

**DESIGN AND DEVELOPMENT OF ANDROID APPLICATION ON
INSECTS AND DISEASES OF PLANT AND SOLUTIONS NAMED
“(AMAR KRISHI)”**

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This documentation represents and fulfills the Requirements for the Degree of the Bachelor of Computer Science and Engineering.

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APPROVAL

This Project titled “**Android Application on Insects and Diseases of Plant and Solutions (Amar Krishi)**” submitted by Shuvo Roy, Amit Golder, Najmul Hossain and Niger sultana to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering (BSc) and approved as to its style and contents. The presentation has been held on 19/08/2015.

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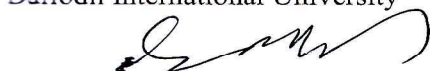
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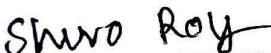
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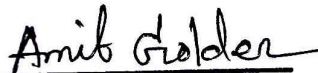
We hereby declare that, this project has been done by us under the supervision of, **Md. Mahmudul Hasan, Senior Lecturer, Department of CSE, Daffodil International University**. We also declare that neither this project nor any part of this project has been submitted elsewhere forward of any degree or diploma.

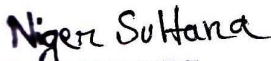
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ABSTRACT

The report is intended to highlight the prospects and opportunities of insecticides in Bangladesh. Like different economic sector in the country, insecticide is one of the drawbacks which contribute to the national economy. Insecticide poisoning is a common method of suicide attempt and less commonly occasional poisoning in Bangladesh. As in many developing countries, people have lack of knowledge and understanding to proper use of insecticide including divisional areas. The purpose of this report is to apply the outcome of the application to the root level where users can get benefit and use it in their farming. By this application, users can get necessary information regarding the insecticides and its possible causes. Thus, users can implement their knowledge to produce better crops.

Our project is implemented on android platform. The proposed application is designed and tested based on applied scenario and implemented using the eclipse IDE and java with Extensible Markup Language (XML) languages.

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ABBREVIATIONS

UI	:	User Interface.
UML	:	Unified Modeling Language.
ERD	:	Entity Relationship Diagrams.
API	:	Application Program Interface.
SDK	:	Software Development Kit.
AVD	:	Android Virtual Device.
ADT	:	Android Development Tool.
IBM	:	International Business Machines.
XML	:	Extensible Markup Language.

CHAPTER 1

INTRODUCTION

1.1 Introduction

The motive of this document is to present a detailed description of the Amar krishi application on android platform. The report attempted to highlight the vision and opportunities of insecticides in Bangladesh. Like different economic sector in the country, insecticides are one of major sectors which pay subscription to the national economy.

The report offered to concise country profile includes general information and main economic exhibitor and specifies business environment for household insecticides market development in Bangladesh.

Bangladesh is principally an agricultural country with an area of 147570 sq. km. Agriculture plays a significant role in the lives of Bangladeshi people. The major crops grown in the country are rice, wheat, jute, potato, sugarcane, vegetables and tea. Until 2014; 2894 different types of insecticides are commissioned in Bangladesh.

The use of insecticides has been grown 400% percent and its value increased 600% during the last couple of decades. The present, 84 insecticides workable ingredients belonging to 242 trade names have been affixed in Bangladesh [1]. Out of the total Insecticides usage, over 80% are used in rice fields and rest of them used for household and other purpose.

1.2 Insecticides Use in Bangladesh

Insecticides in agricultural input was initiated in Bangladesh in 1957 and mainly distributed by the Government to the farmers free of cost until 1974. The Insecticides turn in to very popular to the farmers for two reasons; firstly quick and ocular effect on insecticide and secondly, no quickly growth of crops involvement. In 1974, the subsidy was waned to 50% and in 1979 it was withdrawn completely. As a result at first Insecticides use abject and again gradually increased and in 1999 the amount reached 15000 metric tons. At present 84 Insecticides with 242 trade names have been registered in Bangladesh [11].

