

**Smart Travel Dhaka: An
Android Application**

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This Report Presented in Partial Fulfillment of the Requirements for the
Degree of Bachelor of Science in Computer Science and Engineering

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APPROVAL


This Project titled “**Smart Travel Dhaka**”, submitted by Md Moshir Rahman Ovi, ID No: 181-15-11112 and Effat Ara Easmin Lucky, ID No: 181-15-10793 to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on Saturday, December 04, 2021.

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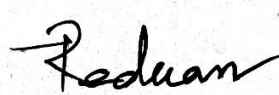
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ABSTRACT

In this modern era, we are using lots of modern android applications which make our life easier than previous, many of them are uber, pathao, food panda, bKash etc. There is more such type of apps. That's why we try to build a real life android application which will make our life easier. We focus on travelling problems which are mainly suffered by those who are new in town. Because on their very first days, they have no idea how to travel one place to another place, or by which transport they can go, and even they have no idea about travelling cost. Thus they can go to hospital, restaurants and hotels also. Our android application has two types of user - admin and user. Admin will manage and update the app and the user will use the app as they want. Admin will add new places, restaurants, hotels manually. User also can add. Every user need to registration at first and then by signing in they can use the app comfortably. Our application also provides hundred percent security. I strongly believe that this app will ease the suffers of people who are new in town.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

It is the era of technologies. Developers and engineers are making everything easier through building useful technologies or apps. That's why we are also tried to build a project which will be helpful for us. Our android application "Smart Travel Dhaka" will help for finding paths in Dhaka city who are new in city. Because when someone new in city maximum time he/ she has no idea about paths, vehicles, restaurants etc. So, when they need to go out, they usually ask someone about the place or vehicle who knows better. And this is very weird situation. Because they are sharing their personal information with other person. That's why we build this app so that they can go anywhere without anyone's help. They will get all the facilities for moving one place to another. They can know the vehicle which is better as per their desire location. They also can know about the vehicle rent. Even they also get the facilities for finding hospitals, hotels, restaurants. Admin will manage the app for updating and removing data from app.

1.2 Motivation

As there is no such type of app which will help us for finding paths for moving one place to another with suggestion of vehicles that's why we are motivated to build this project. Even it is seen that, after staying an era in this city, lots of people still are facing this problem. So, for new comers in city, it is a big problem. By considering these problems, we are motivated to build this app. And as this app will reduce traveling related problems of new city people that's why we recommend them for use it. This app assures higher security system.

1.3 Objectives

The main objective of our application is to making the travelling system easier. Because of having problem in travelling system that's why we inspired to build it. It is a user-friendly android application. User have to register for using it, then they can able to use it as they want. It is very user friendly, secured and useful android app. User can use it without any hassle.

1.4 Expected Outcome

The expected outcome of our project is straight forward. We build it for solving travelling problems such as which path is best for his/her moving, the cost is how much. They can also go anywhere as they want by using this app. They can search restaurants, hotels, hospitals based on area. By searching with area, user can find all hospitals, restaurants, hotels in desired area. It will be an advance version of google map.

1.5 Project Management and Finance

As the project made with open source resources, that's why we completed all the tasks without costs. If any further is needed to develop then we will must add. Our project is dependent on backend server financial cost. Though the maintenance cost is very low, Daffodil International University always manages this. And in future, the cost of maintenance will be fully controlled by Daffodil International University.

1.6 Report Layout

In this report, we try to mention our full overview, related works and technologies gradually. In chapters, we will discuss more broadly about our projects. We try to describe requirement specification. At present we are working on 'What features need to develop to make it more attractive' question answer. We will also mention the problems and challenges which we face. In different chapters of report, we try to discuss different topics, such as- problems and challenges, solutions, details structure of apps, and also future plan.

CHAPTER 2 BACKGROUND

2.1 Preliminaries

People are facing travel problems from very fast. Everyone needs a smart app which will provide users desire outcome. Almost everyone uses google map for their transformation from one place to another. But it just shows the paths. It doesn't suggest vehicle's name or cost. That's why people can't get a smart solution from google map. For that reason, we are inspired to make something by collaborating google map. We focus on real life requirement for travelling one place to another. We will be solved all problems what will be face by user. We will provide the best service from our app.

2.2 Related Works

There is lot of travel related project available on internet. But the problem is- there is no application which solve all problems together. The problems are those apps are- if one has a good functionality, it lacks for another functionality. That's why this is the only project which made specifically for solving all problems together. The main goal of or project is- solving all problems of other applications.

2.3 Comparative Studies

The other related project is on google map which is made for finding paths for moving one place to another. Moreover, in its very first period it just shows path directions. But after updating so many times, now it is also staring providing nearby restaurants or etc. And that's why we want to collab google map in our project. As, we don't find all facilities together from any app, that's why we inspired to collab all facilities in our app. Our app provides all facilities which lack in others. As it is an android app, that's why any android will be able to use it.

