DESIGN AND DEVELOPMENT OF AN ANDROID APPLICATION NAME "CONSTRUCTOR HUB"

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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APPROVAL

This Project titled "**CONSTRUCTOR HUB**". submitted by **Susmit Das Barsan**, **ID No: 151-15-4828** 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 First week of November, 2018.

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DECLARATION

I hereby declare that, this project has been done by me under the supervision of **Farah Sharmin, Senior Lecturer, Department of CSE** in 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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Finally, I must acknowledge for their constant support and love of my parents.

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ABSTRACT

The aim of this project is to helps to communicate with users within a short time. The aim of this application or software is online based communication system between different stakeholders. In this application who wants to make a building see the product list for his construction site. For that purpose, a reliable and comfortable business communication will be held between buyer and seller. My project provides two types of services.To develop this project the most essential part is making an online android application using android studio, java, firebase database.After implementation of those function the system is tested in different stage and it worked successfully.Android studio is basically comfortable for me to develop this project.Using this application user will get lots offacilities thus helpful for their virtual communication for constracting related product and services.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Our project is based on online Android Application on construction related for different kind of stockholders in construction sector. In a word, our App is all about construction materials buy and sell point. Where construction or the service provider can create their ads and user can simply or easily chose and buy their product from this Application. Different kind of stake holders can easily live conversation between them by a good authentication dealing process. it is very important for them to product buy or sell. User can easily signup the process by login and see the product list service list and can easily order their necessary things by this system of application. it is very much user friendly and reliability thus the different kind of stack holders related construction sector are must be benifited. This application is very much easy virtual communication for the construction site. People who have need to build house not to go outside for construction product or construction related services. they can get every single construction product pricelist and construction services company around to see here.

1.2 Motivation of Work

The Motivation of our project is to developing construction dealing system more between reliable and which helpful to the builder's company's product seller and buyer. It is more helpful for Builders Company and who are willing to build a building these they can easily get their product list and those product list price from this android application. A reliable business communication between two users by live chating system.it is more security process for different type of stake holders.User easily post their product and also buyer can choose their requirement of product and order product or services by usig this application.So that it's a virtual dealing system also by livechatting.

Thus, they are benefited from this application.

1.3 Objectives:

The main objective of our project to help seller and buyer related to the construction sector.

- Its an online Based virtual communication process.
- Its an online system so that user can use it easily, others reducing waste of time.
- It connected with stakeholders for the construction builders purpose.
- It produces good security for the stakeholders into the construction services.
- Reliable security seystem.

1.4 Expected Outcome

- Product list like:

  1.Product related. Exp: Bricks, steel

  2. Construction services related. Exp: 1.sheal private ltd. 2. M.A. builder ltd.
- Pricing Product policy.
- Feedback system.
- Conversation (chat) system between different stakeholders.
- Authentication process between seller and buyer.
- Positive information can easily see buyer.
- Lot of data entry system.
- Security and integrity.
- Vitual Dealing process.
- Income through advertisement.
- Reliable virtual communication process.

1.5 Report Layout

In this report, I have arranged other parts of the report in this following way. In chapter 2 I will keep the discussion about the background of this service, related work and comparative studies, problems that may arise and challenges of this project. Then in next chapter I will discuss about requirement specifications including business process modeling, requirement collection and analysis and use of case modeling and description.From here a graphical viewer is provided. I will also discuss about logical data model and design requirements in this chapter.i discuss about graphical user interface very logically and easily.I want to show part by part distribute of my android application here. It's a great problem to show it separation and also linked it database into the whole system.and also I show it by figure here,how can connected databae onto my application system. Then I will discuss about front end design, back end design, interaction design and UX and also discussed about implemented requirements in chapter 4 named design specification. Implementation and front-end design and implementation of interaction along with testing implementation and test results and reports will be discussed under the name of Implementation and Testing in chapter 5. In chapter 6 the conclusion will be done by discussing discussion and conclusion and scope for further developments.

CHAPTER 2

BACKGROUND

2.1 Introduction

Constructor Hub is basically online based android app. The background of our project is done by android studio. Android studio is the official integrated development environment process. Build on jetBrain's intellij idea software. It is reliable for download on windows, mac os and linuse os.

We also use firebase for Database management system. We use it for chat from real-time database. Authentication app post etc.

2.2 Related Works

When we work on our project very early, we need to learn android studio. Need to work database management system. Firebase on to the application. Designed done by xml, we get knowledgeable about java for coding and those purpose we establish our project from all activities. But android studio is comfortable for us.

In the project development site, we faced many problems. Such kind of work is difficult for us by we tried to do this. We wrote dividing part by part of different sector of design, layout, coding, firebase database, java for new outlook of the application

2.3 Comparative Studies

We basically make these app for construction site people who buy and sell offline to online process for business purpose. So, lots of social activity and combine with android study work system and user login process and seller post product list on to the site and buyer get is to login process.

We describe about app works:

When open the app firstly sign up with user id, contact number, user name, mail. Then check all sector of product list. It is like social but virtual sector all the data become safe. When we enter the app by user name, email.

2.4 Scope of the Problem

Live chat is more difficult part when we prepared our application. It was very difficult to complete the task on that time and we faced lots of problem arising part by part. User push message on to server and destination pulled it from server was more difficulties and second time we faced problem database management system. When we connect firebase on database. It is free online so that is save 100 users almost. But limitation is one of the major problems for us.

We work analytical site almost two months layout of the project one month.
Coding four month and verification and error detection time was one month.
In total seven month we expand for the project prepaying.

2.5 Challenges

Real time searching and firebase database system are the difficult task for the implementation. Enter into the product list, feedback process, user id, login part for buyer and seller are differentiate is very difficult for me. Here I faced lots of problem become our team member are not well expert for this type of problem arising on to the work station.

- Live chat Real time chatting support system is very difficulties.

- It was very difficulties to maintain time when I prepare app and lots of problem arise and solved, they're on time.

- Different type of problem solve and my supervisor helped difficult task in every season. Reliable communication was needed to finish the app easily without any problem.

- Project always needed skill people. But I am not well skilled. I commented each other and discuss about the project and tried to do every step clearly to do every step clearly and carefully for me as a leader. If I have more members then I may get rid of this problem. I think every part is difficult for me as a new developer. So lots of issues are painful for me to develop the project carefully . authentication problem is very difficult part for me to include system user friendly. lots of challenges I faced to complete my project .I always thought a good communication system between users for this application .online chatting system is very new for me and I use eal time database for chatting. It was more challenging part for me to include with this system. Authentication process for dealing is more important part for different kind of stake holders, thus I wanted its higher security and integrity for better communication into my system.

- To develop this project firstly I work part by part for every part of system and after included those part on to the system is quite difficult for me to arrange a good combination with database management system.its a great challenge for me of thos arrangement on my system.

- The time was too short for me to setup all section according to the part by part.because I am in new in this sector. thus I felt uncomfortable to manage it properly and felt very nervousness to accept those challenge I faced.

- Signup method is more difficult part for me.It s one of the major portion in a system to login one part to another part by proper authentication process.Which is a quite problem for me and my firstly focus on that.

CHAPTER 3

REQUIREMENT SPECIFICATION

3.1 Business Process Modeling

Business process modeling is the graphical representation of a company's business processes or workflows, as a means of identifying potential improvements. This is usually done through different graphing methods, such as the flowchart, data-flow diagram, etc.

