# DIU HOSTEL MANAGER

**BY**

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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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**DHAKA, BANGLADESH**

**DECEMBER 2018**

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# APPROVAL

This Project titled "DIU Hostel Manager", submitted by Md. Farhadul Islam, ID: 091-15-778 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 (BSc) and approved as to its style and contents. The presentation has been held on 12-12-2018

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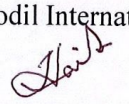

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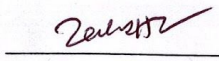

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# DECLARATION

I hereby declare that, this project has been done by us under the supervision of **Mr. Narayan Ranjan Chakraborty**, Assistant Professor , Department of CSE Daffodil International University. I also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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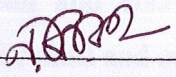

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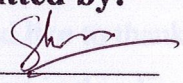

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First I express my heartiest thanks and gratefulness to almighty Allah for His divine blessing makes us possible to complete the final year project successfully.

I really grateful and wish my profound my indebtedness to **Mr. Narayan Ranjan Chakraborty**, **Assistant Professor**, Department of CSE Daffodil International University, Dhaka. Deep Knowledge & keen interest of my supervisor in the field of Android Application Development to carry out this project. His endless patience ,scholarly guidance ,continual encouragement , constant and energetic supervision, constructive criticism , valuable advice ,reading many inferior draft and correcting them at all stage have made it possible to complete this project.

I would like to express my heartiest gratitude to Prof. Dr. Syed Akhter Hossain, Head, Department of CSE, for his kind help to finish my project and also to other faculty member and the staff of CSE department of Daffodil International University.

I would like to thank my entire course mate in Daffodil International University, who took part in this discuss while completing the course work.

Finally, I must acknowledge with due respect the constant support and patients of our parents.

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# ABSTRACT

The project is on development of an android application for DIU Hostel. Purpose of this project is to give hostel students some additional benefit and make their life easier. I thoughts about the challenges from my perspective along with my experience to live in a hostel during my Admission Coaching after HSC examination and I wanted to develop something which truly help students and give them a better feeling as a hostel broader.

This application will solve several problems like seeing room broader details by just installing application to device from anywhere rather than physically visiting the hostel just to see the room and broades status. Students can create a complan through this application, can see notices and apply to be a broader of the hostel.

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# CHAPTER 1
# INTRODUCTION

## 1.1 Introduction

In the era of internet & technology, people want to get access things more conveniently and faster. “Hostel Manager” is an android based mobile application which make hostel students daily life more easier and can give them a better experience as a member of Daffodil International University Hostel border. Alongside, it will reveal the requirements,design and development process of this application.

## 1.2 Motivation

Behind building this application many incident and memory inspired me to develop this tool. Firstly, i can remember my first experience to be a member of a hostel when I came to Dhaka for Admission test coaching in early time of my life. That time I was young and my experience was not smooth as I thought. I still can remember those hard experience which really set up my mind to develop something which could practically help people who live me hostel. I explored Google app store and did not find any good solution which really offer any practical solution of a typical hostel life ERRORS. I wanted to develop app which can be added with Existing Daffodil Hostel Management Database and will interact data through this application. Nowadays people want more flexibility rather then just sitting in front of a bigger screen like laptop ,desktop which is not possible to carry all the time. From my love, endeavor, desperation, enthusiasm towards android development considered a good reason we concentrated on this project.

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## 1.3 Project Objective

The objective of my application are

- Check rooms & seat to see which one open for admission
- Check each room boarder's details
- Apply for Hostel Admission
- Check Hostel notices Board through app
- Through Hostel related any complain
- Emergency Contact Number

## 1.4 Expected Outcome

I have had some hard experience in my hostel life when I come for University Admission Coaching after my HSC examination and with that experience I wanted to develop something which really make Hostel boarder's life smooth and flexible and they don't have to make a plan to face hostel daily issues. I believe, this application will really help hostels to give better experience to their members.

## 1.5 Report Layout

In this chapter 1, I have discussed about my project introduction. I discussed about my project motivation, objective and fields of my work. In chapter 2, I will discuss about background. In chapter 3 , I will discuss about requirement specification. In chapter 4, I will describe about design specification, chapter 5 contains implementation and testing and finally conclusion and future scope will be discussed in chapter 6.

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# CHAPTER 2
# BACKGROUND

## 2.1 Introduction

DIU Hostel Manager is a android platform based application. This chapter is having details work present, comparative analysis with our application. Details about scope of the application will be explained. My target and challenge that I faced will is described here.

## 2.2 Related Work

I searched on google play store and did not find any application for Daffodil Hostel management or something that make hostel daily works easier.My application is fully Daffodil university focused and any user can get lots of flexibility from anywhere of the world rather then keep asking for information and process to Hostel Manager.

## 2.3 Comparative Studies

DUI Hostel Manager is a Android application developed for Daffodil Hostel to make hostel member's life easier. Before setup my find to develop this application, I did not find any single application on google playstore for Daffodil Hostel. So my main focus was the member of Daffodil Hostel and I wanted to make their life more comfortable by providing all necessary information they need through this application.

## 2.3 Scope and Problem definition

I worked on the application following the software development process. I went through each part completion the previous one. The application was planned for more then two week long to collect requirements and gather information extensively. This application planning and time management schedule given in next page.

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### 2.3.1 Time Scheduling

Table 2.1: Time Scheduling

| | |
|---|---|
| Planning | Two weeks |
| Design and analysis | Three weeks |
| Coding | Four weeks |
| Testing and Implementation | One week |
| Totall | Two Months and Two weeks |

The scope is Application Module. This application is for Hostel users which database is developed in MySQL rather then SqLite so that I can integrate the app database with Hostel Management system Database to interact with real information.

### 2.3.2 Target of this Project

Target of my project is to reduce the hassle of hostel life and give users more flexibility so that they can interact with hostel management proper way. It helps to reduce time waste also.

## 2.4 Challenges

For me, making this application User friendly and developing that app in a way which force people mind to use this application as long as they belong in Daffodil hostlem is the ultimate challenge I feel.

