

Krishoker Bazar: An E-Commerce 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

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I am declare that, this project has been done by me under the supervision of **Md Zahid Hasan, 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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ABSTRACT

Bangladesh is an agriculture-based country. The development of our country depends on agriculture. Farmers work hard to produce crops. But they don't get proper price of their product. Third parties buy product from them at a cheap rate but sell them at a high price in the market. So that the prices of daily necessities are increasing day by day. General people face problems to buy their necessities at this high price. So they suffer most. To solve this problem we are going to implement an android application **“Krishoker Bazar”**. The people who have a smart phone can use our application. Farmers can sell, and people can buy products by using this android app.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

“Krishoker Bazar” is an Android based application for people to sell and buy their product. This application allows only registered users to login and new users are allowed to register on the application. To add a new post with the required properties the seller must be registered and logged in. The user without registration can only see the advertised product given by other registered user. To make a comment the user also needed to be logged in. This is proposed to be an android application.

1.2 Objectives

The main objective of our application is to help our farmer. Farmer can sell and advertise their product. It is a log in system application. The aim of this Application is to ensure that farmers get fair prices of their product.

The goals of our application are:

- To avoid third party
- Seller can add their product photo and price.
- People can buy their needed products very easily.
- Online Registration & Payment
- Sell and buy product in fair prices.

1.3 Motivation

Bangladesh is an agricultural country. There are many problems in this field. Farmer produces crops but does not get fair prices because of third party. They buy product from farmer at a cheap rate but sell it at a high rate. So, the prices of our daily necessities are increasing day by day. With the advancement of science and technology, we have to make a solution to solve these problems. In our project, we are using IOT concept to help farmer and general people.

1.4 Expected Outcome

In our Project, our main focus is to avoid third party and try to help a farmer sell to get fair prices of their product and help people to buy their daily necessities at a cheap rate. The system also will be able to work on any android smart phone and can be accessed anywhere via internet. The system also will be secured as it will protect the confidential and privacy of data effectively. It will be very easy to use. We will use both Bengali and English language so that everybody can easily use our app.

1.5 Report Layout

This report consists of chapter 6.

Chapter 1 contains the Introduction, Objectives, Motivation, Expected Outcome and Report layout of our project.

Then chapter 2 contains Project Introduction, Related works, Comparative Studies, Scope of the problem and also Challenges of our project. Our third chapter contain all about Requirement Specification which are Use Case Modeling and Description, Logical Data Model, Design Requirements.

Chapter 4 describes our full application description which is related to Design Specification like Front-end Design, Back-end Design. In chapter 5 is all about Implementation and Testing. This contains Implementation of Database, Front-end Design, Interactions, Testing Implementation and Test Results and Reports.

Chapter 6 contain conclusion of the full project. This report contains all about our Application and its problem, solution and use of the system.

CHAPTER 2

BACKGROUND

2.1 Introduction

Mobile app services is more commonly used to deliver services for producers and traders. The host of applications of mobile technology in agriculture market such as trading facilities. ‘Krishoker Bazar’ is the application of advertising various agricultural products where a seller and a buyer can directly make a deal. The application was developed various technology and necessary information of agricultural products. The application will be used to post of a product with a little description including an image in the home page.

2.2. Related Works

This is not a copied idea. As far as we know this kind of application is no available in our country. However, this is a new concept and new plan for a smart dealing system with proper authentication, user interaction design. But in others country like Uganda they have made “**Agro Market**” app to sell farmers products and tools to the buyers directly. This application enables farmers to upload information about their produce onto the system which will be visible to anyone who has the application on their mobile phone.[5]

2.5 Comparative Studies

In our study, we are intended to find a feasible solution of a better dealing system. As we know this kind of application is no available in our country. First of all, this application is not independent, they have to install it in a smart phone or a device. The application is free from that complications, anybody can use it from a smartphone/tablet/android based device from any place. Just they need internet connection. Secondly, the application will give the opportunity for a user to see all of the post in the home activity. They can only see the post if they aren’t registered. If they want to give a post or advertise their product they must be registered member. In

our application, there will be no third person. So the interaction will be made between buyer and seller.

For internet connection, any kind of internet like 3G, 4G or a medium quality of speed will be efficient for this application.

2.6 Scope of the Problems

This application focuses on finding a way to develop a smart dealing system to reduce overall risks, problems of the people and to get proper value of their product.