2.4 Scope of the problem

Our main purpose of building this app to make a better system for travelling and eliminate all travel related problems. Initially, the project is built for only Dhaka. But the database is designed in such a way that we can easily modify it and make it available for other division. Moreover, we can add other features easily if we want.

2.5 Challenges

Our challenges for making the travelling application a secure and user-friendly environment to the users. So, creating an interactive user interface is a big challenge for us. Moreover, as we are developing our application an independent platform, that's why we must provide a compatible backend so that our application can work fluently on every functions. Our project will be dynamic. In our project, we provide a rich admin panel, so there is no need backend server for data update function. Admin can do it easily through admin panel of our application.

CHAPTER 3

REQUIREMENT SPECIFICATION

By the term requirement specification, it gives idea about features and behavior of a system or system application [1]. The whole project is built based on requirement specification. Developers and engineers specially make their project based on customer requirements.

3.1 Business Processing Modeling

The business processing model of our project is shown in below figure 3.1.1.

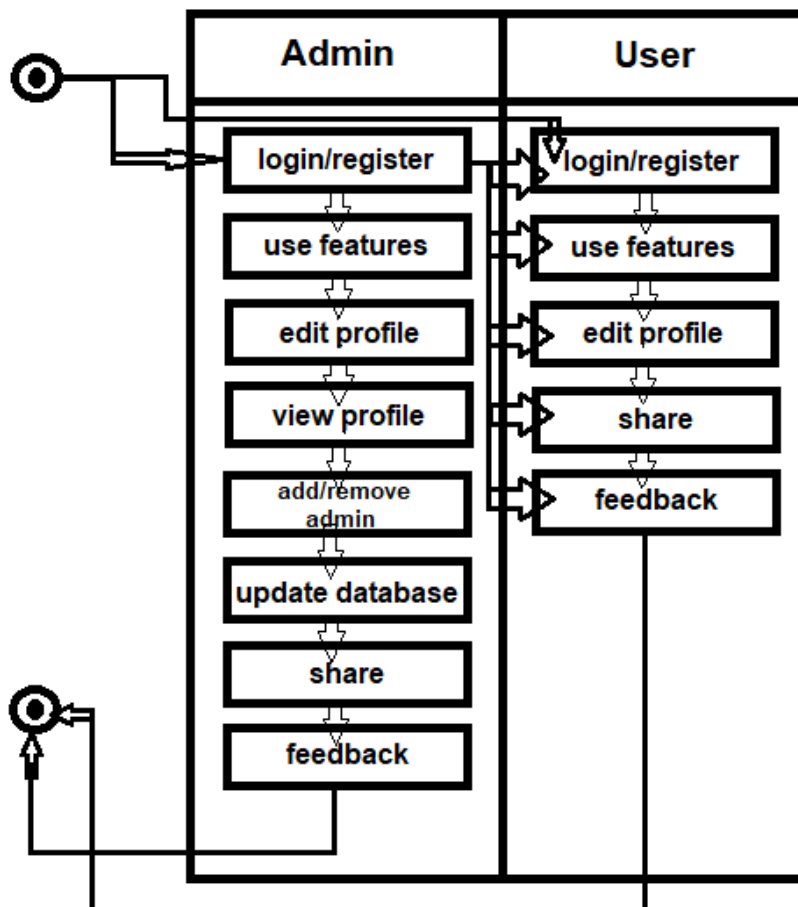


Figure-3.1.1 (business process modelling)

3.2 Requirement collections and analysis

Requirement collections plays vital role for building any kind of projects. It's not only important for building projects but also for project management system. It is the most important step of project management system. Basically, requirements collect based on customer demand. When a project fails to provide all required requirements, the projects run with risks. In that time, the result of the project can't be able to satisfy customers. That's why requirement collection is the key of project management system. For that reason, we collect all requirements based on customer demand and we will collect more requirement in future for project development.

Software Development Life Cycle

It is the core of any project development. It includes all the process of project development from planning to development [2]. In between all of the model of project development, agile is the best. Because agile model proposes us incremental and iterative approaches for software designing [3].

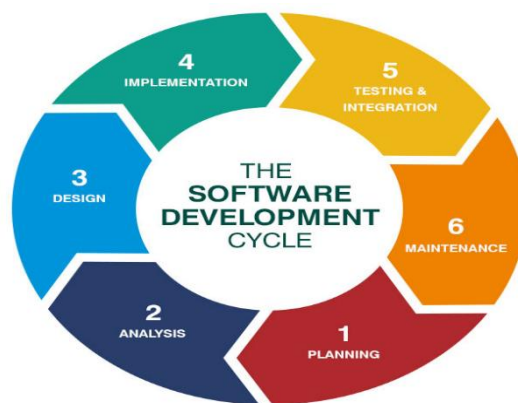


Figure: - 3.2.1 (software development life cycle)

Flow Chart

The full process of our project is shown in figure 3.2.2.