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# CHAPTER 3
# REQUIREMENT SPECIFICATION

## 3.1 Introduction

Process to develop this application I had to design how I will approach towards my plan. First I have to create a flowchart, use case model and data flow diagram which will help us to execute the project step by step.

## 3.2 Flow Chart

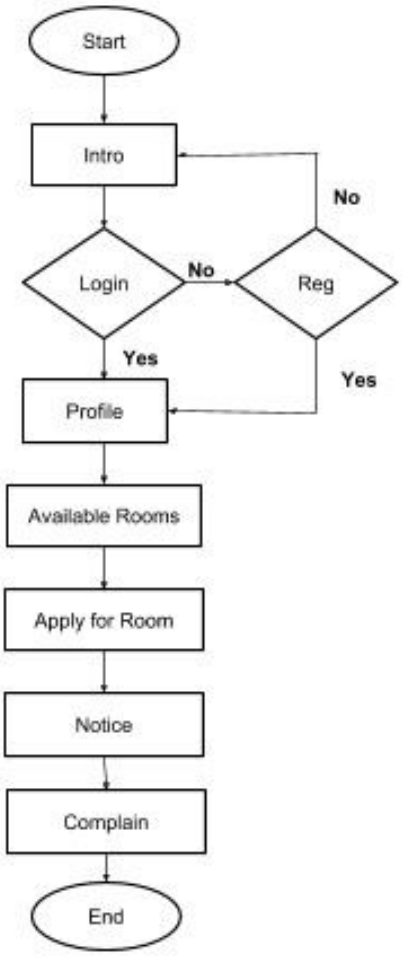


Figure 3.1: Flow Chart

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## 3.3 Requirement Collection and Analysis

**Software Requirements**

To Develop this application I have  used following Software Requirements:

- Operating System: Windows 7
- System Design: Adobe Photoshop
- Language: Java, Php, XML
- Database: MySql
- Tools: Android Studio
- Debugger: Android Dalvik Debug Monitor service
- Operating System: Android with API level 19 or higher
- Minimum Space to execute: 50MB

**Software Requirements**

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- Database: MySql
- Tools: Android Studio
- Debugger: Android Dalvik Debug Monitor service
- Operating System: Android with API level 19 or higher
- Minimum Space to execute: 50MB

**Hardware Requirements**

To Develop this application I have  used following Hardware Requirements:

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- Processor: Intel Core i5
- Ram: 8GB
- Space disk: 15GB

**Functional Requirements**

- Graphical User Interface which the application user
- Network MySql that store data or information to be displayed to the user

## 3.4 Use Case Diagram and Description

Below use case diagram is simply representing the user's interaction with the system. Cases included the following use case diagram of login process,registration, interact with database information and respond on it accordingly.

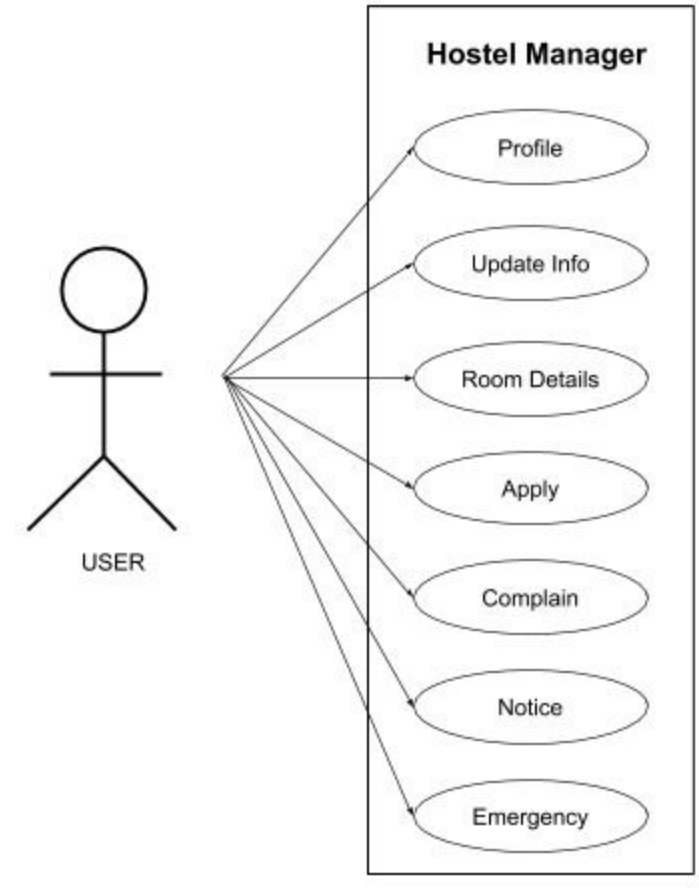


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Figure 3.2: Use Case

## 3.5 Data Flow Diagram

A data flow diagram is a graphical representation of the Flow of data through an information system, modeling it's process aspects. A DFD is often use as a preliminary step to create an overview of the system. I can talk up my DFD and business process diagram for connecting my system process and business activities. My system DFD is shown on figure 3.3

