"ALUR CASHABAD O KRISHI TOTHYO SEBA" AN ANDROID BASE MOBILE APPLICATION FOR FARMER

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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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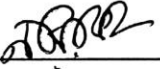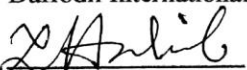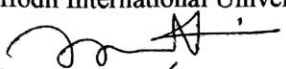# DAFFODIL INTERNATIONAL UNIVERSITY

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APPROVAL

This Project/internship titled "ALUR CASHABAD O KRISHI TOTHYO SEBA"AN ANDROID BASE MOBILE APPLICATION FOR FARMER, submitted by Md Shihab Ali, Md Umar Faruk, Muhammad Tanvir Hossain, ID No:151-15-4975, 151-15-5057, 151-15-4765 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 12-12-2018.

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We hereby declare that, this project has been done by us under the supervision of **Ms. Fahmida Afrin,** Lecturer, Department of CSE, Daffodil International University and co-supervision of **Md. Sazzadur Ahamed,** Lecturer, Department of CSE, Daffodil International University. We 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

In Agriculture perspective our mobile base android project provides potato disease content. We include many types of feature for farmer. In our country farmer has faced many types of problem. They have no better knowledge about agriculture. The scientific study of disease in plants involving infectious organisms and environmental conditions. Organisms that because it includes fungi bacteria, viruses, virus-like organisms, protozoa, nematodes and parasitic plants. Plant pathology also involves the study of pathogen identification. Control of plant diseases reliable is important production of food, and it provides significant reductions in agricultural use of land, water, fuel and other inputs. By this application, users can get essential information pertaining the insecticides and its feasible reason. Thus, users can implement their knowledge to yield better harvest. They also contact, find location for development agriculture. Our project is complete on android platform. The raised application is planned and tested based and implemented using the android studio and java language.

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CHAPTER 1

Introduction

1.1 Introduction

The intention of this document is to present a detailed statement of the " Alur Cashabad O Krishi Tothiyo Seba " application on android platform. This report attempted to highlight the prospects and advantages of insecticides in Bangladesh. In the different economic section in the country, insecticides are one of the major sectors which pay a contribution to the national economy. The report invested in short country profile includes common information and main economic indicator.

In Bangladesh, it specifies the business environment for household insecticides market development. Bangladesh is predominantly an agricultural country with an area of 147570 sq. km. Agriculture plays an important role in the life of the Bangladeshi people. The major crops produced in our country are rice, wheat, jute, potato, sugarcane, vegetables, and tea. In Bangladesh 2894 different types of insecticides are permitted, until 2014.

1.2 Motivation

This application helps farmers to find crop diseases and how to solve it. Most of the farmers of Bangladesh are not capable of receiving decisions on pest management and Insecticides application. Often farmers apply Insecticides when there is no actual need or they use wrong chemicals at wrong doses, process and times. As a result, they kill the inclinable creature effortlessly and create pest strength causing greater problems and crop damages. This application helps the knowledge, treatment, and perception of the farmers reflect their habit of Insecticides use and decision-making procedure regarding the pest management strategy. Therefore, this study is formulated to realize the insecticides behavior practice as well as to evaluate the farmer's knowledge, attitude and perception concerning the impact of insecticides on the environment.

1.3 Objective

The objective to design and develops the project is to produce a disease detection application for Bangladesh. This application is to be easy to use and user friendly for farmers over the android operating system. In this application farmers can find how to cultivate potato.

Using printed maps and written information we can change the traditional techniques of human guides. In Bangladesh, there are many agricultural problems. Insects is one of the biggest problems in agriculture. So, using this application we can easily find out the crops disease. Collect pure information about insects, insecticides and their uses. Chose a compatible mobile platform that is accessible to the mass population. To design user-friendly User Interface. To do necessary coding and build up an Application. To organize them in a way that this information can be easily gathered in the database. To provide location-based services we use this application.

1.4 Expected Outcome

Thousands of developers are developed more and more android application. In the App market, our application has much competition. There are many Android application is produced by thousands of developers. [1]

This application has supported all android devices. At present android device is so popular and android application is more user-friendly. After searching for a location using the Internet, we can use that location if we are in data online. The user has to connect to the internet for affix and see the posted data so our prospect and user expend more time with this application. In the forum, option registered user only can post and comment so this makes the application dominated. The helpline will help farmers in any emergency case. In this application all the important tools available which raise the users of this app.

1.5 Report Layout

In this report chapter 1, we introduce our project application and discussed about motivation, objective and also its expected outcome.

In this report chapter 2, we discuss about the background circumstances of our project. We also talk about the related work, comparative studies, scope of problems and challenges of the project.

Chapter 3 provide us requirement and specification that means what type of hardware and software we need. And also describe our plane.

Chapter 4 we will define our project front-end design. And how it connects out our back-end. We also shown how to design our project. Which kind of material we use.

Chapter 5 is implementing data base design and storing data in our hosting server.

CHAPTER 2

Background

2.1 Introduction

Bangladesh is an agricultural country. There are many types of crops grow in Bangladesh, such as rice and jute are the primary crops and Tea is grown in the northeast etc. And another momentous thing is that the number of android phone user is accretive day by day. Bangladesh is one of the major agricultural striking country in the worlds. Android application deliver the simple way to resolve any eminent problem. There are many applications for android what are used for crop disease in Bangladesh.

In this application user can contact with crops diseases officer and they can find out how to cultivate potato and search any places 64 districts of our country. He/she can search nearest places based on location where contract with officer to solve the crops problem.

2.2 Related Work

There are many types Application in Google Play Store. In this part we discussed about some related apps Such as "Krishi Totho O Cashabad", "Krishi somosha O Somadhan"," Phosoler Rog-balai O Protikar"," Krishi Poshu, Fol, Sobji Rog Balai Somadhan"

2.2.1 Krishi Totho O Cashabad

In this application helps people to know about Krishi Totho. People find static information here. There are almost 120 types of Krishi Totho are available and you can find here easily. In this figure 2.1 we showed the user interface screenshot of the app Krishi Totho O Cashabad. [2]
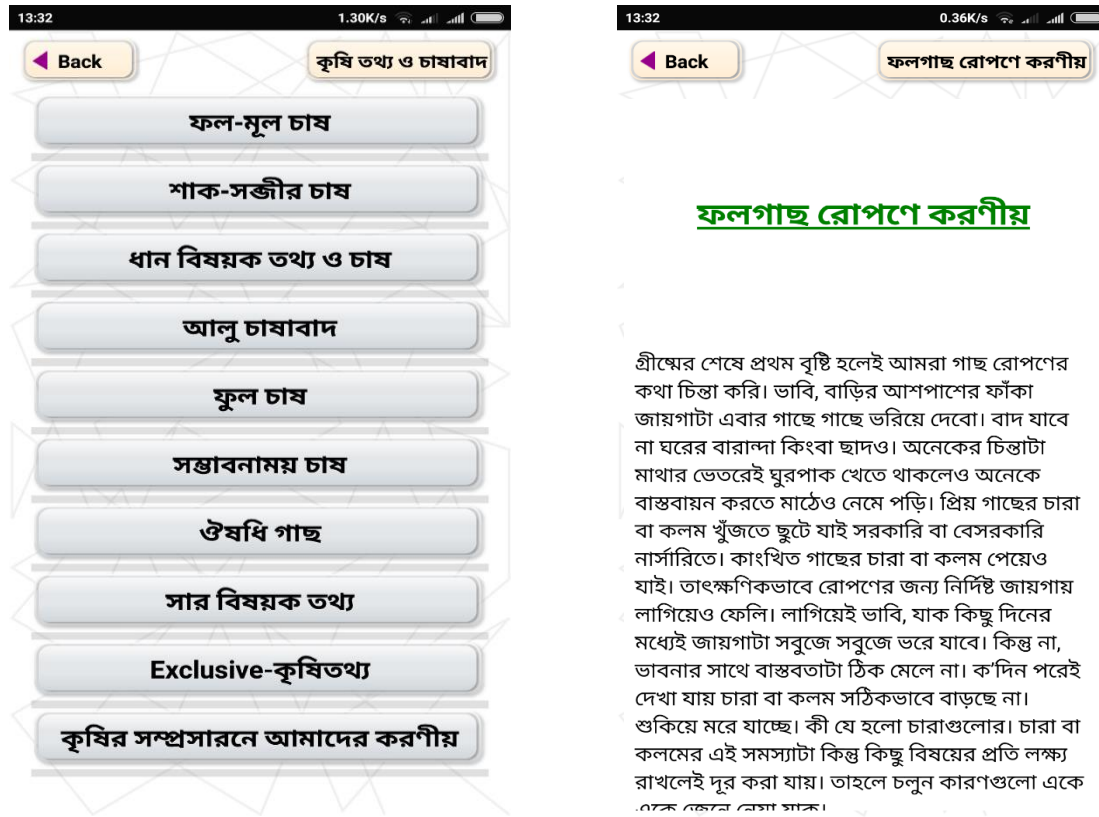
Figure 2.1: " Krishi Totho O Cashabad ''application user interface.