- 1) As the purpose of this application is to dealing/selling and buying. So delivery process is big question and it can be an issue. It will be less cost effective to deliver products between neighboring districts/division. But if distance is too high, its transportation cost will be also high and the buyer won't be benefited. So distance can be the threat in dealing process.
- 2) As we are using firebase database to store and transfer files, it has some limitations for free bundles initially. It has a free bundle plan called 'Spark' which includes real time database with max 100 connections, 10GB data transfer and 1GB data storage. Max 100 connections means, 100 user can be active at once. So, it will be the problem if more user is active at once.[3]

2.7 Challenges

Illiteracy

Illiteracy can be the major challenge for this project as most of the farmers in village levels are illiterate. They don't have educational knowledge. They don't have the practical knowledge about technology. As they have to post their products through this application they must be a registered member, they have to fill up some fields to post. To fill up these fields their educational and technological knowledge is needed. All these steps can be the reason of their unwillingness. So, this can be the main blockage for our project.[7][6]

Lack of Medium

This can be another obstacle for our project. As our project is android based project, so if they want to use this application they must have a device. And we know many of our village farmers use analog phone, they don't have a smartphone but it is prerequisite for this project. So this is a major blockage. Firstly they don't have practical knowledge about technology, Secondly having not a smart device they will lose their will. Some may buy or some will not.

Publicity

Publicity can also be in this category. If people don't know about this application, don't know about the uses of this application, this will be valueless to develop this application. So, it is a challenge to reach information about this project to the people.

CHAPTER 3

SOFTWARE REQUIREMENT SPECIFICATION

3.1 Introduction

Requirement analysis consisting of some approaches taken to work out specific options, demands, expectations by communication with the system users. Primarily collecting some raw data and then analyzing these as per as needs. And finally comes out the information of user demands. It needs combination of both hardware and software.

3.2 Business Process Modelling

Basically our aim is to remove third party between farmers and buyer .That's why we decide to make it non-profitable business initially. But in future we will use google AdSense. In this system an user doesn't need to pay any amount directly. If a user who doesn't want any ad he/she can buy premium package that will help him to run the application smoothly without any ad.

3.3 Hardware & Software Requirement for System

For this application, we need to look after the minimum requirement of hardware and software to run it. There are some requirements to run this application properly and efficiently.

The following requirements are needed to use the app:

1. RAM: Minimum 512 MB.
2. Operating System: Android.
3. Need Internet Connection

Analysis

We studied a lot of android application and website which are mostly similar to our application and discover what features they were missed. Everything we are using is real time so we decided to use firebase as our real time database. And also we decided to use Java as back-end programming language

3.4 Use Case Model

Use case model refers to a model of how different types of users interact with the system to solve a problem. As such, it describes the goals of the users, the interactions between the users and the system, and the required behavior of the system in satisfying these goals.

System Use Case:

System use case diagram is shown in figure 3.1. The purpose of our system is to make a fair dealing system where user can advertise their products. Only registered user can create post by logged in. User without registration can view and search the post. Before creating a post, the user have to fill up some fields of product photo, product amount, product price, location etc. Among of these fields product photo and amount must be required. Making blank other fields will appear null. An action can be made to update and delete by its Author.

User who will advertise their product is Seller and who is intended to purchase is buyer. Both can put a comment after completing registration process. Without registration Buyer can still make a phone call.

To get all the features user must be registered and logged in.

Table: 3.1 Seller Registration Process use case details:

Use Case Name:	Registration Process
Precondition:	None
Actor:	Seller
Primary Path:	1)Enter Name 2)Enter Phone Number 3)Enter Password 4)Enter Confirm Password 5)Click Registration 'Button'
Exceptional Path:	1.1)Name is required, back to step 1 5.1)Invalid Phone Number/Password/Confirmation Password, back to step 2 or 3 or 4

Use case of Approval registration for Seller:

Approval of registration process diagram for seller is shown in Figure 3.3.

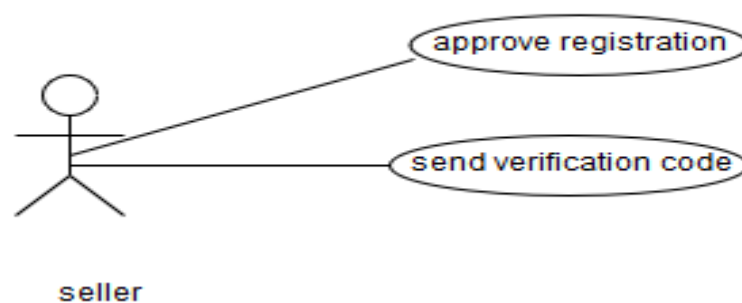


Figure: 3.3 Approval Registration for Seller

Seller will get a verification code to confirm the registration process.