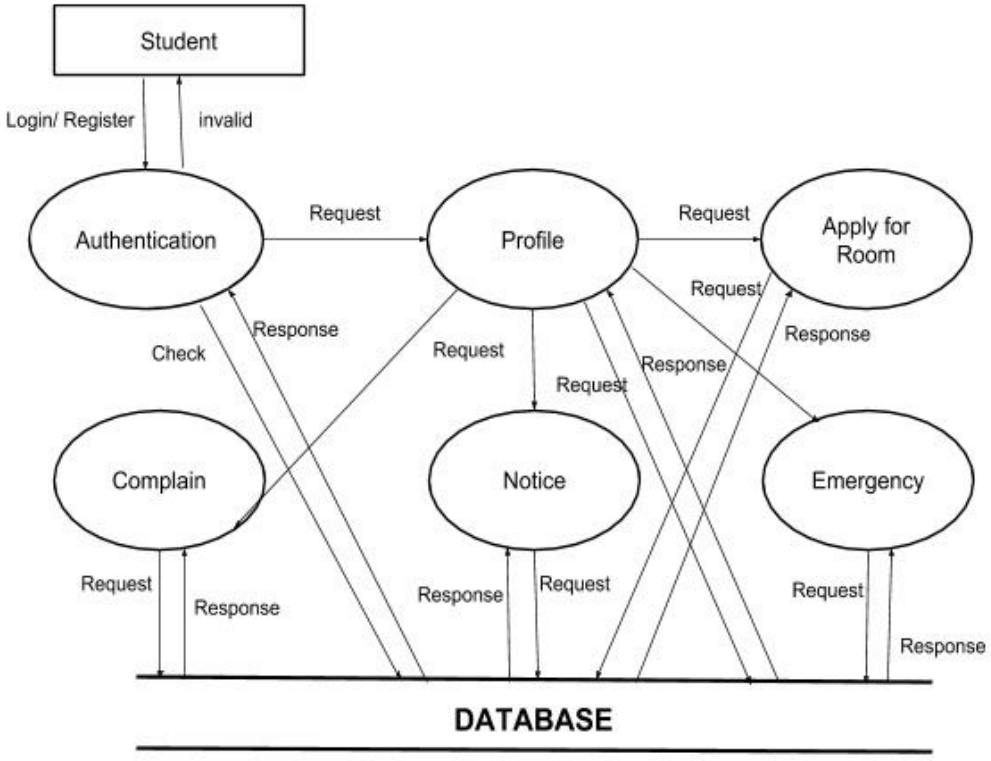


Figure 3.3: Data Flow Diagram

## 3.6 Design Requirement

When designing systems or software, following issues must be considered that reproduce the overall design of the goals that the system expected to achieve. The following goals were kept in mind while designing the system. Make system simple and

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flexible for users: The system users are able to have a great amount of control over their propose in achieving objectives, Make the system compatible: it should be fit in the total system, future maintenance and enhancement must be less.

# CHAPTER 4

# DESIGN SPECIFICATION

## 4.1 Front end Design

Front-end Design is the main attraction of an application. It also should be user friendly. Our application we designed a beautiful front end design. We also tried to design user friendly. In front end design, my application belongs with below sereenes.

- Intro/ splash screen
- Login Screen
- Registration Screen
- Lost Password Screen
- Profile Screen
- Room Details Screen
- Apply for Room Screen
- Notice Board Screen
- Complain Screen
- Emergency Number Screen
- Edit Profile Screen

## 4.2 Interaction Design and UX

Interaction Design is most important part of user Experience design. An application fruition depends on User satisfaction. How an application is more attractive to the user mostly depends on interaction and Design part. In my application, we used the useful model of interactive design.

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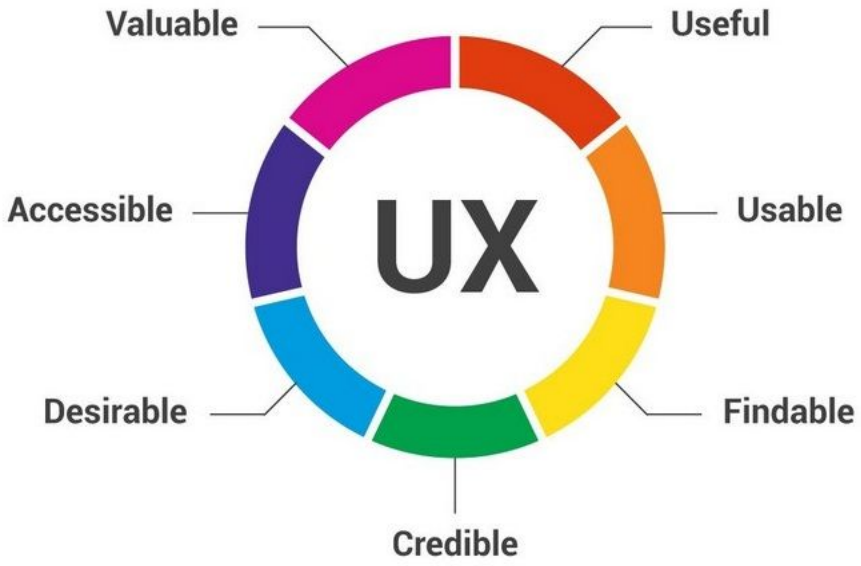


Figure 4.1: UX Design

## 4.3 Back-end Design

This application has dynamic function works by using internet. In backend design i used MySql database which will be altered with Daffodil University Hostel Management real database or by accessing through APIs. Internet is mandatory to operate this application.

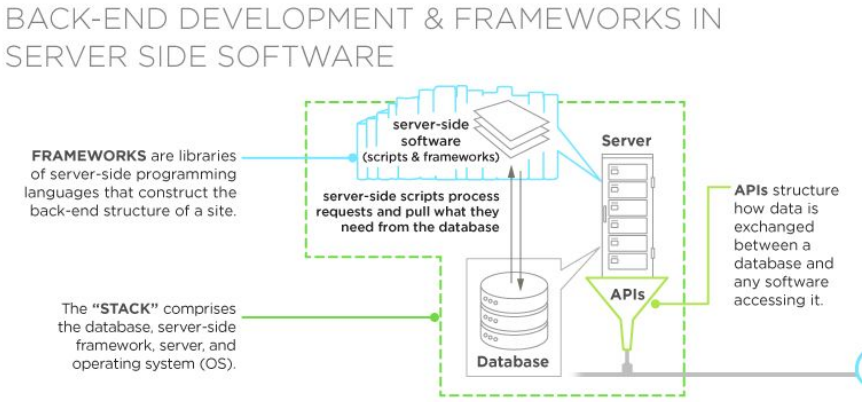


Figure 4.2: Connecting API to DBMS

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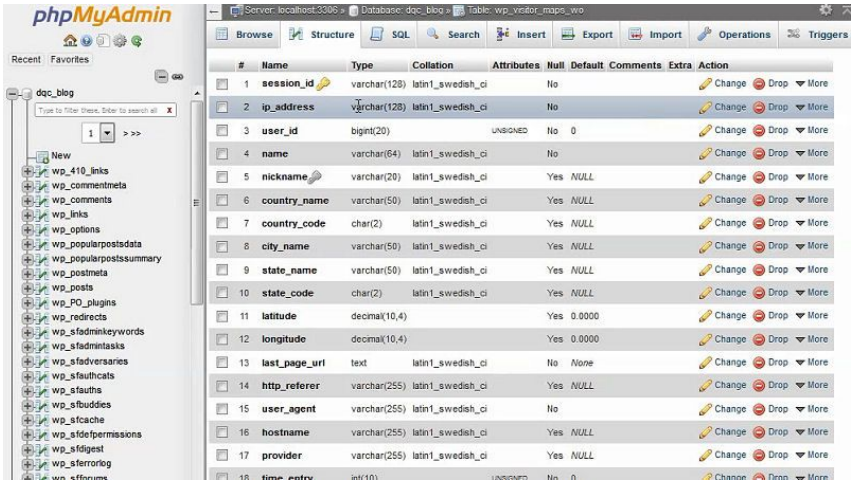


