East West University

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Section: 01

Project Report

Submitted to:

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Local Bus Route Finder

Introduction:

The Objective of our project is to solve the problem of local transportation finders. As an example, there are hundreds of busses in Dhaka city and the rest of the Country each bus goes to several routes around the city. A person who lives in a part of the city he/she might not be aware of the other route or roads of the city. He/she needs to use local transportation but they are not aware which bus goes to which route. At that time our system comes into work. They simply can't search by our system which bus goes to which routes by our system. Simply he/she can enter their location and enter the destination and the system will tell them which bus goes to their desired destination with approximate time and fare with the shortest bus route available. By this implementation the hassle of a person will be reduced to some extent. So, we can call it a route solution system.

Project Motivation:

As we live in the city, it is also a problem to find the available transportation for our desired routes. Because one does not go to the different routes everyday so it is very common to not know the route's bus name. And today's modern time people find it very awkward to ask which bus goes to what place. So that motivated us to build a system that makes it easier to find the names of the bus. Also, it gives us knowledge about the city. As people come outside of the city and ask us about the routes as city people it is awkward not to know the place/routes/bus names. That also inspires us to build the system. Mostly it is a problem solving system so it is helpful to people that's also a reason.

Project Challenges:

1. The first challenge of this project is to gather the information of bus routes and names because we are in a lockdown state and it is almost impossible to go to each place for bus routes and names and there are also no verified websites to gather the information. so, we have to gather the information from BRTA which is also a challenging task.

2. Implementation of the technologies is also a challenge for this project as both of us are newbies to this web language. So, it will be a tough job for us to finish the project.

3. Time management is also a factor for this project. As we have less time than other semesters.

4. Group work also can be hampered due to recent situations. Which also can affect the final project.

5. Project implementation will also be challenging as we have a lack of resources.

Requirement Specification

Non-Functional Requirements:

Security requirement: The system should be secured. As there is log in feature where user data/password will be stored so it is important

Usability requirement: The system should be easy to use by the users, As we want more people to use the system so usability should be easy.

Reliability requirement: The system shouldn't crush. It should be working fine for all the users who search for the service.

Recoverability requirement: A recoverable system. Where if a registered user forgot his/her login info then they can recover it.

Availability requirement: The system should be available always. As it is a city service so the system should run always.

Dependability requirement: The users are dependable to the system so the system should depend on accurate data.

Efficiency requirement: The system should be efficient to the mark. And give output in less time.

Ethical requirement: The admin should not see user sensitive data.

Functional Requirements:

User:

1. Users are able to login to the system.

2. Users can also enter as guest users.

3. Users are able to search in the system for their desired information (bus or route) info.

4. Users can share the bus or root details with other people.

5. Users will be able to see the approx. fare of some common routes, bus names, number of busses available.

6. Bus details.

Admin:

1. Admin will be able to login to the system.

2. Admin Able to create user login for User.

3. Admin Can update the records of the system as such new bus or update route details.

4. Admin should not see the user password as an ethical issue.

Feasibility Study:

1. Technical Feasibility:

For developing this system, we are using html, css, bootstrap, MySQL, jQuery and all of these technologies to implement our process and ensure the satisfaction of our users.

2. Operational Feasibility:

As we live in the city, it is also a problem to find the available transportation for our desired routes. Because one does not go to the different routes everyday so it is very common to not know the route's bus name. And today's modern time people find it very awkward to ask which bus goes to what place. So our project will solve this type of problem and ensure it makes it easier to find the names of the bus. Also, it makes us knowledgeable about the city.Also as people come outside of the city and ask us about the routes as a city people it is awkward not to know the place/routes/bus names. That problem is also solved by our system. Someone gives the review also by using this system and also get the important notifications about the bus. Mainly our system tries to solve the problem so it is helpful to people and makes moving from one place to another much easier.

3. Economical Feasibility:

This project is non profitable as we have no further thinking to earn from this.So there is no economic feasibility.

Stakeholders:

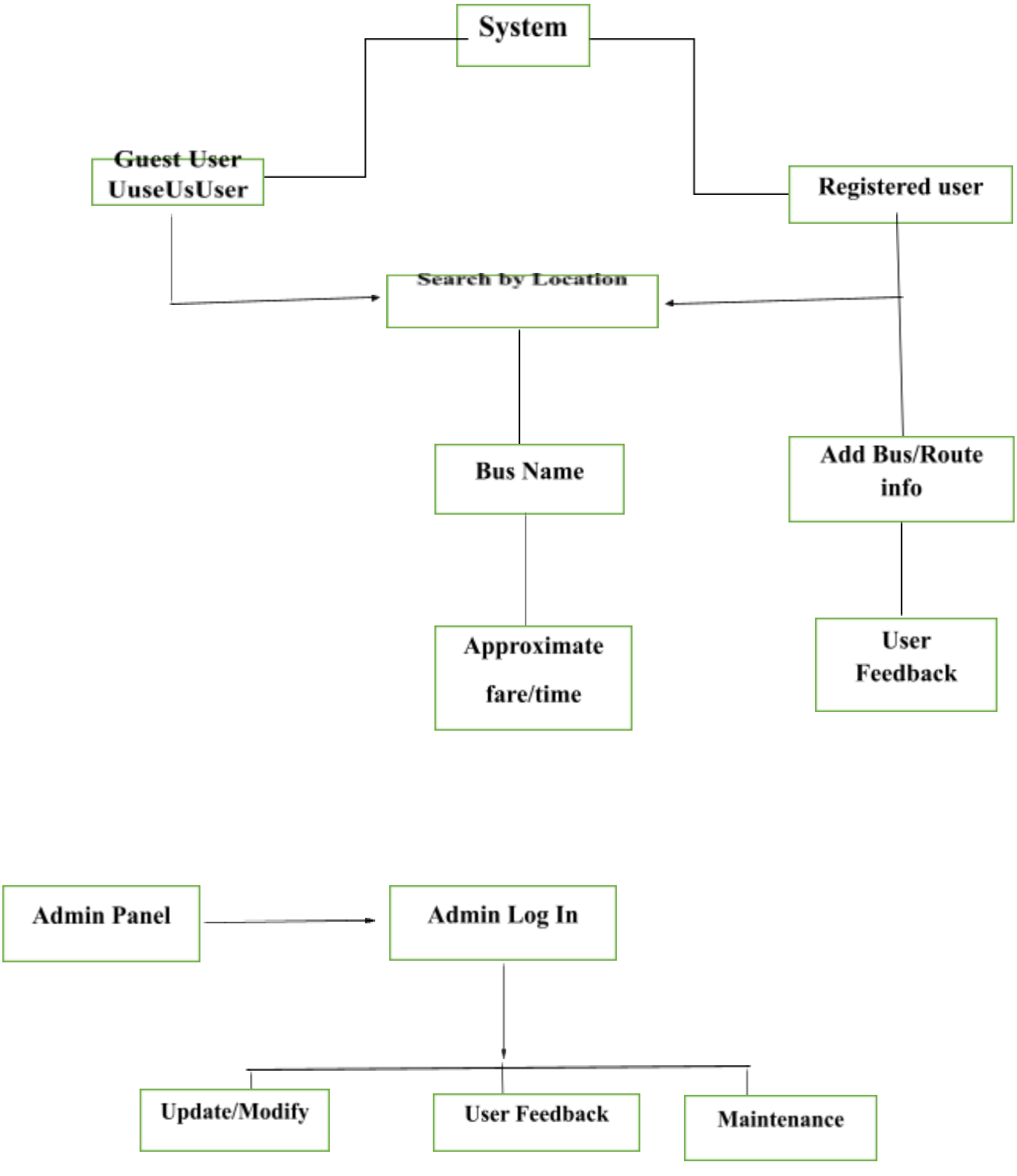
Internal Stakeholders:

1. Project manager
2. Project team
3. Owner
4. Funder

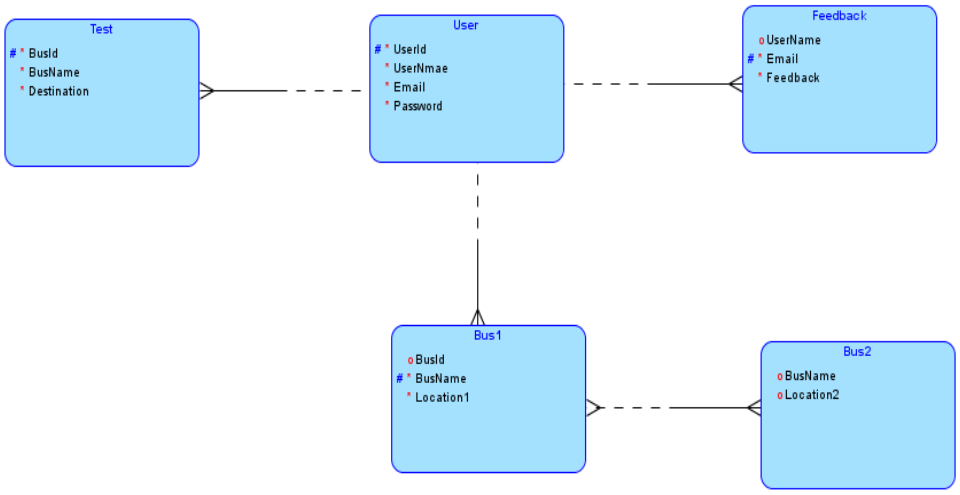
External Stakeholders:

1. Driver
2. Passenger
3. Stuff
4. Government

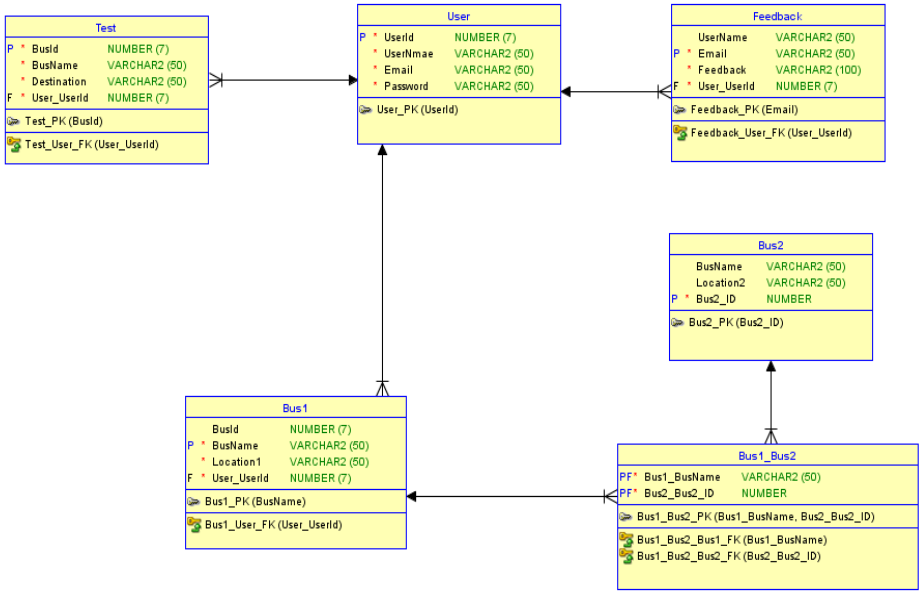
System Block Diagram



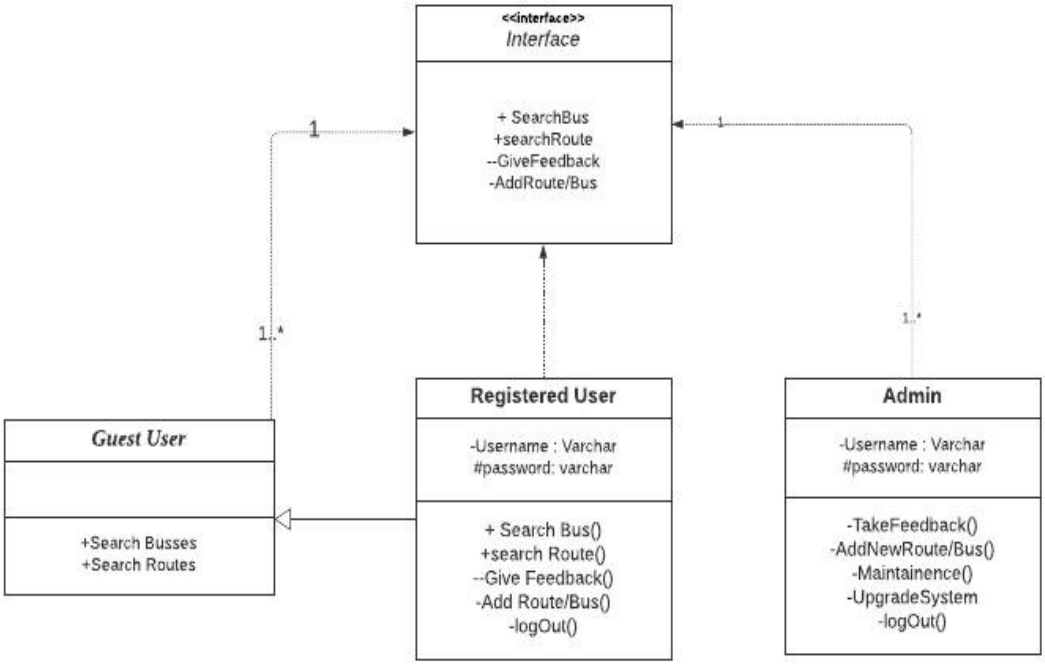
ER Diagram (Logical Model)