Table: 3.2 Seller Registration Approval use case details:

Use Case Name:	Approval registration
Precondition:	None
Actor:	Seller
Primary Path:	1)Approval registration 2)Send verification code
Exceptional Path:	1.1)Registration failed

Use case Login for Seller:

Figure 3.4 describes the login process for the seller.

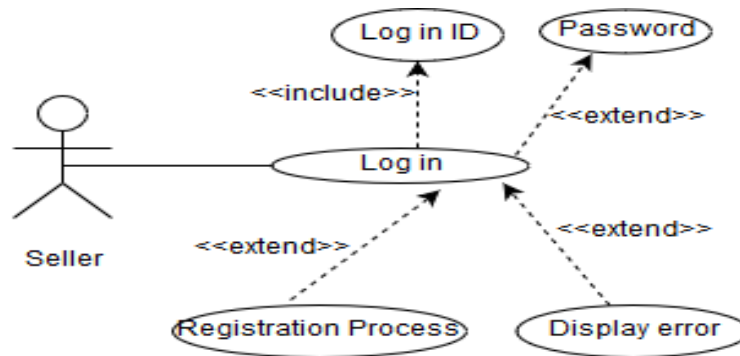


Figure: 3.4 Login Process For seller

To get all the features user must be registered and logged in.

Table: 3.3 Login use case details for seller:

Use Case Name:	Login
Precondition:	None
Actor:	Seller
Primary Path:	1)Enter username 2)Enter password 3)Click Login 'Button'
Exceptional Path:	3.1)Invalid username/password, back to step 1 or 2

Use Case of All Posts:

User can see all the posts in home activity/posts activity.

Table: 3.4 All Post use case details for seller:

Use Case Name:	All Posts
Precondition:	None
Actor:	Seller
Primary Path:	None
Exceptional Path:	None

Use case Post:

User must be logged in to post product. To post the product some required field should be filled up. If field is filled up then post will be displayed otherwise it will show some error.

Table: 3.5 Post use case details for seller:

Use Case Name:	Post
Precondition:	Login
Actor:	Seller
Primary Path:	1)Product photo 2)Product amount 3)Product price 4)Location 5)Comment
Exceptional Path:	1.1)Product photo required, back to step 1 2.1)Product amount required, back to step 2 3.1)null 4.1)null 5.1)There is no comment/blank field

Use case Registration process for Buyer:

Figure 3.5 describes registration process use case for Buyer.

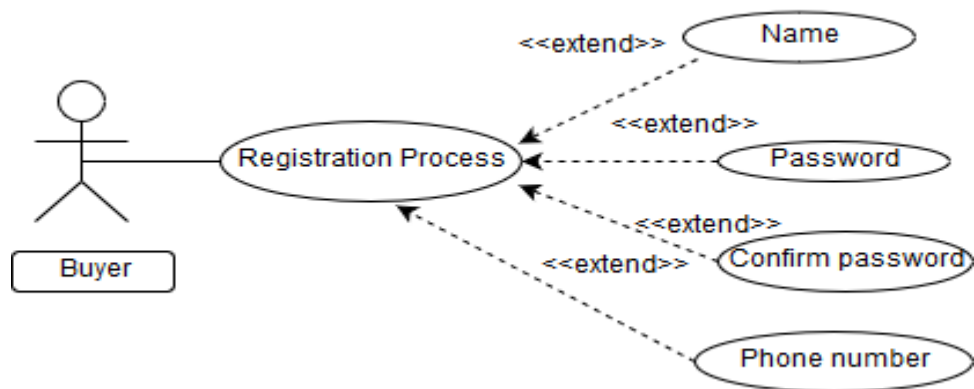


Figure: 3.5 Registration process for Buyer

As like seller buyer also have to be a registered member to get all the features.

Table: 3.6 Registration process use case details for buyer:

Use Case Name:	Registration Process
Precondition:	None
Actor:	Buyer
Primary Path:	1)Enter Name 2)Enter Phone Number 3)Enter Password 4)Enter Confirm Password 5)Click Registration 'Button'
Exceptional Path:	1.1)Name is required, back to step 1 5.1)Invalid Phone Number/Password/Confirmation Password, back to step 2 or 3 or 4

Use case of Approval Registration for Buyer:

Figure 3.6 describes approval registration use case for buyer.