Figure 4.3: Implement to DBMS

## 4.4 Implementation Requirements

Implementation Requirement is given below:

1) Android Studio
2) Java language knowledge
3) Knowledge on Android Ecosystem
4) MySQL
5) API Design
6) XML
7) Database Design

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# CHAPTER 5

# IMPLEMENTATION AND TESTING

## 5.1 Implementation of Database

The implementation phase is where developer installs the Database Management System on the required hardware, optimize the database to run best on that hardware and software platform, create database and load data. The initial data could be either new data captured directly or existing data import from DBMS. Developer can establish database security and give access to authorised users. At this moment I used a MySQL database but later I have to either switch to Daffodil Hostel Management Existing Database or have to create api so that I can interact with data.

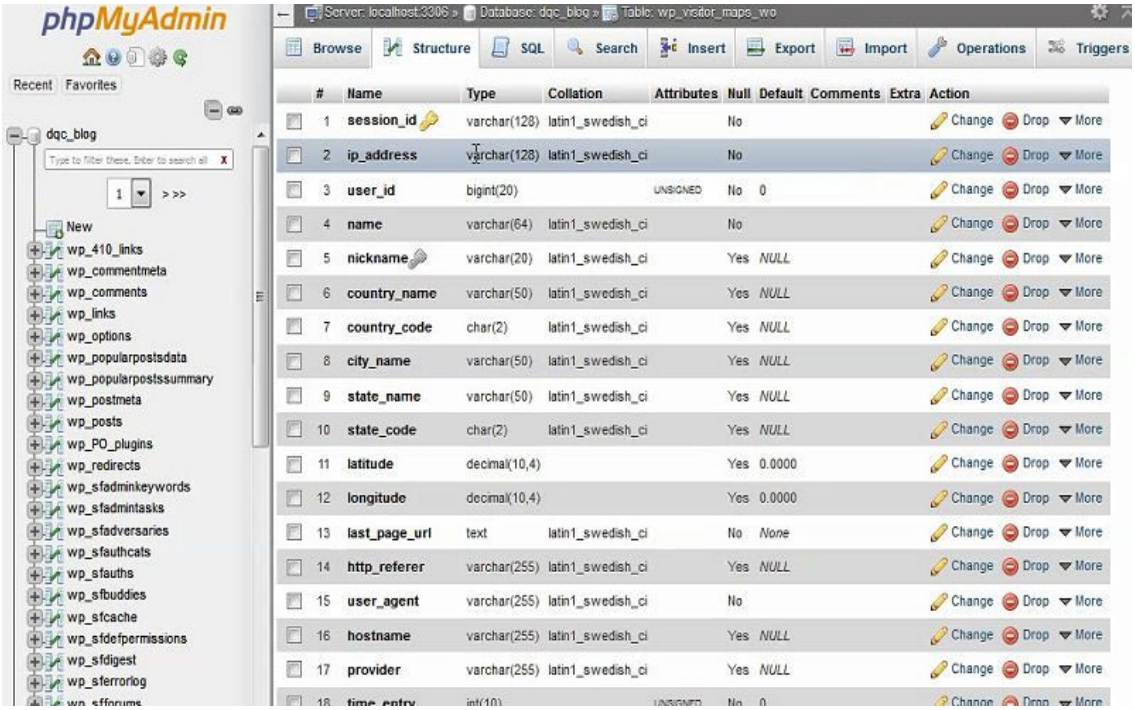


Figure 5.1: Implementation of user (Students) table

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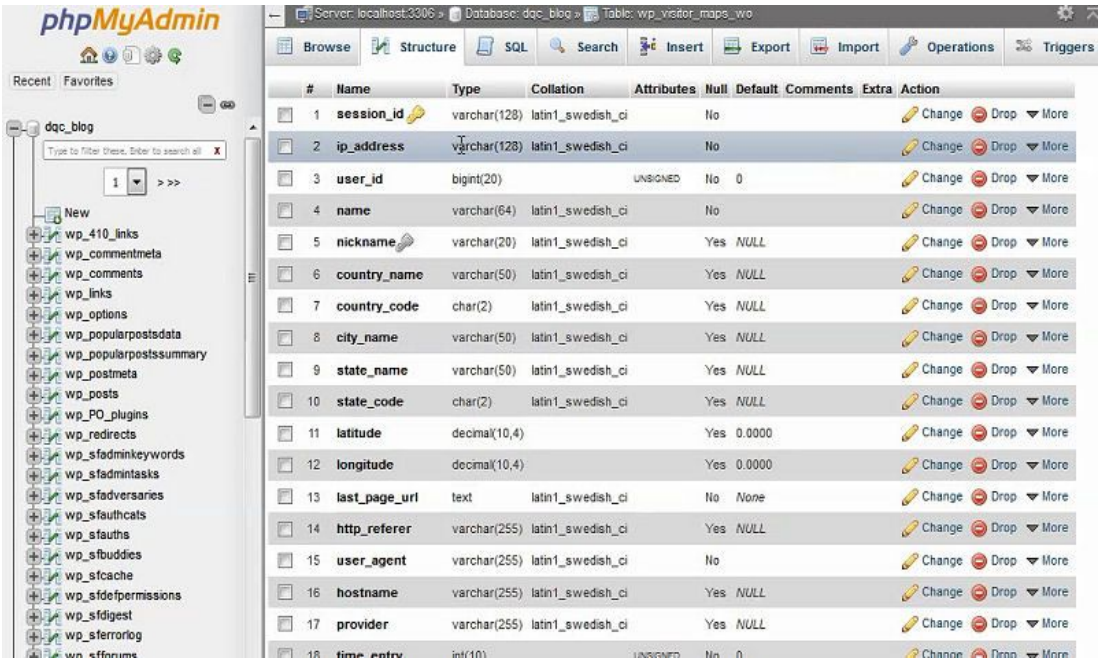