2.2.2 Krishi somosha O Somadhan

This is the information about '' Krishi somosha O Somadhan'', Here you can find different types of agricultural crops problem and different types of fish cultivate. Figure 2.2 is the "Krishi somosha O Somadhan" applications user interface screenshot. [3]
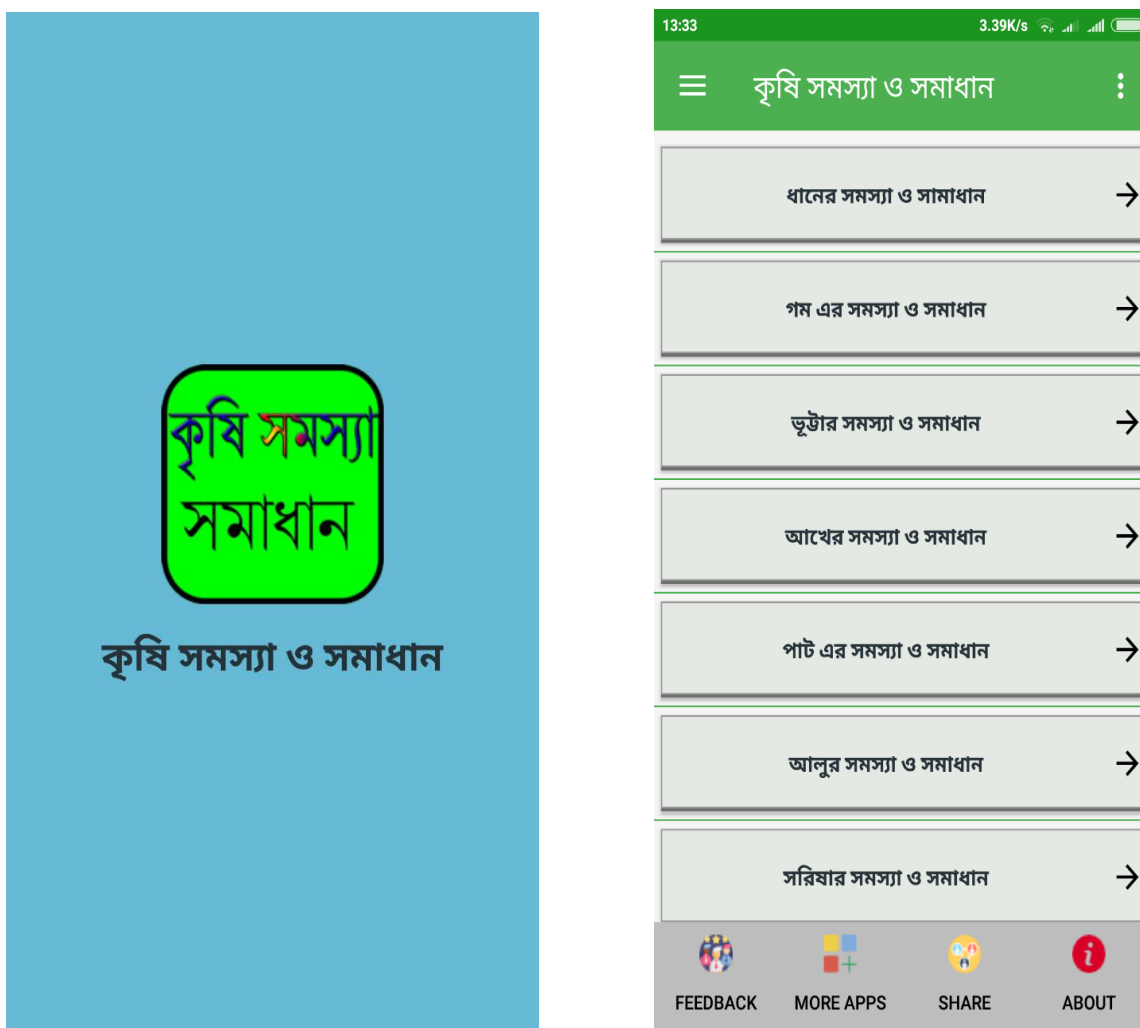

Figure 2.2: "Krishi somosha O Somadhan'' application user interface.

2.2.3 Phosoler Rog-balai O Protikar

In this application where you can find crops diseases and protect. Figure 2.3 is the "Phosoler Rog-balai O Protikar" the user interface screenshot. [4]
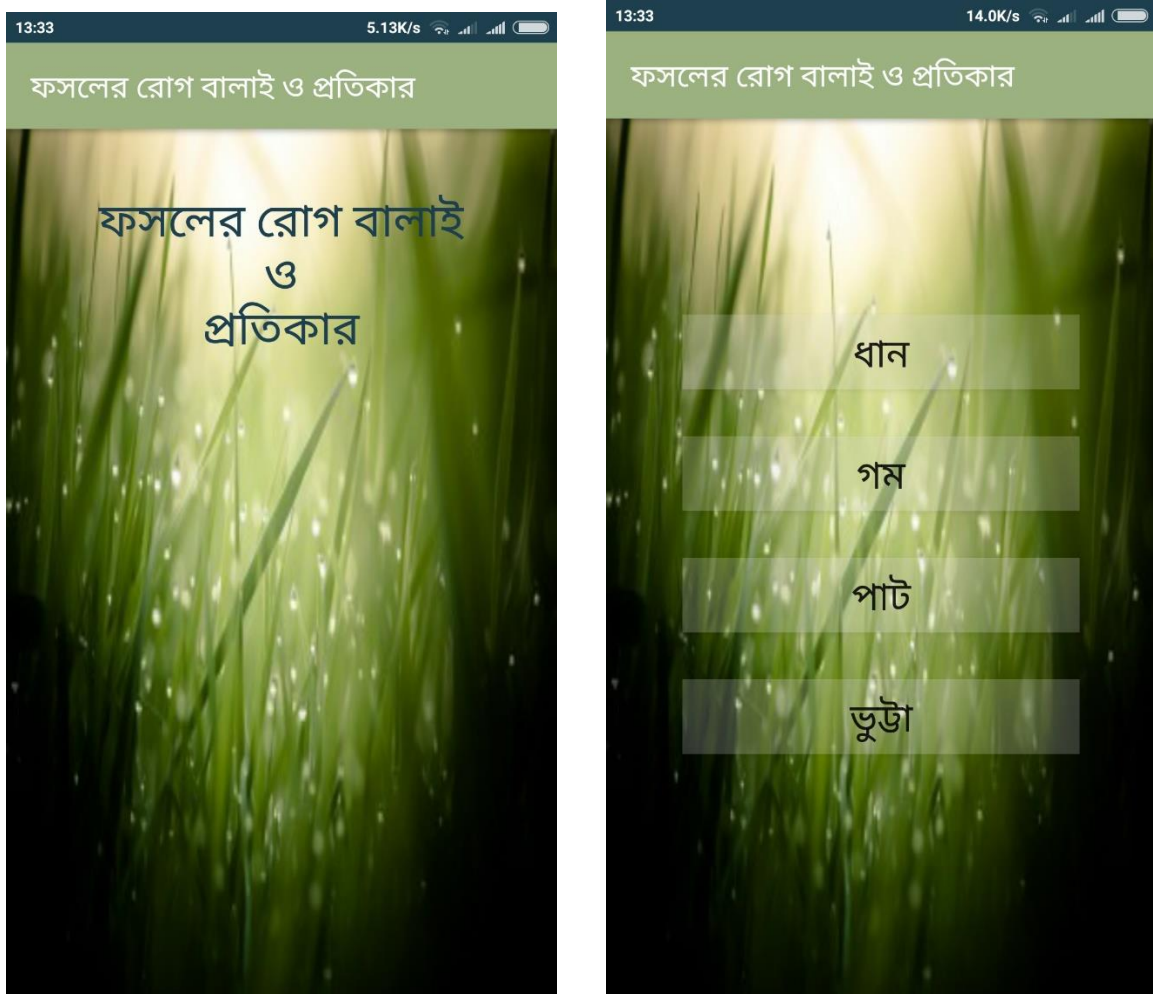
Figure 2.3: "Phosoler Rog-balai O Protikar" application user interface.

2.2.4 Krishi Poshu, Fol, Sobji Rog Balai Somadhan

In this application where you can find crops diseases and protect and here you can find almost 60 types of crops problem which help to you the crops disease problem. Figure 2.3 is the "Krishi Poshu, Fol, Sobji Rog Balai Somadhan" the user interface screenshot. [5]

Figure 2.4: '' Krishi Poshu, Fol, Sobji Rog Balai Somadhan'' application user interface.

2.3 Comparative Studies

There are many agriculture crops diseases related apps in Bangladesh. Those application help to people to solve diseases problem. They give the information about agricultural crops diseases p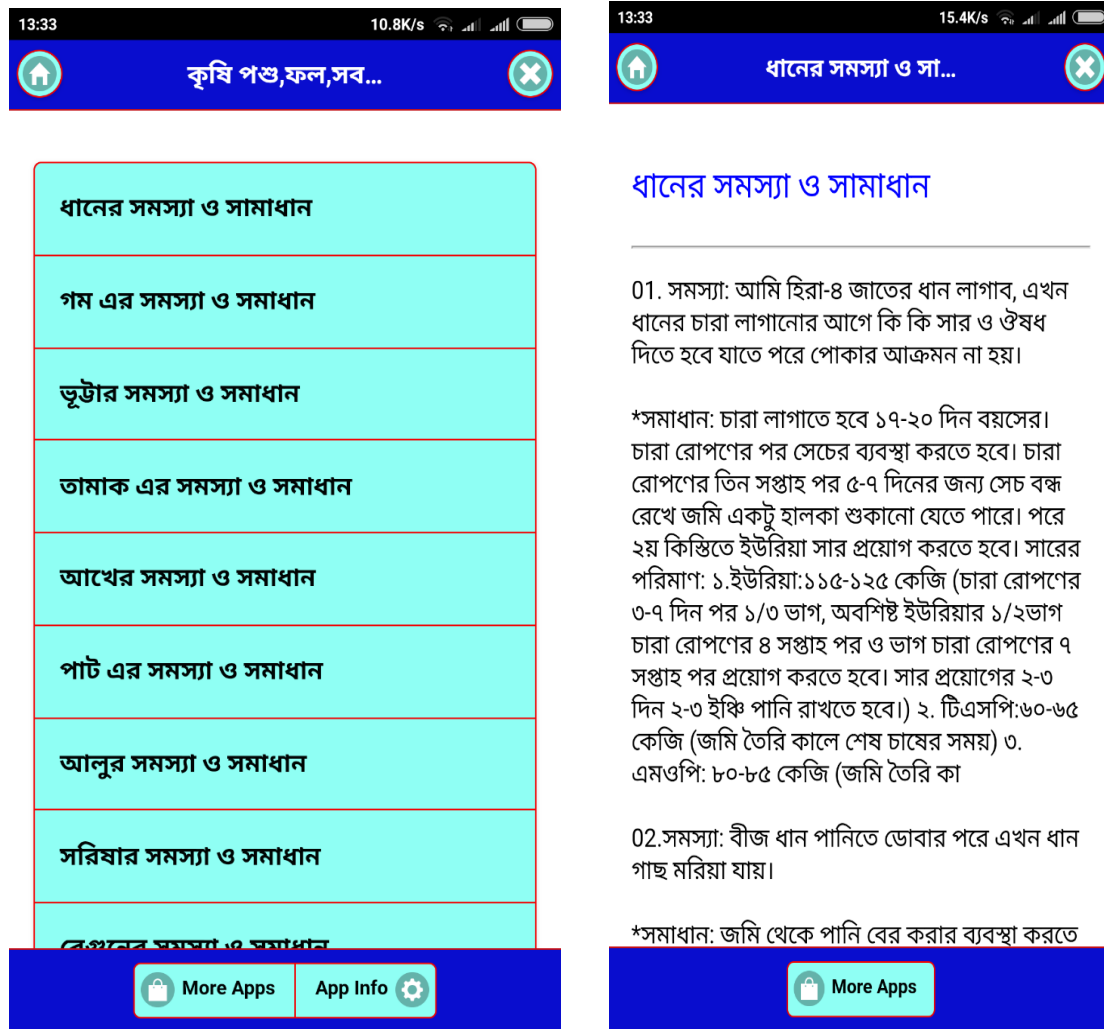roblem. But there is some restriction. Most of those apps are fixed type app. But they didn't give the real-time solution like how they find out which problem is mine crops and which diseases is mine plants. But in our Application we try to fix the limitation. Here cultivator can find how to cultivate potato and then here we have contact officer number list to contact with them anywhere in Bangladesh at 67 district to solve the cultivator problem.