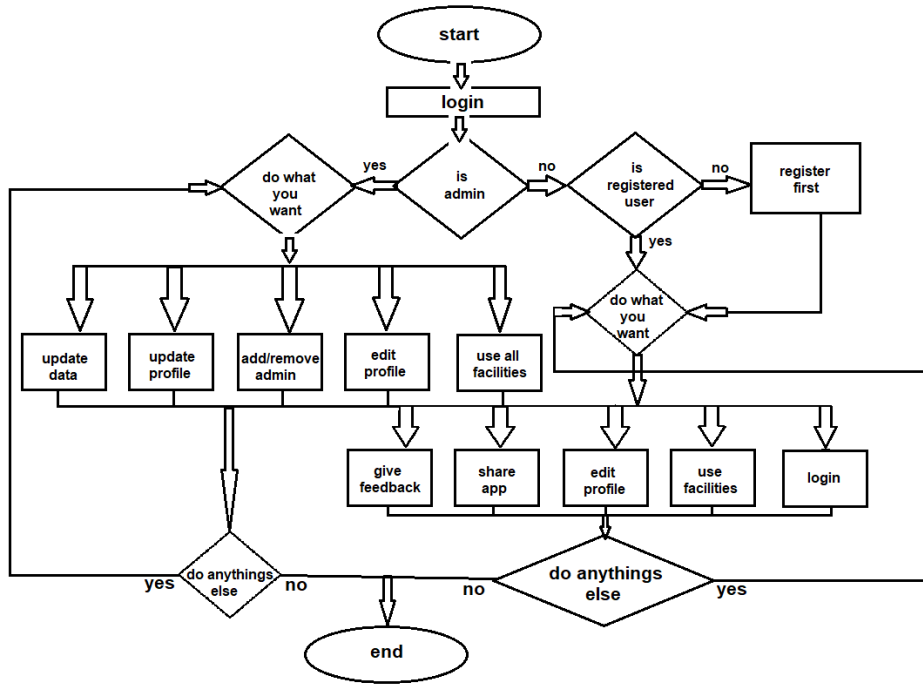


Figure: 3.2.2 (flow chart)

Dataflow Diagram

Data flow diagram shows the flow of process or system [4]. Mainly, it is the primary step to create a details overview about project. It is also used for data visualization. In 3.2.3 figure, we show our project's DFD. This DFD process is fully applied on our project.

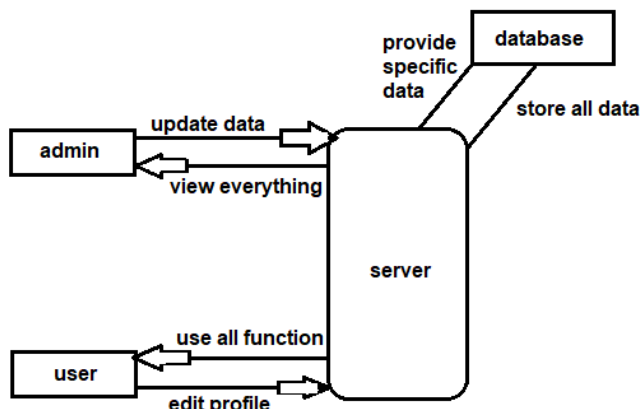


Figure: 3.2.3(Data flow diagram for system)

3.3 Design Requirement

Design requirement is also mandatory for project management. Because, when developer build an application and it's not user friendly, then this application will not get market place. User will not use it. They will search duplicate solution for it. The architectural design, use case diagram, flow chart and data multidimensional language everything is design requirement under. In our project, we use modern and updated tools. Thus, we make our project user friendly. Even, at present we are working on it, how can we make it more attractive. In future, we will notice it and will update our application time to time.

Architecture Design

We try to build our project in simply but must have powerful architecture. Any android user can use it. A basic structure of our architecture design is shown in figure.

CHAPTER 4

DESIGN SPECIFICATION

4.1 Front-end Design

For front-end designing purpose we use XML. Through XML, we design our full application. This is very popular markup language.

4.2 Back-end Design

For back-end designing we use Java. Java is the best for android development [7].

4.3 Interaction Design and User Experience

We highly focus on project design and we make it user friendly. We take help of google for designing interface. We don't exactly copy anyone's idea. We collaborate many of them to make our app's interface attractive.

4.4 Implementation Requirements

We try to implement all of specific requirement which is suitable for our project. Our project needs updated data. So, we are trying to update data time to time.

CHAPTER 5

IMPLEMENTATION AND TESTING

5.1 Implementation of Database


We design our database method in such away that we can handle it from multiple concurrent requests continuously. We use Firebase for database management. As it is open source so that we can modify it when we need to do. Administration of our database can be handled by firebase. All data of our project will be stored in firebase. Before adding admin panel in our project, we added data manually in firebase.

