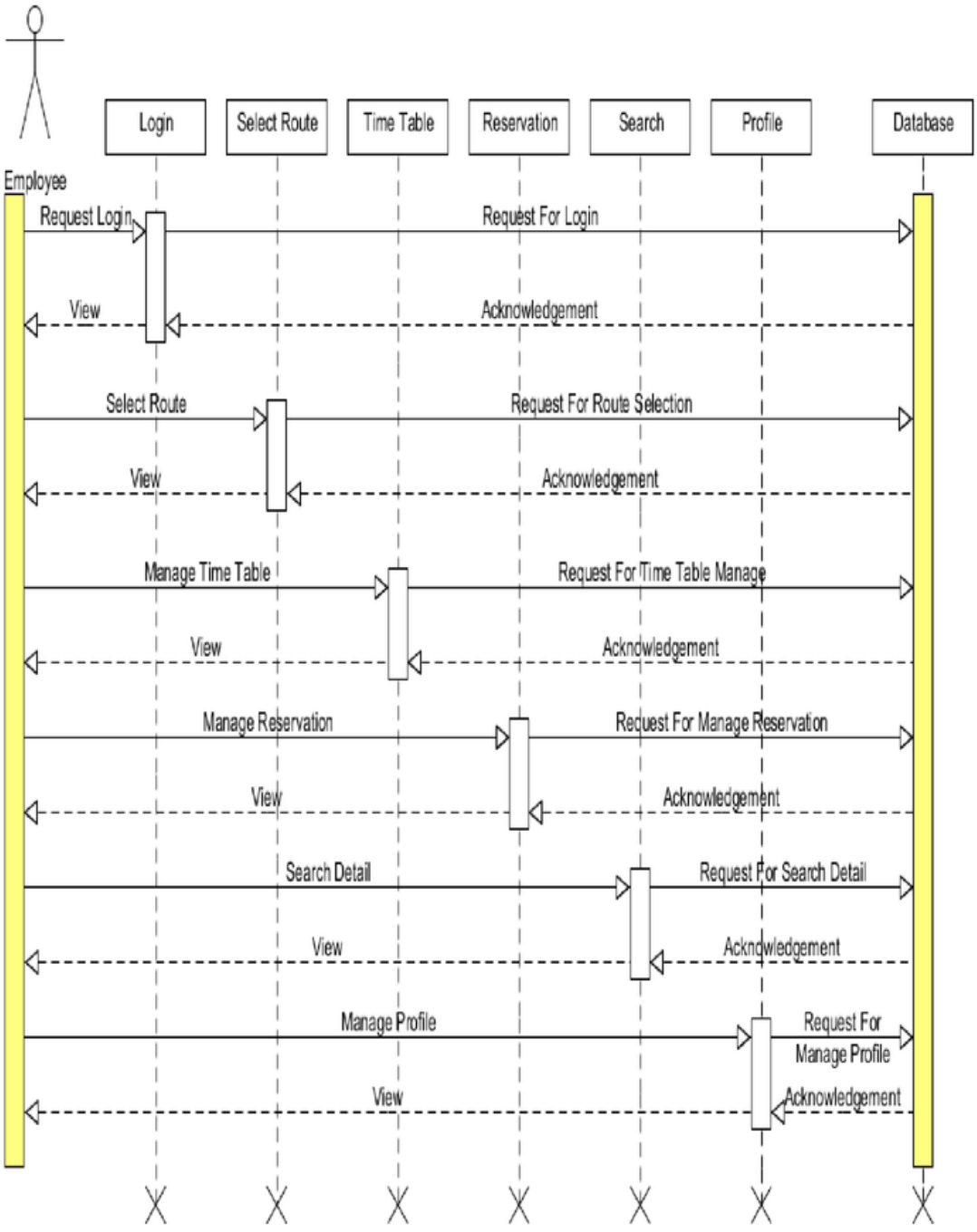
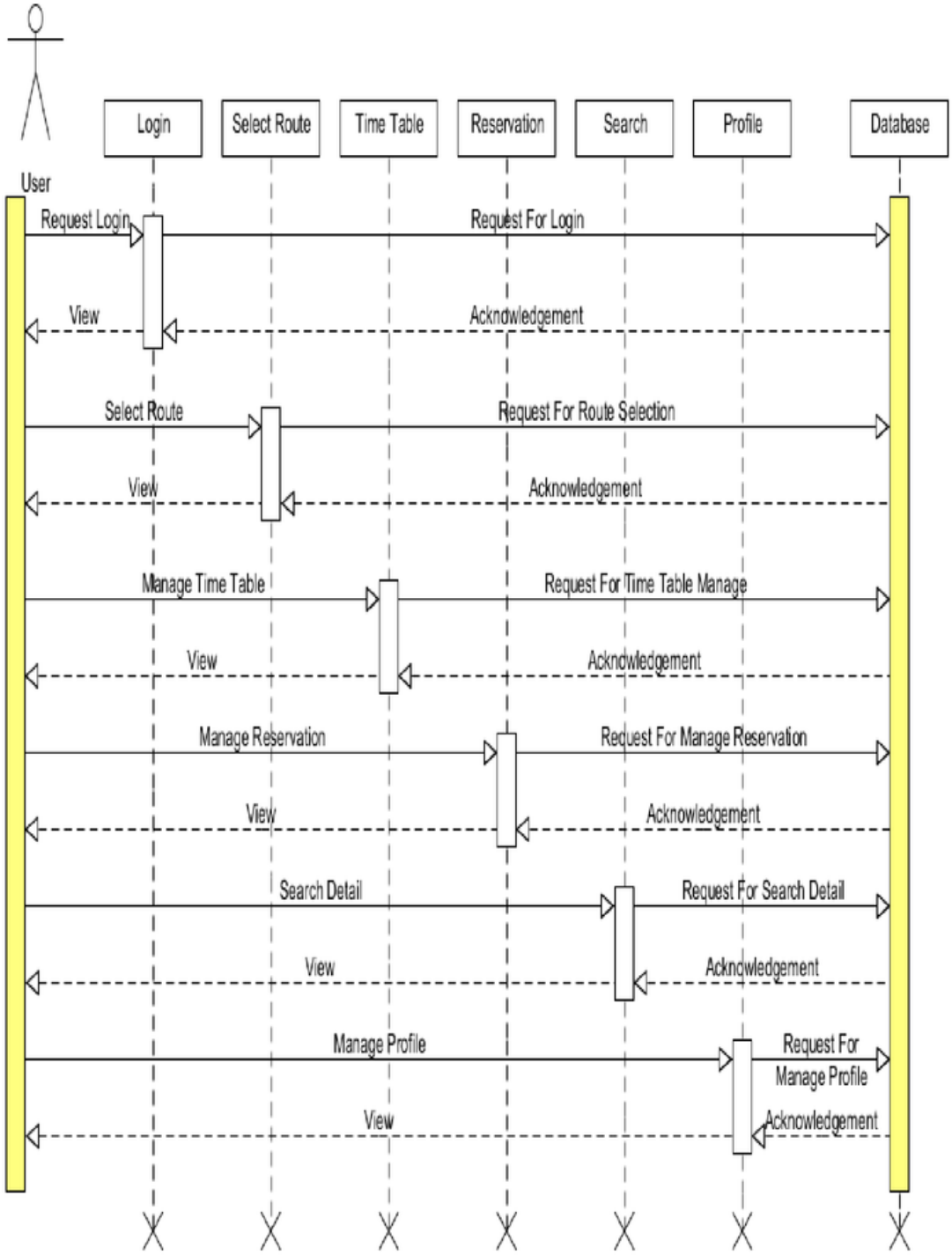
4.5.1 Sequence Diagram for Admin