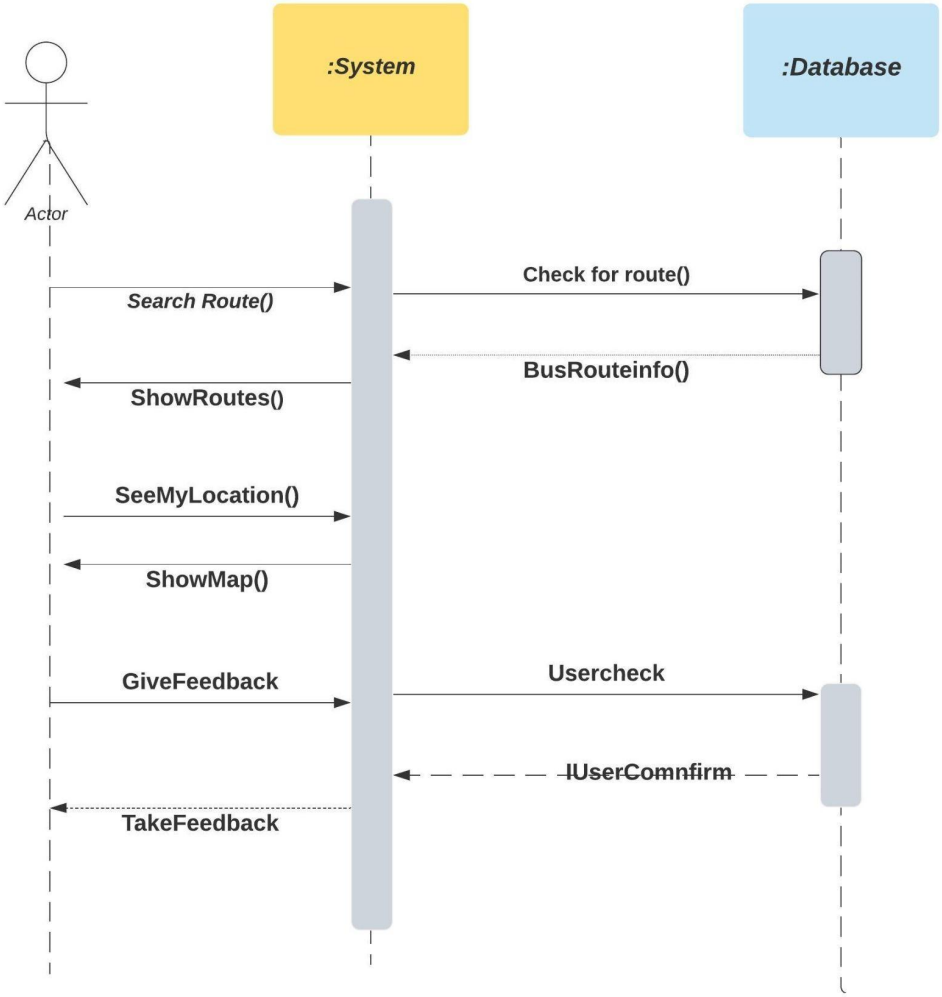
Relation Model



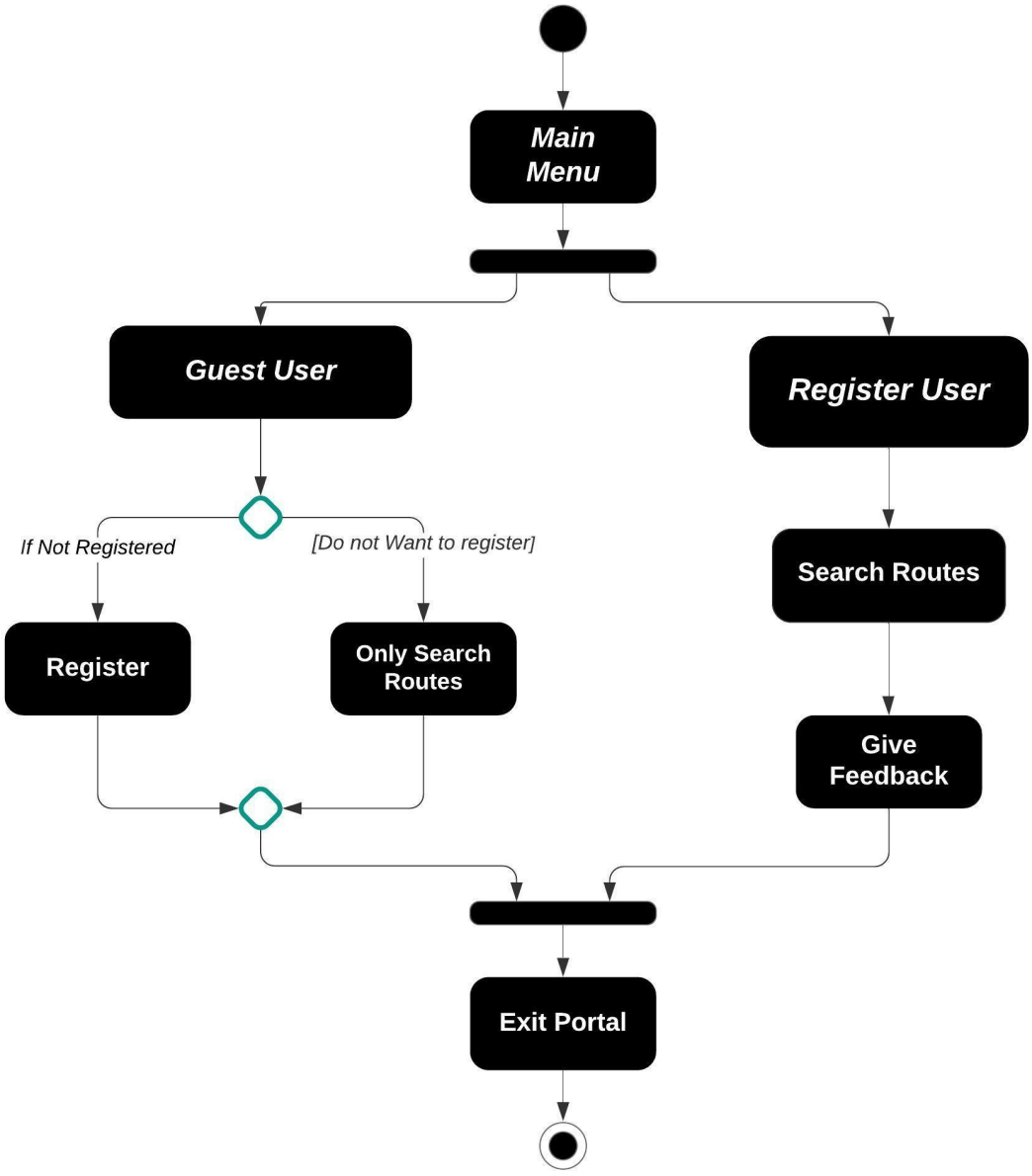
UML Class Diagram:



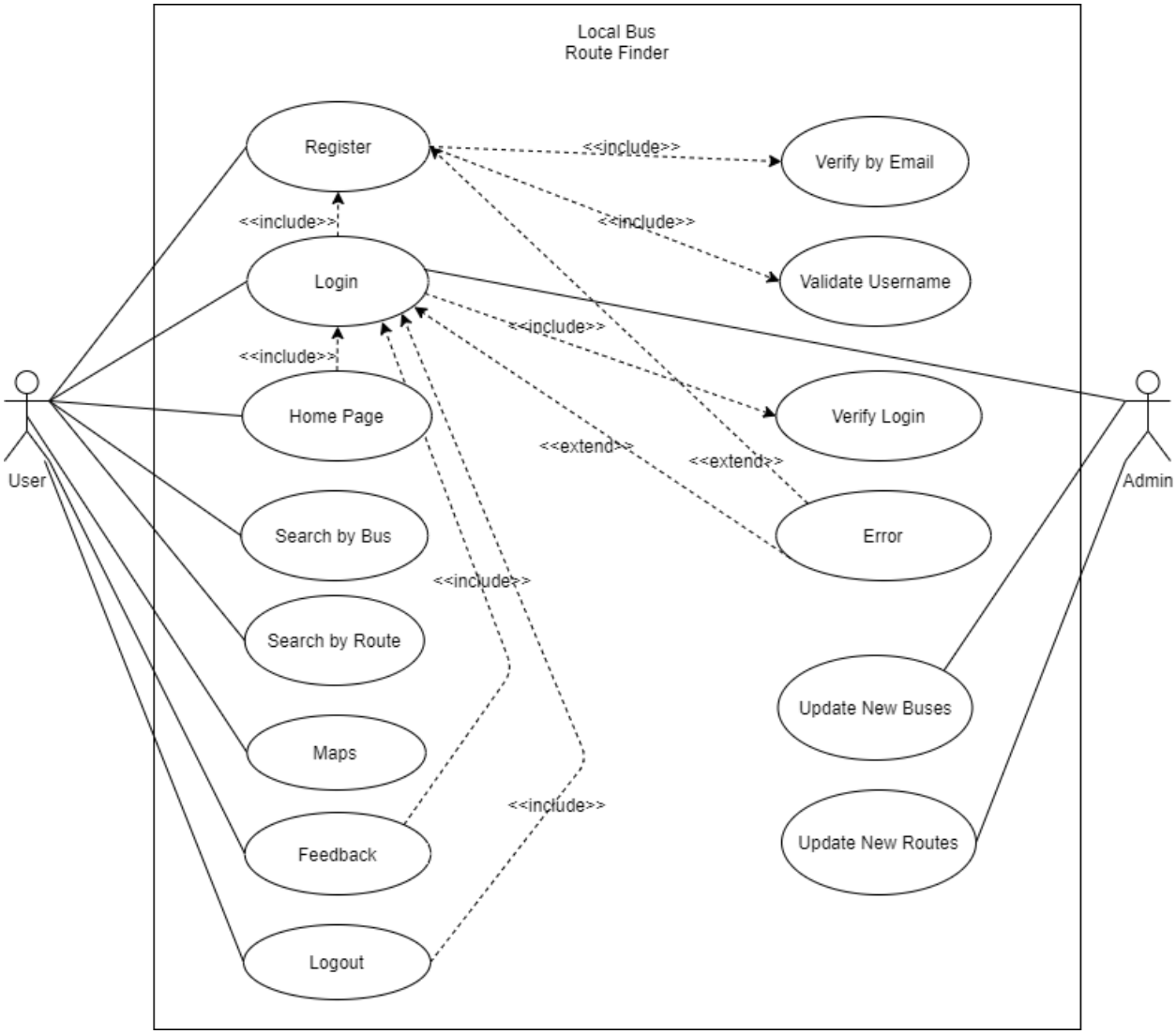
Sequence Diagram



Activity Diagram



Use Case Diagram:



Use Case Description:

1

Usecase#1	Register	
Goal in context	This use case helps user for creating an account in this application	
Preconditions	Users must have a valid mail and an unique username.	
Success end condition	Users will be able to create accounts in this app	
Failed end condition	Try again	
Primary actor	User	
Secondary actor	Admin	
Trigger	Users must browse the website.	
Description	Step	**Action**
	1	Need to provide a valid username,email and password, confirm password and click register
Extensions or variations	Step	**Branching Action**
	1	Username already exists error message

2

Usecase#2	Login	
Goal in context	This usecase helps user to login to this application with their existing account.	
Preconditions	Users must have their registered account. This application should be running on a server and in service.	
Success end condition	After successful login,they can see their profile and other feathers	
Failed end condition	Try again	
Primary actor	User, Admin	
Secondary actor	Government	
Trigger	Users must register.	
Description	Step	**Action**
	1	Need to enter their own username and password and click login button
Extensions or variations	Step	**Branching Action**
	1	Incorrect username or password error message.

3

Usecase#3	Search by bus	
Goal in context	This usecase helps users to search for the bus routes with bus names.	
Preconditions	User must have an account.	
Success end condition	After successful searching, they can see all the bus routes for their desire bus.	
Failed end condition	Try again	
Primary actor	User	
Secondary actor	Admin	
Trigger	Users must login first.	
Description	Step	**Action**
	1	Need to select bus name from the list and click submit button
Extensions or variations	Step	**Branching Action**
	1	

4

Usecase#4	Search by route	
Goal in context	This usecase helps user to search the bus names for the routes	