5.2 Implementation of Front-end Design

The UI of our application includes login, homepage, admin panel, search activity etc. which are described below:

Login:

The very first interface of our application is “Login”, we can see it when we open the application. It is connected with email. When we open the app, there is two option- first one is login, if user has been already registered then he/she can easily login into the app. Second one is- if user has not registered for login then they have to go register here option, and user can se lots of option which they have to provide for registration. After providing all necessary information they have to click register button. After that, they will get an email in their provided email. In the email, there will be a link, by clicking on this, the email will be registered. Then the user can login easily by providing email and password. 5.2.1 figure will show the details of login page-



Welcome Back


Sign in to continue

LOGIN

[Forgot Password?](#)

[Don't have an account? Register Here](#)

Registration



REGISTER

[Already have an account? Login Here](#)

Figure: 5.2.1 (login page)

Homepage:

It is the main page of our project. There is a route map feature, hotel service feature, hospital, restaurant etc. 5.2.2 shows the details-

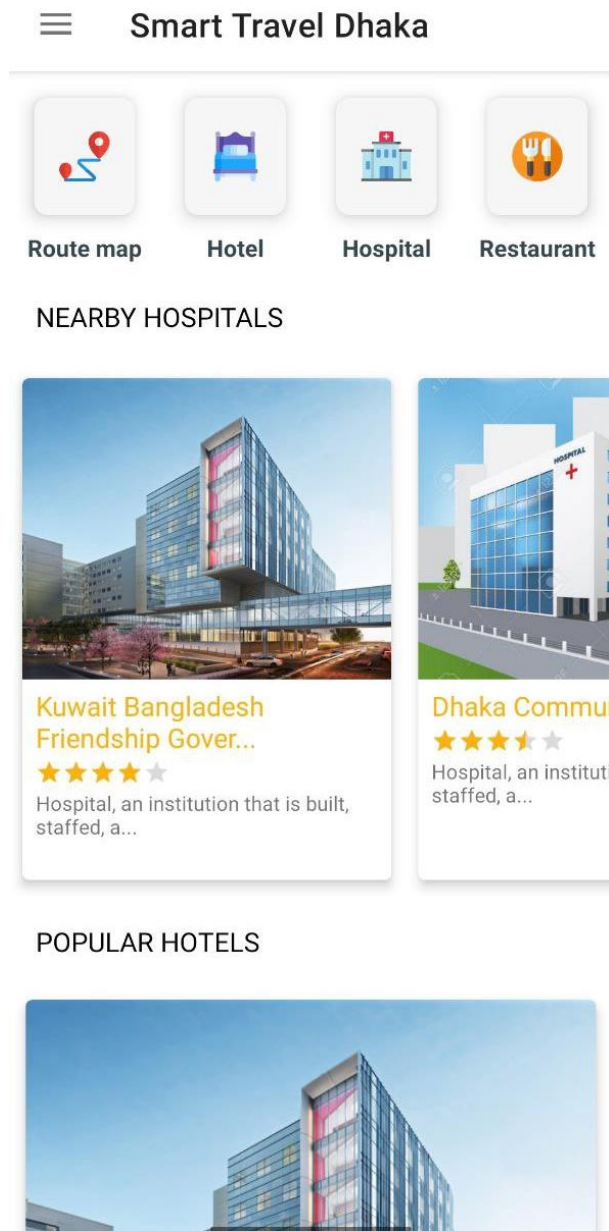


Figure: 5.2.2 (Homepage)

Route map:

By clicking route map feature, we will see many choices for vehicle, what type of vehicle user wants to use they can choose. There is bus service, uber service, and pathao service. By clicking 'Bus' option, user can see two search button option- present location and destination. Then user have to click search option, then user can see the outcome, they can see the bus names which are available in this searched route with bus rent, estimate time. User can go with uber and pathao. By clicking Uber and pathao option, it directly goes into pathao and uber app. 5.2.3 will show details-

