FYP Title

Final Year Project

Session 2017-2021

A project submitted in partial fulfillment of the degree of

BS in Computer Science

Department of Computer Science

Faculty of Computer Science & Information Technology

The Superior College, Lahore

Spring 2021

Type (Nature of project)	[✓] **D**evelopment [ ] **R**esearch [ ] **R**&**D**
Area of specialization	Android Application
FYP ID	FYP-BCSM-F20-010

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*The candidates confirm that the work submitted is their own and appropriate credit has been given where reference has been made to work of others

Plagiarism Free Certificate

This is to certify that, I **Zoya Arshad** S/D of Arshad Mehmood, group leader of FYP under registration no **Bcsm-F17-005** at Computer Science Department, The Superior College, Lahore. I declare that my FYP report is checked by my supervisor.

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Name of Supervisor: Hafiz Muhammad Zahid Co-Supervisor:

Designation: Lecturer Designation:

Signature: _____ Signature: _____

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Signature: _____

APPROVAL

PROJECT SUPERVISOR

Comments: _____

_____

Name:_____

Date:_____ Signature:_____

PROJECT MANAGER

Comments: _____

_____

Date:_____ Signature:_____

HEAD OF THE DEPARTMENT

Comments: _____

_____

Date:_____ Signature:_____

Dedication

This Project is dedicated to The Creator of this whole Universe for being our best Companion in this whole phase. I also dedicate our dissertation work to our parents, my teachers, and my friends. They have been my best Cheerleaders.

Acknowledgments

I would like to express my profound gratitude to my Supervisor Sir Zahid for his extremely helpful guidance, vital support, and suggestions throughout the course of this Project.

I also take advantage of this moment and pleasure to express my heartfelt appreciation to the faculty members of Superior University Lahore's Department of Computer Sciences and Information Technology for their extremely valuable advice and support during my BSCS degree. We truly thank our parents for taking us to this place today and helping us to accomplish this task. We are very grateful to our friends who have helped us with their valuable suggestions. We want to thank our class for always helping us.

Executive Summary

The problem of finding housekeeping nowadays is very common. For example, the user needs a driver, plumber, mason, or others. So, the user has to find them. We have developed an application that has a centralized platform to provide all the housekeeping services, where users and service providers can meet directly through contact information. The platform is an android application. The interface of our application is developed by keeping all the user-friendly points in mind to make it easy to use. The user can create a profile and enter the requirements so that the people can avail the services. The app provides the contacts so that people can directly contact the service provider by call or message. Users can also give feedback through contact us and can give us comments to make our services better for them.

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Chapter 1

Introduction

Chapter 1: Introduction

It was hard to find household services nowadays or we have to face some issues regarding this like we have to spend time. So, we solved this problem by developing an app that provides you all household services just with a single click. You just have to make an account either as a client or service provider. By entering requirements you can find the desired person to avail chance of taking services from them. The biggest advantage is it will save your precious time and you don't have to suffer in search of a service provider.

The service provider has to make a profile where he/she add personal detail including name, address, contact number, email-id, and services. They can share experiences to improve the profile, edit fields of the profile. By this, a client can easily access desired service provider and gave feedback about the service.

The categories of services which we are providing are the basic services which every person needs nowadays and that includes Maid, Gardener, Driver, Mechanic, Electrician, Plumber, Mason, Sanitary Worker, Sweeper, Car Detailer, Baby Sitter, Cook, Carpenter, Secretary, Watchman, and Tutor. These all are have become part of life nowadays. So, we resolved this problem by developing an app to provide ease to people.

1.1. Background

The home service system is beneficial for all those who want to take services like plumbing, electrician, plumber, and maid. It was hectic to find a person who can repair and provide you house services and time taking process before this app. Now, it's easy or on one click to access the service and it's time-saving.

1.2. Motivations and Challenges

Some services are occasionally used. So, this app accommodates the changing needs of the user. The system can be designed that it can further add more features to provide overseas services. Additionally, this system will add a payment system.

1.3. Goals and Objectives

Our main objectives are to:

- Understand the development of application
- Save the time of user
- Provide budget friendly services
- Provide users all household services
- Provide services on one click
- Service providers are capable to earn money by providing services
- Use of technology productively and efficiently.

The main objective is by using the latest tools and technologies to provide ease to people, clients by saving time and service providers by earning money.

1.4. Literature Review/Existing Solutions

There are many websites and apps available that are working on the same pattern. But they are a little different from our app. Some of them are:

- Sukoon
- Technician

Source	URL
Technician[1]	http://technician.pk/
Sukoon[2]	http://www.sukoon.com.pk/

1.5. Gap Analysis

According to our research, few apps are built on the same pattern but they are unknown to people. So, firstly we advertise this app on a big scale that everyone is familiar with this. And avail these services. Secondly, they are not user-friendly. But our app is user-friendly and easy to use for any person.

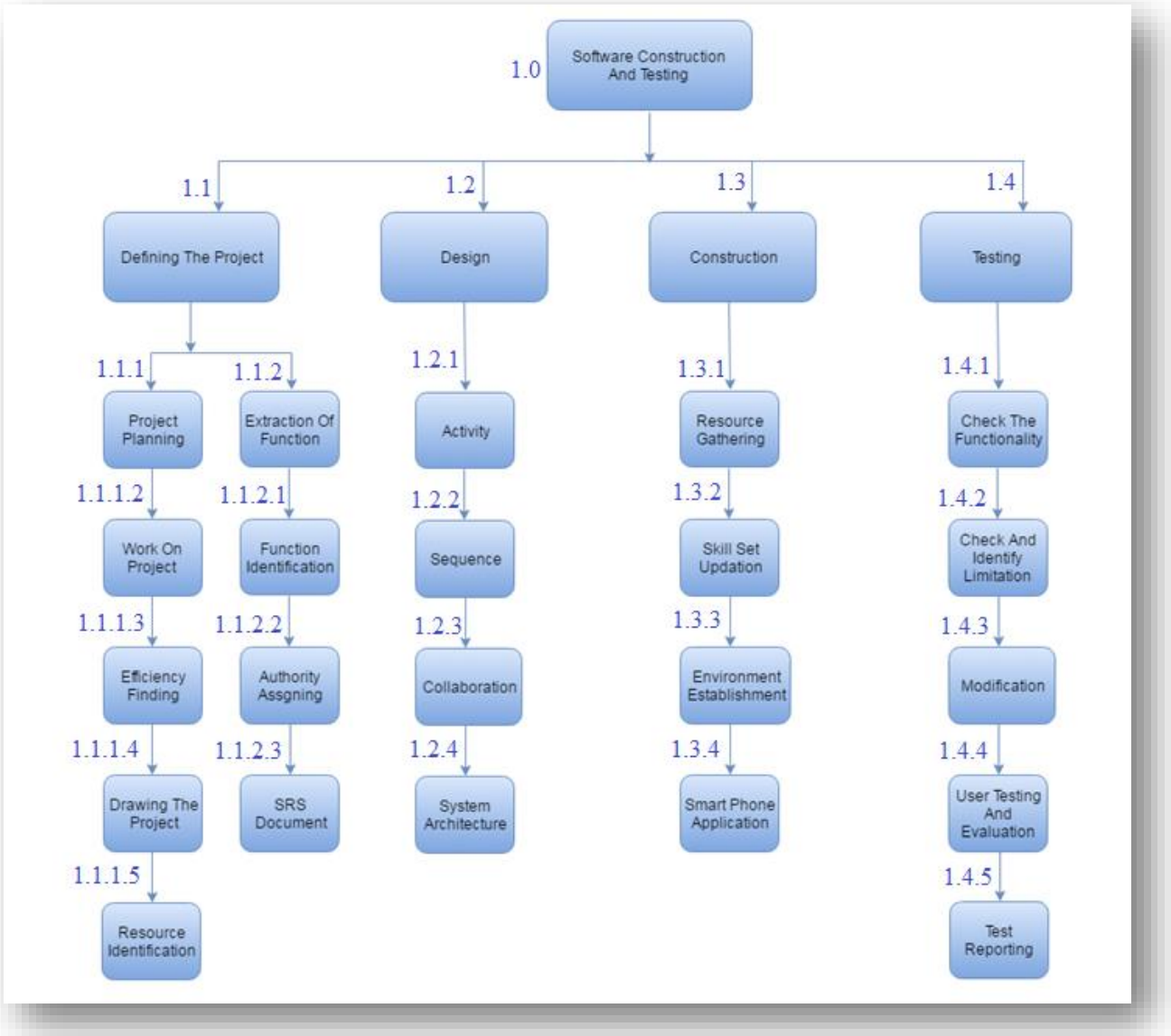
1.6. Proposed Solution

We are developing an app that provides services by entering desired requirements in the search bar and registered service providers will show in the list. You can contact them through contact number and Gmail.

You just have to make an account either as a client or service provider. By entering requirements you can find the desired person to avail chance of taking services from them. The biggest advantage is it will save your precious time and you don't have to suffer in search of a service provider.

The service provider has to make a profile where he/she add personal detail including name, address, contact number, email-id, and services. They can share experiences to improve the profile, edit fields of the profile. By this, a client can easily access desired service provider and gave feedback about the service.