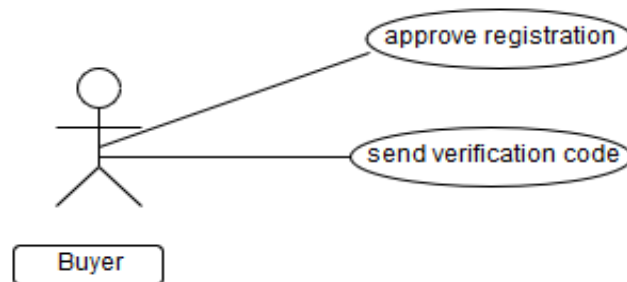


Figure: 3.6 Approval Registration for Buyer

Like as Seller, Buyer will also get a verification code to confirm the registration process.

Table: 3.7 Buyer Registration approval use case details:

Use Case Name:	Approval registration
Precondition:	None
Actor:	Buyer
Primary Path:	1)Approval registration 2)Send verification code
Exceptional Path:	1.1)Registration failed

Use case Login for Buyer:

Figure 3.7 describes login process use case for buyer.

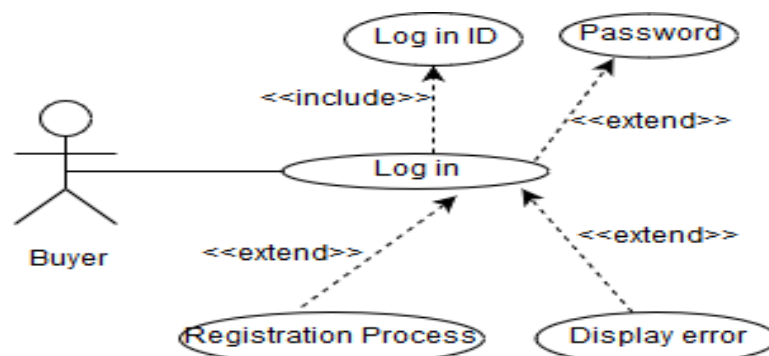


Figure: 3.7 Login Process for Buyer

Like as Seller Buyer must be registered to get all the features.

Table: 3.8 Login use case details for buyer:

Use Case Name:	Login
Precondition:	None
Actor:	Buyer
Primary Path:	1)Enter username 2)Enter password 3)Click Login 'Button'
Exceptional Path:	3.1)Invalid username/password, back to step 1 or 2

Use Case of All Posts for Buyer:

Buyer can also see all the posts in home activity/posts activity.

Table: 3.9 Details of the all post use case for buyer:

Use Case Name:	All Posts
Precondition:	None
Actor:	Buyer
Primary Path:	None
Exceptional Path:	None

Use case Post for buyer:

User must be logged in to put comment on the post. If comment section is empty, it will show blank.

Table: 3.10 Details of the Post use case for buyer:

Use Case Name:	Post
Precondition:	Login
Actor:	Buyer
Primary Path:	1)Log In 2) Comment
Exceptional Path:	2.1)There is no comment/Black field

3.8 Logical flow diagram for proposed system

Logical flow diagram of the system is shown in Figure 3.8.