In 2018 we see in Bangladesh where 68 million people in our country use and 64 million people use mobile internet. So in this application we create map where cultivator find the nearest agriculture institute.

2.4 Scope of Problems

- ❖ First of all, this application is user-friendly, this will boost the general people in reality what they want. We viewed about the other app that obtainable in the Google play store. They cannot complete the claim for cultivator.
- ❖ Cultivator face many types of problem when they grow their crops so in this reason they couldn't grow more crops. So I think this is the great scope to develop something new which is really helpful for cultivator.
- ❖ It supports almost all android phones and its user friendly, User can easily use it and cultivator can be carrying phone everywhere so it will boost farmer.
- ❖ This application is secured.

2.5 Challenges

When you want to do something you must be face some problem and our project has some challenge too. As Bangladesh is pretty developing country so we need to improve some Cultivator crops disease problem so they can grow more food and make more money and the most important things is our application is online based. So internet is not available in everywhere in Bangladesh.

Bangladeshi all cultivator is not literate because they have not much more money to be educated, So the main challenge is cultivator to interest about this application to how they used it and solve their proper problem and how they contact with officer. So all those things might be challenging for us.

CHAPTER 3
Requirement& Specification

3.1 Business Process Modeling

The Next figure 3.1 business process modeling (BPM) in systems engineering is the activity of representative processes of a creativity, so that the current process may be explored or improved. BPM is naturally implemented by business market analyst, who provide skill in the modeling self-control; by subject material experts, who have specific knowledge of the processes being molded; or more usually by a team including both. Otherwise, the process model can be derivative directly from results' logs expending process mining implements.
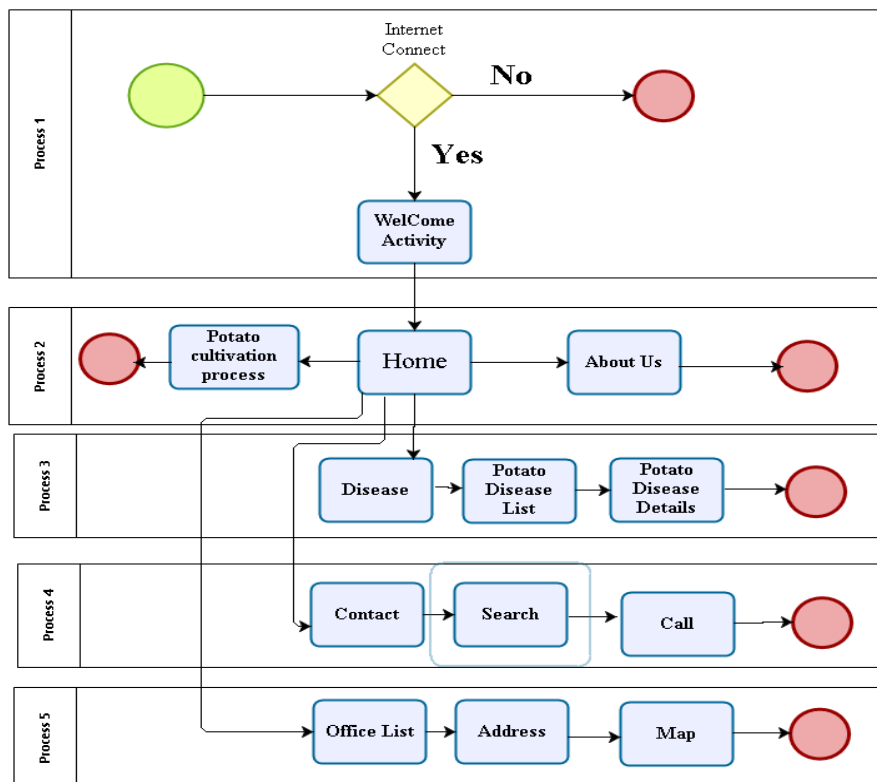

Figure 3.1: Business Process Modeling for "KRISHI-HATIYAR" mobile application

3.2 Requirement Gathering and Analysis

Requirement gathering and analysis is one of the major circumstances of application development. When it approaches to any type of project, requirement gathering plays a significant role. Requirements gathering is not only vital for any project; it also assistances to manage a project. Require can be the serviceable requirement and non-serviceable requirement.

3.2.1 Software Requirement

Android SDK

Android Studio is the certified Integrated Development Environment (IDE) for Android app development. This is a software development kit is as expected a set of software development tools which come to an agreement to the formation of applications for a fixed software package, computer system, hardware platform, operating system, video game console, or similar development boards. Android Studio proposals, even more, features that improve your throughput when structure Android apps. In Appendix B unit figure B1 has presented the android SDK.

Android Studio

Android studio is the certified IDE (Integrated Development Environment) or tool (layman terms) for developing application for Android platform. It has a robust editor apparatus for developing inventive UI and emulators for not the same versions where anybody can test and act out sensors without taking actual Android devices. It also has a very valuable griddle plugging expending which developer can make application files (APK) with different formations. And it creates exporting and uploading APK on play store stress-free with an only click. In current stage Android studio has gotten instant run which marks testing even quicker and easier. [8]

Java Package

JDK stand for (Java SE Development Kit). For developing on java take in a complete JRE bits tools for developing, debugging, and monitoring java application. Therefore, working on android studio we must install Java SE Development Kit. The latest version is 8 and we install version 8 to work accurately.

Emulator & Phone Driver kit

Emulator is a sample which can develop, and test Android apps short of using a hardware device. The emulator maintenances Android Wear, Android phone, tablet, and Android TV devices. It comes with predefined device types so you can get started quickly, and you can create your own device definitions and emulator skins. The Following figure 3.2.3 is the android emulator. It simulates a device and displays it on the development computer. The Android Emulator is powerful, fast, and feature-rich. It can transference data faster than using a connected hardware device, fast-moving up the development procedure. The multi-core feature lets the emulator take advantage of multiple core processors on your development computer to improve emulator performance even more. In appendix B unit figure B2 has shown the associated diagram of emulator.

3.2.2 Language Requirement

Java

It is a programming language explicitly intended for used in the setting of the internet. It was structural design likes immediate C++ language such that having the "look and feel" of the C++ language, but it is more stress-free to use than C++ and highlights an object-oriented programming prototype. Java can be cast-off to design comprehensive applications that possibly will execute on only computer or be disseminated between servers and client in the system. It can also be cast-off to construct a little application component or applet for usage as part of a web side. Applets make it achievable for a web page manipulator to cooperate with the page.

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3.2.3 Hardware Requirement

• Personal Computer

• Android Smart Phone

3.2.4 Functional Requirement

Starting the point of outlook of our method, it should have various functional requirements alike, a crop details section, a map section, camera and contact section where only check person and use this type of facilities.

3.2.5 Non-functional Requirement

Non-functional requirements are benefit to being further efficient, boost performance, memory uncontrollable, smoother set-up, and load on rapidly as likely to our application. Application UI must be user friendly and attractive for first-rate user experience.

3.3 Use Case Modeling and Description

The Next figure 3.2 is the use case modeling of our development. A use case diagram at its pretentious is a representation of a user's collaboration with the system that displays the connection between the user and the different user cases in which the user is elaborate. A use case modeling can classify the different types of user of a method and the different use cases and will often the go together with by other types of diagrams as well [10]

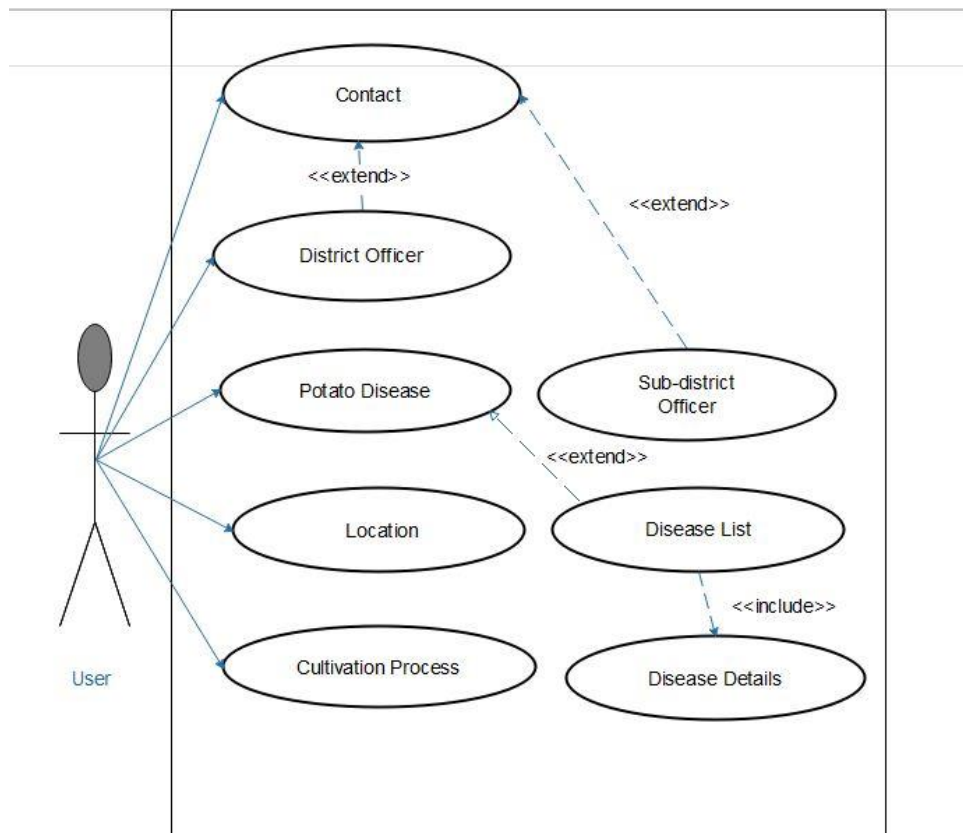## 3.3.1 Use case Description for user

Figure 3.2: Use case of user for the application

❖ Use Case-1 (Contact)

An actor (user) can contact District and Sub-District Agriculture Office by using phone call. Actor search his/her District or Sub-District name to contact for discuss many types of problem.