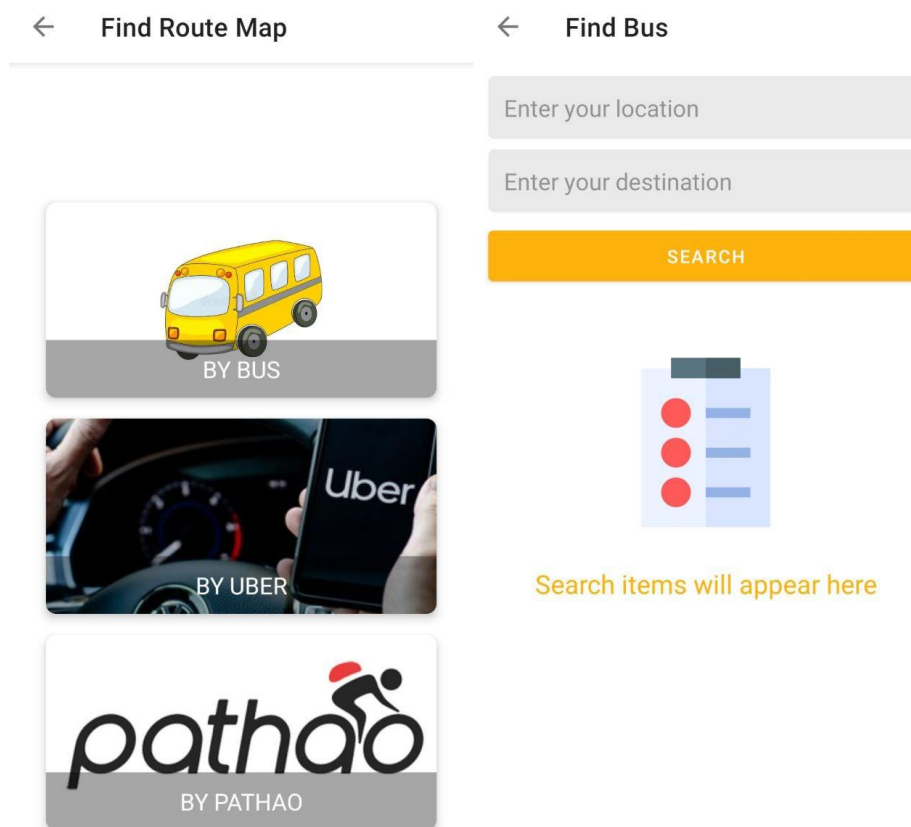


Figure: 5.2.3 (Route map)

Hotel:

By clicking “hotel” option we can see a search bar option. In this search, user will have to enter desire location where they want hotels. After that, they can see all the hotels in searched location. Details illustrate in 5.2.4 figure-

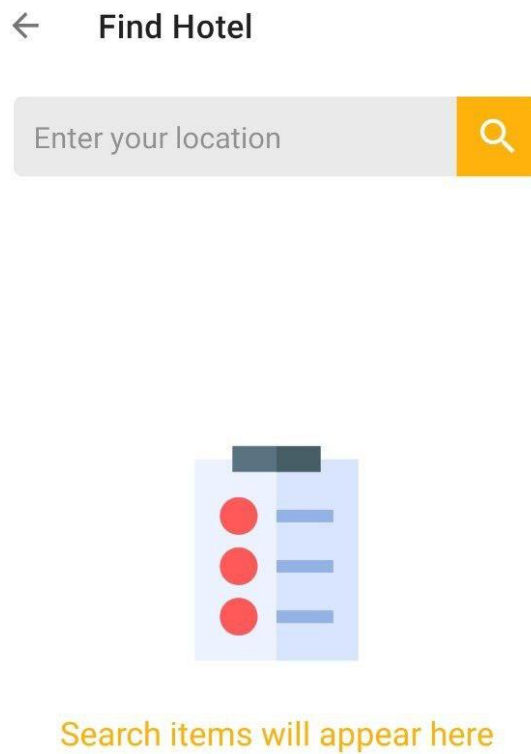


Figure: 5.2.4 (Hotel searching Interface)

Hospital:

By clicking “hospital” option we can see a search bar option. In this search, user will have to enter desire location where they want hospitals. After that, they can see all the hospitals in searched location. Details show in figure 5.2.5