In Bangladesh government give away 6 types of insecticides license. These are:

- 1) Formulation
- 2) Repack
- 3) Import
- 4) Wholesale
- 5) Retail
- 6) Pest Control

1.2.1 Available household pesticides products in Bangladesh

Until 2014; 2894 different types of Insecticides are commissioned in Bangladesh [2]. From those most popular and most useable insecticides are

1. BAOMA
2. Black fighter
3. Mortein power guard
4. Mortein
5. Good knight
6. Allout
7. ACI
8. Finish
9. Xpel
10. Allout (Spray)
11. Zaps (paper)
12. Chalk
13. Finish powder
14. Finish ant kill powder
15. Super tray
16. Atraprat (Powder)

1.3 Motivation

Most of the farmers of Bangladesh are not able of taking decisions on pest management and Insecticides application. Often they apply Insecticides when there is no actual need or they use wrong chemicals at wrong doses, methods and times. As a result they kill the favorable organisms effortlessly and create pest strength causing the greater problems and crop losses.

The knowledge, conduct 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 know the insecticides behavior practice as well as to evaluate the farmer's knowledge, attitude and grasp regarding the impact of insecticides on environment.

1.4 Goal of the Project

In order to achieve this aim we will,

- Collect authentic information about insects, insecticides and their uses.
- Organize them in a way that this information can be easily stored in database.

- Chose a suitable mobile platform that is accessible to mass population.
- Design user friendly User Interface (UI).
- Develop suitable algorithms.
- Do necessary coding and build up an Application.
- Test this application for bugs and other errors.

1.4.1 Designing methodology

The methodology for Insecticides Inventory readiness was designed based on the Guidelines of DAE. The process included the followings:

- Collection of Information from Secondary Sources
- Collection of Information from Field Survey
- Preparation of Filed Survey Plan
- Questionnaire Survey/Personal Interview
- Site Inspection
- Spot Check
- Case Studies
- Data Processing
- Report Preparation

1.5. Overview of the project.

The following statement helps us to understand that which chapter covers which topics and gives us an overview of the project.

- In Introduction chapter, we have described the basic principle and purpose of our project.
- In the chapter Amar krishi introduction, specialty of Amar krishi, challenges of creating this application will be briefly described.
- In the chapter Mobile App for Amar krishi, Introduction, Features of available mobile App, Requirement Specification will be described.
- In the chapter Analysis and Design of proposed Amar krishi the Use Case Model and description, conceptual Data Model (ERM), UI and Interaction model, Implementation Requirements will be described.

CHAPTER 2

MOBILE APP FOR AMAR KRISHI

2.1 Overview of Amar krishi

Amar krishi is an android based app .Most of the farmers of Bangladesh is not efficient of taking decisions on pest management and Insecticides solicitation. Often they apply Insecticides when there is no material need or they use wrong chemicals at wrong doses, methods and times. As a result they slaughter the beneficial organisms easily and create pest resistance causing the greater problems and harvest losses.so in this app they can easily know which insecticides will be used in which crops with details in quantities.

In Amar krishi android app farmer or user can like the options they need to easily crop disease problem sand to him, and he shall border signs the problem they can take necessary steps and use Insecticides to their corps. Our app's interface is very user friendly and user can easily understand what to do or how to do best use of this app.

Farmers can easily see the pictures of diseases and problems of their crops with my Farming Android App and they can use insecticides on the basis of that. They can also come to know about the quantity of using. The problem and symptom of the affected crops along with the method of remedy has been given input in that app. Farmers can easily take necessary steps by matching their affected crops with the pictures given in the app.

2.2 Specialty of Amar krishi

Mobile communion technology has rapidly become the world's most ordinary way of transmitting data, voice, and services in the provoking world. Given this histrionic change, mobile applications in general and mobile applications for agricultural and rural prosperity in particular sustain significant potential for advancing development. They could provide the most affordable pathway for millions of people to ingress information, markets, finance, and governance systems previously unavailable to them. My Farming Android App has been created to spread out the benefit of mobile technology among the farmers. A very easy interface has been used in this app .So that the farmers can easily be benefited to look at the features and the pictures of the app. Besides that, the app is totally made in bangle language. So farmers can easily use it.Feature with symptoms are included in this app. From which the problem of crops can be identified by the symptom or the picture. They can also search about

a new kind of problems by checking and uploading the photos of the affected plants. Moreover information about insects and the prescript can be captured from this app.