1.6.1. Work Breakdown Structure

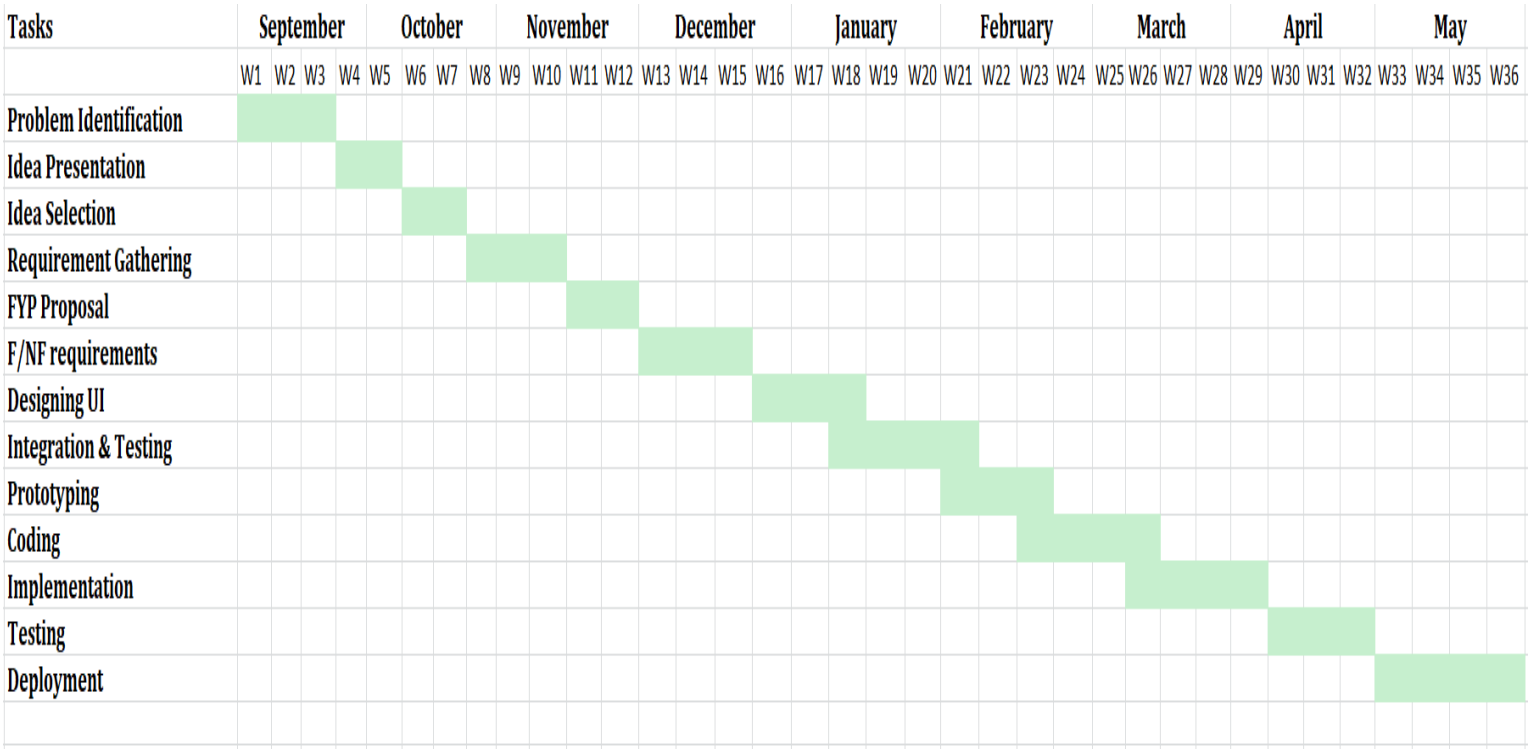


1.6.2. Roles & Responsibility Matrix

WBS #	WBS Deliverable	Activity to Complete the Deliverable	Duration (# of Days)	Responsible Team Member(s) & Role(s)
1	Idea Presentation	12-11-2020	2	Zoya Arshad, Tehreem Rasheed
2	Idea Evaluation	14-11-2020	2	Zoya Arshad, Tehreem Rasheed
3	Idea Selection	16-11-2020	2	Zoya Arshad, Tehreem Rasheed
4	Requirement Gathering	19-11-2020	3	Zoya Arshad, Tehreem Rasheed
5	Problem Statement Identification	20-11-2020	1	Zoya Arshad, Tehreem Rasheed
6	Problem Statement Proposed Solution	21-11-2020	1	Zoya Arshad, Tehreem Rasheed
7	Problem Statement Selected Solution (UVP)	21-11-2020	-	Zoya Arshad, Tehreem Rasheed
8	Software Specification	23-11-2020	2	Zoya Arshad, Tehreem Rasheed
9	Functional Requirements	23-11-2020	-	Zoya Arshad, Tehreem Rasheed
10	Non-Functional Requirements	23-10-2020	-	Zoya Arshad, Tehreem Rasheed
11	Designing User Interface	26-11-2020	3	Zoya Arshad, Tehreem Rasheed
12	Web User Interface	30-11-2020	4	Zoya Arshad, Tehreem Rasheed
13	Application Interface	10-12-2020	10	Zoya Arshad, Tehreem Rasheed
14	Application Integration & Testing	15-12-2020	5	Zoya Arshad, Tehreem Rasheed
15	Prototype 30%	25-12-2020	10	Zoya Arshad, Tehreem Rasheed
16	Designing Process	15-01-2021	20	Zoya Arshad, Tehreem Rasheed
17	Backend	10-02-2021	25	Zoya Arshad, Tehreem Rasheed

18	Connectivity Of Web Panel & Application	1-03-2021	20	Zoya Arshad, Tehreem Rasheed
19	Complete Prototype	15-03-2021	15	Zoya Arshad, Tehreem Rasheed
20	Final Implementation & Testing	05-04-2021	20	Zoya Arshad, Tehreem Rasheed
21	Deployment	21-04-2021	15	Zoya Arshad, Tehreem Rasheed

1.6.3. Gantt chart



1.7. Report Outline

Chapter 1 is the introduction of the project. This gives a summary of the project and its purpose and scope of the project.

Chapter 2 captures the literature review of the existing system, its working, interfaces of the project, and its system features.

Chapter 3 captures the planning and scheduling details of the projects, system analysis, and based on models used to develop a product.

Chapter 4 is based upon all the models and diagrams of this project.

Chapter 5 is based upon the pseudo-code, flow diagram, and all the implementation techniques.

Chapter 2

Software Requirement Specifications

Chapter 2: Software Requirement Specifications

2.1. Introduction

2.1.1. Purpose

We found limitations in the existing system

- No time limit to provide service
- No guaranteed service
- No security
- 24 hours service is not available
- Wastage of time in search of the service provider
- Keeping records was difficult

Our purposed solution has overcome these limitations

1. Guaranteed services
2. 24 hours service
3. Time-saving app
4. Online database
5. Time limit to provide service
6. Capable service provider/ worker

2.1.2. Document Conventions

The standard rule of documentation has been followed in order of standardizing the work. This software requirement document uses the following conventions.

- Line Spacing 1.5

	Font Style	Font Size
• Heading	Calibri	16
• Sub Heading	Calibri	14
• Paragraph	Calibri	12

2.1.3. Intended Audience and Reading Suggestions

This document is intended for developers, project managers, and users who want to know about what functionalities this system is providing. The other part like workflow, a dataflow diagram is intended for developers to build the system according to this.

2.1.4. Product Scope

The scope of this project is bound to specific areas of Lahore. As we get a good response in these areas we will increase the scope of this. We will provide services in the whole of Lahore in the future. We also have a further plan to working on it so these services will be available outside Lahore.

2.1.5. References

https://www.dosomething.org/us/articles/community-service-project-ideas

2.2. Overall Description

2.2.1. Product Perspective

This app is beneficial for clients and service providers. As clients get ease and save time from this. While service providers get a chance to earn money.

2.2.2. Product Functions

The Main Functions of this Project are following:

- All Household services for User.

- Another functionality is a platform for people to earn money from it.

2.2.3. User Classes and Characteristics

Classes	*Characteristics*
Admin	*Admin class will manage and maintains all the features or functionalities including users profiles*
User	*User class will contain basic information about profile and login function which is used by Application and all other functions.*

2.2.4. Operating Environment

- Android Studio
- Firebase for Database.
- XML
- Java

2.2.5. Design and Implementation Constraints

- User can access from any android smartphone using an internet connection.
- User can use their login profile name to get attached to their profile.
- All data will be saved in a real-time firebase database.

2.2.6. User Documentation

User documentation will be given within the application so that users can read and get help.

2.2.7. Assumptions and dependencies:

The points of interest related to the item, client, and administrations are given physically. The director was made on a framework as of now. Roles and errands are pre-defined.

2.3. External Interface Requirements

2.3.1. User Interfaces

The application will have a first page to sign in and join after that if the client has effectively joined, he can sign in or he can make a record. At that point, he will have a first page where he can see the Panel for Service suppliers, Service searchers, and administrators. There he can join and sign in to the ideal board.

2.3.2. Hardware Interfaces

The hardware interface of our project can be:

- Android phones or tablets
- 340 MB of free device space
- 2 GB RAM

2.3.3. Software Interfaces

This Application is an easy-to-use platform to build and design professional native applications for Android. Any android operating system running for SDK. This App used Java or XML technologies and firebase database using android software development kit SDK.

2.3.4. Communications Interfaces

This application will use clients to connect to Server. For exchanging the data between the server and the client, through firebase connection.

2.4. System Features

2.4.1. System Feature

Functional Requirements

2.4.1.1. FR01-FOR REGISTRATION (who want to provide their services)

2.4.1.1.1. FR 01

The system shall be able to check the name and password according to the requirement.

2.4.1.1.2. FR 02

The system shall be able to report an error if the syntax is not corrected.

2.4.1.1.3. FR 03

The system shall generate an error if the information is insufficient or not completed.

2.4.1.2. FR02-FOR USERS (who want to avail of services)

2.4.1.2.1. FR 01

The system shall allow access to every user to see all categories of the user.

2.4.1.2.2. FR 02

The system shall be able to show all details of the person who wants to give their services.

2.4.1.2.3. FR 03

The system shall be able to get feedback from the user.

2.4.1.2.4. FR 04

The system shall be able to show all the categories of the services which are available.

2.4.1.3. FR-03 ADMIN END

2.4.1.3.1. FR 01

The system shall be able to allow admin for accessing the system.

2.4.1.3.2. FR 02

The system shall show all information about managing the data.

2.4.1.3.3. FR 03

The system shall allow the admin to delete the items according to the requirement.

2.4.1.3.4. FR 04

The system shall allow the admin to edit web content.

2.5. Nonfunctional Requirements

2.5.1. NFR 01

The website will be accessible through all over Pakistan.

2.5.2. NFR 02

The average load time of a page in 5 seconds.

2.5.3. NFR 03

For target users, it is easy to use.

2.5.4. NFR 04

Deal with invalid data gracefully

2.5.5. NFR 04

Users should have an android phone to use a mobile application.