Figure 5.2: Implementation Room Details table

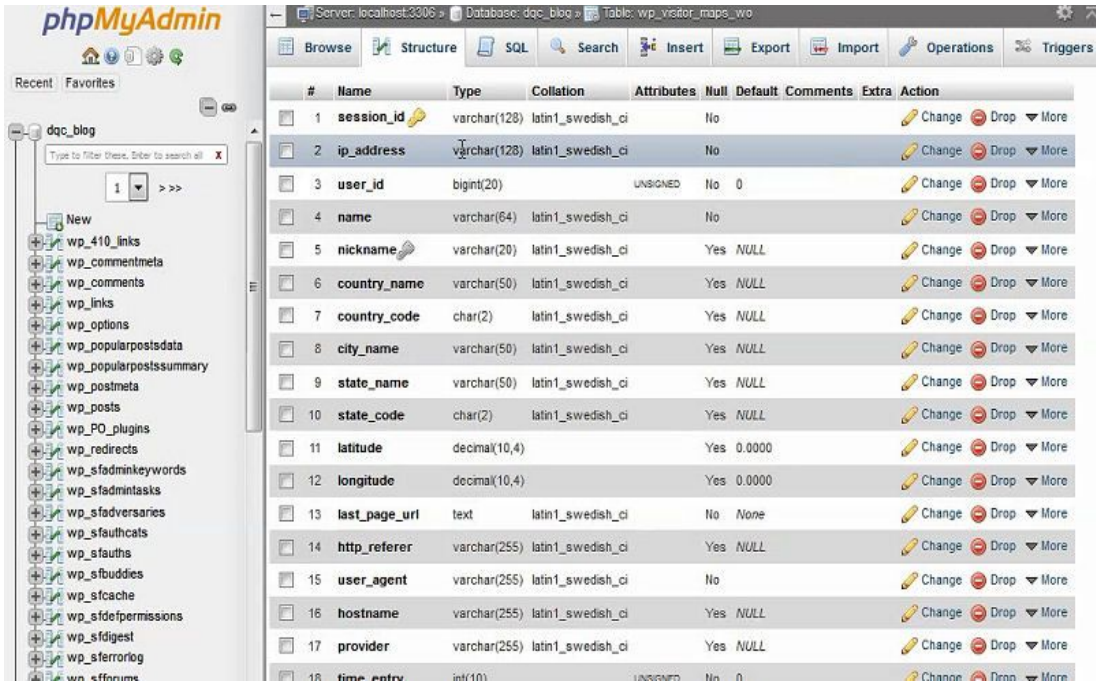


Figure 5.3: Implementation of Request for Apply table

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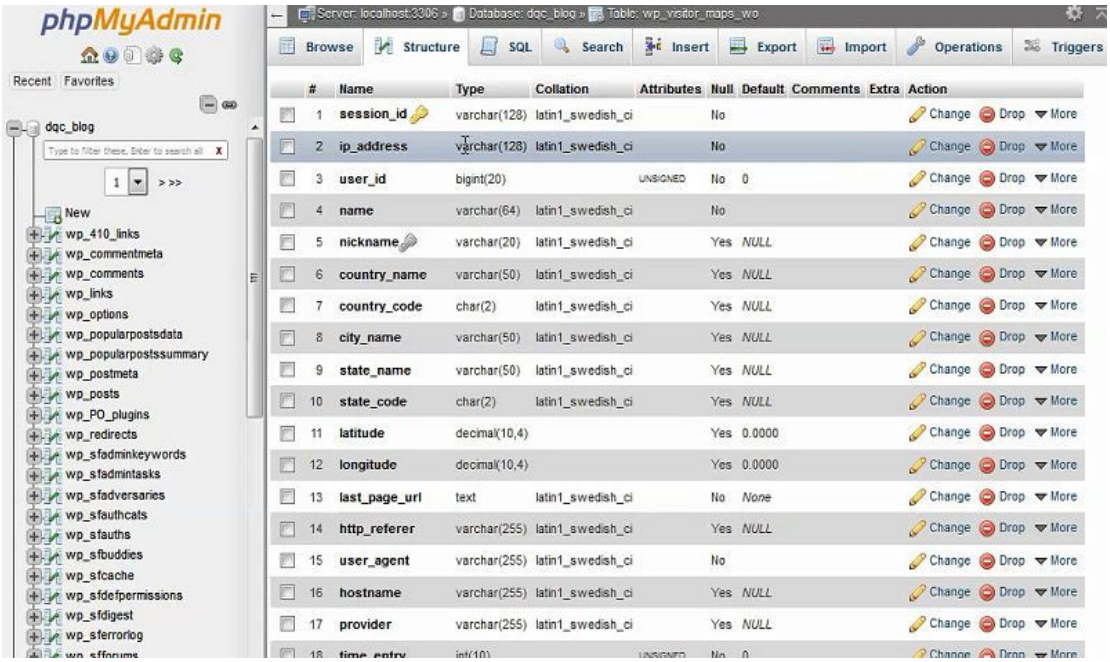