4.5.2 Sequence Diagram for Employee



4.5.3 Sequence Diagram for User



Chapter # 5

System Implementation

The Book Metro is built for easy booking of the ticket. This system is built for all the smart phone users, and internet users. All the users avail the booking service who are using the internet and smart phones. This system is responsive to be used in any device or screen resolution. Bootstrap is a free tool for making websites and application using different templates and typography built with HTML5 and CSS3. Bootstrap have many designs for buttons and templates most of all its responsive (adjustable with any screen resolution).

5.1 System Architecture

System is based on simple design and users can login with their account to the system.
This system is divided into two components which includes:

- Android Application: which is android based and will be used on android based smart phones for reservation.
- Web Application: Will be on webserver, provides different functionality for different users mainly use online reservation and reports generation.

5.1.1 Tools and Technology Used

Followings are the tools used for the coding or implementation of the project.

Bootstrap:

Bootstrap is a tool for creations of websites and web-based applications. It consists of HTML5 and CSS-based designs. Bootstrap is the technology which loads the software as needed on the desired device. It loads the software interface according to the device.

Adobe Dreamweaver:

Adobe Dreamweaver is a tool for web development and provides and visual WYSIWYG editor. It provides transfer and synchronization features. Dreamweaver and some other editors like HTML can edit and upload files to the remote Web Server.

Microsoft Visual Studio:

Visual Studio is a platform which gives the services through which we are able to create the applications according to our requirements. It is used for the development of computer programs.

5.1.2 Development Environment/Languages Used

Following are the languages used for the development

HTML5:

Language that is used for presenting contents for World Wide Web. HTML is a potential candidate for mobile applications. Some Features of HTML5 is built for low powered devices E.g. smartphones and tablets.