❖ **Use Case-2 (Potato disease)**

By clicking contact layout actor can see a list of potato disease list. If actor tap or click any one of list actor see this disease details. Disease photo, disease name and its details show on this activity.

❖ **Use Case-3 (Information center with Location)**

In Information center with Map activity now actor see a google map and information about division some institute. Hear we just provide Khamar bari krishi office. By using google map actor find out this office destination. And also search any place and also see it direction. If actor tap on marked icon, he/she can know this location details.

❖ **Use Case-4 (Potato Cultivation Process)**

When an actor clicks Potato Cultivation Process layout then actor can see different types of potato cultivation process. An actor can see potato cultivation details by using this app.

3.4 Design Requirements

The design requirements for our project will altered from the other projects, because our project will work on our specific problem of the farmer. We designed our project for a specific fragment, that is agricultures site of Bangladesh and we try to be responsible for the all things to our application that are essential for a user to control our application simply.

In our application we design a crop activity which is potato daises list and their details.

- ❖ We design a map so that a farmer can find agricultures help office places and detailed information of that places and also using it user can see the nearest places.
- ❖ We design camera. This camera daises potato percentage. We should also keep in mind something when we designed
- ❖ Android Support v7 (for layout)
- ❖ Logo (for icon and logo)
- ❖ Color code (for color background)
- ❖ Our app responsive, as a result support all size of mobile phone or tablet.
- ❖ Toolbar support

CHAPTER 4
Design Specification

4.1 Front-End Design

User Interface on of vital part for every software (android or OS etc.). The Achievement of the application is generally depending on design and easy access for the user. From the viewpoint of designing, Front-end is the utmost essential part for the application development. It is fragmented away at introduction level and user can openly communicate with this. It is vital to build up a direct and effectively appreciative front-end or GUI for the user of the application. Therefore, we strained to keep our design as modest as possible and simply reachable for the user, but the development assignment was not so easy. We assign our application's front-end design as follows:

4.1.1 Welcome page

When we install this application we need to internet connection. If we have no connection mobile data or Wi-Fi we show Figure-4.1. But our connection is ok then we show Figure-4.2. This welcome show three second. Then it will go Home page or dashboard page.
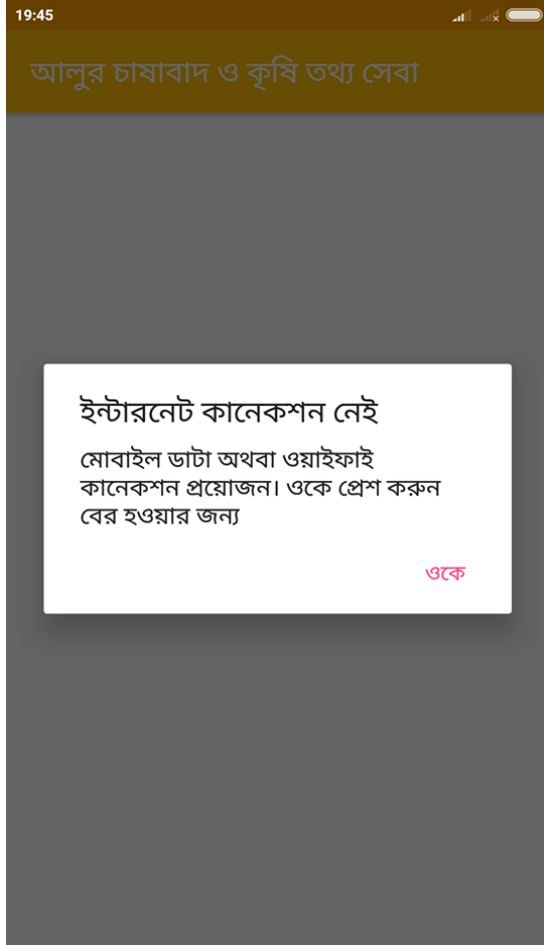

Figure 4.1: "No internet connection" & "Welcome page"

4.1.2 Home Page:

Basically we have four part of our project. There are Crop, Map, Camera and Contact option. Crop activity provide us only potato disease list then it details. Then Maps provide us nearest location and destination agricultures office. Camera activity is under contraction. We just take image and save it our SD card. Contact officer provide us every district and sub-district agriculture officer phone number and their list. About developer and super visor activity just our team and our super visor details. Shoe
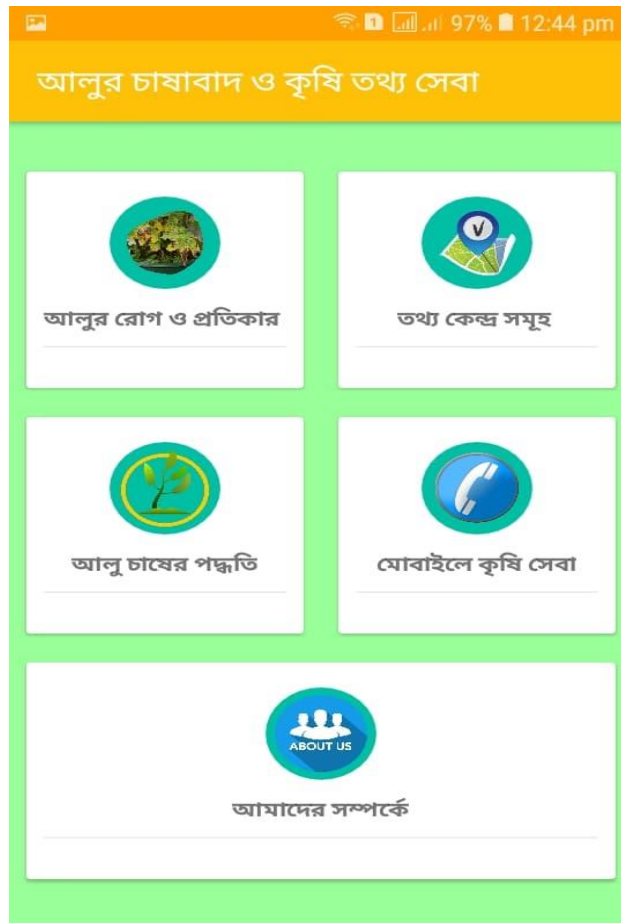
Figure 4.2: "Home page"

4.1.3 Potato disease details:

When we click or tap on crop layout we show the list of potato disease list. This List activity show the disease show the name disease with image. Hear we use list Recycler View and Card View. We load this data by using volley library. When we click any kind of list we see next activity. Next activity design for Potato disease details with image. In front-end we use CollapsingToolbarLayout using Android Material Design Support Library. For this reason, when we scroll, image will hide then we just see the name of disease name and it details.
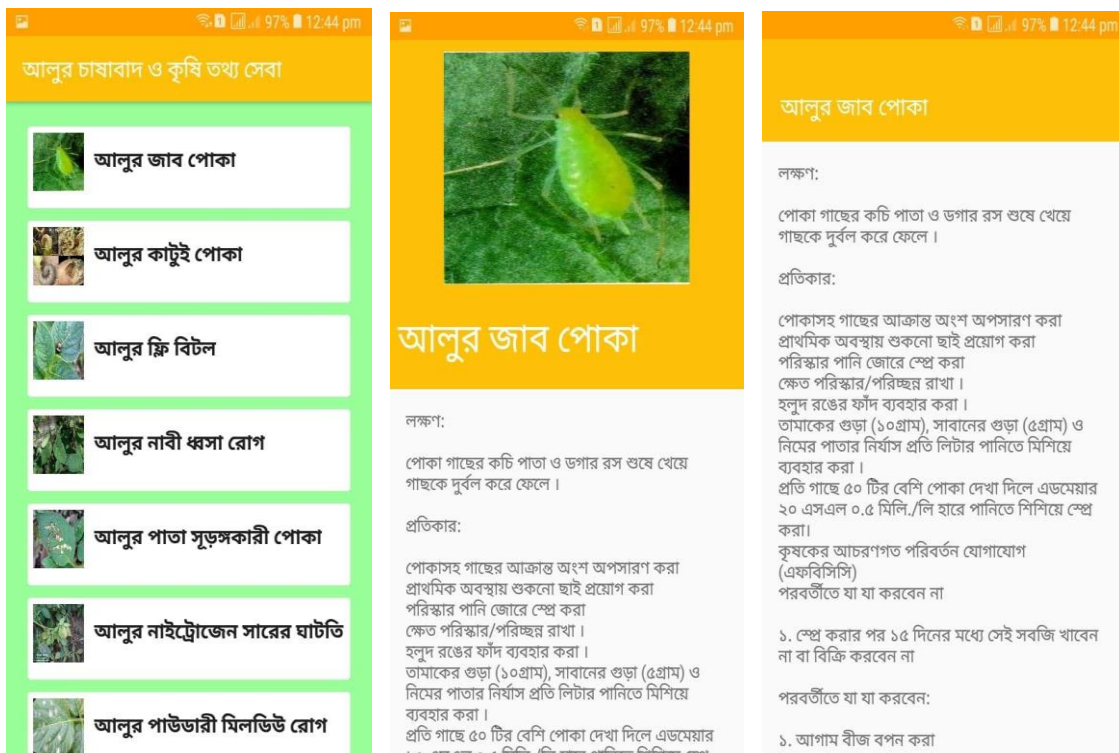
Figure 4.3: Potato disease list page, Individual Disease name, photo & details "Potato disease details" after tap on Crop