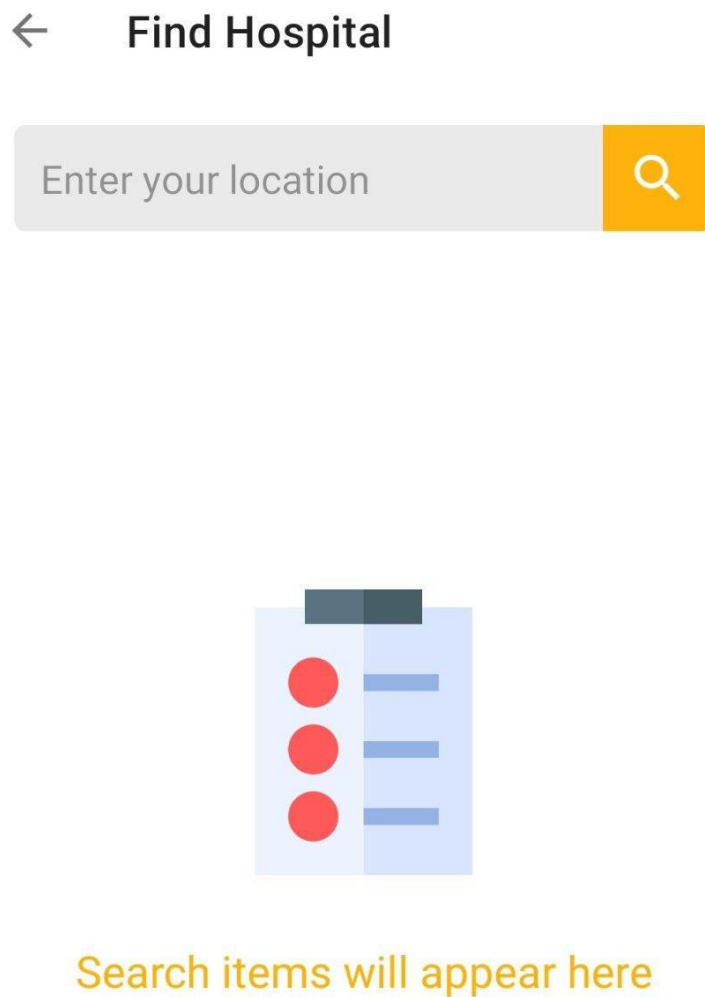


Figure: 5.2.5 (Hospital searching Interface)

Restaurant:

By clicking “restaurant” option we can see a search bar option. In this search, user will have to enter desire location where they want restaurants. After that, they can see all the restaurants in searched location. Details show in figure 5.2.6-

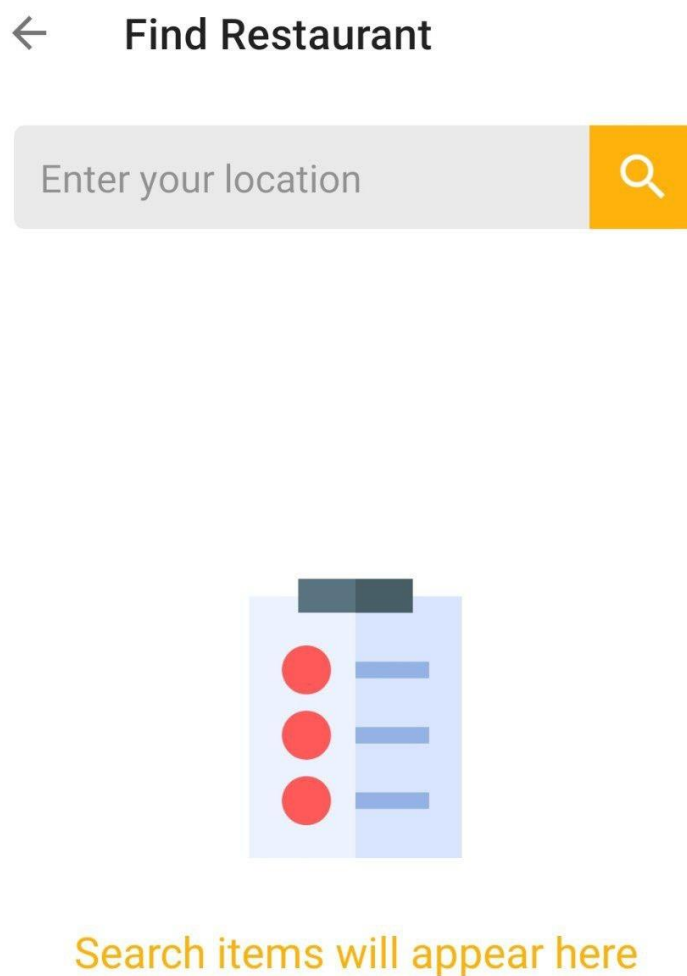


Figure: 5.2.6 (Restaurant searching Interface)

Profile:

Every user will have a profile. And there will have an edit profile option. By clicking on edit user can edit his/her profile by providing many information. After clicking on “save changes” option the information will be saved. The details of these are shown on figure 5.2.7-