Preconditions	Users must have an account.	
Success end condition	After successful searching they can able to see the bus name for the existing route they entered	
Failed end condition	Try Again	
Primary actor	User	
Secondary actor	Admin	
Trigger	Users must login first.	
Description	Step	**Action**
	1	Need to select bus routes from the existing list and click the submit button.
	2	Need to enter their current location and their destination and click submit button
Extensions or variations	Step	**Branching Action**

5

Usecase#5	Maps	
Goal in context	This usecase helps users to see the full map.	
Preconditions	Users must have an account.	
Success end condition	The user will be able to get direction to the location.	
Failed end condition	Try again	
Primary actor	User	
Secondary actor	Admin	
Trigger	Users must login first.	
Description	Step	**Action**
	1	Click on the maps
Extensions or variations	Step	**Branching Action**
	1	

6

Usecase#6	Feedback	
Goal in context	This usecase helps user to give any kind of feedback.	
Preconditions	Users must have an registered account.	
Success end condition	Users will be able to give their feedback.	
Failed end condition	Try again	
Primary actor	User	
Secondary actor	Admin	
Trigger	Users must login first.	
Description	Step	**Action**
	1	Need to enter their username,email and feedback and click the submit button.
Extensions or variations	Step	**Branching Action**
	1	Incorrect username or email error message

7

Usecase#7	Verify Login	
Goal in context	This usecase helps user to verify the login	
Preconditions	User must have an account.	
Success end condition	After verification, user can continue their login.	
Failed end condition	Try again	
Primary actor	User	
Secondary actor	Admin	
Trigger	Users try to login.	
Description	Step	**Action**
	1	Users need to enter username and password and click the login button.
Extensions or variations	Step	**Branching Action**
	1	Incorrect username and password message.