4.1.4 Information center with Map:

When we click on Information center with Map layout, we see this activity. Because we can't complete this activity so now this activity under contraction. That only show the khamar bari market place but from google you can find agricultural institute. So that a farmer can find out his/her nearest agricultures office easily.
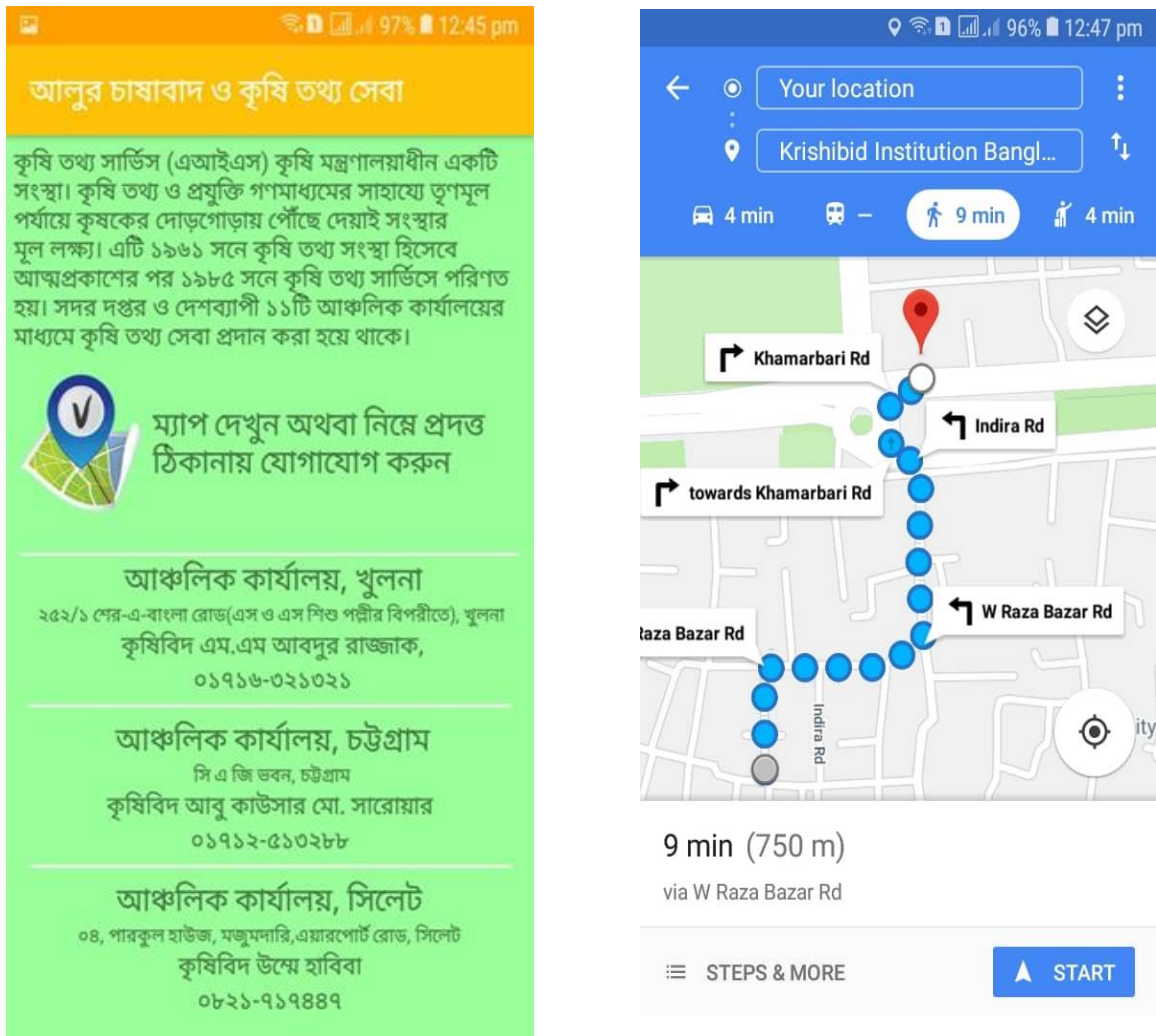

Figure 4.4: "Information center with Map page"

4.1.5 Potato Cultivation Process:

In this section we can see the how to process potato by Potato Cultivation Process layout. When click the Potato Cultivation Process button then find out others details like different types potato and how to make better land to growing better crops, when we cultivate potato, how far we grow potato then we get better potato, how much fertilizer we give in the potato cultivate land, irrigation system, how to serving potato, potato different types of disease, then how to collect potato food in perfect day.

Figure 4.5: "Potato Cultivation Process"

4.1.6 Contact:

After clicking Contact layout, we see this activity. In this activity we search all the districts or sub-districts to contact the districts or sub-districts officer. By using AutocompleteTextView and we see our districts or sub-districts officer name and his/her mobile phone no. Then we click call icon to contact officer. If we click ok, then this number show on our dialing keypad.
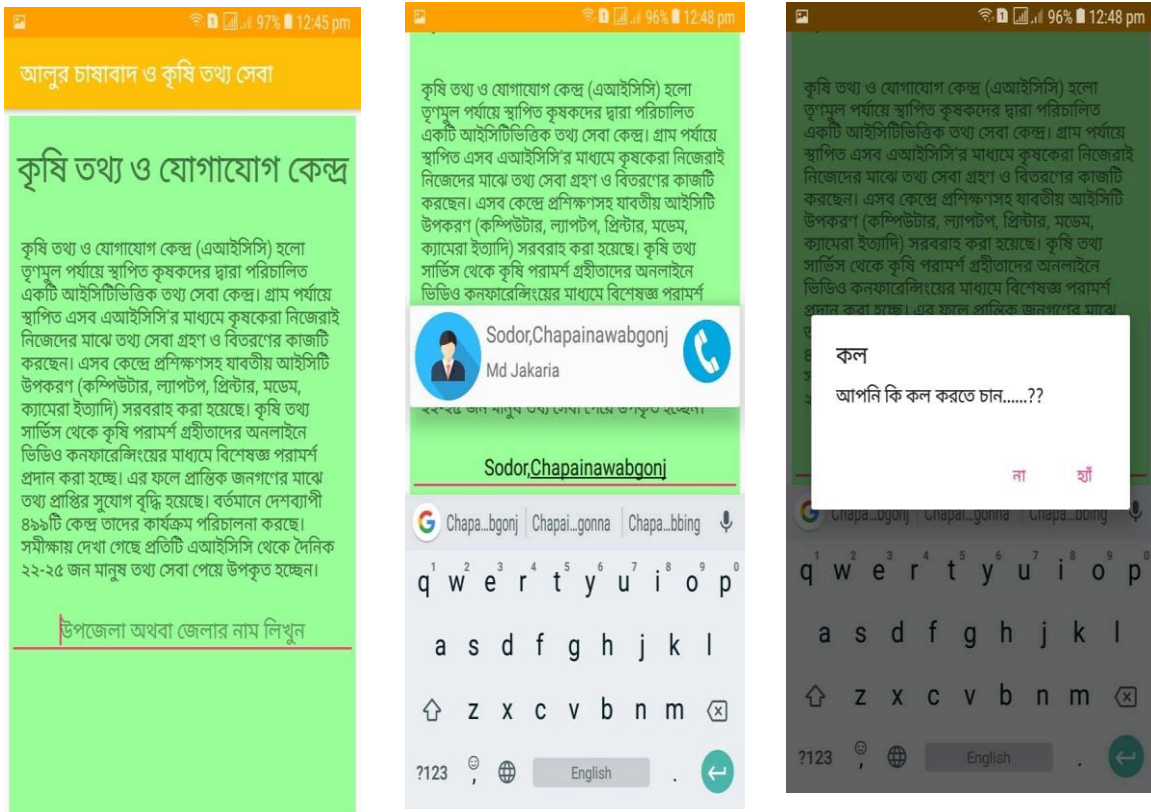

Figure 4.6: "Contact Activity" for Contact Officer

4.2 Back-end Design

Back-end is the portion that working behind schedule the project, but the manipulator is not alerting or cannot see this portion. In reality front-end project is only method to act together with the user but user cannot lookout and never imagined how to this portion is working. Back-end does the whole lot that occurs on the server or behindhand the application. For android application, it is further difficult to holder back-end portion than a web application, for the reason that android device modules are very limited.

- **JSON**
  On our application, we use JSON database develop and continue the back-end unit which diagram has exposed in the appendix section B Figure B6 & B7. We assign our application's back-end design in the associated diagram unit in the appendix.

- **Volley**
  The volley library has the structures like automatic arrangement of network request, multiple parallel connections, request prioritizing, cancel/block a request, stress-free management of UI with data gotten asynchronously from the network and also suggestions stress-free customization. We load the all data by using volley library. Show Appendix Section B Figure B8.

- **Alu table**
  We store the all info of alu disease in that table. We store the disease photo, disease name and disease details. Disease photo load by Picasso photo loader then it saves it local data. Show Appendix Section B Figure B8 show the data base.

- **Contact**
  Contact officer database we use local database. All the data we save it on array adapter Show Appendix Section B figure B9 show how we implements the local array adapter. We process that data to easily find out officer details.

4.3 Interaction Design and UX

Interaction design funds by which we can lookout the association between a framework and its user. All things well thought-out association formation is the actions which figure out the user topic space, development the topic and discover the conclusions, achieve activities by the as regards comes approximately and take carefulness of the topic. On the other hand, user knowledge attentions on the overall capability between a user and an application. In our application, some structures can cooperate with the user. For UX we have strained to give some fantastic understanding by our application. We keep our system simple and free from anxiety for better understanding and presentation for the user.

4.4 Implementation Requirements

We only add few package and helpline information but we have to input the data of the agriculture officer. We want more data and the process of outlook page. For executing this we need tool that's the implement constraint. To implement our project, we cast-off different type of tools, components those help us to established our project successfully. We need to implement map option and camera option. We also need many kind of data of crop disease details. For hardware this is the implementation requirement and other important thing is that for executing this we want some tools like android studio, SDK, JSON etc.

CHAPTER 5
Implementation and Testing

5.1 Implementation of Database

The database execution phase is anywhere everyone installs the DBMS on the necessary hardware, improve the database to run best on that hardware and software raised area, and generate the database and load the data. Show section B Figure B6.

5.1.1 Database Design

For storing our applications data, we used JSON. **JSON (JavaScript Object Notation)** stands for JavaScript Object Notation which is light-weighted calculated such that humans can without difficulty read data substitution and its implementation. [11]

- **Volley**

  Volley is a HTTP library settled by Google and was first presented during Google I/O 2013. This library is used to pass on data over the network. It actually makes networking more rapidly and stress-free for Apps. It is obtainable over and done with AOSP (Android Open Source Project) repository. The volley library has the structures like automatic arrangement of network request, multiple parallel connections, request prioritizing, cancel/block a request, stress-free management of UI with data gotten asynchronously from the network and also suggestions stress-free customization.

- **JSON**

  JSON notation covers these basic fundamentals which also use in JAVASCRIPT. JSON syntax is self-same stress-free to use. We have to use simply **->** as a syntax which be responsible for us a stress-free parsing of the data and quicker implementation of the data. In the meantime, its syntax is self-same small and light weighted that's the motive that it implements the reaction in the more rapidly way. It has the extensive range of maintained browser compatibility with the operating

systems so the submissions made with the coding of JSON doesn't need much strength to make it all browser well-matched. For the period of development, the developer thinks for the not the same browsers but JSON be responsible for that functionality. On the server side parsing is the vital part that developers want if the break down will be fast on the server side then the only operator can get the fast retort of their response so in this case JSON server-side parsing is the strong point that point out us to use the JSON on the server side. JSON is the Grade A tool for the distribution data of any size even audio, video etc. This is because JSON equipment the data in the arrays so data transmission makes stress-free. For this reason, JSON is a larger file design for web APIs and for web development.