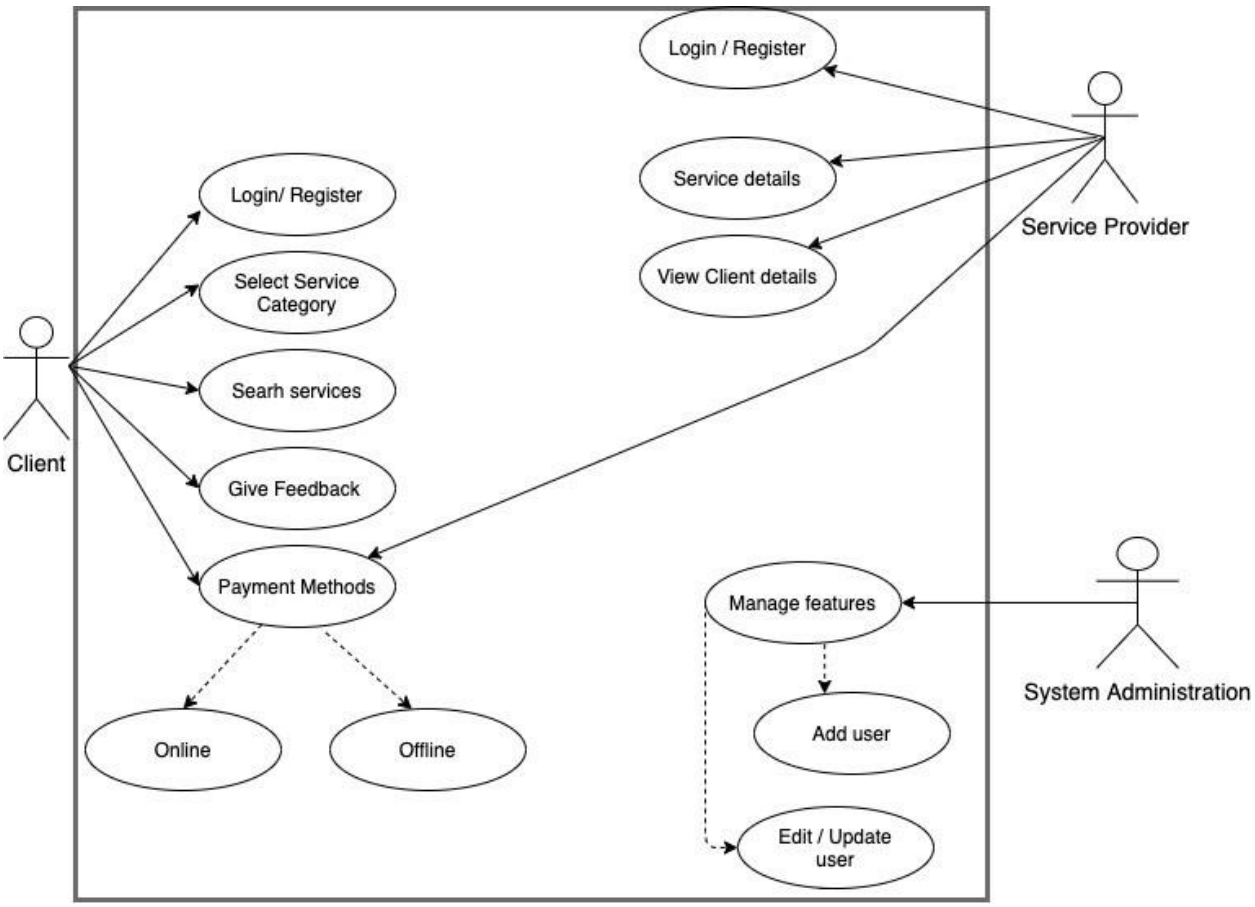
Chapter 3

Use Case Analysis

Chapter 3: System Analysis

It's all about the roles and functionalities of the system and its actors in the use case form. All the primary and secondary actors concerning their responsibilities. We have made a use case diagram in which we have properly defined every functional and nonfunctional requirement according to the respected id or levels. The use case given below explains the relation between actors and their functionalities.

3.1. Use Case Model



3.2. Fully Dressed Use Cases

Use case number	1
Use case name	User Login
Actors	User
Use case description	Users have to follow the steps: 1) Enter Username 2) Enter Password 3) Click the Login button
Pre-condition	The user must be on the website.
Alternative Flow	The system will show an error if the username or password is incorrect.
Postcondition	The user will be logged into his/her account.

Use case number	2
Use case name	Contact Us
Actors	User, Customer Care
Use case description	Users will enter the name, subject, and message and will send it directly to us on our official email.
Pre-condition	The user must be on the contact us page on the website.
Alternative Flow	There is no alternative flow of this use case.
Postcondition	The customer care receiver will solve the user's problem.

Use case number	3
Use case name	Signup Page
Actors	User
Use case description	The user has to enter the following information: 1)Username 2)Password 4)Email id 5)Mobile number 6)Area 7)Service Selection that he/she wants to provide

	8)Picture is optional
Pre-condition	The user must be on the add profile page on the website.
Alternative Flow	The user will get the error if the same username exists in the database of the website.
Postcondition	The profile of the user will be created.

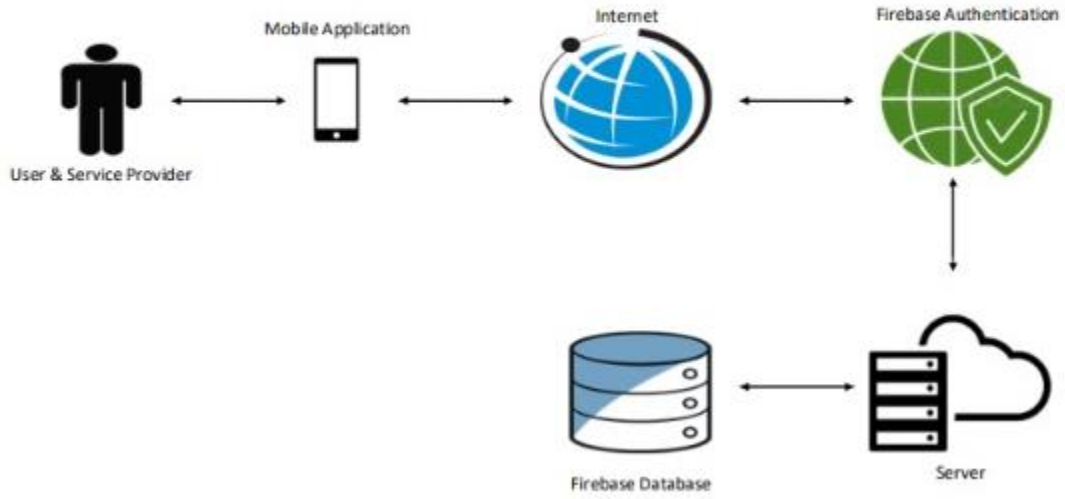
Use case number	4
Use case name	Search
Actors	User
Use case description	In this, the user will enter the requirements of the services needed and the area of the user and will click the search button.
Pre-condition	The user must be on the website.
Alternative Flow	The user will get the message if the services in the specific area are not available.
Postcondition	The list of the required services will be visible to the user.