8

Usecase#8	Validate username	
Goal in context	This usecase check the validation of username when they create an account	
Preconditions	User must have a valid username	
Success end condition	After validation, users can continue their registration.	
Failed end condition	Try again	
Primary actor	User	
Secondary actor	Admin	
Trigger	Users try to register.	
Description	Step	**Action**
	1	Need to enter a valid username
Extensions or variations	Step	**Branching Action**
	1	Username already exists message

9

Usecase#9	Verify Email	
Goal in context	This usecase checks if user provide a valid email when they create an account in this application	
Preconditions	Users must have a valid email id.	
Success end condition	After verification, users can continue their registration.	
Failed end condition	Try again	
Primary actor	User	
Secondary actor	Admin	
Trigger	Users try to register.	
Description	Step	**Action**
	1	User need to provide a valid email
Extensions or variations	Step	**Branching Action**
	1	Not a valid email message.

10

Usecase#10	Homepage	
Goal in context	This usecase helps users to see the homepage and the shortcut of buses.	
Preconditions	Users must have an account.	
Success end condition	Users can see all the features in this section.	
Failed end condition	Try Again	
Primary actor	User	
Secondary actor	Admin	
Trigger	Users must login first.	
Description	Step	**Action**
	1	Users need to login with their username and password.
Extensions or variations	Step	**Branching Action**
	1	Login error message

11

Usecase#11	Logout	
Goal in context	This usecase helps users to log out from the website.	
Preconditions	User have to logged in to their profile	
Success end condition	After a successful logout from their profile,they still can see this application but as a general view.	
Failed end condition		
Primary actor	User	
Secondary actor	Admin	
Trigger	Users must login first.	
Description	Step	**Action**
	1	Click on logout button
Extensions or variations	Step	**Branching Action**
	1	It will not show this button without logged in.

12

Usecase#12	Error	
Goal in context	This usecase helps to identify the error.	
Preconditions	Users must try to register or login.	
Success end condition	Shows error message.	
Failed end condition	Does not show any error message.	
Primary actor	User	
Secondary actor	Admin	
Trigger	Users try to register or login.	
Description	Step	**Action**
	1	Users need to try to register or login on this website.
Extensions or variations	Step	**Branching Action**
	1	Users must try performing programmes or error messages will not show.

13

Usecase#13	Update New Buses	
Goal in context	This usecase helps admin to update new bus names.	
Preconditions	Admin should keep the options to update bus names.	
Success end condition	Admin can enter or add new bus names.	
Failed end condition	Admin can not update busnames.	
Primary actor	Admin	
Secondary actor	User	
Trigger	Admin tries to update new buses in the database.	
Description	Step	**Action**
	1	Admin updates the bus names in the database.
Extensions or variations	Step	**Branching Action**
	1	The system must be updatable otherwise admin can not update bus names.

14

Usecase#14	Update New Routes	
Goal in context	This usecase helps admin to update new routes.	
Preconditions	Admin should keep the options to update routes.	
Success end condition	Admin will be able to add new routes.	
Failed end condition	Admin will not be able to add new routes.	
Primary actor	Admin	
Secondary actor	User	
Trigger	Admin tries to update routes in the database.	
Description	Step	**Action**
	1	Admin updates the routes in the database.
Extensions or variations	Step	**Branching Action**
	1	The system must be updatable otherwise admin can not update routes.