Figure 5.4: Implementation Complain table

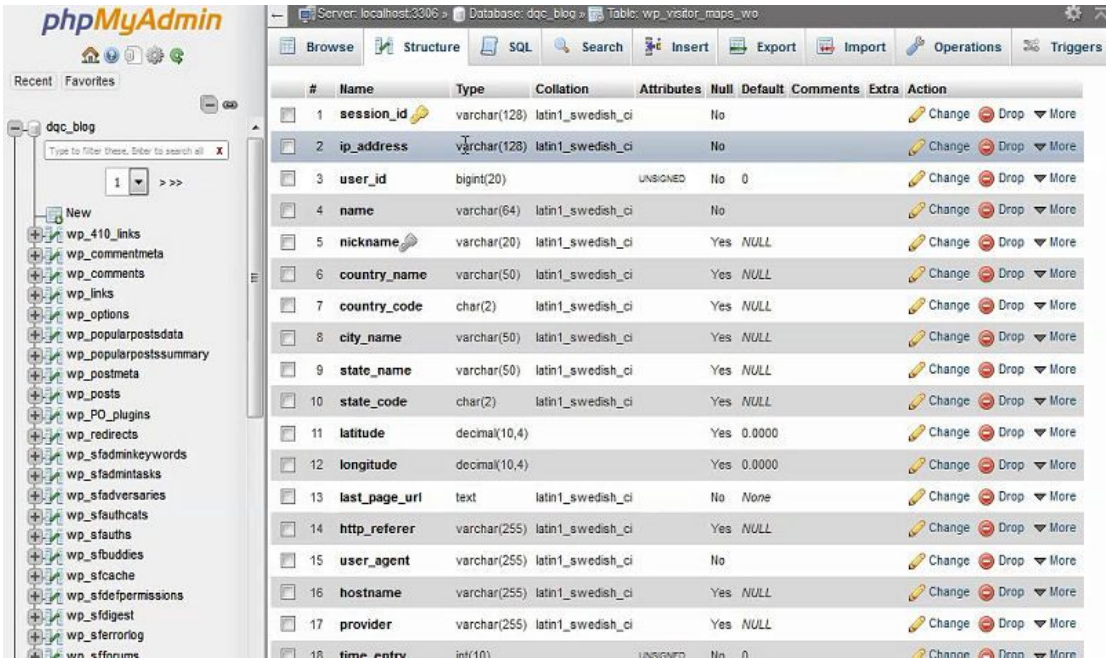


Figure 5.5: Implementation of Notice table

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## 5.1 Implementation of Front-end Design

For implementation front-end design of the of the system used XML language. The challenge was more when we just implement the screen and there the perfection was the matters for me.

**UI Designs**

Fig 5.6: Splash Screen

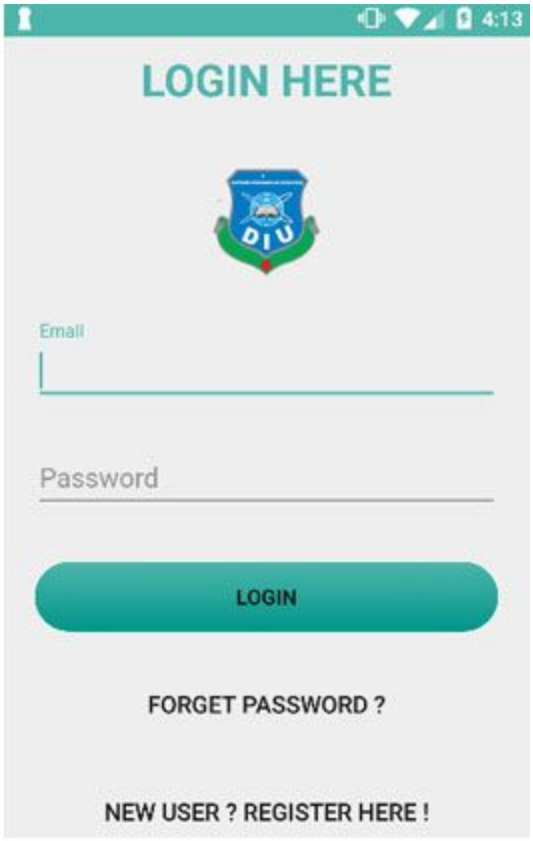


Fig 5.7: Login Screen

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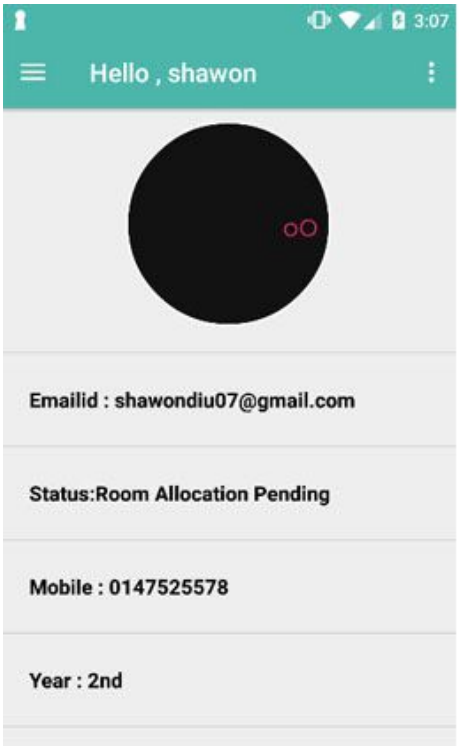



Fig 5.8: Profile Screen

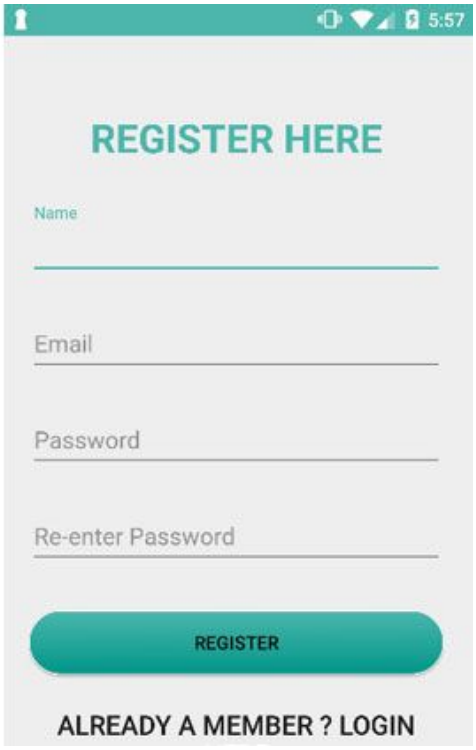
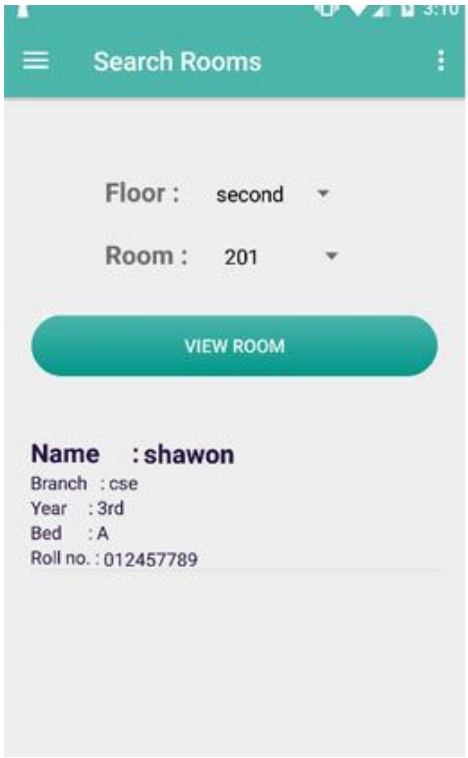