3.1.1 Business Processing Model

We are using agile method as a business processing model of our project for the causes given below: [1]

- Working application is delivered frequently
- Improve Process Communication
- Increase Control and Consistency
- Improve Operational Efficiencies

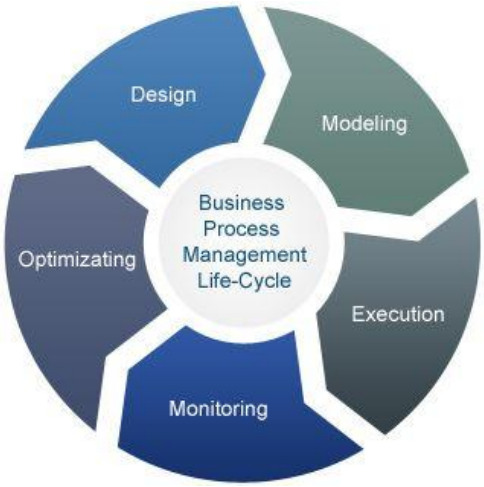

Figure 3.1.1: Business processing model (agile method)

3.2 Requirement Collection & Analysis

3.2.1 Software Requirements:

- Android Studio IDE
- Android Virtual Device
- Database: Firebase
- Abode Photoshop

3.2.2 Hardware Requirements:

- Operating system: Windows
- Android supported device
- Computer configuration:
    - RAM-8GB (min)
    - Hard Disk- 150GB (min)
    - Processor- 1.5GHz (min)

3.3 Use Case Modeling

Use case diagrams are set of actions (use cases) that some system or systems should or can perform in collaboration with one or more external users of the system. Each use case should provide some observable and valuable result to the actors or other stakeholders of the system.

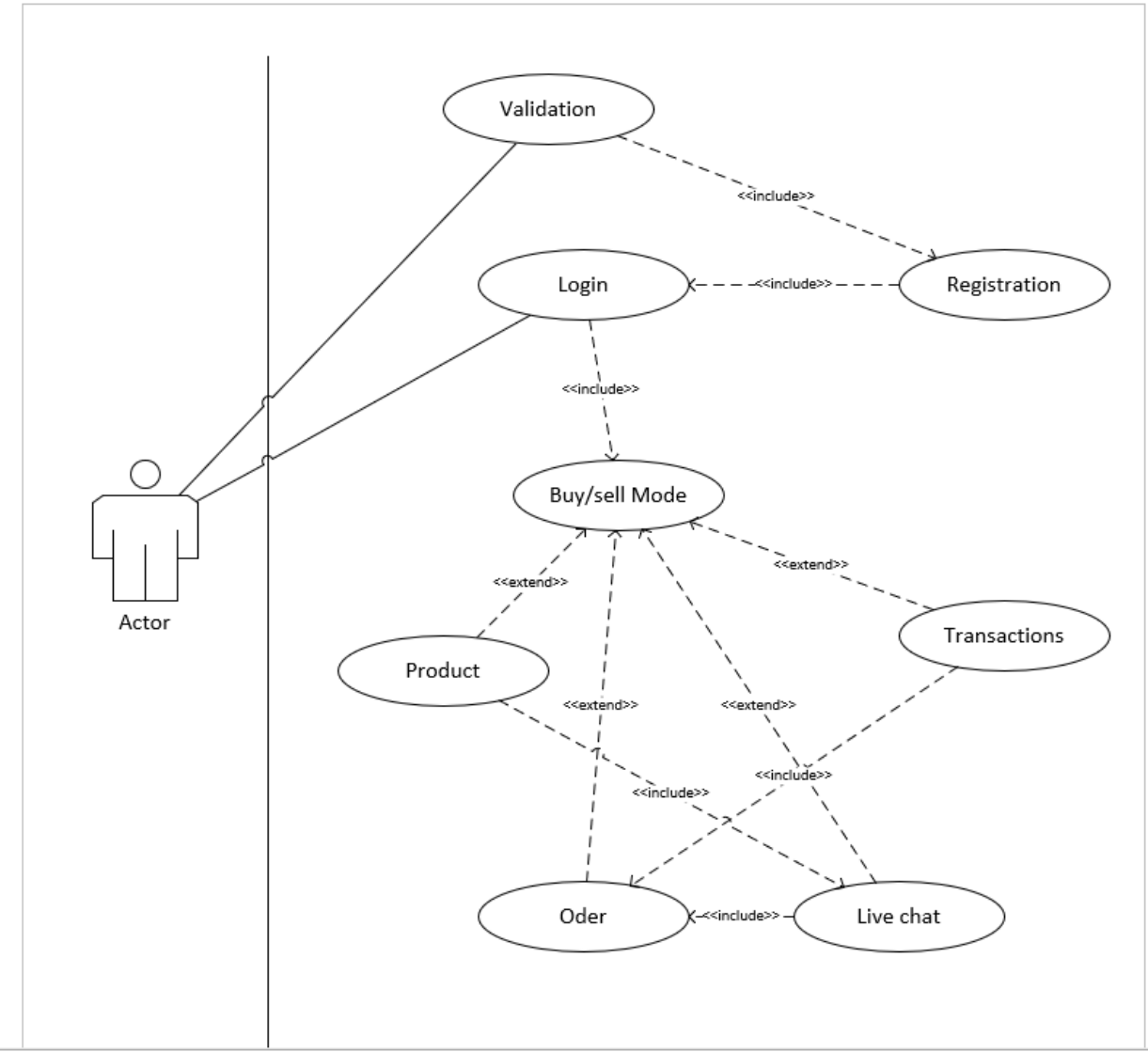

Figure 3.3: Use case diagram

3.4 Logical Data Mode

System has Name, location, email id, phone no, enter password and all are connected through ‘user’ and decision making policy is “use confirm” link with buyer or seller, also feedback is connected with it. and buyer or seller making decision from the total system.

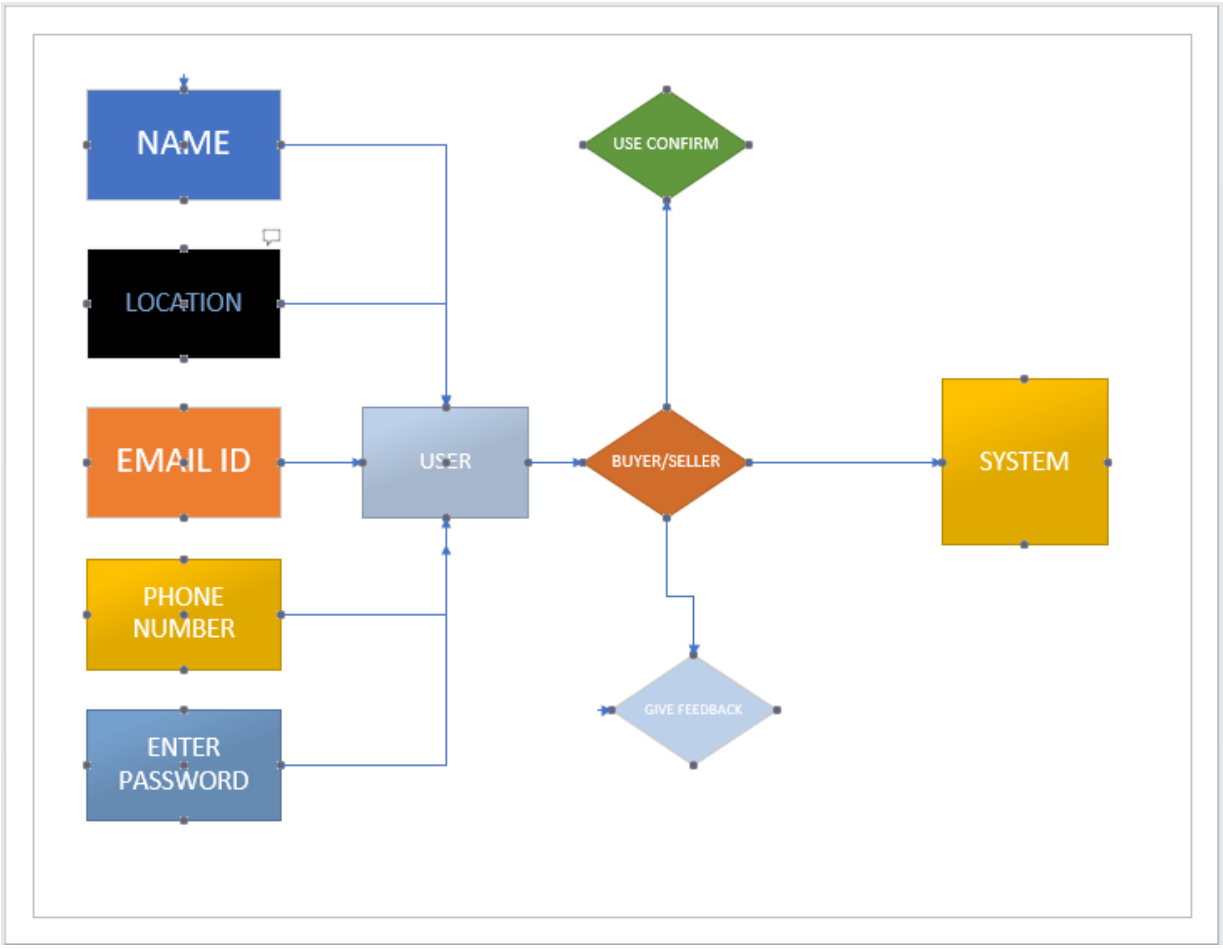

Figure 3.4: E-R Diagram of the Proposed System

3.4 FLOWCHART:

firstly start with the system and data policy made then three process are connected with decision. if decision is yes then enter first process, if no then enter or check the second process and then get third process.