Chapter 4

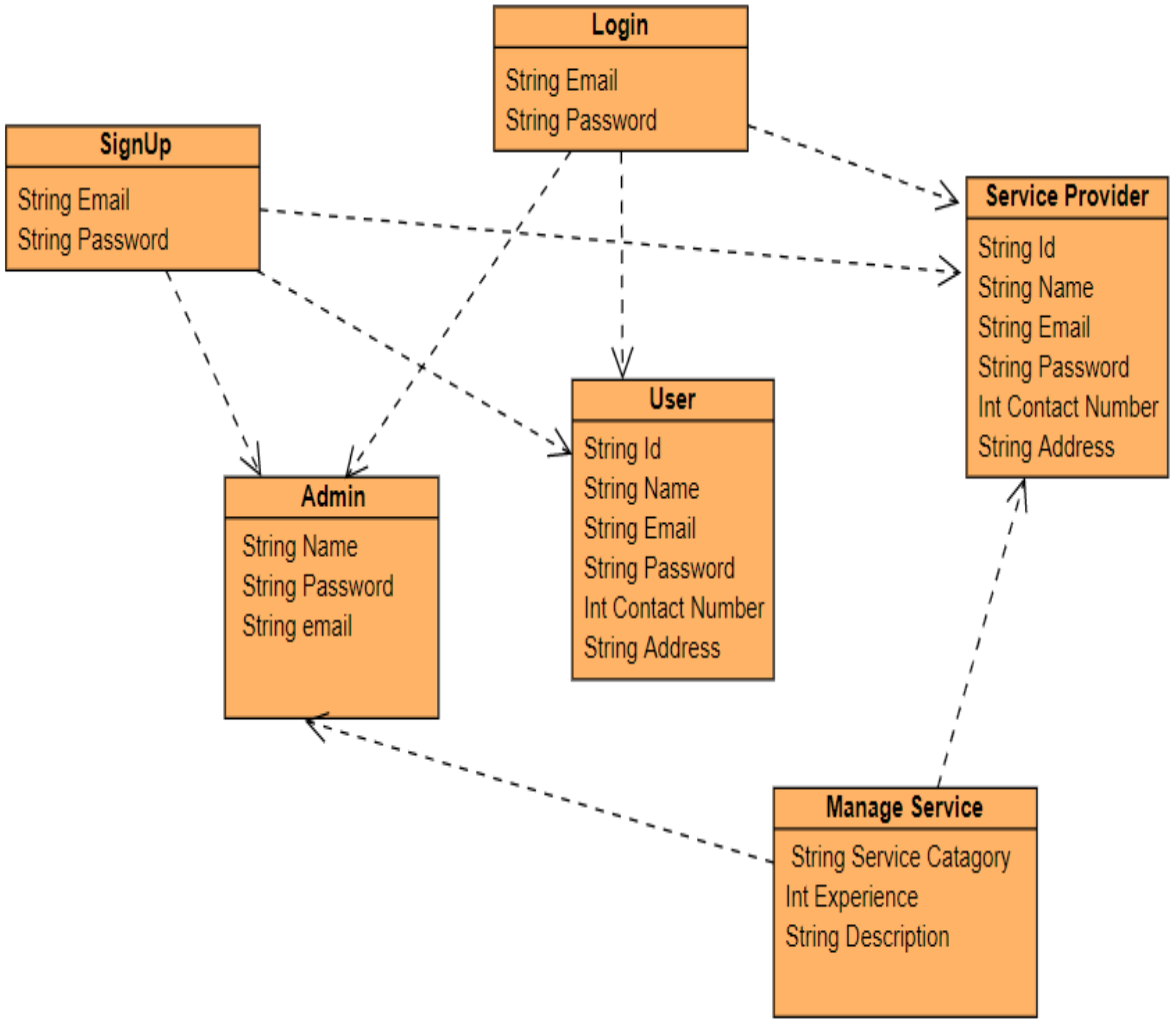
System Design

Chapter 4: System Design

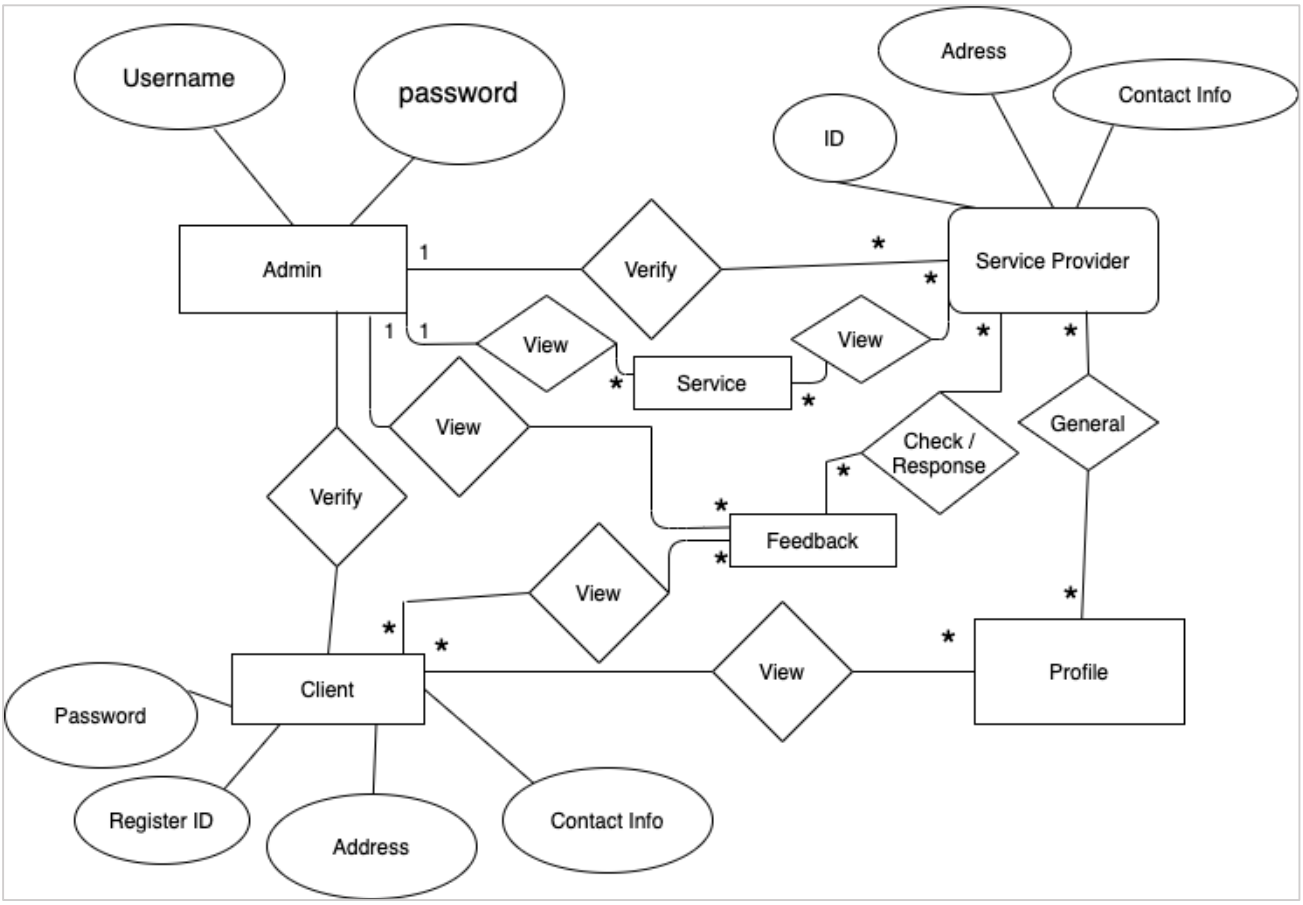
4.1. Architecture Diagram



4.2. Domain Model

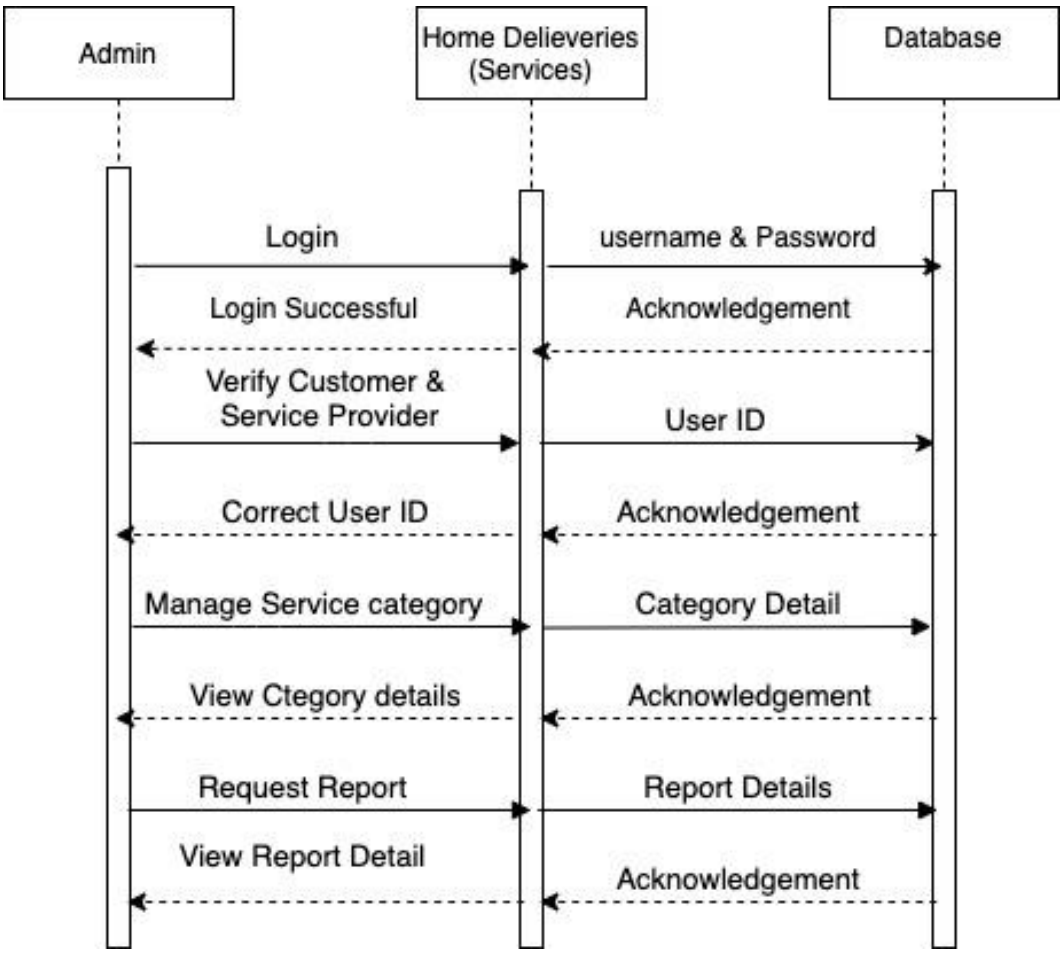


4.3. Entity Relationship Diagram with data dictionary

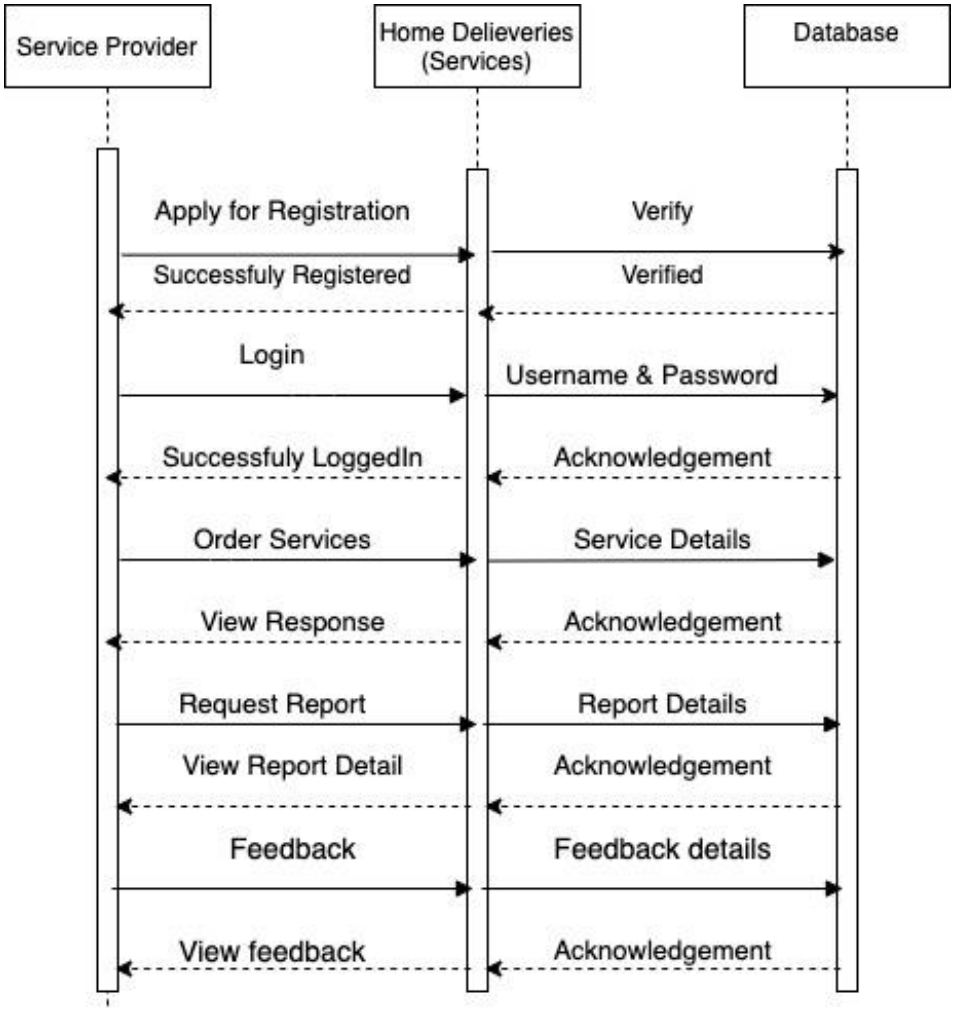


4.4. Sequence Diagram:

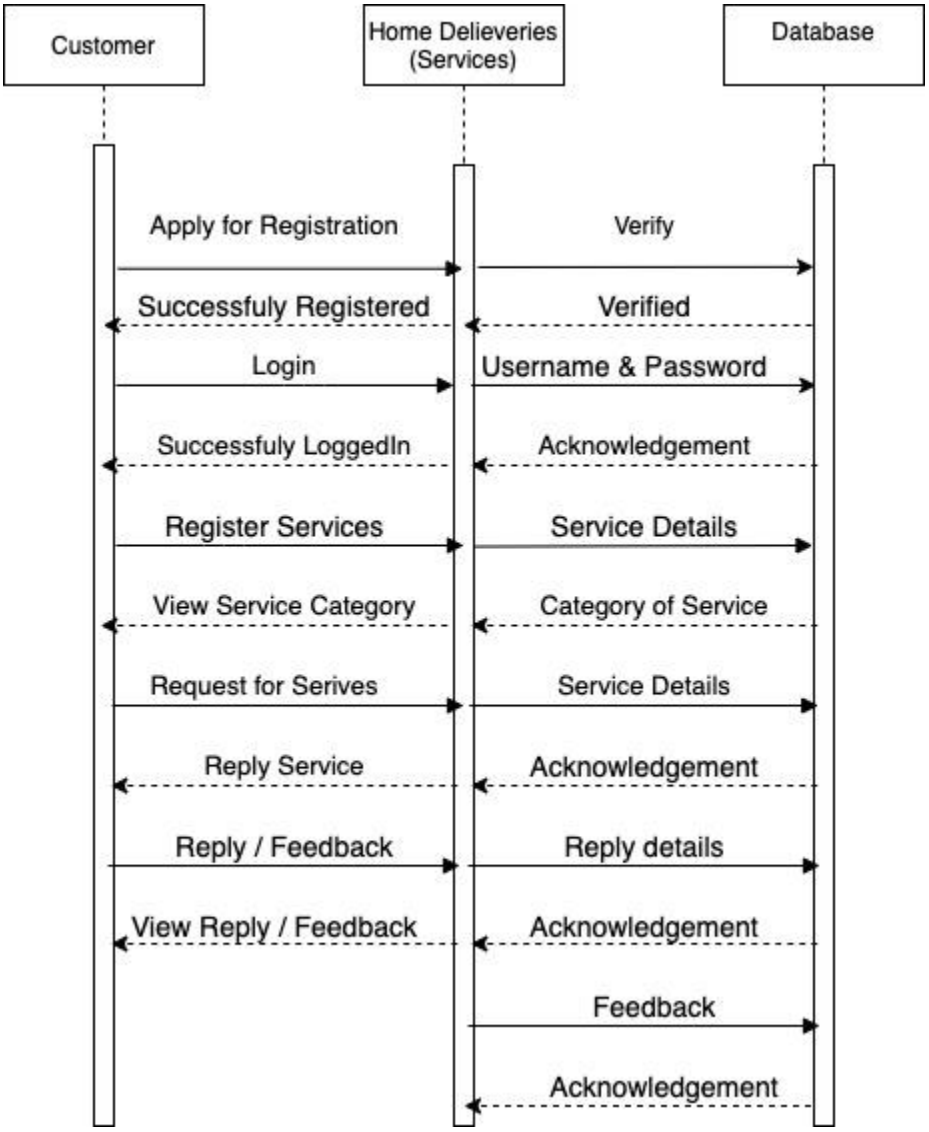
4.4.1. Sequence Diagram for Admin:


Admin
Home Delieveries (Services)
Database
Login
username & Password
Login Successful
Acknowledgement
Verify Customer & Service Provider
User ID
Correct User ID
Acknowledgement
Manage Service category
Category Detail
View Ctegory details
Acknowledgement
Request Report
Report Details
View Report Detail
Acknowledgement

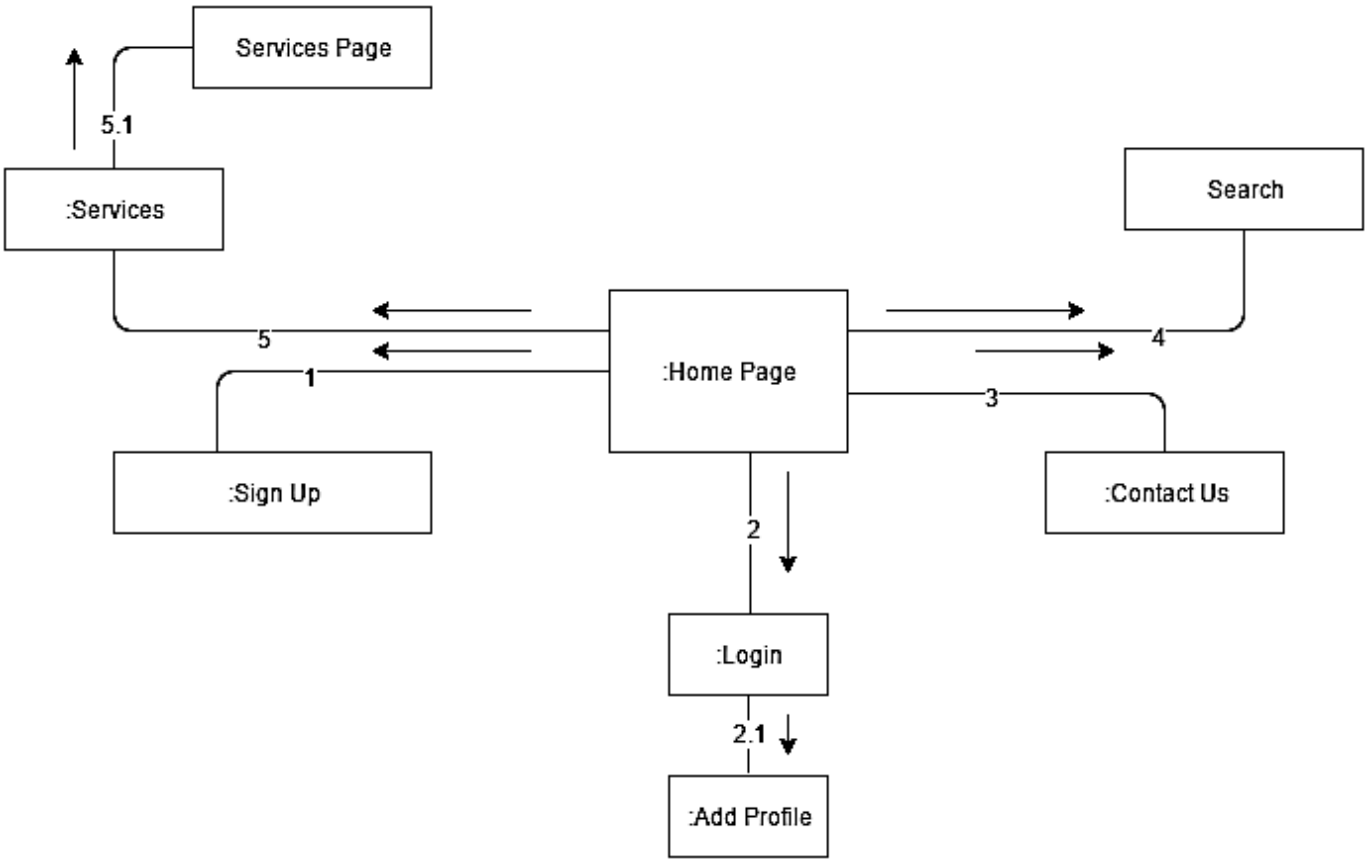
4.4.2. Sequence Diagram for Service Provider:



4.4.3. Sequence Diagram for Client:

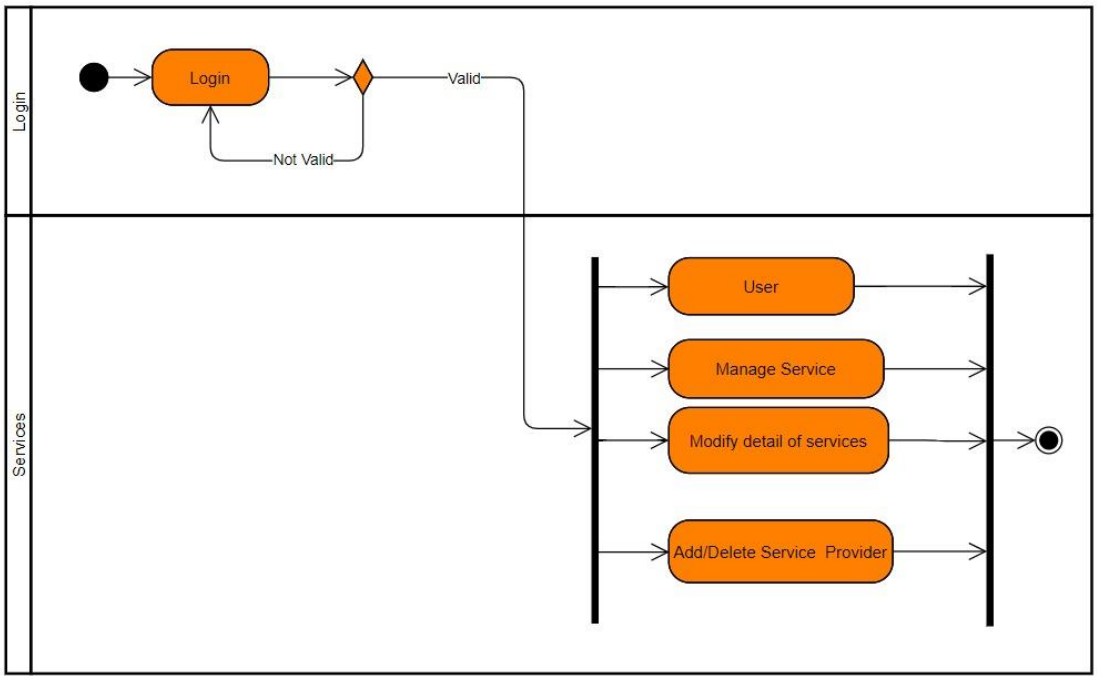


4.4.4. Collaboration Diagram:

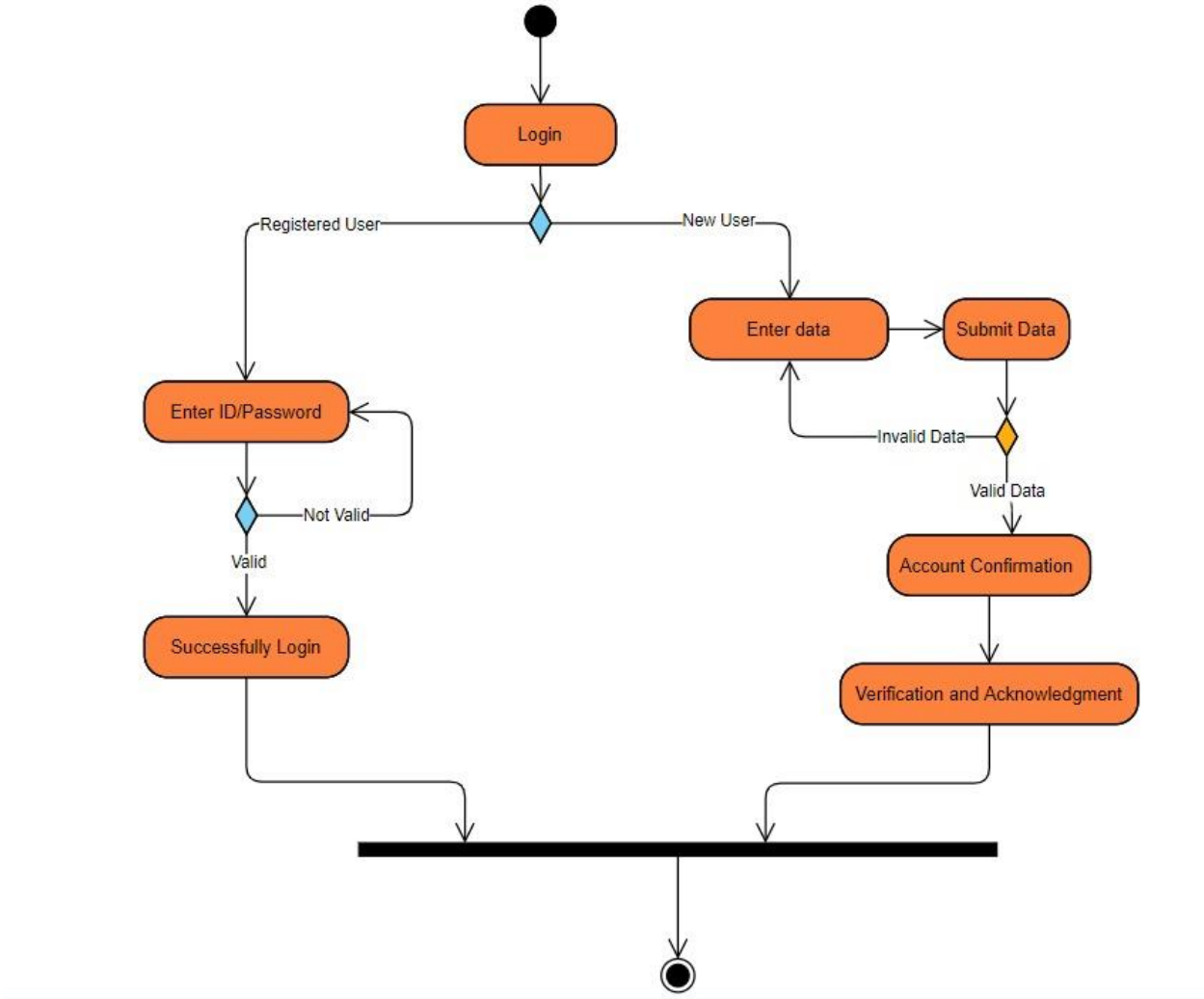


4.5. Activity Diagram

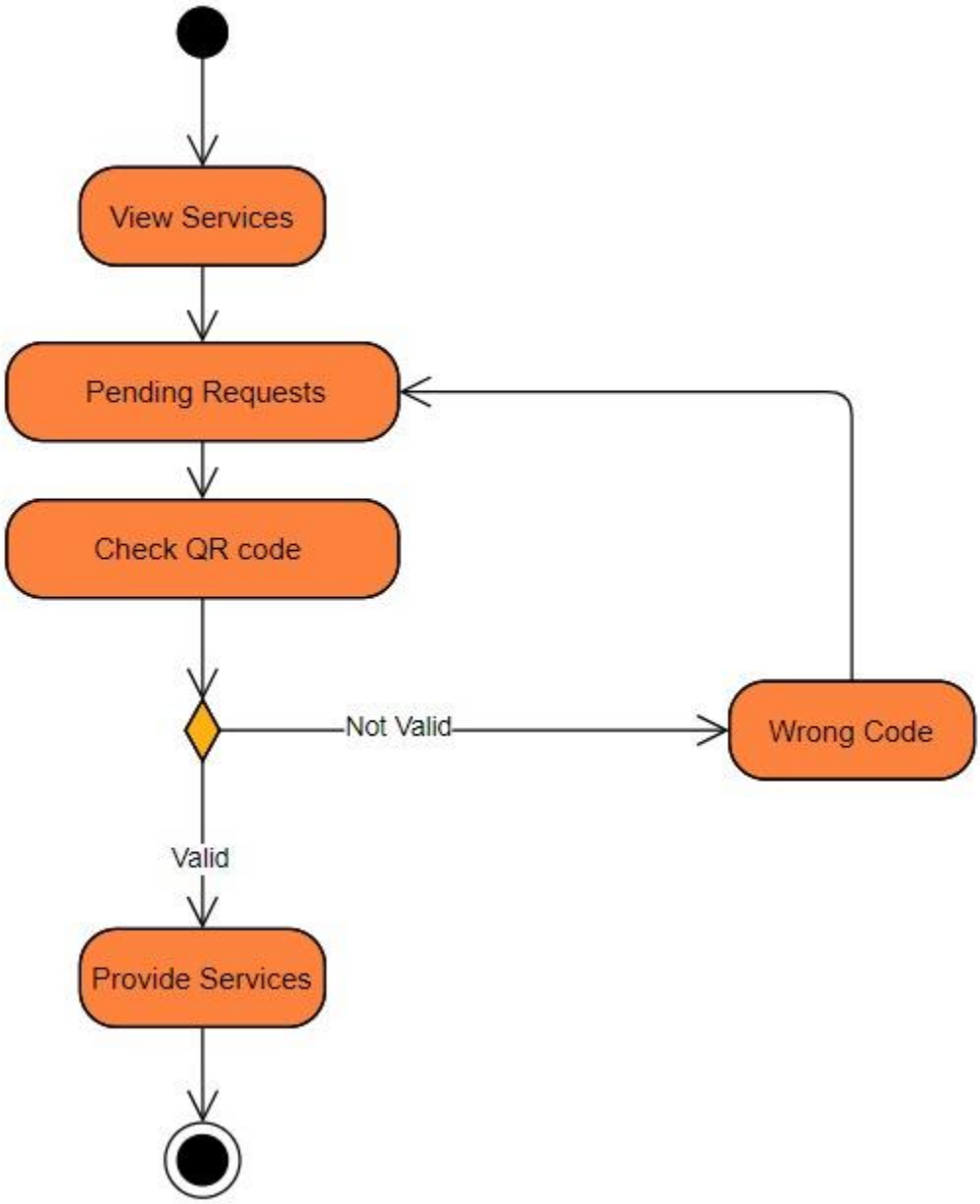
4.5.1. **Activity Diagram for Admin**:



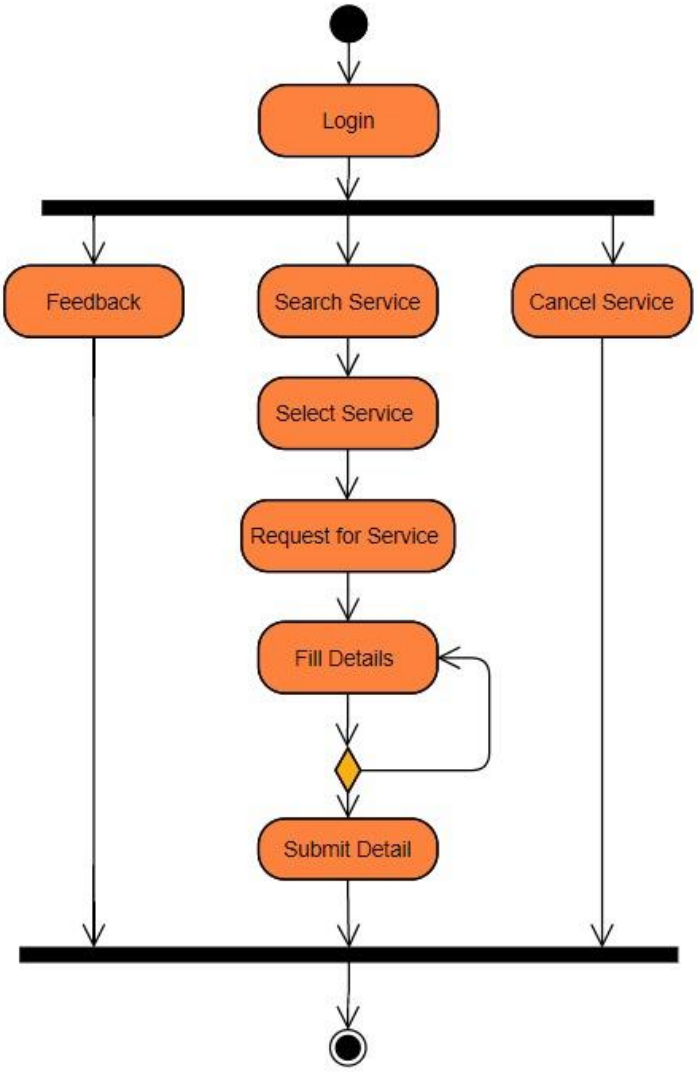
4.5.2. Activity Diagram for Login & Registration:



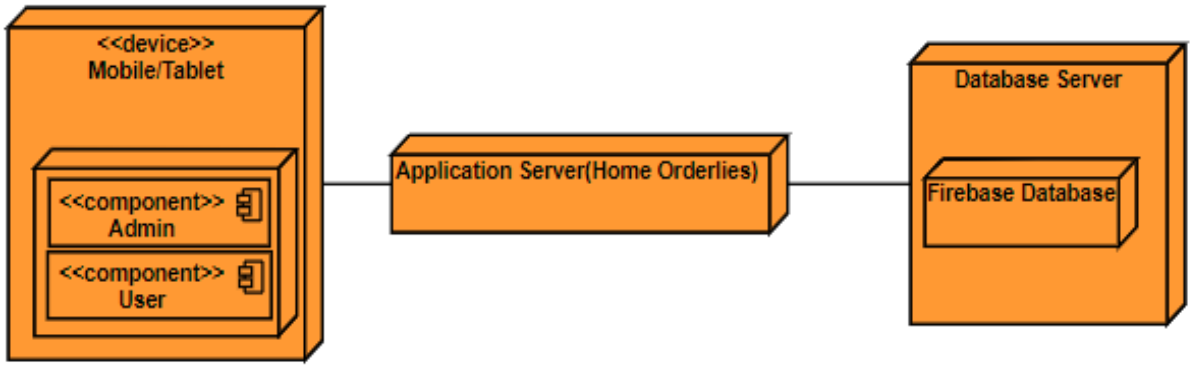
4.5.3. . Activity Diagram for Service Provider:



4.5.4. Activity Diagram for Client:

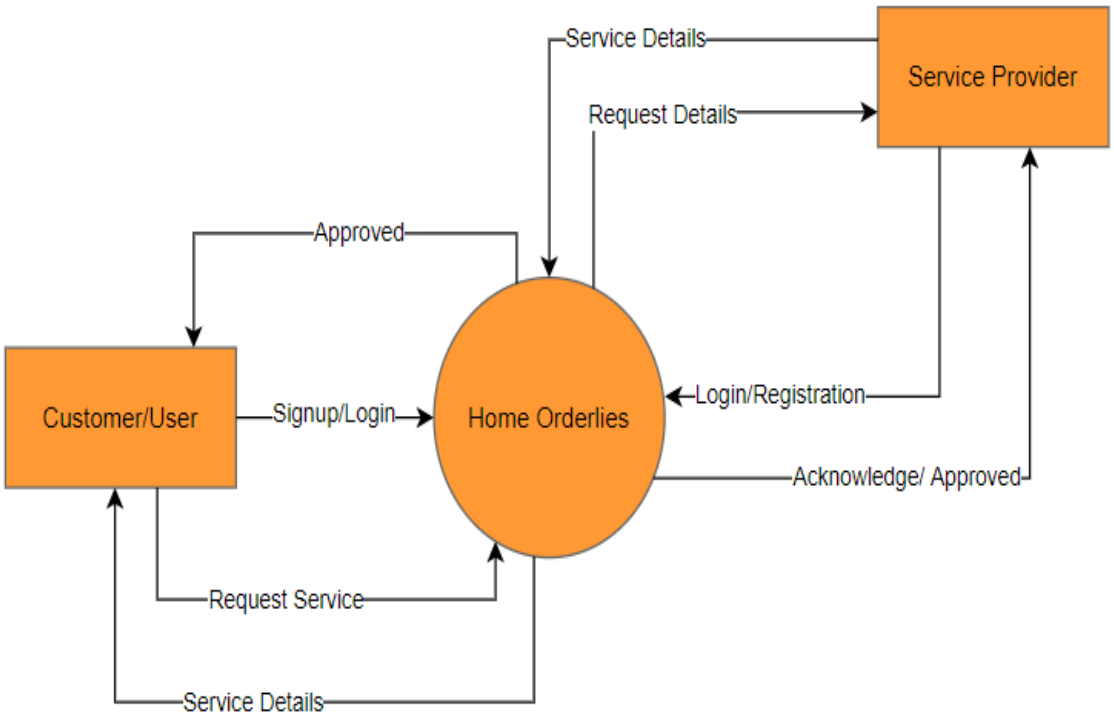


4.6. Deployment Diagram:

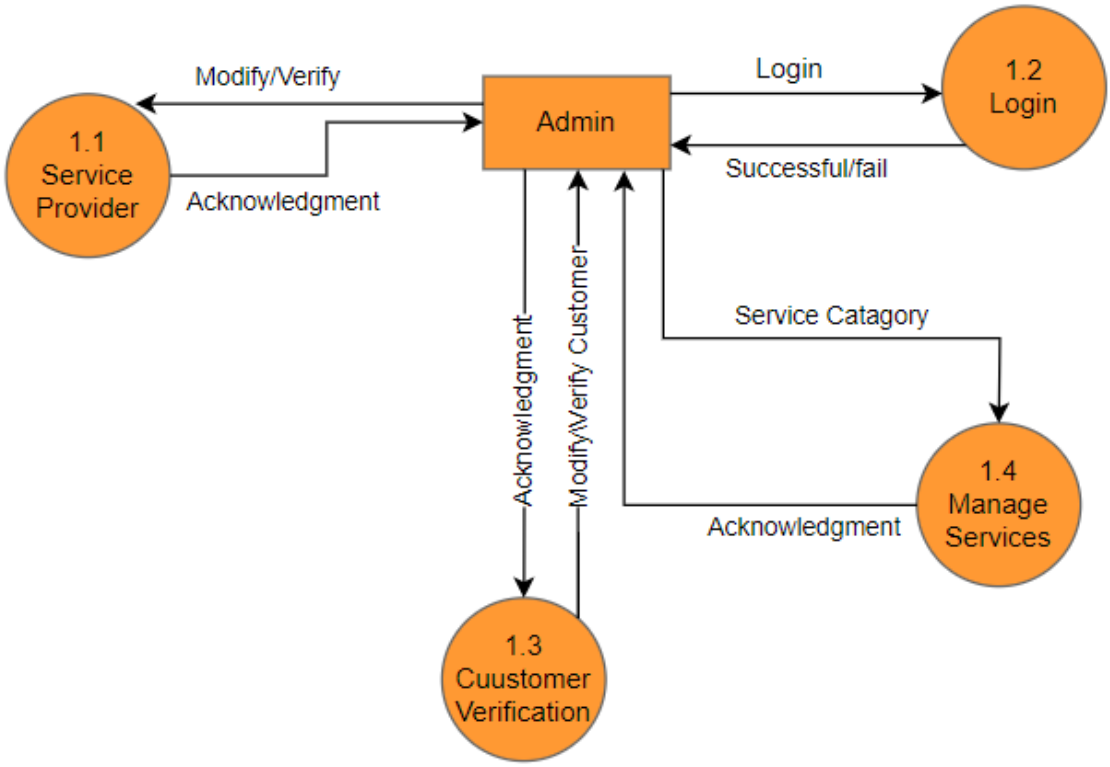


4.7. DATA Flow Diagram:

4.7.1. DFD-Level 0:



4.7.2. DFD Level-1:



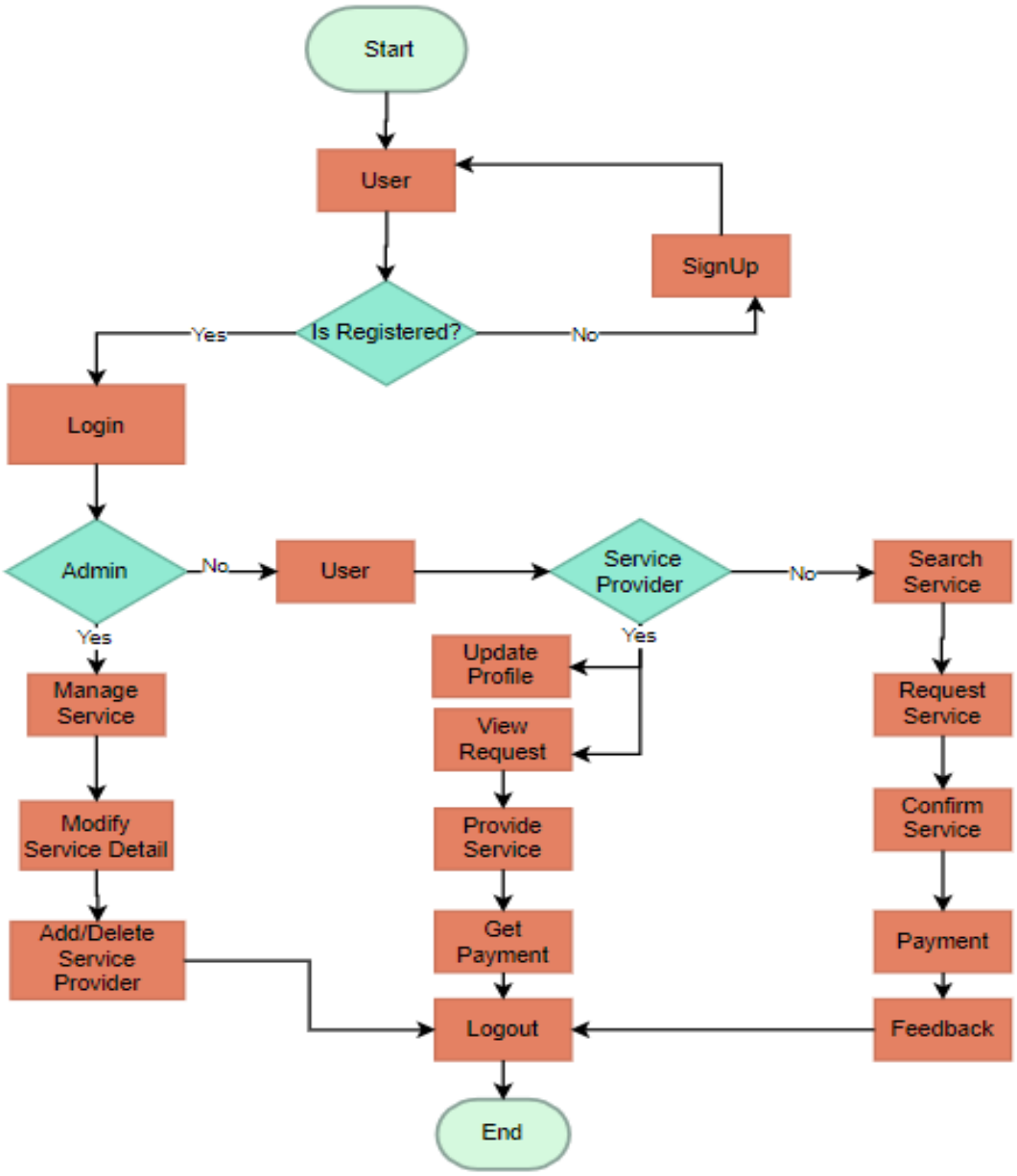
Chapter 5

Implementation

Chapter 5: Implementation

Home Orderlies is an application to provide all household services at your doorstep.