Fig 5.9: Registration Screen



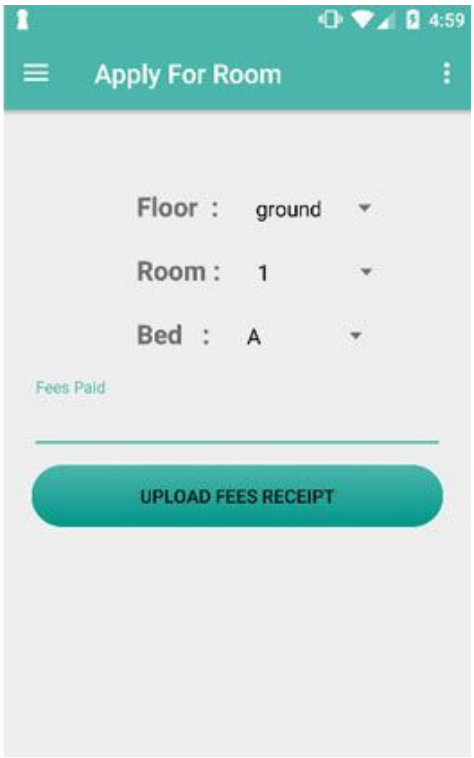




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Fig 5.10: View Rooms Screen

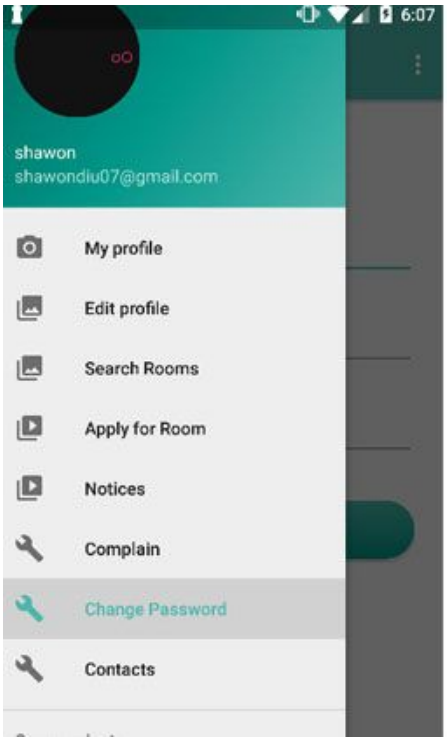


Fig 5.12: Menu Screen

Fig 5.11: Apply Screen

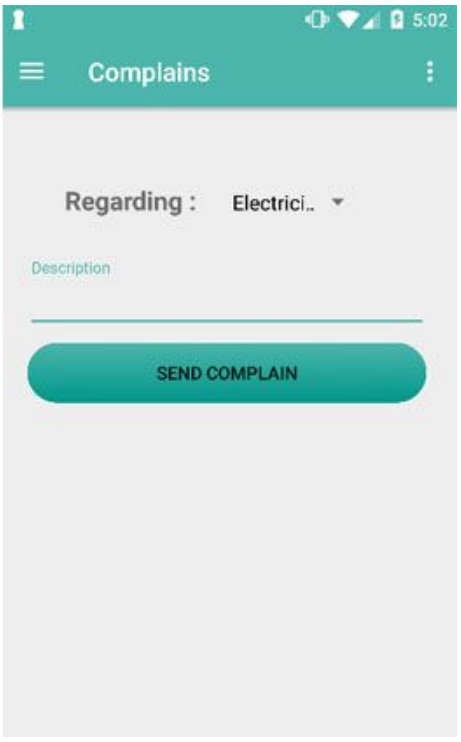


Fig 5.13: Complain Screen

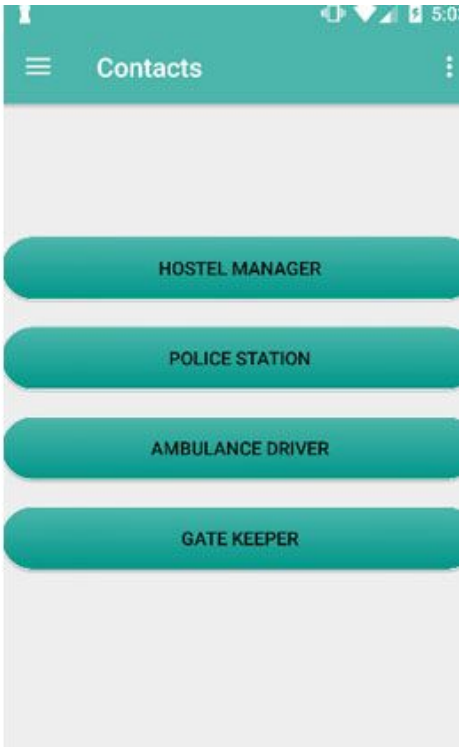


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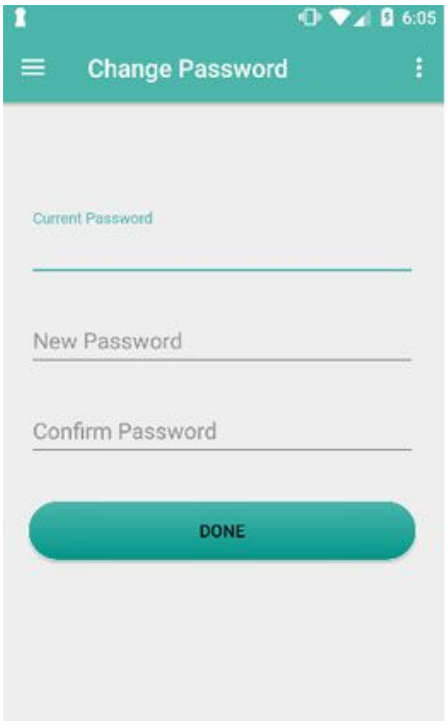
Fig 5.14: Notice Screen