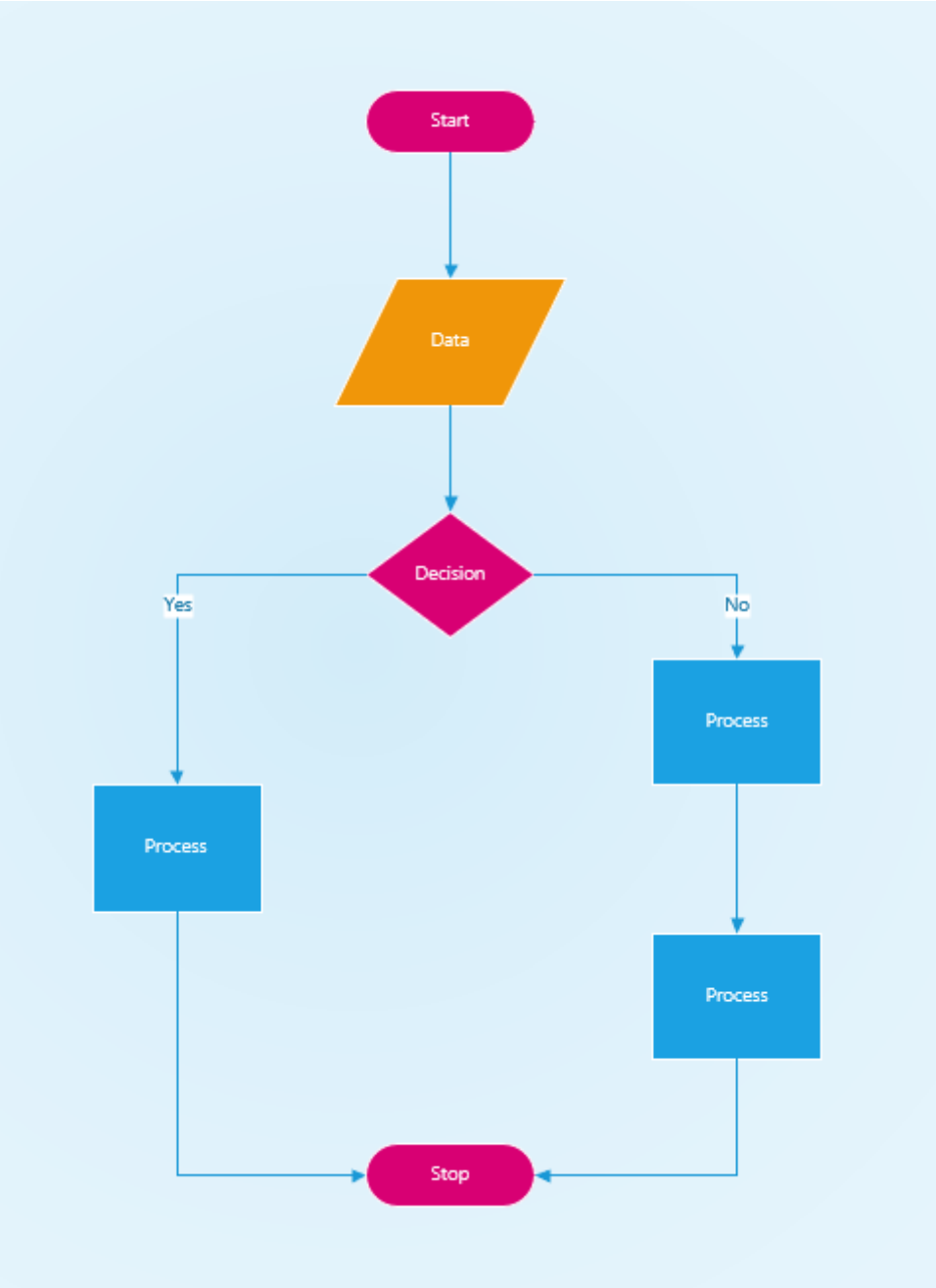

Fig 3.4.1 : Flowchart Diagram

3.4 PROCESS WORK:

Firstly account signup then it checked or new register. register then sign up and register has login and forget part checked. if it forget then correct email wants. login has two type of buyer and seller.