5.1.2 Storing Process of Data

For string data, we use local server phpmyadmin. We store it on https://www.spherelab.xyz domain. We have just on one table its name alu table. Our data base name ProjectData and the Table name alu. Alu table has been added in appendix B section in figure B2. There are four field in the alu table. Id field, name field, img_url field and description filed. Id field we just add id for crate a primary key. Name field has included potato disease name, img_url store potato disease photo location and finally description field store the potato disease details. Then we produce JSON data for take data from server. Show Appendix Section B Figure B4 & B5.

5.2 Implementation of Front-end Design

In the meantime, android devices are bantam in approximation, so the plan should to be categorized in no time together with key part of the framework. It's self-same thought-provoking to develop a beautiful front-end design. For the reason that, for developing a project for android devices, all the time we have to think through the display dimension of android device, it's very strong to balance the design with android presentation size. For shared design, we continuously effort to be simple in UI design and we try some material design for create the application attractive. But the utmost thought-provoking helping is, to create our application, device self-determining, because there is various kind of

Smartphone that provision android, between them some device has very week headwear module, in small gravity those devices behave like strange. Out their different device be able to different in version. Therefore, we have to design a method which can sustenance all the devices and we have to make sure that, the system that support furthermost of the android version from original to older and doesn't create any extra stress on the devices. We emotionally involved our application front-end implemented design below:

5.2.1 Alur Rog O Proticar Layout:

In this layout we fetch data from server and load the array List. We use Recycler View and card view for design. It is dynamic design. We just design on list other default connect. Hear we also use loader for loading time. If our internet connection is slow, we see the loading design. We load all data by using volley library. Volley Library load all from JSON parsing. Next activity we put extract all the data from this activity. We use Design Support Library Name Collapsing Toolbar Layout. We divide it four-part Coordinator Layout, App Bar Layout, Collapsing Toolbar Layout and Nested Scroll View. Set all data from server by using android volley library. With some easy steps, now we have a wonderfully animated detail screen that contains most of the effects we've understood in Material Design specs. We can modify this in many ways truly easily, and even be able to some more composite effects by making custom performances. We see the database in appendix B section in figure B7**.**

Figure 5.1: "Alur Rog O Protikar Activity" Load data from server.

5.2.2 Contact Layout:

By using this app, a man can call agriculture officer. When he/she click on contact layout then see a search option. This search option is android autocomplete text view. We write the name of our district or sub-district name. Then autocomplete text view show officer name and district and sub-district name. This data show from array list. We store it local data. We see the database in appendix B section in figure B9.
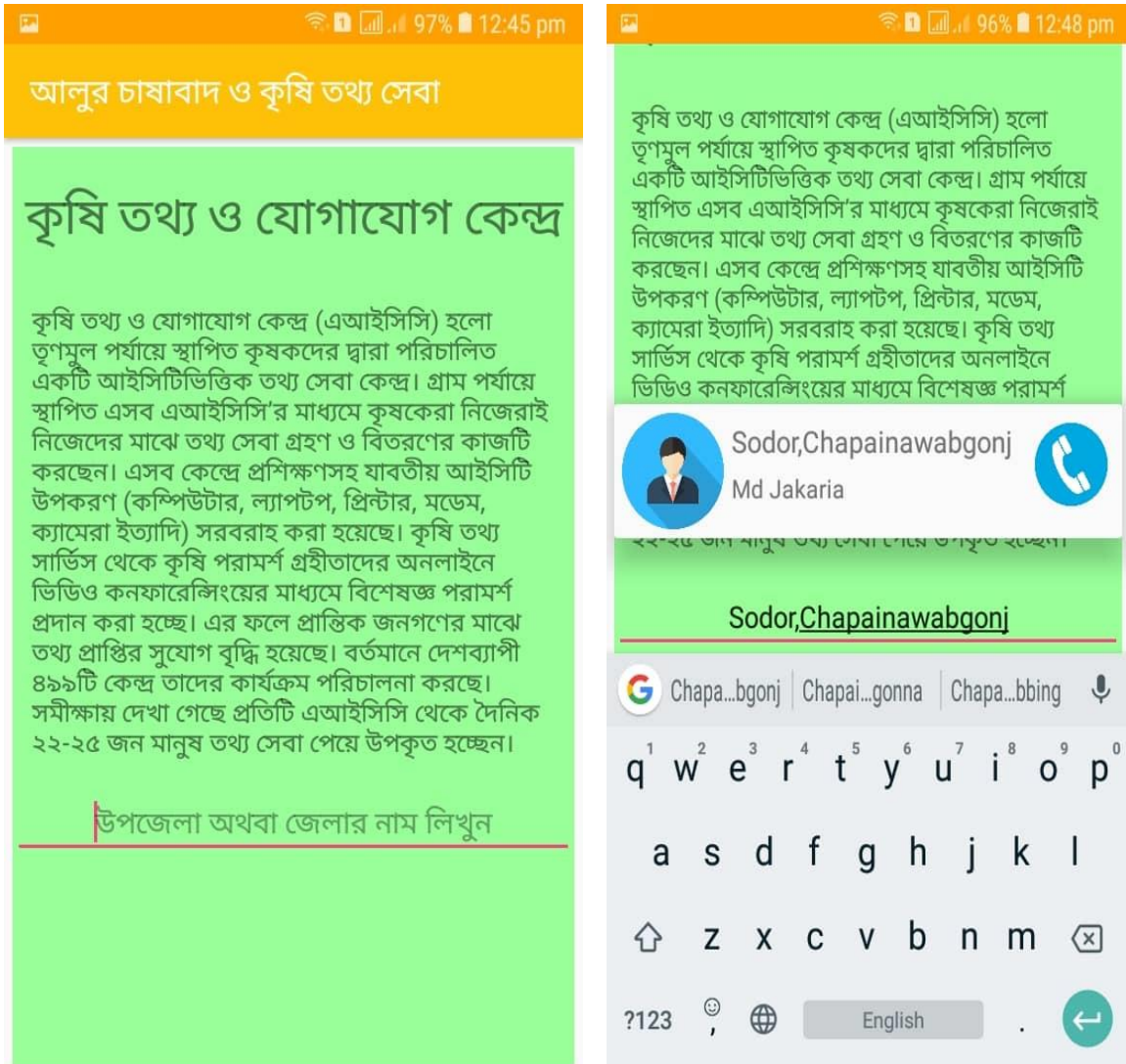
Figure 5.2: "Contact Activity" Local data.

5.3 Implementation and Interaction

The structural design of a software system describes that system in expressions of mechanisms and connections among those modules. In real world, relations can found almost all over. Relations is the key to make a structure dynamic and gorgeous to user. It's very essential to create a system collaborating and we also effort to. As point out in earlier,

we also contain some exceptional feature to cooperate our system. Our application is well implemented and the interaction of our application with the users is quite exciting

5.4 Testing Implementation

This table shows the testing Implementation of this app. We must test the Application and check the application work it perfectly or not. In bellow table we show the testing implementation.

Table: Testing Implementation

Test Case	Test Input	Expected Output	Actual Output	Result	Tested On
1.Install Application	We test in various different Android version. Like Android (8.0) Oreo Android (9) Pie	That is successfully install with those version	Installed successfully	Passed	22/11/2018
2.Menu	Click the menu	Show all our option	Show all option	passed	22/11/2018

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3.Potato cultivate process	Click the Potato cultivate process	Show all our details	Show all details	passed	22/11/2018
4. Information center with Map	Click the map option	Show the map direction	Show the map direction	passed	22/11/2018
5.Nearst Agricultural institute	Click the current location on the map	To show the nearest agricultural institute	To show the nearest agricultural institute	passed	22/11/2018
6. Crop	Click the crop option	To show the potato disease	To show the potato disease	passed	22/11/2018
7.Potato disease	Click the alu job poka	To show the details	To show the details	Passed	22/11/2018
8.Contact Officer	Click the Contact Officer	To show the contact name	To show the contact name	Passed	22/11/2018
9. Search District Name	Click the search option and write the District Name	To show the search related all District	To show the search related all District	Passed	22/11/2018
10.Show Contact Number	Click call icon the search district what you want	To show the Contact Number where	To show the Contact Number where	Passed	22/11/2018

		you want to call	you want to call		

Chapter 6

Conclusion and Future scope

6.1 Discussion and Conclusion

This application is an important application for farmers. Bangladesh is an agricultural country. There are many fertile lands in our country. But farmers cannot cultivate their land properly for pest. Crops are not grown properly for disease. Bangladesh is one of the major agricultural attractive countries in the worlds. There are many agricultural crops diseases related apps in Bangladesh. Those applications discuss about the disease problem. But our application can detect the problems of crops. Our application also has Information center with maps; this map helps farmers to find the nearest agricultural office. Then farmers can contact the agricultural officers by phone call. The user can use these services through the internet, Global Positioning Systems (GPS) and Google maps. So, by using this application any user can enjoy many facilities and find the solution to any problem in their farming period.

6.2 Scope for Further Development

This application has been manifested with future development probabilities in consideration. We wish we could reduce the limitation and enhance the system of the app in a short time.

Notification:

We want that in future, our proposed system can show a notification. The admin and the user of this application will get a notification and that will help to give any solution instantly. That makes the forum part efficient and user-friendly for users.

Off Line Version:

In future, the proposed system could be converted into an offline version. Then this guide will be more helpful for the farmers who do not have access to the Internet facility. Because farmers do not use the internet in common life and in our country, there are many remote areas where we don't get the internet. If the page became load the application works without. Making it offline will increase its storage but it could be beneficial for the farmers who don't have internet access.

Information center with Maps:

In future, the proposed system will improvise the map and searching. Maps will more striking and helpful for farmers.

Potato Disease Detection:

First intention was disease detection by using camera. Now we just complete a camera and take a photo and also save it SD card. We connect our app with OpenCV. But we can't solve this part. In future we will try to complete this part.

Appendix

Appendix A: Project Reflection

This Project Reflection Is provide an introduction. This project was very claim and lovely to us. We had been enjoyed to develop this app. we learned many things on our app development period. Still we are constantly developing and correction one another's ideas. We tried each other's and help another to complete this project. Here, a survey form of this application.