2.3 Challenges of Amar krishi

Farmer usage a wide range of insecticides to counteract crop loss from pest attack. Insecticide use in Bangladesh, potty until the 1970s, has recorded a dramatic rise in recent years. As in many developing countries, Bangladesh lacks sufficient information on insecticide use, even at the endemic level. Bestowed this informational gap, the purpose of this report is to present the results of an exercise that mix recent farm-level insecticide use data and Bangladesh agricultural growth data to estimate insecticide use “hotspots” or insecticide severe areas at the district level To evaluate farmers’ safe insecticide practice, farmers were asked about their application practices during the past year .While insecticide retailer’s craftsman’s, government officials or NGOs provide printed information, many farmers are illiterate, so the questionnaire addressed how farmers read printed instructions. But In this age of modern technology the service of android mobile phone has been reached home to home. In addition to these IPM schools and school by different NGO has been found to help the farmers finding out their problems through discussion among themselves. The universality of mobile phone has been reached in every village and towns. The Android phone has also been reached to the hands of the relative’s and the children’s of the farmers.

2.4 Requirement Specification

Firstly we described about necessity specification. Requirement Specification is a record that clearly and preciously describes each of the essential requirements of the software and the external interfaces.

Our proposed system “Amar krishi” is android based application. In this app user will get easily see the pictures of diseases and problems of their crops with my Farming Android App and they can use insecticides on the basis of that. They can also come to know about the quantity of using. The problem and symptom of the affected crops along with the method of remedy has been given input in that app. Farmers can easily take necessary steps by matching their affected crops with the pictures given in the app.

To create this app we used some requirement. Here given below the requirements which were needed to structure the game

- Use Case Model
- Use Case Model Description

- Graphical User Interface
- E-R model

2.5 Methods and design

2.5.1 Collection of information from secondary sources

A lot of very pertinent information related to insecticides, in general, and insecticides, in particular, was collected from secondary sources. The most significant sources of the most useful information were [6]

- Insecticides Ordinance, 1971 (No. of 1971) modified as 1985;
- The Insecticide Rules, 1985;
- List of registered insecticides available from DAE;
- Reports on sales and consumption of insecticides available from BCPA;
- The books on Entomology published in the 60's by Agricultural Information Services
- Yearbook of Statistics, BBS;
- Yearbook Agriculture, BBS;
- Published scientific articles;
- Unpublished records and registers of PAB

2.5.2 Collection of information from field survey

The field metering for primary data collection and physical verification involved questionnaire survey/personal interview, site inspection, spot check and case studies, which were commenced following a pre-set survey scheme. The details of field survey are presented below

2.5.3 Selection of Different Categories of Information Sources

The following categories of knowledge sources were identified and selected for information collection through different methods:

- Ministry of Agriculture (MOA)
- Secretary, Insecticide Technical Advisory Committee (PTAC), and the concerned section for different aspects of insecticides particularly permission for import, passing of rules, regulations, and record of PTAC decisions;
- Department of Agricultural Extension (DAE)
- Additional Director's Office of Khulna, Jessore
- Plant Protection Wing (PPW)
- Bangladesh Agricultural Development Corporation
- Head Office, Kristi Bhaban, khamarbari

2.5.4 Comparison with other application

We have compared our Application with some existing Apps that are available on 'App Stores'. We have made a comparative table after reviewing the features of these Apps

Table: 2.1: Following table describe the comparison with two other applications which are related with Amar krishi.