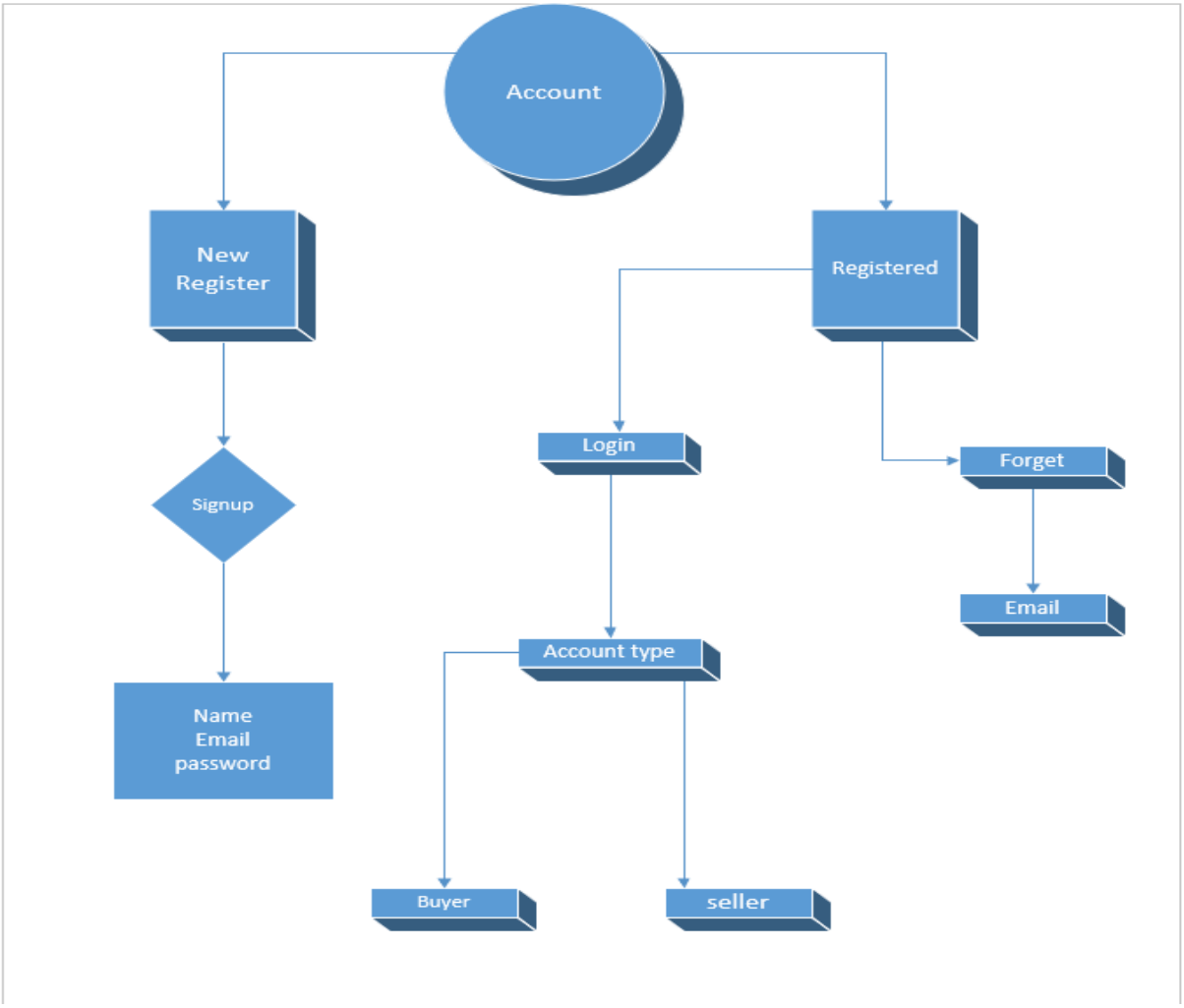

Fig 3.4.2: Process Work

3.5 Design Requirements

- The system will be used by user who is a citizen also.
- System admin will control database.
- User will create account and login.
- User will give NID no & data of birth to identify himself. Then user can sign up providing phone no, email address, password etc.
- User can send data.
- User can request to admin to edit data. Admin can edit after verify.
- The messages will be stored in database.
- Admin (govt) can edit or remove any data or account if it's needed.
- Secure authentication method are allowed into the system.
- Virtual communication process by included real time database management system.
- User inter into the system by login with proper information and is stored into database.
- Seller can post product and buyer can see product of seller’s post product and services.and buyer can order it from order part.and also listed it future wishlist f the product and services.

CHAPTER 4

DESIGN SPECIFICATION

4.1 Front-end Design Specification

When we enter into the app First we see username and password. Then “login” and “forgot password?” next step “sign up”. The user then need to correct user name or Gamil id, until the correct information find.If the correct or proper user gamil id and password are included then it would be possible to enter the system by sign p or login process. otherwise the user would not enter the system my sign up process. If it get correct information the user automatically login. so that there it would not need to “forget password ?” so that it has an good authentication process for enter the whole system by user login process. Details are given bellow. User can login the system by mail id and password. Which has been stored ito the database of the system. wrong mail or password would not be allowed for next login or signup on the system for next step to permit through this authentication process. A fixed number of collect data from it.cause it firebase database connection. The user firstly fulfill the information the system requirement like, name, location, contact number,address,mail account, password. then user login the process by signup authentication fulfillment.

4.1.1 User authentication

In this part user can easily enter their “username” and “password” and login here.there ara also two part added here.if user id or pass wrong or something missing of true authentication then the part will be needed Forget password? And user then sign up.

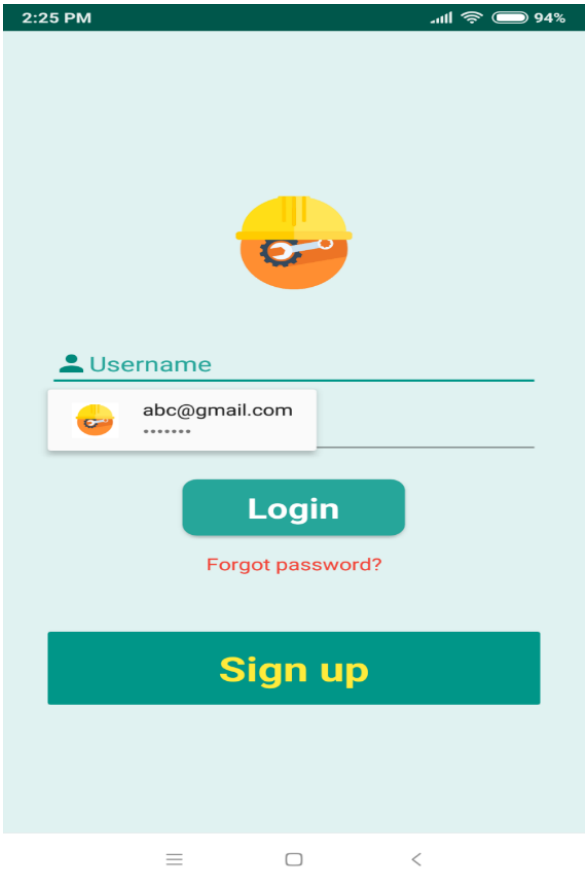

Figure 4.1.1: User’s data check

4.1.2 Signup process

In this part, user enter his/her name, password, email id, phone no,location and enter password which is collected on to the database. Then user sign up for further process.

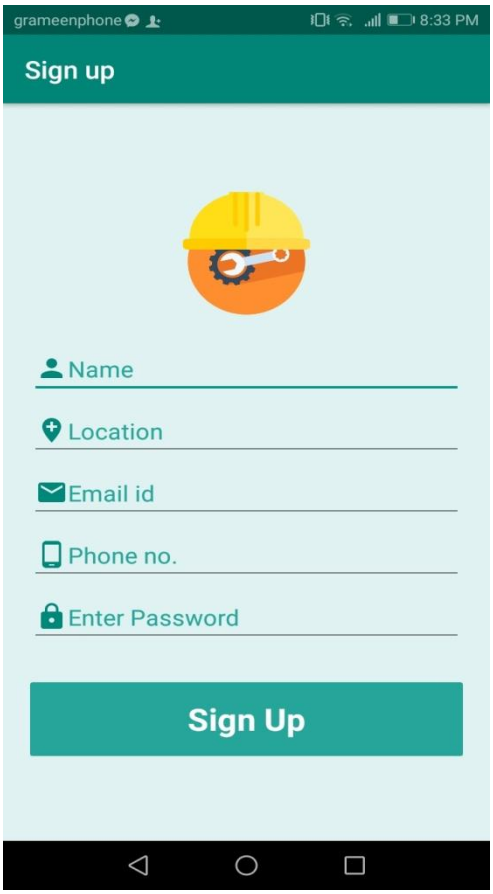

Figure:4.1.2 Sign Up

4.1.3 Log in as user

If user is already having an account, then he will see the log in page directly. After logging in user can do to home page. We use firebase authentication [3] with a scroll view [4] to authenticate email and password

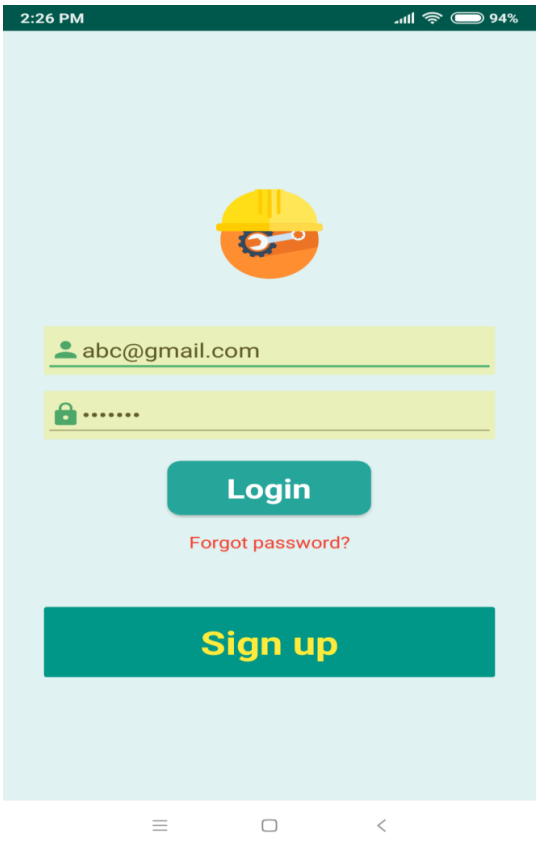

Figure 4.1.3 : Log in

4.1.4 Switch Profile Mode

In this Switch profile mode seller mode and another mode is buyer mode.in seller mode seller can easily see hi product list, he can update their product ,product list. On the other hand, buyer can see the product list, advertisement from enter the process and can connect easily with seller.