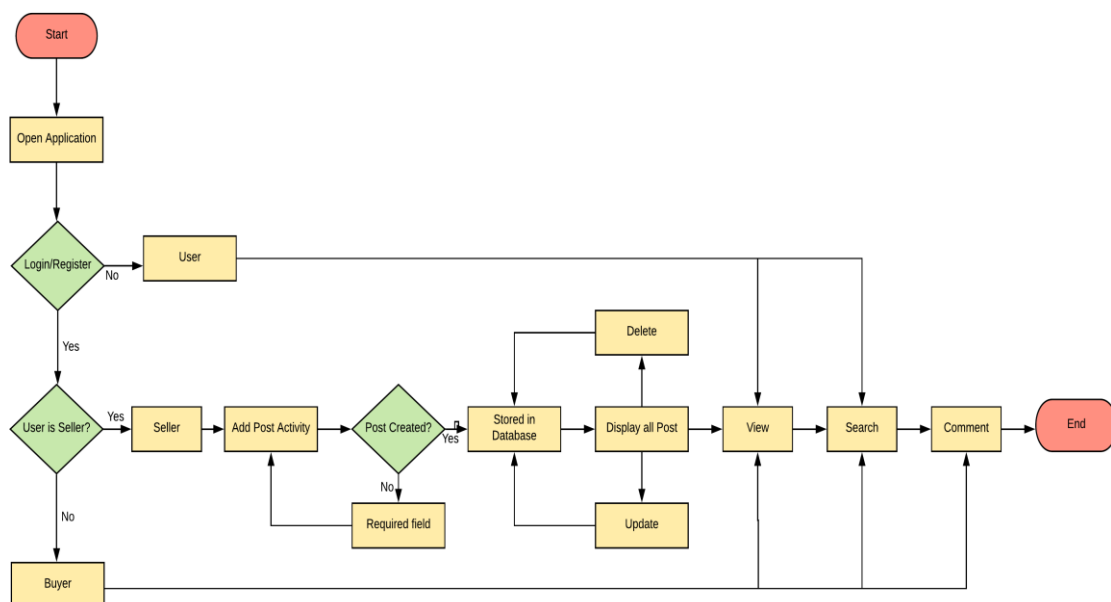


Figure: 3.8 Logical Flow Chart

3.6 Implementation Requirements

Before any programming could be done decisions needed to be made on which technologies should be used to program the project with. The following is a critical evaluation of mainly java programming language that could be used to program such an online application. Java language is for Back-end and XML is for front-end/designing the user interface.

XML:

The Android platform is an open source mobile development platform. It gives you access to all aspects of the mobile device that it runs on, from low level graphics, to hardware like the camera on a phone. XML is commonly used as a data format on the Internet. If we want to access data from the Internet, chances are that the data will be in the form of XML. If we want to send data to a Web service, you might also need to send XML. In short, if your Android application will leverage the Internet, then you will probably need to work with XML. Luckily, we have a lot of options available for working with XML on Android.[9]

Java:

Android applications are developed using the Java/ kotlin language. Java is a very popular programming language developed by Sun Microsystems Developed long after C and C++, Java incorporates many of the powerful features of those powerful languages while addressing some of their drawbacks. Still, programming languages are only as powerful as their libraries. These libraries exist to help developers build applications. Some of the Java's important core features are:

- It's easy to learn and understand
- It's designed to be platform-independent and secure, using virtual machines
- It's object-oriented
- It's easy to learn and understand

Android relies heavily on these Java fundamentals.[8]

Firestore Database:**Tools:**

Google comes to introduce with firestore and it works similar to hosting, so to speak. We pick what services connect them to your application and bam, we're ready to take over the world. Firestore's backend is just another service. It provides a JSON like database in which you store and read data. It doesn't really follow the REST standard as it has no REST methods (GET, POST...). Here, you're working directly with the database. Android SDK, Java SDK, Android mobile phone, Firestore app platform.

Android Studio

In our project, we have used Android Studio IDE to develop Android Application. Android studio is official IDE (Integrated Development Environment) provided by Google for its operating system Android. It is a replacement of Eclipse Android Development Tool (ADT) as primary IDE for Android Development

CHAPTER 4

DESIGN SPECIFICATION

4.1 System Environment

The Design & Development of Krishoker Bazar app has two active actors. Figure 4.1 describe the system environment. The Seller and Buyer. All actors can access the system. Both of them must be registered to sell and buy the products.

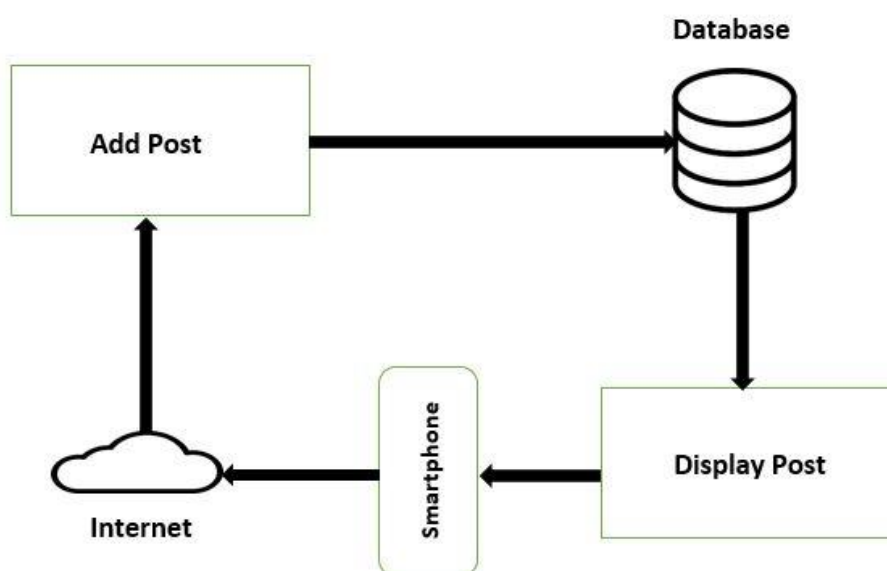


Figure: 4.1 System Environment

4.2 Front-end Design

Front-end web development is the practice of converting data to graphical interface for user to view and interact with data through digital interaction. Front end design is about user interface of the application.