Applications	Available For Free?	Main Feature	Problem Searching Method	Information Categorized ?	Problem or Solution sending options	Audio Feature
Amar Krishi	Yes	Problem and Solutions	Categorized by Plants and Also by Short Symptoms	Yes	Yes	Yes(Partially)
Krishi Somosso o Shomadhan	No	Problem and Solutions	Fixed Questions and Answer	Yes	No	No
Krishi Tottho	Yes	Miscellaneous	Topic	No	No	No

Figure 2.1 Following figure shows GUI of Amar Krishi with two other applications.

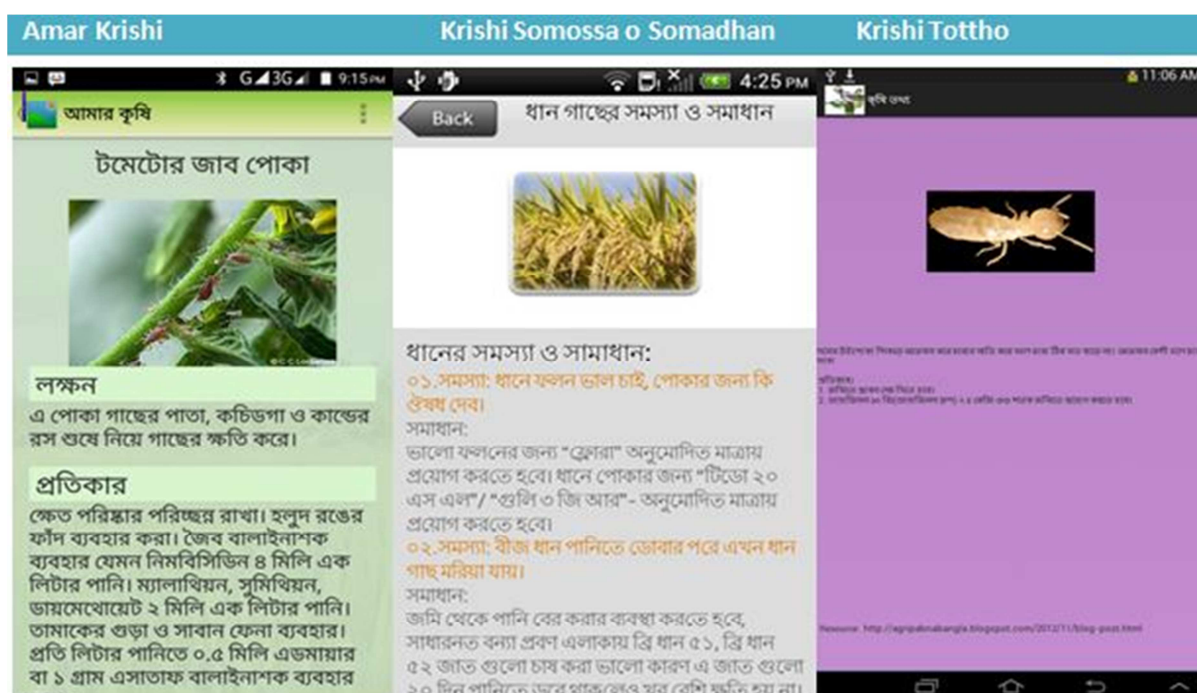


Figure 2.1 GUI of Amar Krishi with two other applications.

CHAPTER 3

ANALYSIS AND DESIGN OF PROPOSED AMAR KRISHI

3.1 Use Case Model and Description

Use Case Model

A use case model is a graphical delineation of how different types of users interact with the system to solve a problem. A use case is a single unit of meaningful work to identify, clarify and organize system requirements. The most significant elements are: use cases, association, actors and the relationship between them. The actor can be a human or an external system. Use case diagrams are the blueprints for a system. A standard notation for modeling of real time objects and systems is known as UML (Unified Modeling Language) in which use case is deployed [5].

Use Case Model Description

For Developer:

Developers have done some task which is given below in the figure 3.1.