C#:

C-sharp is a multi-paradigm language by Microsoft. It is a language based on combination of C, C++ and C # and used to develop software for Windows platform.

MySQL:

The World's second most widely used language for open-source relational database management system (RDBMS).

MySQL is used for databases used in web applications.

MySQL is developed by Oracle and is freely available for used.

Asp.Net:

Asp.net is a server side Web application through which we are able to develop the Web pages. Programmers will be able to develop dynamic web sites and web application.

JavaScript:

JavaScript is a client and server-side scripting language. It can be used across multiple web browsers and is considered essential for developing interactive or animated web functions.

For Book Metro following things must be known.

- How to store, retrieve and update data in database.
- How to execute database queries.
- How to do programming in HTML5, C# and JavaScript.

5.1.3 Processing Logic/Algorithms

The processing logic is based on the basic website architecture from login to logout. The registered users login to their account and get the access to their profiles. If the user is not registered then the user of the product must fill a form of the registration process to get the access to their accounts. The registered users must pass the login process to enter into the profiles if the login information is not correct then the request for login is not approved by the system. When the users get access after correct login to their profiles then they will do the reservation or will get any information which they want according to the bookings, buses, timetables. The admin have authority to change the timetable update the information of buses and the admin should update the system on regular basis.

5.1.4 Application Access Security

The application is secure with the login access of user registration. Only the registered users can get access to the profile if the login is not correct then the access denied.

Application can only be accessed by authentic users. Every user will see the interface according to their types, and access only the functions that are made for that user. E.g. a user cannot access the admin's functionalities as well as the employee also cannot access the functionalities of admin.

5.1.5 Database Security

Databases are the most valuable component of any web based application. The databases must be secure for any external use. If anyone can be able to access the database then he/she will be able to make changes in the database very easily. Database is very important for any company or organization because all the important information and credential is store in database if the database is not secure, then anyone can access the database and can make changes in the database and many peoples may face the difficulties. Since very sensitive or secret information can be stored in a database, you should strongly consider protecting your databases. Commonly used query language in this interaction is the Structured Query Language (SQL).

For security of user's account we are using authentication process.

Chapter # 6

System Testing and Evaluation

6.1 Introduction

The testing and evaluation process is an integral part of the Systems Engineering Process which ensures that the system is working according to the functional requirements as well as the non-functional requirements. It also helps developer correcting the deficiencies and identifies the level of performance.

6.2 Approaches of Testing

In this section, methods of testing have been stated through which the system has been evaluated.

Different methods to the testing along with the test cases have been shown below:

6.2.1 User's Login:

Test Case ID	TC_FUNCT_01
Description	Tests the Login Screen
Applicable for	IE10, Firefox, Google Chrome
Requirements	REQ_FUNCT_01 (3.1)
Initial Conditions	Login form is shown to the user.

Step	Task & Expected Result	
1	Browse the URL.	
2	Verify that the login screen is displayed on IE10, Google Chrome and Firefox.	**Pass**
3	Enter Username and Password.	
4	Verify that the username can be entered.	**Pass**
5	Verify that the password is masked and can be entered.	**Pass**
6	Verify that the check box to remember the user is displayed.	**Pass**
7	Verify that the user is able to login with the provided username and password.	**Pass**
8	Verify that the user is able to login with the provided username and password.	**Pass**
9	Verify that the user is unable to login with the wrong username and password.	**Pass**
10	Verify that the user is shown the respective page according to the nature of the user.	**Pass**

6.2.2 Admin's Login:

Test Case ID	TC_FUNCT_02
Description	Tests the Login Screen
Applicable for	IE10, Firefox, Google Chrome
Requirements	REQ_FUNCT_01 (3.1)
Initial Conditions	Login form is shown to the user.

Step	Task & Expected Result	
1	Browse the URL.	
2	Verify that the login screen is displayed on IE10, Google Chrome and Firefox.	**Pass**
3	Enter Username and Password.	
4	Verify that the username can be entered.	**Pass**
5	Verify that the password is masked and can be entered.	**Pass**
6	Verify that the check box to remember the user is displayed.	**Pass**
7	Verify that the user is able to login with the provided username and password.	**Pass**
8	Verify that the user is able to login with the provided username and password.	**Pass**
9	Verify that the user is unable to login with the wrong username and password.	**Pass**
10	Verify that the user is shown the respective page according to the nature of the user.	**Pass**

6.2.3 Employee's Login:

Test Case ID	TC_FUNCT_03
Description	Tests the Login Screen
Applicable for	IE10, Firefox, Google Chrome
Requirements	REQ_FUNCT_01 (3.1)
Initial Conditions	Login form is shown to the user.