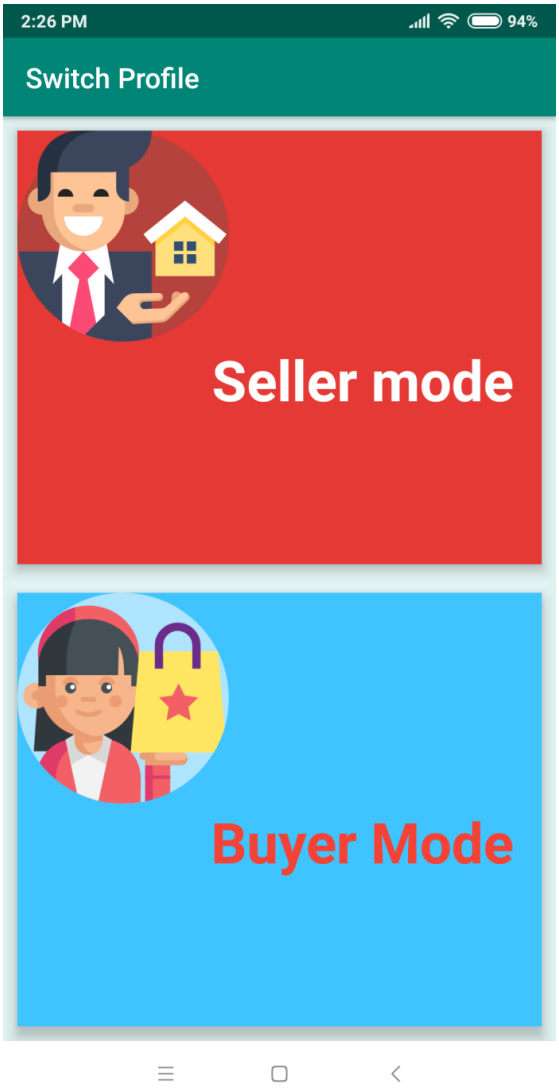

Figure 4.1.4 Switch Profile

4.1.5 Supplier Mode

In this part seller can easily post post product, update product price, posted products area zone,transaction,live chat between different two kind of stakeholders and buyer's order part.

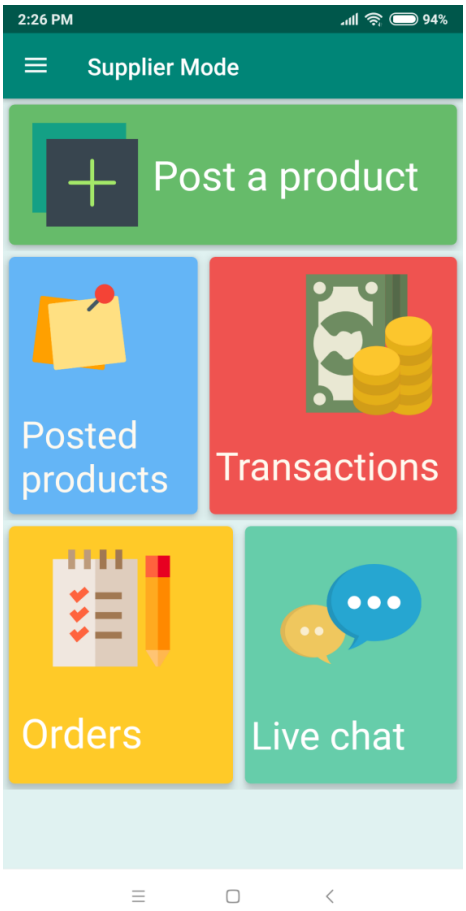

Figure 4.1.5: Showing supplier mode

4.1.6 Buyer Mode

Buyer can enter into the product portion and see the product and chose it from here, then he can order it and can chat with the seller and also transaction for buying necessary product he needed.

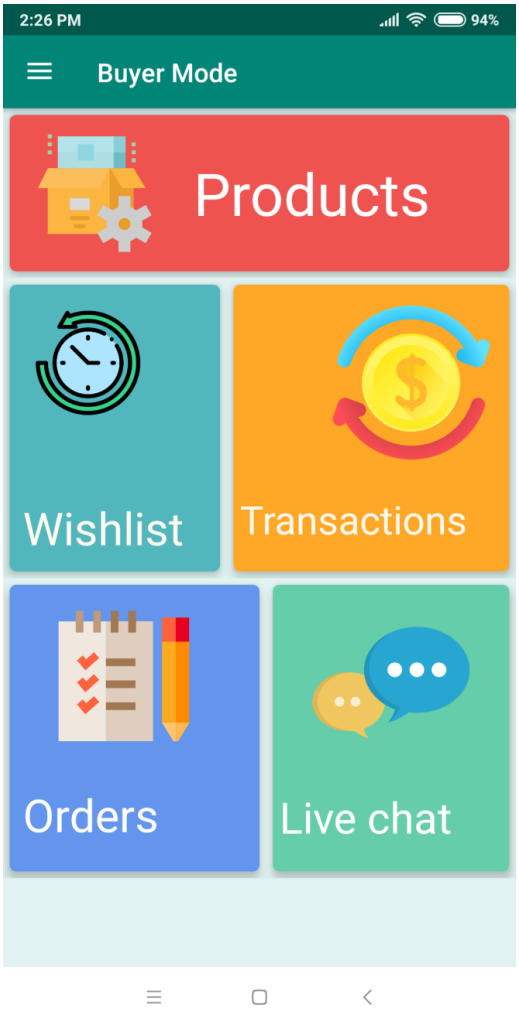

Figure 4.1.6: Showing buyer mode

4.1.7 New Product post

If the seller need to post the necessary product then he can post here for further updating, heading,company name, service, price, description and also seller can update image.

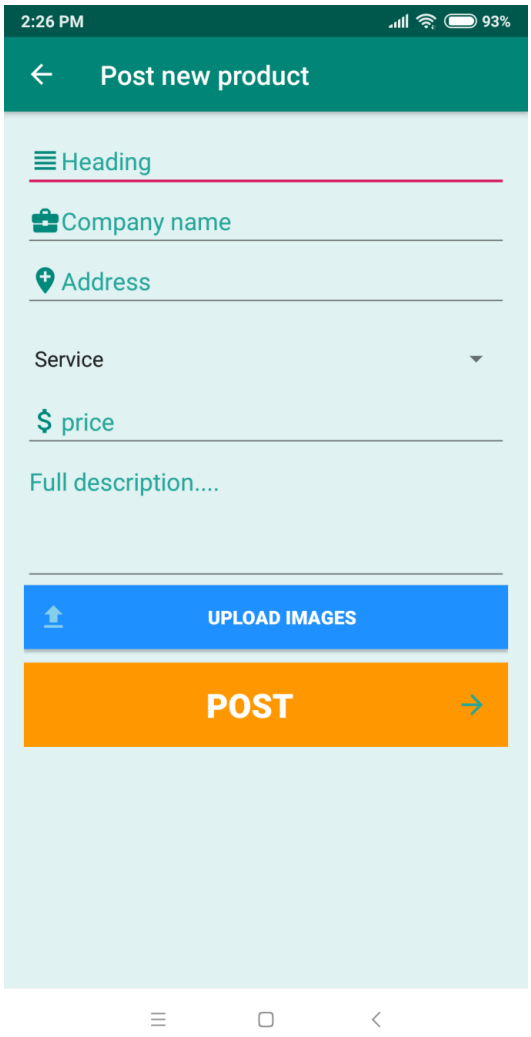

Figure 4.1.7: New product Post

4.1.8 Giving Feedback

The stackholders can easily give feedback In this part. “user name”,” password” and “feedback details “ here and also a part of “email resonse”.ad user can send it usually for giving feedback