Fig 5.15: Contact Screen



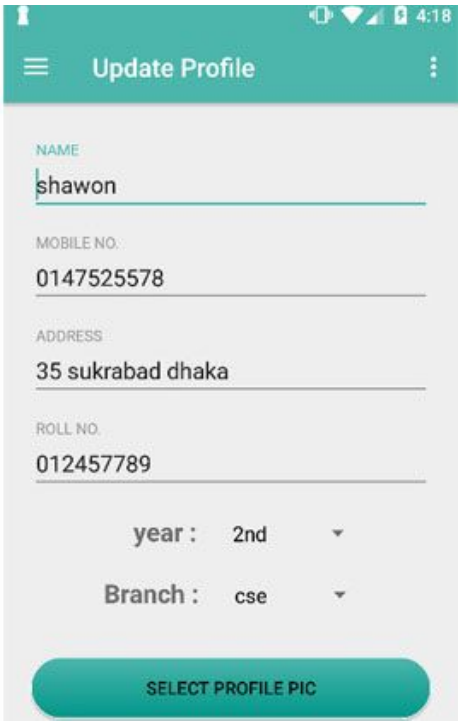




Fig 5.16: Pass Screen

Fig 5.17: Update Profile Screen

## 5.2 Implementation of Interactions

Implementation of interaction is most important part of a system. Interaction means when users on specific module and switch to another module. This application consists of one type of user at this moment so that is no chance to interrupt values. I tried to give users a good UX to make this project successful.An application would be successful when it's users will get this useful and will feel a good experience.From that point my expectation would be high.

## 5.3 Testing Implementation

When a system is implemented and test some specific method is called test implementation. I have tested system several times. Login, Register, Complain, Room Checking, Notice Board tests on several times. I have tested following factors:

- Login System

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- Registration system
- Apply for Hostel
- Check Available Rooms

## 5.4 Test Result and Reports

System Testing Table shows below as a result of testing

Table 5.4: Time Scheduling

| Test Case Id | Date | Tester | Pass/ Fail | Severity of Defect | Summary of Defect | Close prior to Release | Comment |
|---|---|---|---|---|---|---|---|
| 1 | 5.12.18 | Farhadul Islam | Pass | Bug in 2 place | Bug | <Yes> | |

## 5.5 User Acceptance Testing

The table below abridge the test cause for user acceptance testing and the test result obtained each other.

Table 5.5: Time Scheduling

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| Test Case Id | Date | Tester | Pass/ Fail | Severity of Defect | Summary of Defect | Close prior to Release | Comment |
|---|---|---|---|---|---|---|---|
| 1 | 6.12.18 | Farhadul Islam | Pass | No Defect | No Defect | <Yes> | |
| 2 | 6.12.18 | Farhadul Islam | Pass | No Defect | No Defect | <Yes> | |
| 3 | 6.12.18 | Farhadul Islam | Pass | No Defect | No Defect | <Yes> | |

# CHAPTER 6

# CONCLUSION AND FUTURE SCOPE

## 6.1 Discussion and Conclusion

For the grace of Almighty ALLAH I have successfully completed the project and documentation. After the long term thinking, researching and implementing things in last session i am happy to complete. DIU Hostel manager application capable of providing all information need any hostel broder regarding to his hostel life.

There is always scope of come up with more features when I consider an android based application. I would like to show every broader's monthly financial transaction, able to pay through this application.

## 6.2 Scope of Further Development

I have a future plan for this application. Some of the planes are:

1. Payment method integration
2. Show all history through this application

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3. Include hostel monthly meal system
4. Guest meal request

## Reference

[1] Android “analysis report on Android Application Framework and Short Description,” itsrcs.com [online]Available: https://www.swotanalysis.com/pros-cons-analysis-template.html [Accessed: Dec3, 2017]

[2] Android “analysis report on Android Application Framework and Short Description,” gplay.com [online]Available: https://play.google.com/store?hl=en [Accessed: Jan3, 2018]

[3] Android “analysis report on Android Application Framework and Short Description,” itsrcs.com [online]Available: http://developer.android.com/reference/packages.html [Accessed: Dec3, 2018]

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[4] Android “analysis report on Android Application Framework and Short Description,” itsrcs.com [online]Available: http://forum.xda-developers.com/ [Accessed: Feb3, 2018]

[5] Android “analysis report on Android Application Framework and Short Description,” itsrcs.com [online]Available: http://groups.google.com/group/android-developers?lnk= [Accessed: March3, 2018]

[6] Android “analysis report on Android Application Framework and Short Description,” itsrcs.com [online]Available: http://developer.android.com/resources/community-groups.html [Accessed: March3, 2018]

[7] Android “analysis report on Android Application Framework and Short Description,” itsrcs.com [online]Available: http://developer.android.com/resources/samples/get.html [Accessed: April10, 2018]

[8] Android “analysis report on Android Application Framework and Short Description,” itsrcs.com [online]Available: http://code.google.com/android/add-ons/google-apis/maps-overview.html [Accessed: Dec3, 2018]

[9] Android “analysis report on Android Application Framework and Short Description,” itsrcs.com [online]Available: http://developer.android.com/guide/components/fundamentals.html [Accessed: Dec3, 2018]

[10] Android “analysis report on Android Application Framework and Short Description,” itsrcs.com [online]Available:

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https://play.google.com/store/apps/details?id=com.planbsys.pmtheory [Accessed: Dec3, 2018]

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