Step	**Task & Expected Result**	
1	Browse the URL.	
2	Verify that the login screen is displayed on IE10, Google Chrome and Firefox.	**Pass**
3	Enter Username and Password.	
4	Verify that the username can be entered.	**Pass**
5	Verify that the password is masked and can be entered.	**Pass**
6	Verify that the check box to remember the user is displayed.	**Pass**
7	Verify that the user is able to login with the provided username and password.	**Pass**
8	Verify that the user is able to login with the provided username and password.	**Pass**
9	Verify that the user is unable to login with the wrong username and password.	**Pass**
10	Verify that the user is shown the respective page according to the nature of the user.	**Pass**

6.2.4 Home Page:

Test Case ID	TC_FUNCT_04
Description	Tests the Home Page.
Applicable for	IE10, Firefox, Google Chrome
Requirements	REQ_FUNCT_02 (3.2)
Initial Conditions	Respective home page is shown to the user according to the nature of the user.

Step	Task & Expected Result	
1	Verify that respective options are shown to the user according to the nature of the user.	**Pass**
2	Verify that on button click of the options, the respective form is shown to the user.	**Pass**
3	Verify that user can put in the information in the shown forms.	**Pass**
4	Verify that the search bar is shown to the user.	**Pass**
5	Verify that the logo is shown on the interface.	**Pass**

6.2.5 Email Notification:

Test Case ID	TC_FUNCT_05
Description	Tests the process of applying for leave.
Applicable for	IE10, Firefox, Google Chrome
Requirements	REQ_FUNCT_05
Initial Conditions	User has logged the incident.

Step	Task & Expected Result	
1	Verify that the user is getting an email notification on a submission of the incident with the tracking number.	**Pass**
2	Verify that the respective team according to the nature of the incident is getting an email notification on a submission of the incident with the tracking number.	**Pass**
3	Verify that the user is getting an email notification after 50% of the time.	**Pass**
4	Verify that the respective team according to the nature of the incident is getting an email notification after 50% of the time.	**Pass**
5	Verify that the user is getting an email notification after 100% of the time.	**Pass**
6	Verify that the respective team according to the nature of the incident is getting an email notification after 100% of the time.	**Pass**

7	Verify that the user is getting an email notification on the resolution of the incident.	**Pass**
8	Verify that the respective team according to the nature of the incident is getting an email notification on the resolution of the incident.	**Pass**

Chapter # 7

Conclusion

7.1 Conclusion

Book Metro aim was to develop a reliable integrated system to automate the reservations and decrease the burden of staff and Employees. Book Metro was successful in achieving its goal.
Book Metro is a software through which the user of this software will be able to do the reservation for buses online to their desire locations from laptops, computers or android based smart phones.

7.2 Future Enhancements

Improvement can be made in Book Metro by including following features:

- Book Metro will send a SMS notification to the customer for the confirmation of their reservation.
- Book Metro will be able to provide users facility to pay from their credit cards or debit cards.
- Book Metro will be available on IOS or Tablets.

References

1. http://www.internet4classrooms.com/using_dw_intro.htm
2. http://www.wikipedia.com
3. http://www.studymode.com/essays/Bus-Reservation-System-850216.html
4. http://www.scribd.com/doc/35883362/Online-Bus-Reservation-A-Project-Report
5. http://shivajivarma.com/project/2014/02/09/bus-reservation-system/
6. mcs.**cankaya**.edu.tr/proje/-2013/guz/duygu-hasan/Sunum.pdf
7. http://www.Google.com
8. http://W3School.com
9. http://www.peeplo.com/Bus+Online+Booking
10. http://en.wikipedia.org/wiki/Authentication
11. Cankaya Universitesi Ankara, Turkey.
12. WEE KIM LI (FACULTY OF INFORMATION AND COMMUNICATIONS TECHNOLOGY
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Appendices

Definitions:

Authentication is the process of identification. It involves the confirmation of the person's identity by validating the identity document.

Acronyms:

BM:	Book Metro
SRS:	Software Requirement Specification
GUI:	Graphical User Interface
SDS:	System Design Specification
SQL:	Structured Query Language
CLR:	Common Language Runtime
MYSQL:	Open Source Database System
RDBMS:	Relational Database Management System
SVG:	Scalable Vector Graphics
HTML:	Hypertext Markup Language
HTML5:	Markup Language used for Structuring and Presenting content for the World Wide Web
XHTML:	Extensible Hypertext Markup Language
IDE:	Integrated Development Environment
WYSIWYG:	What You See Is What You Get
CSS:	Cascading Style Sheet
CSS3:	Cascading Style Sheet, Level 3

Bus Reservation System

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