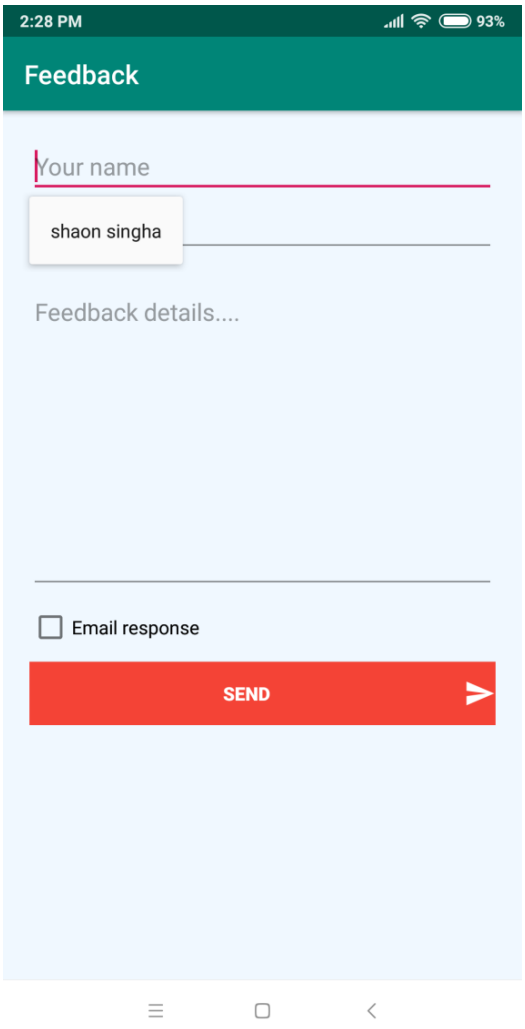

Figure 4.1.8: Feedback

4.2 Back-end Design Specification

Back end design is the ultimate destination of this application. Interaction Design is essential for make a system easy. I have done lots of things to make our system easy. I have used buttons [6] and icons so that people can easily interact with the system. i have implemented many options for selection. User don't need to input text manually in areas instead of he/she can choose options. This makes the service easier to use.

4.3 Interaction Design and UX

Interaction design can be understood in simple terms: it is the design of the interaction between users and products. Most often when people talk about interaction design, the products tend to be software products like apps or websites. The goal of interaction design is to create products that enable the user to achieve their objective(s) in the best way possible. User experience design is the process of enhancing user satisfaction with a product by improving the usability, accessibility, and pleasure provided in the interaction with the product. [7]

I tried to make this application simple, minimal and easy to use for all user to use in daily life. The mechanism of these application is also simple to understand and improve in future. I have implemented animation, relative icons [8], proper descriptions, user friendly design for better user experience.

4.4 Implementation Requirements

Technology used as follows:

Programming/Scripting Languages: JAVA, XML

Database: Firebase

CHAPTER 5

IMPLEMENTATION AND TESTING

5.1 Implementation of Database

I using online firebase database [9] server for data storage.

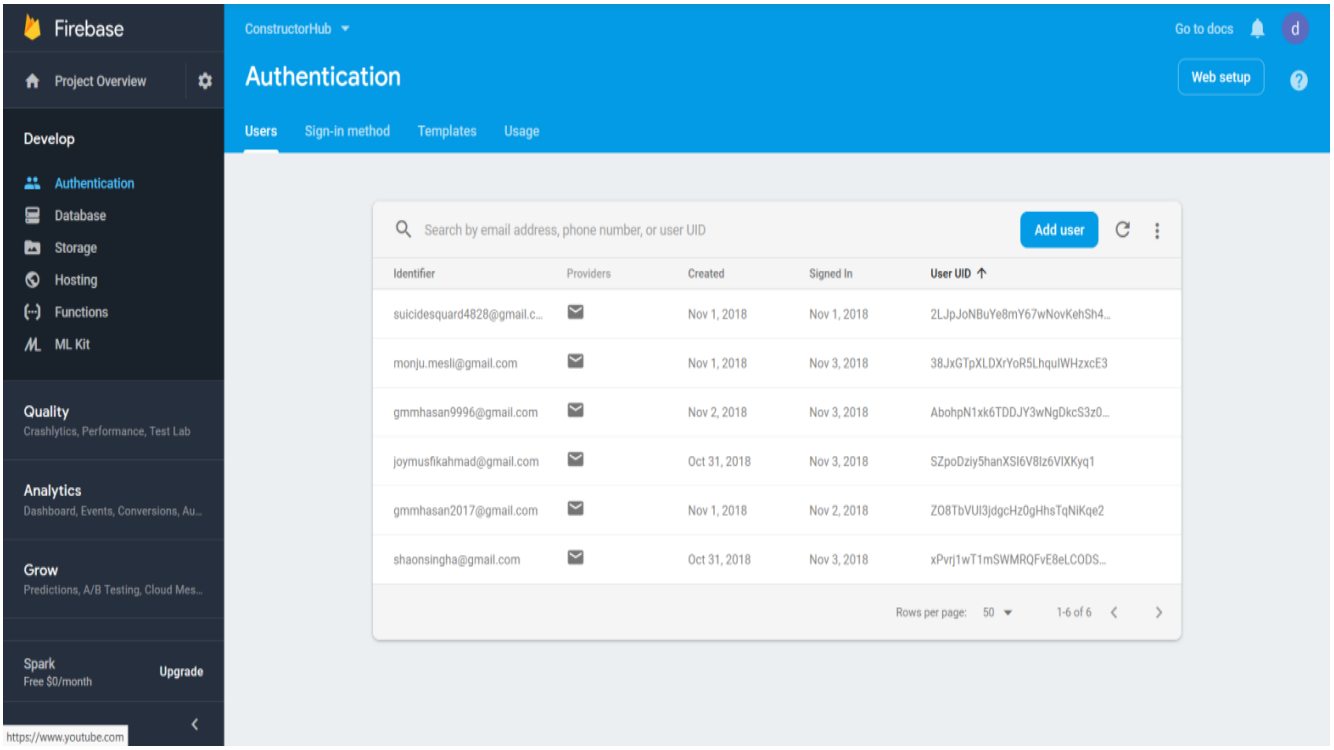

Figure 5.1 : Implementation of Database

5.2 Implementation of Front-end Design

I tried to keep our front-end design simple and easy to understand. So that a user can easily understand and do his work. I use navigation layout, scroll view layout, buttons, search bar and many more features to keep an interactive design. I set nice and relative images and icons to help user.

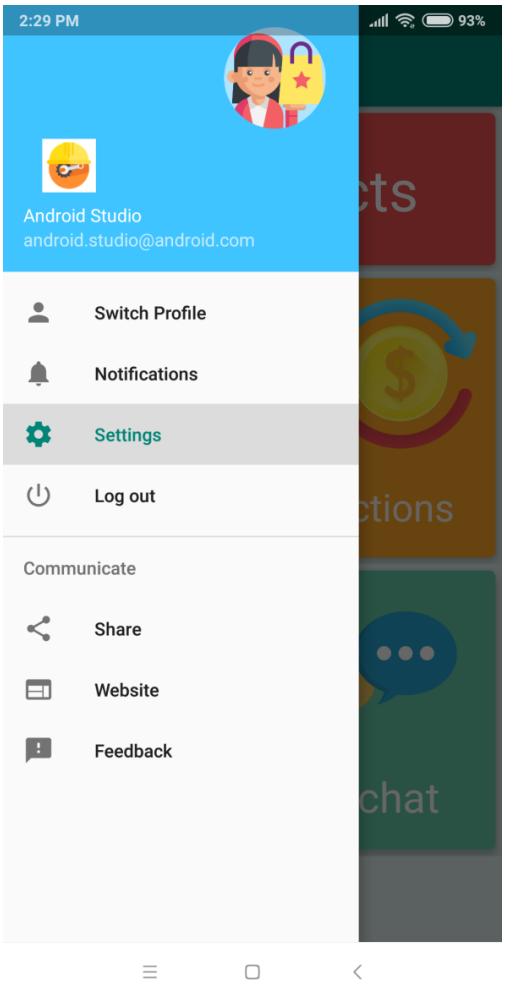

Figure 5.2 : Front end design

5.3 Implementation of Interactions

5.3.1 Choose Product

Seller update product list, price, product images and buyer can easily see the product and buy their necessary product from here. one kind of overview can gather idea from it and buy product.