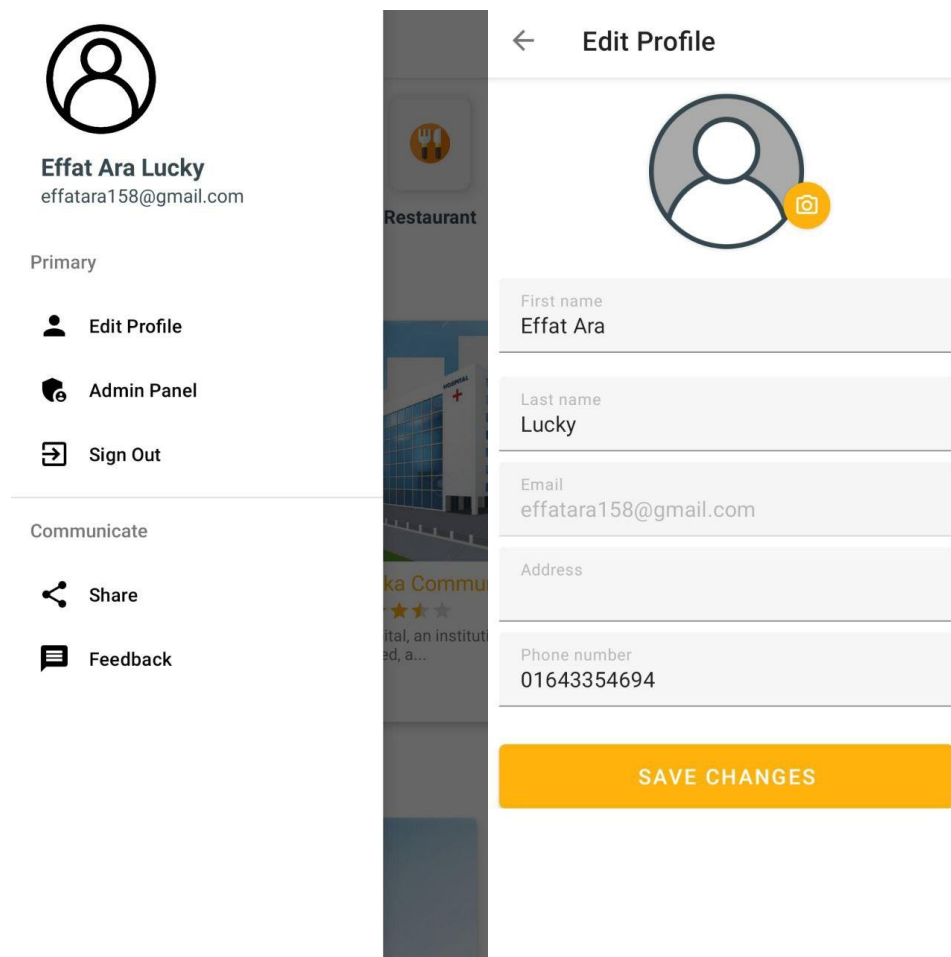


Figure: 5.2.7 (Profile Interface)

Admin panel:

Only admin can use this option. By clicking this option, admin can add data in every features.
Details show in figure 5.2.8-

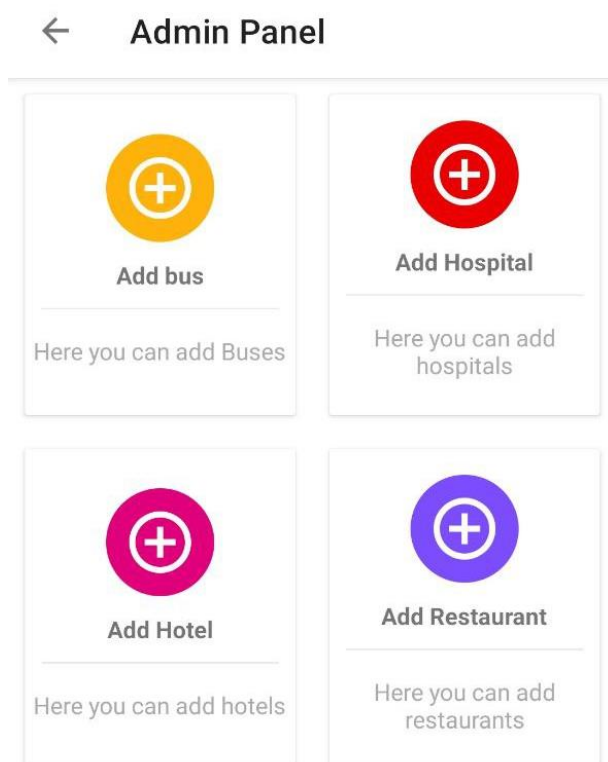


Figure: 5.2.8 (Admin panel Interface)

5.3 Testing Implementation

Testing is the process of checking outcomes with expected outcomes. It is the final process of any projects.

We add many tests result in given table 5.3.1-

Table 5.3.1: Different tests

Test Case	Test Input	Expected Outcome	Obtained Outcome	Pass/Fail
1. Admin login	Email and password	Successfully login	Successfully login	Pass
2. User Login	Incorrect email or password	Login Failed	Login Failed	Pass
3. View Profile	Click on Profile Menu	View Profile information	View Profile information	Pass
4. Admin Update Profile	Give all required information	Update successful	Update successful	Pass
5. User Update Profile	Give all required information	Update successful	Update successful	Pass
6. Use Route map	desire location	Successfully show the route with more information	Successfully show the route with more information	Pass
7. Search hotel	Desire location	Successfully show the path	Successfully show the path	Pass
8. Search hospital	Desire location	Successfully show the path	Successfully show the path	Pass
9. Search restaurant	Desire location	Successfully show the path	Successfully show the path	Pass
11.Admin panel	Add bus, hospital, hotel, restaurant	Added successfully	Added successfully	pass
12. Logout	Click on “logg out”	Logged out	Logged out	Pass

Following tests cases are considered for our “Smart Travelling Dhaka” application-

- **Test case 1.1:**

Precondition: Device must be connected with internet.

Assumption: User is in login page after opening the app.

Input: Press “Login button”.

Result: Login successful

- **Test Case 1.2:**

Precondition: Device must be connected to the internet.

Assumption: User is logged into app and will see first “necessary” page.

Input: Login into the app.

Result: User can view the first page of application.