Here is the user interface of our application:

Main Activity:

Figure 4.2 shows Main activity

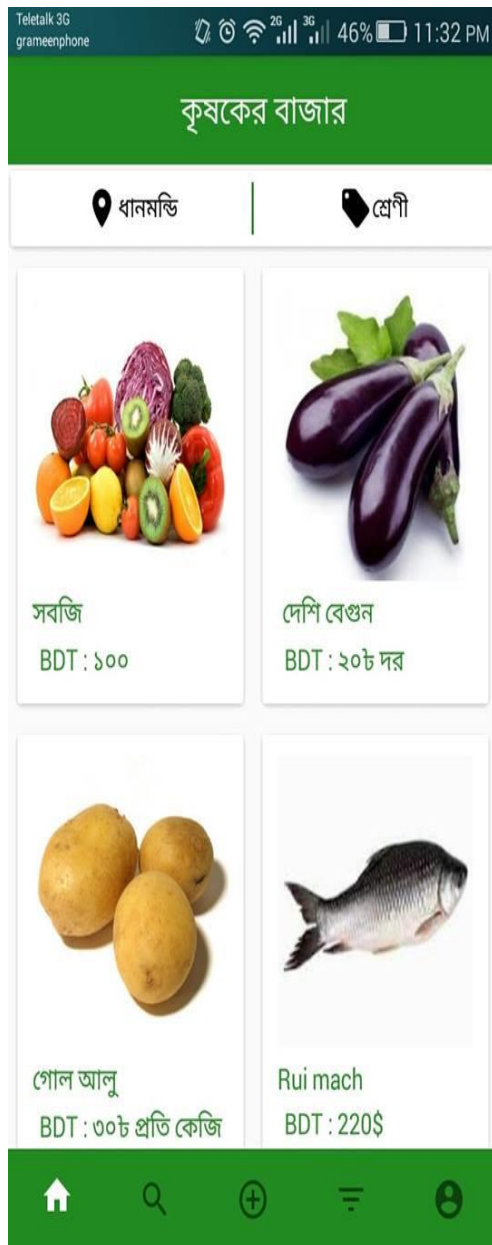


Figure: 4.2 Main Activity

Registration:

Figure 4.3 shows Registration layout.



Figure: 4.3 Registration Layout

Login:

Figure 4.4 shows Login layout

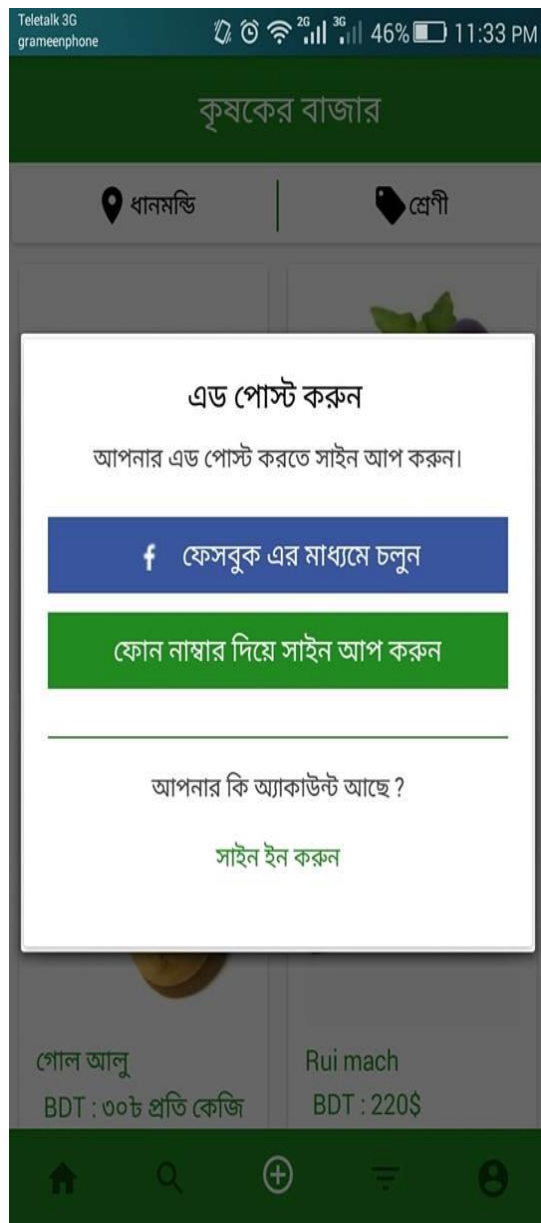


Figure: 4.4 Login Layout

Product Category:

Figure 4.5 shows Category Layout



Figure: 4.5 Category Layout

Post an ad: picture 1

Figure 4.6 shows Ad Posting layout

Teletalk 3G
grameenphone

← আপনার বিজ্ঞাপন পোস্ট করুন

ফসল

আপনার বিজ্ঞাপনের জন্য অবস্থান নির্ণয় করুন

অবস্থান নির্ণয়ের জন্য ক্লিক করুন

কমপক্ষে একটি ছবি যোগ করুন

ছবি যোগ করুন

ছবি যোগ করুন

ছবি যোগ করুন

ছবি যোগ করুন

বিজ্ঞাপনের তথ্য

Post an ad: picture 2

Teletalk 3G
grameenphone

← আপনার বিজ্ঞাপন পোস্ট করুন

ফসল

ছবি যোগ করুন

ছবি যোগ করুন

ছবি যোগ করুন

ছবি যোগ করুন

বিজ্ঞাপনের তথ্য

বিজ্ঞাপনের শিরোনাম

বিবরণ

মূল্য

☐ মূল্য আলোচনা সাপেক্ষে

বিজ্ঞাপন দিন

Figure: 4.6 Ad Posting

Menu:

Figure 4.7 shows Menu layout



Figure: 4.7 Menu layout

Search:

Figure 4.8 shows Search layout



Figure: 4.8 Search layout

4.3 Back-end Design

For the Back end Design we have used java language. To store data we have used firebase database. Figure 4.9 describes firebase database tree. Here is the user data sample:

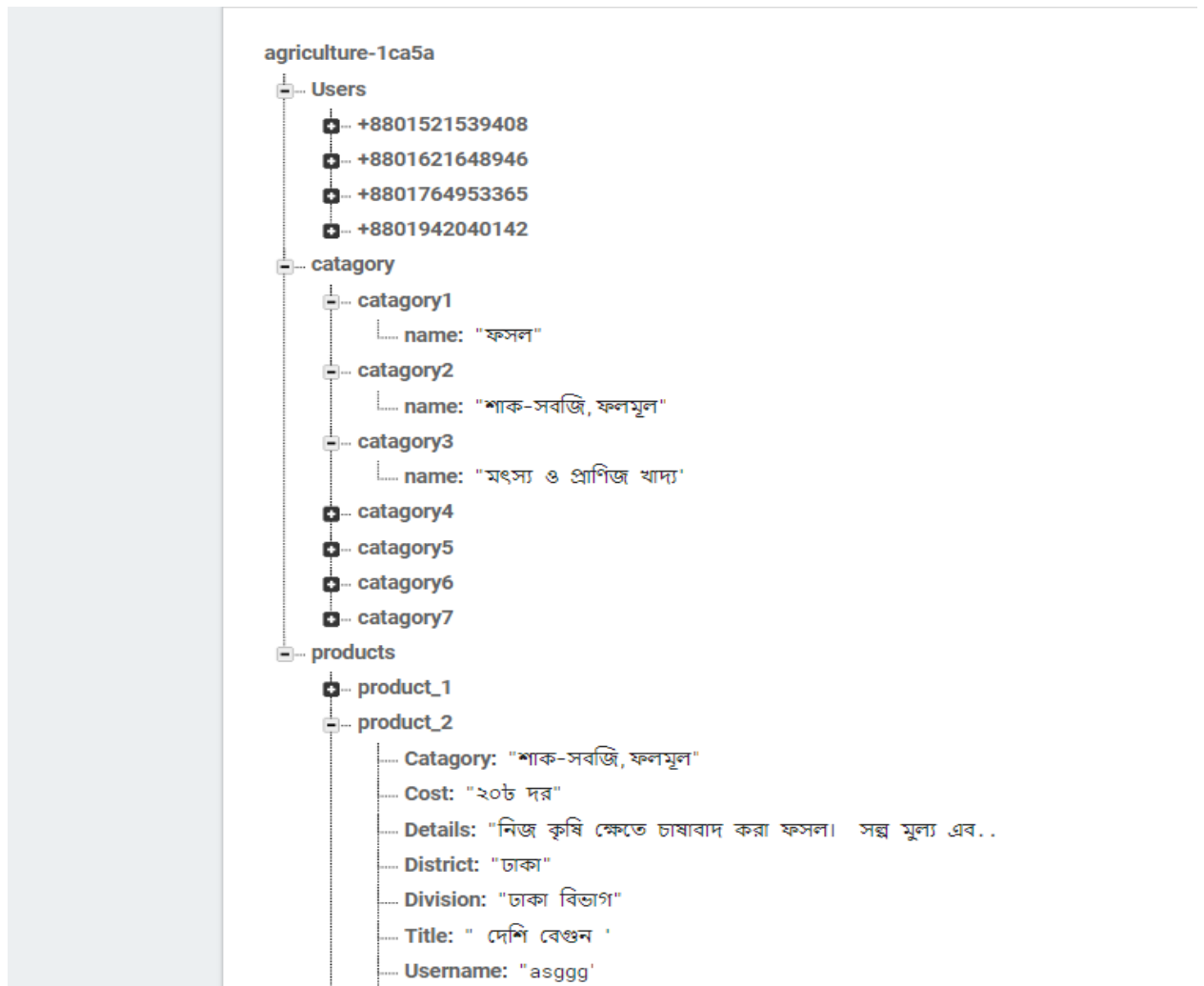


Figure: 4.9 Database Tree

Chapter 5

Implementation and Testing

5.1 Implementation of Database:

We have used Firebase database to control and store data. Basically we have applied three system in the database.

Storage

Storage is used for to store all the files or document that we used in the application. For example when seller will add their products photo it will store in this database.

Real time database

Real time database store and sync app data in real-time. Data is synced across all clients in real-time, and remains available when your app goes offline. The Firebase Real time Database is a cloud-hosted database.

Firestore Authentication

After completing registration form there is a process to send a verification code in the user phone number. We did this by firebase authentication.

5.2 Implementations of interactions:

Searching option: There are two method to search. User can search product by keyword or by category and location wise.

Add products: Users who want to sell products can easily add products.

Direct call: This system is used to connect with the seller within a short time.

5.3 Testing Implementation

System testing is a level of software testing where a complete and integrated software is tested. The purpose of this test is to evaluate the system compliance with the specified requirements.

Testing Approaches:

Tests can be conducted based on two approaches –

- Functionality testing
- Implementation testing

When functionality is being tested without taking the actual implementation in concern it is known as black-box testing. The other side is known as white-box testing where not only functionality is tested but the way it is implemented is also analyzed.

Unit Testing

While coding we perform some tests on that unit of program to know if it is error free. Unit testing helps us decide that individual units of the program are working as per requirement and are error free.

Integration Testing

Testing performed to expose defects in the interfaces and in the interactions between integrated components or systems. Integration Test Case differs from other test cases in the sense it focuses mainly on the interfaces & flow of data.

System Testing

System testing of software or hardware is conducted in complete and integrated system to evaluate its compliance with its specified requirements. System testing takes all integrated modules that have passed integrated testing as its input.

Table: 5.1 Test case result for login system:

Test Case	Expected Result	Observed Result	Test result
1. Correct phone number 2. Correct Password	Login to system	Can login.	Pass
1. Incorrect phone number 2. Correct Password	Login to system	Can't login.	Fail
1. Correct phone number 2. Incorrect Password	Login to system	Can't login.	Fail

CHAPTER 6

CONCLUSION & FUTURE SCOPE

6.1 Conclusion

The design of this project 'Krishoker Bazar' is done with the help of XML, Java and Firebase database. Here, user can edit, the system can be used at anywhere from a smart phone with the help of internet. This is a helpful application for general people. The people who are registered, can buy and sell products. By using this app, they can buy and sell product with proper prize. Buyer can buy product according to their choice. They can search product, do comment and order products. Seller can add photo, products prize and amount, delete and update post, view comment.

6.2 Future Scope

Though there are many features in our application moreover we have some plan about this project. In future we are going to add some features and changing some necessity things which can make this application more user friendly. This project can come up with some betterment in future like:

- 1) Purchase more file storage and user to permission at once
- 2) Online chat box to communicate
- 3) User interface with some animation will be given to make it more user friendly & also necessities feature will be added if it is required from user prospection.

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