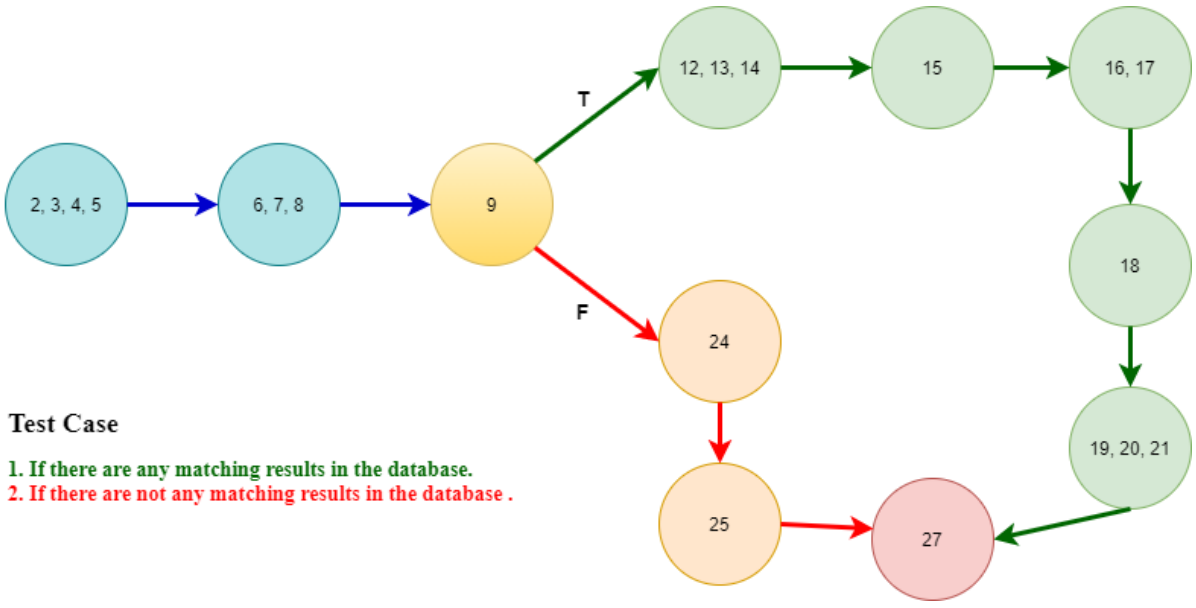
Software Testing

Test Code for searching by location:

searchbylocation.php

```php
<?php
$con = new PDO("mysql:host=localhost;dbname=testdb1",'root','');
$button = @$_GET['submit'];
$search1 = @$_GET['location1'];
$search2 = @$_GET['location2'];
$sth = $con->prepare("SELECT busname FROM bus1 NATURAL JOIN bus2 WHERE location1 = '$search1' AND location2 = '$search2' ");
   $sth->setFetchMode(PDO:: FETCH_OBJ);
   $sth -> execute();
   if($row = $sth->fetch())
   {
      ?>
      <br><br><br>
      <table>
         <tr>
            <th style="text-align-last: center;">Suitable Bus For You</th>
         </tr>
         <tr>
            <td><?php echo $row->busname ;
            ?></td>
         </tr>
      </table>
<?php
   }
      else {
         echo "No Bus Found Or Try Again Please!";
      }
?>
```

White box testing solution:



Test Case

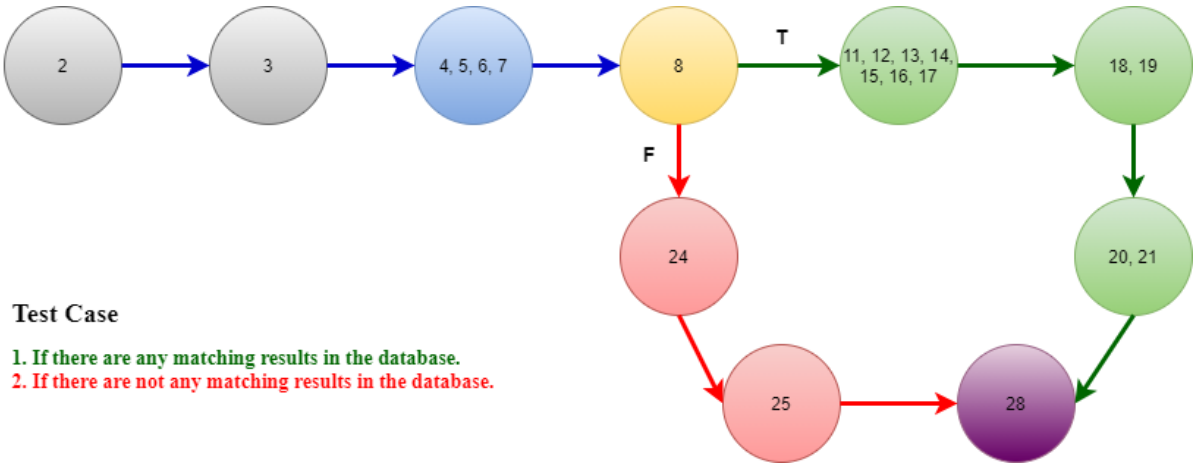
1. If there are any matching results in the database.
2. If there are not any matching results in the database .

Test Code for searching by bus name:

searchbylocation.php | searchbybus.php

```php
<?php
$con = new PDO("mysql:host=localhost;dbname=test",'root','');
if (isset($_POST["submit"])) {
    $str = $_POST["search"];
    $sth = $con->prepare("SELECT * FROM `test1` WHERE BUSNAME = '$str'");
    $sth->setFetchMode(PDO:: FETCH_OBJ);
    $sth -> execute();
    if($row = $sth->fetch())
    {
        ?>
        <br><br><br>
        <table>
            <tr>
                <th>Bus Name</th>
                <th>Bus Routes</th>
            </tr>
            <tr>
                <td><?php echo $row->busname; ?></td>
                <td><?php echo $row->destination; ?></td>
            </tr>
        </table>
<?php
    }
        else{
            echo "No Bus Found Or Try Again Please!";
        }
    }
?>
```

White box testing solution:



Test Case

1. If there are any matching results in the database.
2. If there are not any matching results in the database.

Future Plans:

- Developing an App .
- Integrating more features.
- More Interactive User Interface.
- Implementing Fare option.
- Real time bus tracking.
- Suitable vehicle suggestion.