- **Test Case 1.3:**

Precondition: Device must be connected to the internet.

Assumption: User pressed “Empty Room” button to look for rooms that are available.

Input: Device must be connected to the internet.

Result: User is viewing the empty rooms that are available.

- **Test Case 1.4:**

Precondition: Device must be connected to the internet.

Assumption: User wants to view their profile.

Input: Press “side button” of application.

Result: User will go into profile.

- **Test Case 1.5:**

Precondition: Device must be connected to the internet.

Assumption: User can edit profile

Input: User have to provide all necessary information in edit profile option.

Result: Profile updated successfully.

- **Test Case 1.6:**

Precondition: Device must be connected to the internet.

Assumption: Admin can be added data manually.

Input: Admin have to go “admin panel” and then click the button which they want to add.

Result: Data added successfully.

- **Test Case 1.7:**

Precondition: Device must be connected to the internet.

Assumption: User will go in route map button and can see the vehicles for moving.

Input: Enter user location and destination.

Result: Get the path, rent and other information for bus. And user also can use pathao and uber.

- **Test Case 1.8:**

Precondition: Device must be connected to the internet.

Assumption: User can search hotel in desire area.

Input: Enter desire location.

Result: Get the list of hotels in searched area.

- **Test Case 1.9:**

Precondition: Device must be connected to the internet.

Assumption: User can search hospital in desire area.

Input: Enter desire location.

Result: Get the list of hospitals in searched area.

- **Test Case 1.10:**

Precondition: Device must be connected to the internet.

Assumption: User can search restaurant in desire area.

Input: Enter desire location.

Result: Get the list of hospitals in searched area.

- **Test Case 1.11:**

Precondition: Device must be connected to the internet.

Assumption: User can share the app.

Input: click on share

Result: Shared successfully.

- **Test Case 1.12:**

Precondition: Device must be connected to the internet.

Assumption: User can give feedback.

Input: Click on feedback.

Result: Feedback is given successfully.

- **Test Case 1.13:**

Precondition: Device must be connected to the internet.

Assumption: User can logout from the app.

Input: Click on logout button.

Result: Successfully logged out.

5.4 Test Results and Reports

Our test result is successful. We will work on it more. We have shown the test results in previous step

CHAPTE 6

IMPACT ON SOCIETY, ENVIRONMENT AND SUSTAINABILITY

6.1 Impact On Society

We have been dealing with travelling problems from our childhood. For travelling in a new place, people have to know about the place by asking other people who know better. But often, we don't get a perfect solution. That's why we try to connect this concept with technology. Because we are living in such a century where we strongly depend on technologies, from food to shopping everything, in every field we are taking help from technologies. We can use all of these technologies through our android phone. Our app also can use through the android phone. The app can be accessed from anywhere and anytime. As our society is still backward, and people are still not forwarding to the technologies. We have to inspire them to take these facilities of technologies. On the other hand, there is huge people who are using these technologies regularly for their daily need. So, our app creates a new facility for them. Our app will give a great impact on society, specially on daily life travelling related issues.

6.2 Impact On Environment

Though our application is a very much user-friendly, it gives some impact on environment. For running this app, user needs a smart device (example- smart phone) which consists of plastics. When a smart phone is damaged, then user can't use it further. As the phone is not recycled correctly, then it becomes the cause of environmental pollution. So, we can see that, when a smart phone can't recycle further, then it will give impact on environment. But, ignoring this, our application will be helpful for people.

63 Ethical Aspects

We are maintaining ethical aspects highly. We don't use anything in our project which is not maintaining ethical. And as our project is built in with open source resources, so there is no chance to do any unethical works or anything which hurt someone's privacy or else.

64 Sustainability Plan

We build an android application which is updating with time. If any feature need to update we will do regularly. In our project we use many technology which need to update after a certain period. So, in our project, if any necessary update is needed then we will do.

CHAPTER 7

CONCLUSION AND FUTURE SCOPE

7.1 Discussion and Conclusion

We make such an application which will reduce travel related problems. There is two types of user-admin and normal people. This application is built for solving travel related problem which we are facing in our daily life. It makes our travelling easier than before. Anyone android user can use it. Before building this app, we needed to ask people to know about the place details and by this process, sometimes people get wrong information. Then they face so many troubles. This is the main reason for building our app. Though it is hard to find all information, but we are still trying to collect all of them. Our app will save people's valuable time. The special feature is that our app is cost free and doesn't show any types of ads. Because ads. are irritating maximum time. One more special feature is in or app, that is, it is an open source. So, when any update or change is needed, we can do easily. In future, we will do more work on it.

7.2 Scope for Further Developments

We develop our projects mainly for reducing travel related problems. When people's move from one place to another place, they need some information for travelling. We add so many features to make our app user friendly. We try to maintain simplicity in our app. We will update our app time to time in future. If we need to add more features for making our app more user friendly or beautiful, then we will add more features.

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