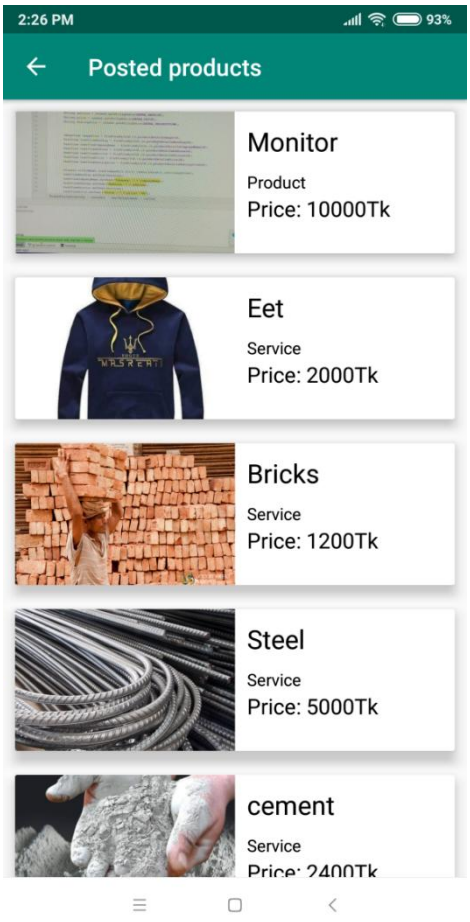

Figure 5.3.1 : Choosing Product

5.4 Testing Implementation

I have tasted my project in different times. Login system, create post, feedback, username, password, seller option, buyer option. Password like six character when I give seven or more or less then it will not login up to next step also similar main system. @,. , etc. are included for the login mail security system.

It also tests chatting part, live chat with customer and sellyer server. I tried real time data base and input Data then tested we got success. I have tasted the following things: Sign up Login system Forget password/ Email Seller profile Buyer Profile Product post list Live chat Update product

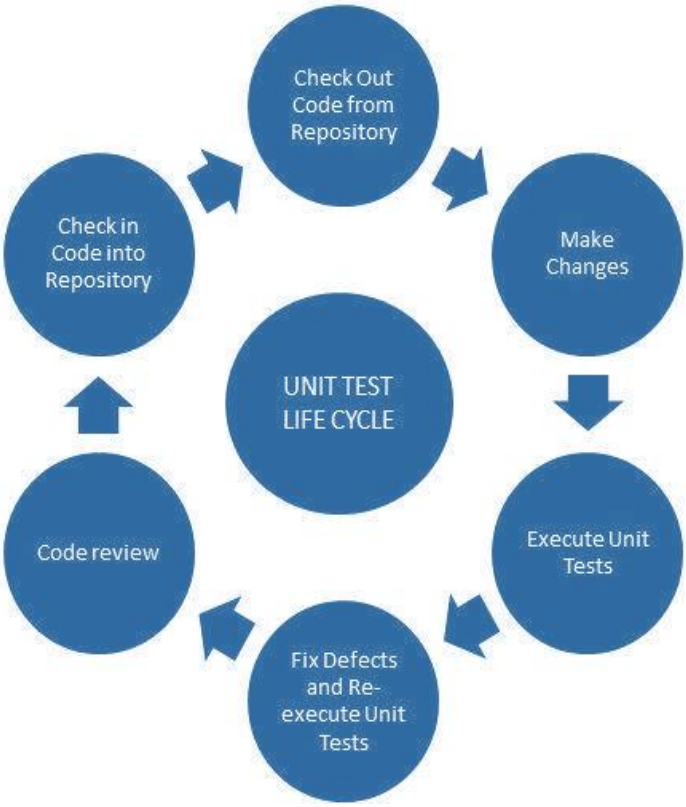

Figure 5.4 : unit testing life cycle

5.5 Test Results and Reports

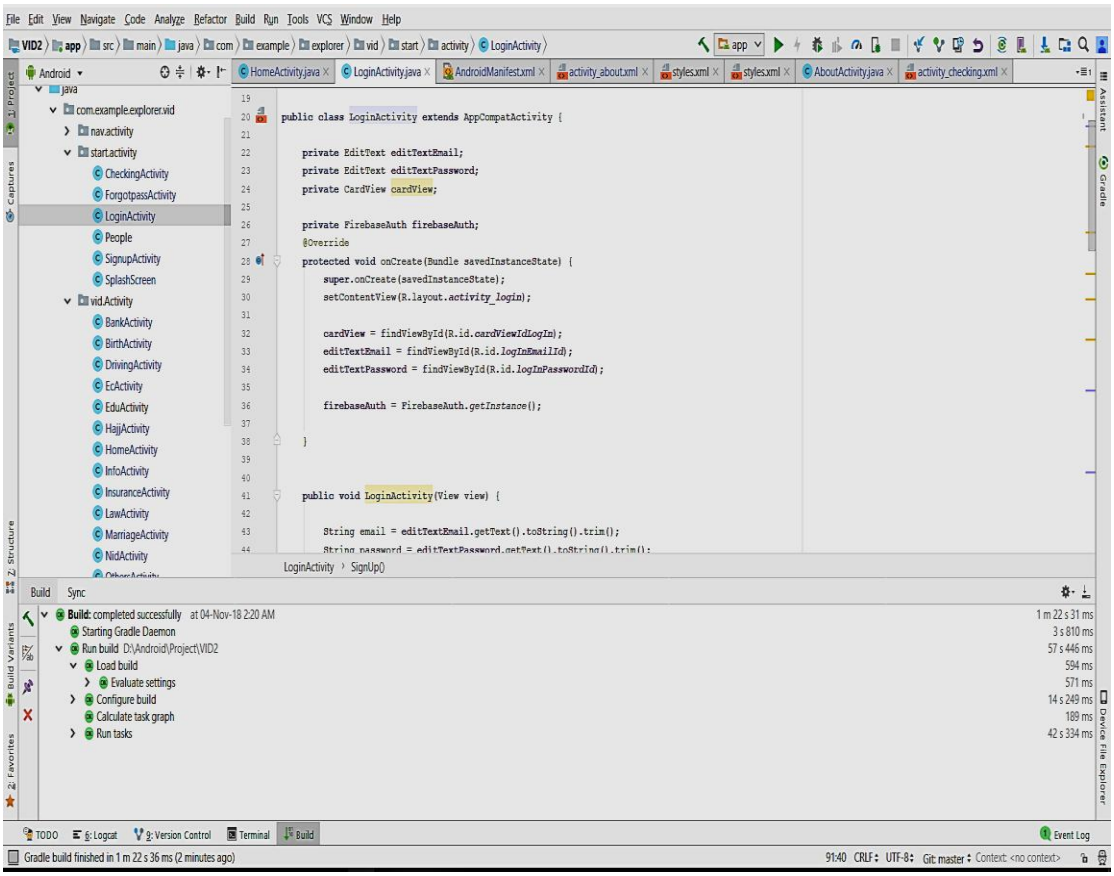

Figure 5.5 : testing and building

Everything of the site is properly right and the testing result is positive it is to verity mobility and accessibility. I tasted part by part. While it is running or not. When complete all tasting it need to serve if have any problem arise and we further tasting before successfully done.

CHAPTER 6

CONCLUSION AND FUTURE SCOPES

6.1: Discussion and conclusion

My “Constructor hub” project is very reliable and user-friendly app for the sector of construction related people. Usually goal of the project like business sector(construction) with relationship between buyer and seller for control house or anything development. Buyer can easily see the product list and chose it from here and seller can update product list or advertise the constructor or builders’ company top list by live chatting Method on system between buyer and seller are secured and it is helpful for them to buy and sell product by conversation.

6.2: Scope for further development

- Work for gorgeous look and attracting for user interface.
- Live video support.
- Commercially viable database.
- Develop highly security system so that information will not be leaked.
- Skill testing.
- Rating system.
- Google location
- More system will be added in live chatting part

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APPENDIX A: Project Reflection

The appendix is to provide an introduction to project refection. This is very hard and challenge for me to complete this project. I complete it from research, designing, developing, add new thing is very much hard. It is a hard pressure for me to contribute whole part of project within a short time.

My experience was how to analysis the project part by part, how to do proper planning, how to solution, graphical interface and implementation problem. Firstly I faced problem sign up method, how can I setup login part or sign up .It was a great problem authentication method of user login part. If I set forget password, then it need to enter six or maximum digit it included. After that database management system one of the greatest problem for me two connect with the system. Then online chatting system is one another major art to include two user reliable communication. It has some problem arisen when made connectivity between buyer and seller user conversation .After that it made possible to connect the live chat system between the users accurately.The graphical view is more impotant to include the system outlook. Within a short time it was a problematic process for me and I took lots of time and see tutorial .one mode to another mode exchange is very hard t cat part by part into the system by measurement of the layout and user reliability. Thus it looks to see very user friendly system for the user comfortable and reliability chatting system are included. So that The communication between the different kind of stack holders are needed to use the system for user friendly through a good and reliable conversation. It was really a geat concern for me how to make it easy bt some great problem has arisen to compete the project within a very short time.