Table A1: Survey form of this application

Serial No.	Query	High	Medium	Low	N/A
1	How much user friendly to use this Application?	■	■	■	■
2	How easy to use this Application?	■	■	■	■
3	How much easy to see our crop disease?	■	■	■	■
4	How much easy to find out agriculture institute by our map?	■	■	■	■
5	How to cultivate potato with Details?	■	■	■	■
6	How much easy to contact officer by our contact officer item?	■	■	■	■

Appendix B: Related Diagram
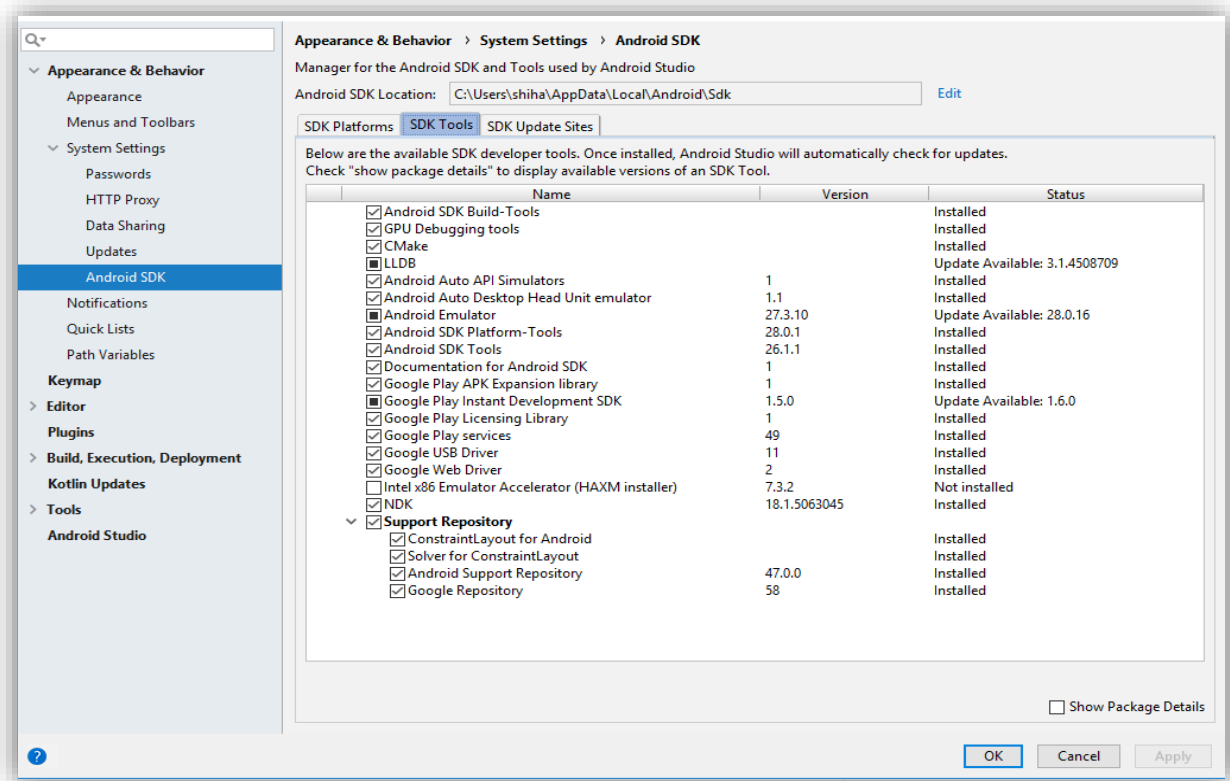
Figure B1: Android SDK
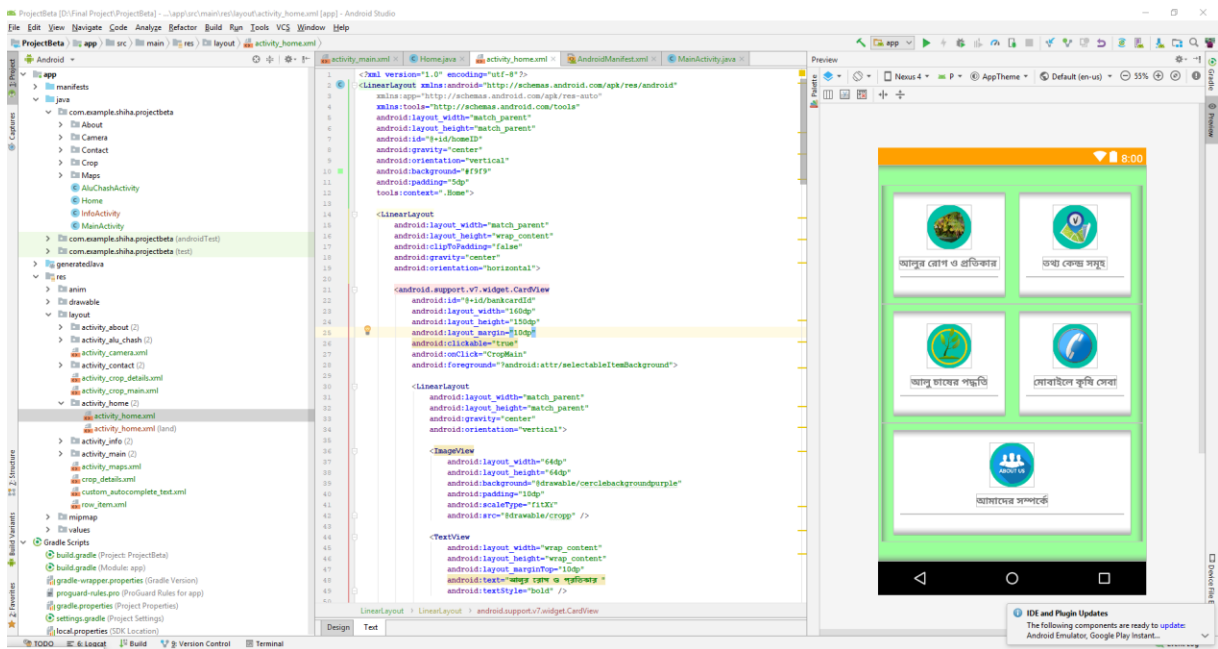
Figure B2: Android Emulator
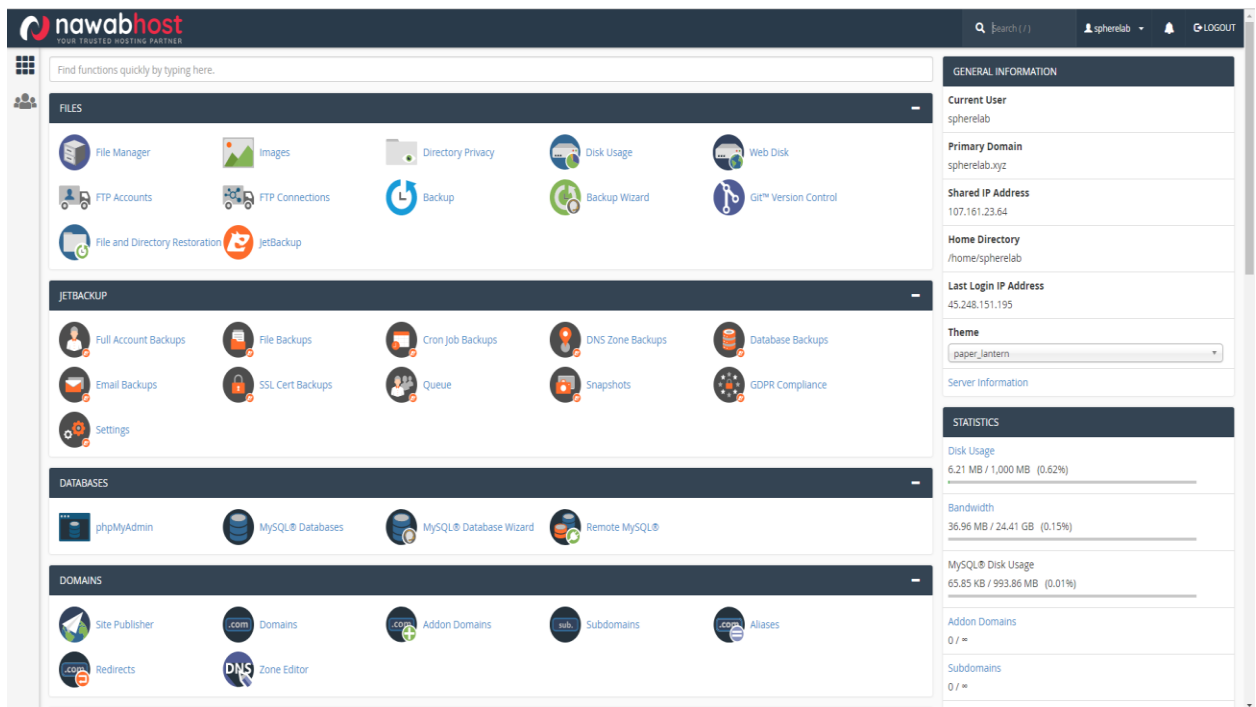
Figure B3: Domain & Hosting