5.1. Important Flow Control/Pseudo codes



5.2. Components, Libraries, Web Services, and stubs

5.3. Deployment Environment

- Firebase Cloud(DB)

5.4. Tools and Techniques

1. ANDROID STUDIO
2. JDK

5.5. Best Practices / Coding Standards

- Concise and efficient code
- User-friendly UI
- Write comments
- BACKUP

Chapter 6

Testing and Evaluation

Chapter 6: Testing and Evaluation

In this chapter, we are going to do all sorts of testing counting unit testing and checking individual modules and integrated modules to check if each and each unit is working properly or not. After unit testing, we are going to check the coordinates modules are working appropriately or not.

6.1. Use Case Testing

The use case for Login

A: Actor S: System	Steps	
	1	A: insert username and password
	2	B: validate username and password from database
	3	C: Allow access to the account
Extension	2A	The entity must be filled
	2B	Username and password are not valid

Use case to Add User

A: Actor S: System	Step	
	1	A: Insert signup detail.
	2	B: Validate username, phone number, password, email id.
	3	C: Allow access to submit data to the database.
Extensions	2A	An entity must be filled
	2B	Email format is not valid
	2C	Duplication not allowed

A use case for contact

A: Actor S: System	Step	
	1	A: Insert name, subject, and message
	2	B: Send to the official email account
Extensions	2A	The entity must be filled
	2B	Email is not valid

A use case for service

A: Actor S: System	Steps	
	1	A: Search service.
	2	B: Select service.
	3	C: Confirm service.
Extensions	2A	Service not found

	2B	Not in your area.

6.2. Equivalence partitioning

Name	Type	Pattern	Valid	Invalid
Email	Email	email@gmail.com	__@gmail.com	@____
Password	Int	23782738	Digit 8-15	Less than 8
Phone number	Int	03000778390	11 Digit	Less or greater than 11
Name	Varchar	XYZ	Character 3-15	No more than 15

Test scenario #	Test scenario description	Expected outcome
1A	Enter 0 to 7 characters in the password field	The system would not accept
2A	Enter 8 to 15 characters in the password field	System would accept
3A	Enter 16 to 20 characters in the password field	The system would not accept
1B	Enter 3 to 15 characters in the name field	System would accept
2B	Enter 0 to 2 characters in the name field	The system would not accept
3B	Enter 16 to 20 characters in the name field	The system would not accept
1C	Enter 11 digits in the phone field	System would accept
2C	Enter 10 digits in the phone field	The system would not accept
3C	Enter 12 digits in the phone field	The system would not accept

6.3. Boundary value analysis

Name	Valid Test case	Invalid test case	
	Min, min+, max-,max	Lower limit (Min – 1)	Upper limit (Max + 1)
Password	8,715 numbers	7	16
Name	3-15 Text length	2	16
Phone number	11	10	12

Test case for the password

Test scenario description	Expected outcome
Boundary value=0	The system would not accept
Boundary value=9	System would accept
Boundary value=18	The system would not accept
Boundary value = 14	System would accept
Boundary value=6	The system would not accept

Test case for phone number

Test scenario description	Expected outcome
Boundary value=4	The system would not accept
Boundary value=11	System would accept
Boundary value=18	The system would not accept
Boundary value = 10	The system would not accept
Boundary value=8	The system would not accept

Test case for the name

Test scenario description	Expected outcome
Boundary value=2	The system would not accept
Boundary value=5	System would accept
Boundary value=20	The system would not accept
Boundary value = 12	System would accept
Boundary value=0	The system would not accept

6.4. Unit testing

In unit testing may be a kind of level of testing that includes exclusively testing a unit of code to confirm that it works on its possess. The most reason is to check that every single unit of the computer program performs as flawlessly outlined.

Module	Test Case	Expected output	Actual Output
Open App	When Pressed the app icon on android phone	Open application and show splash screen and then login page.	Successful
Login	Enter correct email and password.	Information should be put away.	Successful
Signup	If new to the app, enter your email id and password and register yourself.	Information should be put away.	Successful
Upload picture	Validations: .png/jpge extensions.	Picture uploaded.	Successful
Check Details	View/Add/Delete/Update Services	• Services details viewed. • Services updated.	Successful

6.5. Integration testing

Test case	Test case objective	Test case description	Expected result

1	Verify the integration between login and home page	Enter login credentials and do login	The home page should be displayed
2	Verify the integration between signup and homepage	Enter sign up credentials and signup	The home page should be displayed
3	Verify the interaction between the home page and services	Click on the search button	Related Services should be displayed
4	Verify confirmation of service.	Enter credentials for confirmation and click on confirm	A confirmation message should be displayed.
5	Verify and allow to view services	Enter on services	User able to view all services
6	Verify and allow to edit the profile of the service provider	Enter on edit on profile	The profile should update and the user able to view the updated profile

6.6. Stress Testing

The framework performed well with a huge number of clients in extraordinary substances as well.

Through this testing, we screen our framework and make beyond any doubt our system:

- The program must spare all information sometime recently slamming.
- Making beyond any doubt of association from the server.
- The framework ought to do deleting and upgrading of records accurately.

Chapter 7

Summary, Conclusion, and Future Enhancements

Chapter 7: Summary, Conclusion & Future Enhancements

7.1. Project Summary

This project aims to foster Android base application where a low-level specialist can get work and an individual can get a talented laborer, to complete his work. The platform should profit society by improving correspondence between low-level laborers and typical individuals and ready to give an appropriate design to compromising work at a lower level.

7.2. Achievements and Improvements

To this extend, we learned numerous things, counting how to work as a group to attain objectives. We learned venture administration instruments and abilities counting time administration, UML modeling dialect to indicate our framework, Program Quality confirmation, and testing, and much more. It makes strides in our coding and learning abilities. We learn Java, XML and tools interface with each other to form this application.

7.3. Lessons Learnt

We discovered that we ought to invest less energy in the designing stage and additional time in the planning, improvement, and development stage. We dealt with issues as a result of it.

7.4. Future Enhancements/Recommendations

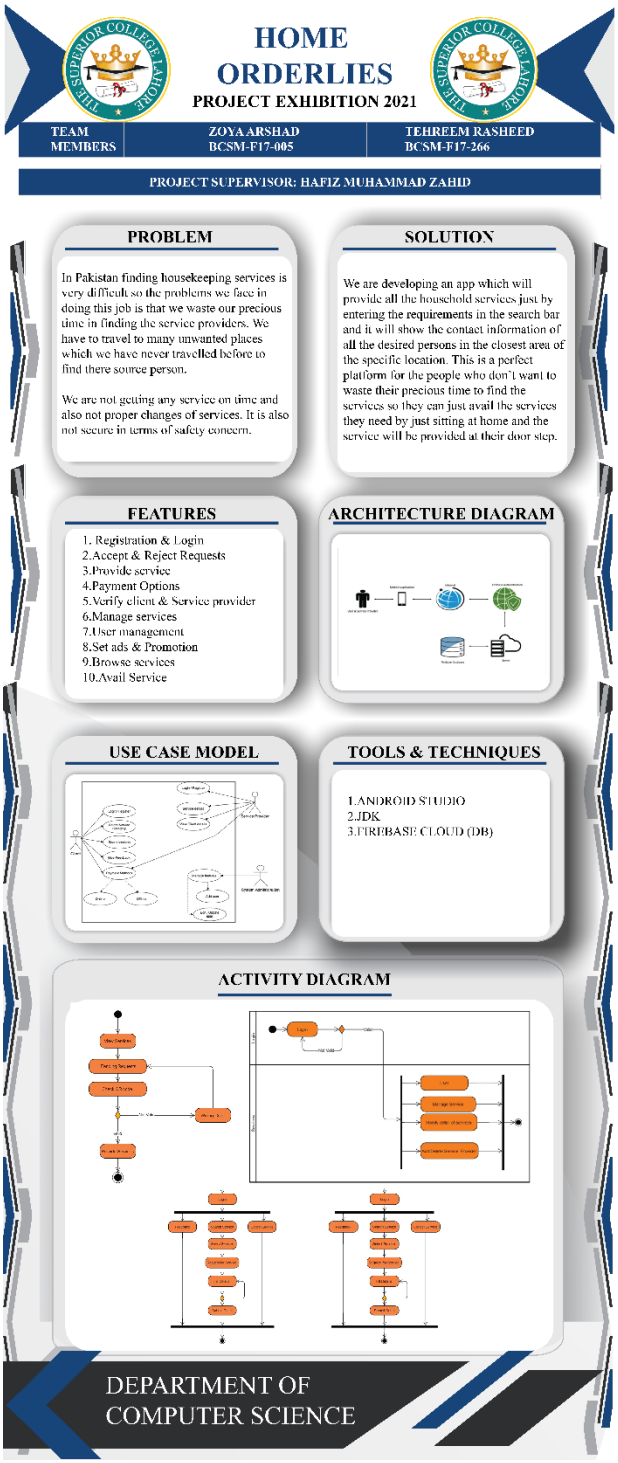
We will build the limit of this stage from Lahore to the whole way across Pakistan.

We can likewise add some different services very much like beauty parlors closest to the client's area with their surveys and some material shops, food cafés and inns which are close to the client.

Appendices

Appendix A: Information / Promotional Material

A.1. Standee



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