Appendix B: Related Diagrams

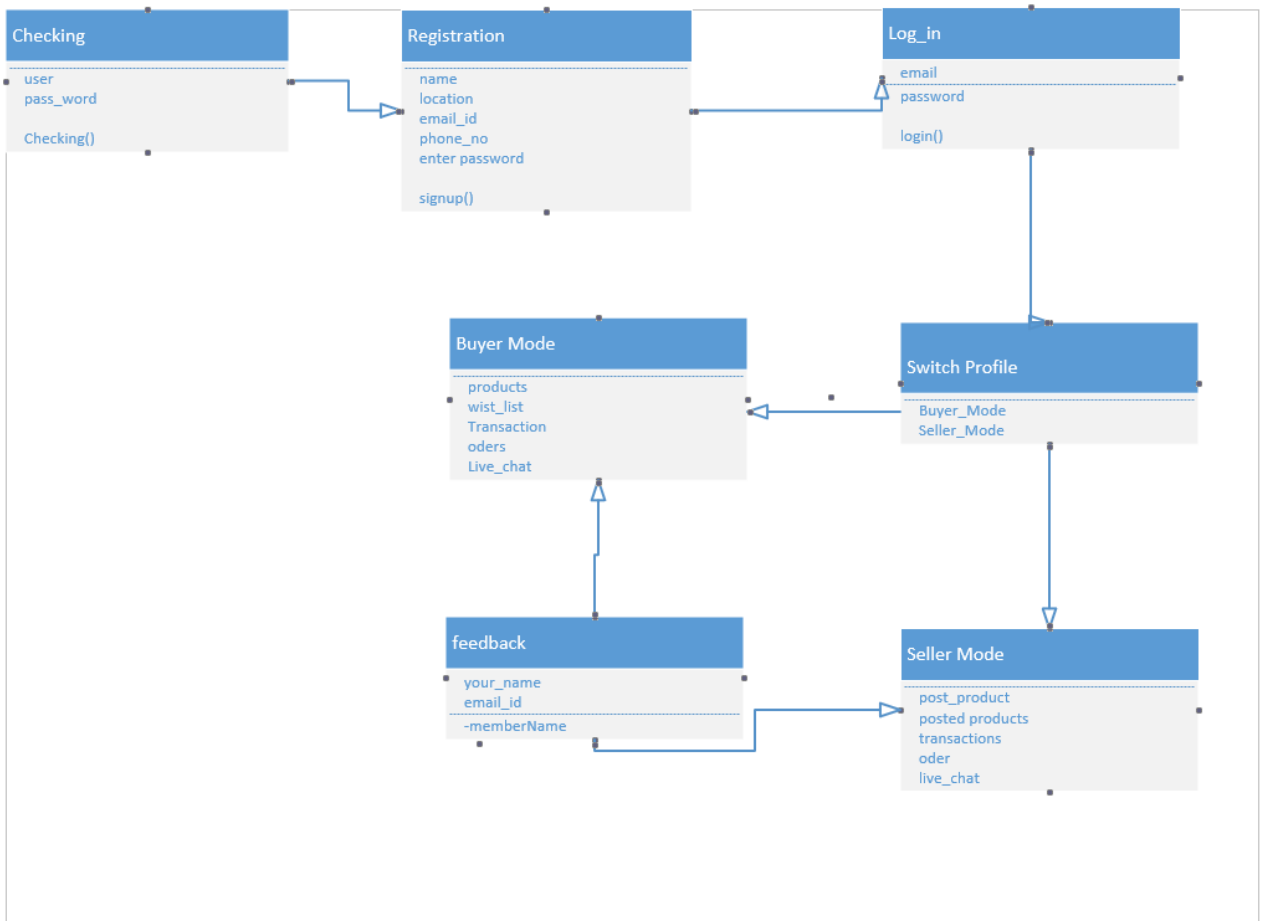
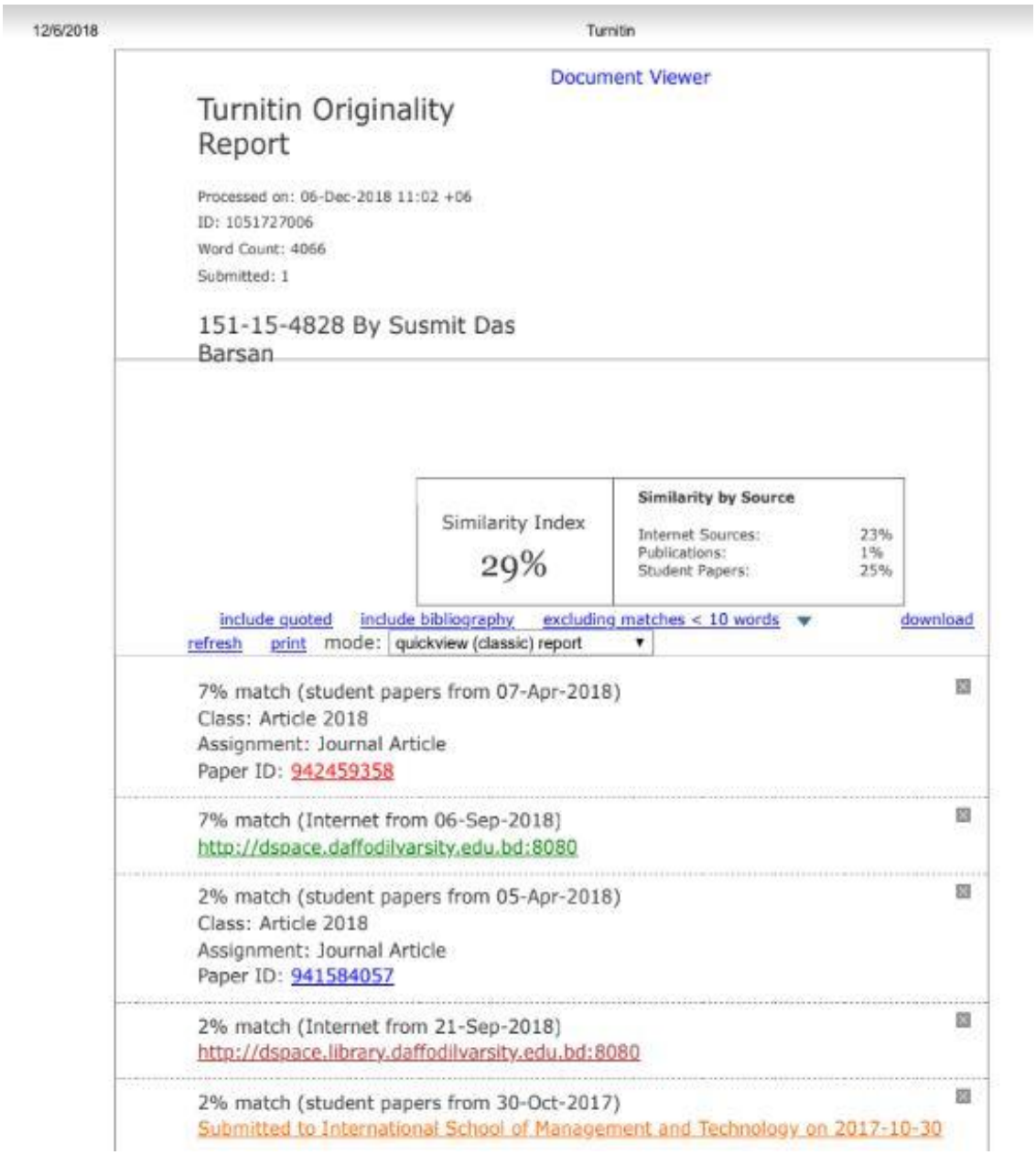


Figure: Appendix B UML Diagram

PLAGIARISM REPORT



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