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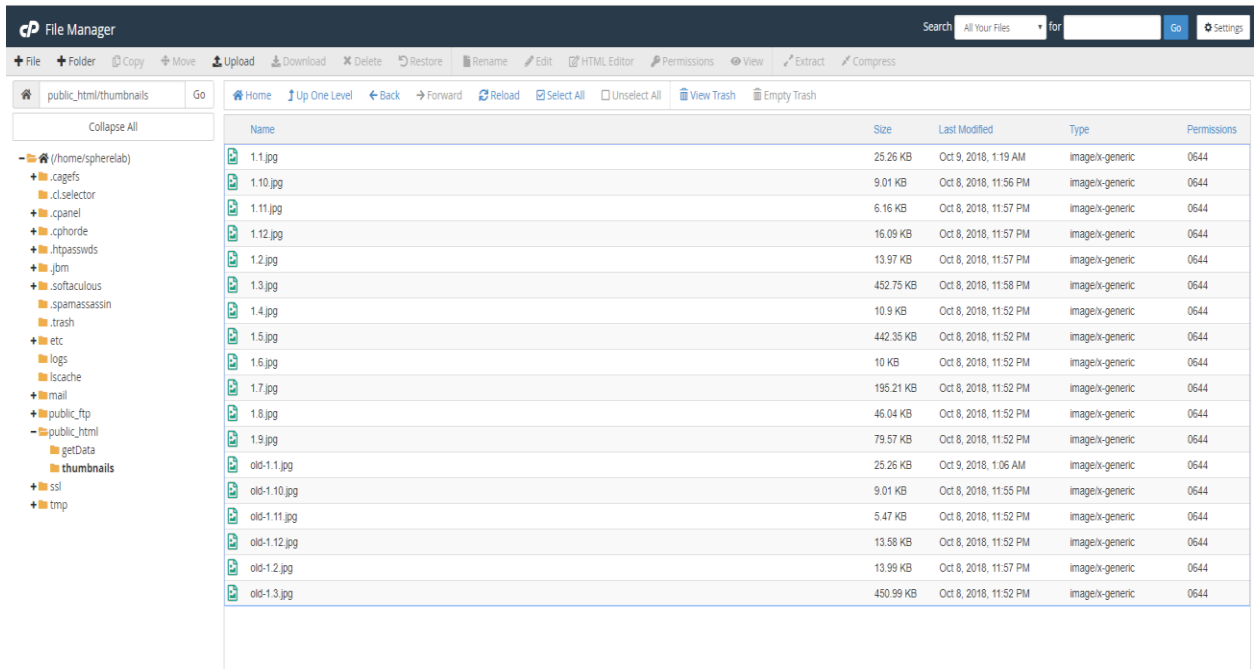
Figure B4: All Photo on server
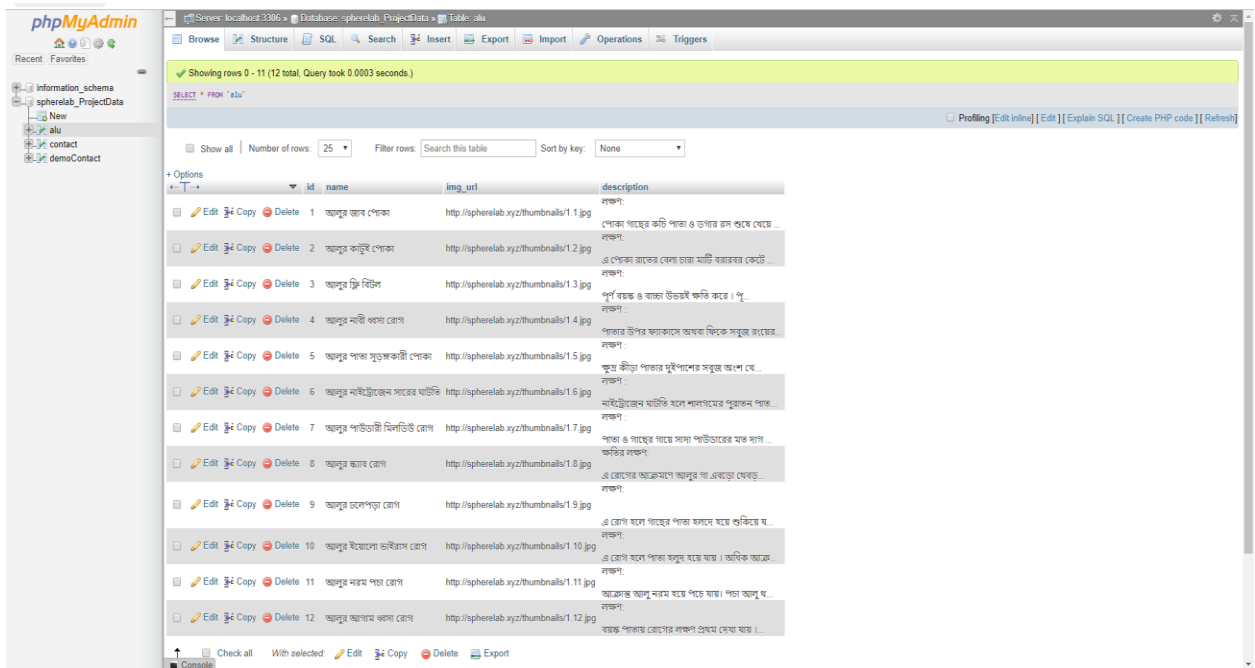
Figure B5: Store data On online data base

Figure B6: PHP code for JSON

Figure B7: Produce JSON data

```
private void loadData() {

    progressDialog = new ProgressDialog( context: this);
    progressDialog.setMessage("Loading........");
    progressDialog.show();

    StringRequest stringRequest = new StringRequest(Request.Method.GET, url,
            new Response.Listener<String>() {
                @Override
                public void onResponse(String response) {
                    progressDialog.dismiss();

                    try {
                        JSONObject jsonObject= new JSONObject(response);
                        JSONArray jsonArray=jsonObject.getJSONArray( name: "mainarray");
                        for (int i=0; i<jsonArray.length(); i++){
                            JSONObject receive=jsonArray.getJSONObject(i);

                            MyItem item= new MyItem(
                                    receive.getString( name: "Name"),
                                    receive.getString( name: "Image"),
                                    receive.getString( name: "Description")

                            );
                            listItems.add(item);
                        }

                        myAdapter=new MyAdapter(listItems,getApplicationContext());
                        recyclerView.setAdapter(myAdapter);

                    }catch (JSONException e){
                        e.printStackTrace();
                    }


                }
            }, new Response.ErrorListener() {
        @Override
        public void onErrorResponse(VolleyError error) {
            Toast.makeText( context: CropMainActivity.this,  text: "Server Error", Toast.LENGTH_LONG).show();
        }
    });

    RequestQueue queue = Volley.newRequestQueue( context: this);
    queue.add(stringRequest);
}
```

Figure B8: Load Data from server

```
        LoadData();
        autoCompleteTextView = (AutoCompleteTextView) findViewById(R.id.AutoTextViewID);
        AutoCompleteUpazilaAdapter adapter = new AutoCompleteUpazilaAdapter( context: this, contactArrayList);
        autoCompleteTextView.setAdapter(adapter);


    }

private void LoadData() {

    contactArrayList = new ArrayList<>();
    contactArrayList.add( new ContactItem( upazilaName: "Sodor,Dinajhpur", name: "Md Manuarul Hak",  phon: "01823359484"));
    contactArrayList.add( new ContactItem( upazilaName: "Sodor,Joypurhat", name: "Md Mustafajur rahaman", phon: "01774350158"));
    contactArrayList.add( new ContactItem( upazilaName: "Sodor,Chapainawabgonj", name: "Md Jakaria",  phon: "01732054698"));
    contactArrayList.add( new ContactItem( upazilaName: "Sodor,Thakurgaw", name: "Rahidash Barm", phon: "01767561327"));
    contactArrayList.add( new ContactItem( upazilaName: "Sodor,Gibanda", name: "Md Rajib Miya",  phon: "01851027774"));
    contactArrayList.add( new ContactItem( upazilaName: "Sodor,Khagarachori", name: "Janab Shanjib Chakma",  phon: "01556770397"));
    contactArrayList.add( new ContactItem( upazilaName: "Sodor,Shatkhira", name: "Md Nur Islam",  phon: "01718872034"));
    contactArrayList.add( new ContactItem( upazilaName: "Joshor Shodor,Joshor", name: "Nashim Ahmed Noyon",  phon: "01798747513"));
    contactArrayList.add( new ContactItem( upazilaName: "Sodor,Rajbari", name: "Abdul rashid Patwari",  phon: "01789535087"));
    contactArrayList.add( new ContactItem( upazilaName: "sodor,Nowakhali", name: "janab Farhadul Alam",  phon: "01843124917"));
    contactArrayList.add( new ContactItem( upazilaName: "Sodor,Fani", name: "jonab Md Murad Hossain",  phon: "01813049837"));
    contactArrayList.add( new ContactItem( upazilaName: "Sodor,Jamalpur", name: "Md Ashadul Shaju",  phon: "01717094293"));
    contactArrayList.add( new ContactItem( upazilaName: "Sodor,Narayangonj", name: "Md Mujibur Rahman",  phon: "01553136961"));
    contactArrayList.add( new ContactItem( upazilaName: "Sodor,Tangail", name: "Md Anowar Hossain Khan",  phon: "01913086241"));
    contactArrayList.add( new ContactItem( upazilaName: "Sodor,Vola", name: "Md Riaj Uddin",  phon: "01749272010"));
    contactArrayList.add( new ContactItem( upazilaName: "Sodor,Potuakhali", name: "Sonjib Mridha",  phon: "01722096969"));
    contactArrayList.add( new ContactItem( upazilaName: "Sodor,Cuadanga", name: "Krishibid Sharmin Aktar",  phon: "01719510695"));
    contactArrayList.add( new ContactItem( upazilaName: "Sodor,Kurigram", name: "Md Kamrujjaman",  phon: "01736161343"));
    contactArrayList.add( new ContactItem( upazilaName: "Sodor,Ponchogor", name: "Md Abdul Motin",  phon: "01710631396"));
    contactArrayList.add( new ContactItem( upazilaName: "Sodor,Meherpur", name: "Krishibid Md. Kamrujjaman",  phon: "01713425597"));
    contactArrayList.add( new ContactItem( upazilaName: "Paba,Rajshahi", name: "Md Mahababur Rahman",  phon: "01936961333"));
    contactArrayList.add( new ContactItem( upazilaName: "Chargat,Rajshahi", name: "Md Abdul Latip",  phon: "10711154742"));
    contactArrayList.add( new ContactItem( upazilaName: "Bagha,Rajshahi", name: "Md ABman Ali",  phon: "10713767642"));
    contactArrayList.add( new ContactItem( upazilaName: "Shanshadabagam,Rajshahi", name: "Md Golam Mostapa",  phon: "10713745741"));
    contactArrayList.add( new ContactItem( upazilaName: "Gamostopur,Chapainawabgonj", name: "Md kabirul islam",  phon: "01725539372"));
    contactArrayList.add( new ContactItem( upazilaName: "Bolahat,Chapainawabgonj", name: "Md Rabul Islam",  phon: "01705"));
    contactArrayList.add( new ContactItem( upazilaName: "Nachol,Chapainawabgonj", name: "Md Ruhul Amin",  phon: "01764724165"));
    contactArrayList.add( new ContactItem( upazilaName: "Shapahar,Naogaon", name: "Md faruj Kabir",  phon: "01761501476"));
    contactArrayList.add( new ContactItem( upazilaName: "Namatpur,Naogaon", name: "Md Mijanur rahman",  phon: "01718542890"));
    contactArrayList.add( new ContactItem( upazilaName: "Ramuihat,Naogaon", name: "Md ushif Kabir",  phon: "01747678686"));
    contactArrayList.add( new ContactItem( upazilaName: "Raninagor,Naogaon", name: "Md Ahasan Habib",  phon: "01712313784"));
    contactArrayList.add( new ContactItem( upazilaName: "Naldanga,Nator", name: "Md Ujjul Jamal Pintu",  phon: "01716261108"));
    contactArrayList.add( new ContactItem( upazilaName: "Shingra,Nator", name: "Md Mahababur Khalil",  phon: "01725251216"));
```

Figure B9: Locally Loaded Contact Officer data

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