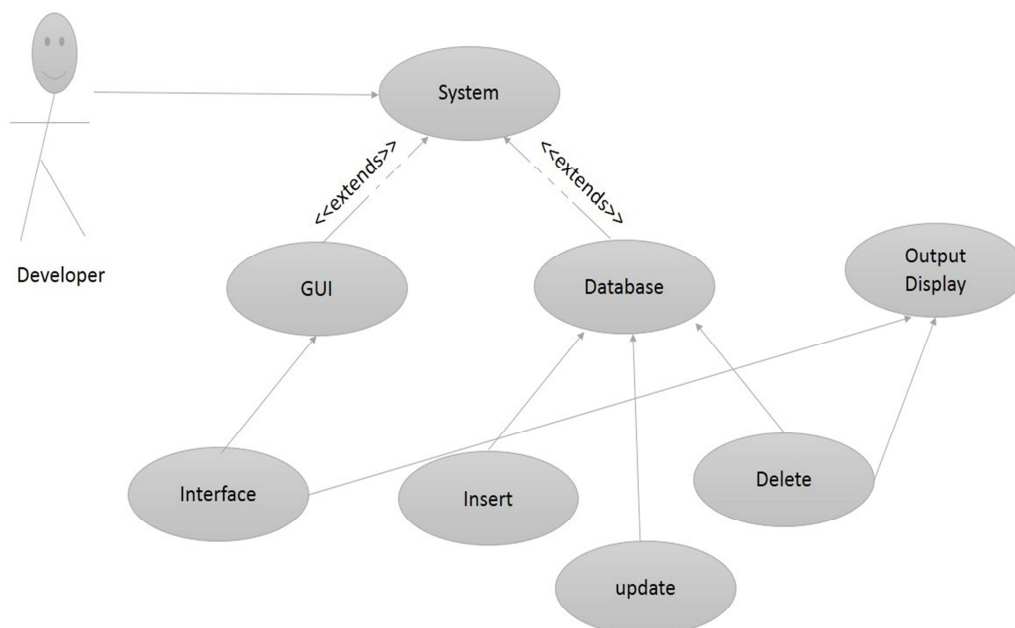


Figure 3.1: Use Case Model for Developer

Table: 3.1: Following table describe the use case of “system”.

Use case name	system
Actor	Developer
Pre-condition	None
Primary path	<ol style="list-style-type: none"> 1. Create system 2. Add buttons. 3. Add theme. 4. Add app name. 5. Add specific field. 6. Delete specific field. 7. Click ok.
Exceptional path	<ol style="list-style-type: none"> 7.1 Theme is not set, enter theme. 7.2 Button is not created, create it. 7.3 Missing adds to app name, add it.

Table: 3.2: Following table describe the use case of “Database”.

Use case name	Database
Actor	Developer
Pre-condition	None
Primary path	<ol style="list-style-type: none"> 1. Add data 2. Select data 3. Add picture 4. Select picture 5. Select specific field. 6. Edit specific field. 7. Click ok.
Exceptional path	<ol style="list-style-type: none"> 7.1 Theme is not set, enter theme. 7.2 Missing theme sizes add size. 7.3 Theme name is not set, enter name.

Table: 3.3: Following table describe the use case of “GUI”.

Use case name	GUI
Actor	Developer
Pre-condition	None
Primary path	<ol style="list-style-type: none"> 1. Add interface 2. Add data 3. Add images. 4. Select images. 5. Select specific field. 6. Edit specific field. 7. Click ok.
Exceptional path	<ol style="list-style-type: none"> 7.1 Theme is not set, enter theme. 7.2 Missing theme size, add size. 7.3 Theme name is not set, enter name.

Table: 3.4: Following table describe the use case of “Interface”.

Use case name	Interface
Actor	Developer
Pre-condition	None
Primary path	<ol style="list-style-type: none"> 1. Create interface 2. Add theme 3. Add images. 4. Add data 5. Click ok.
Exceptional path	<ol style="list-style-type: none"> 5.1 Interface is not selected, select it. 5.2 Name is not set, add name. 5.3 Missing Interface size, add size

Table: 3.5: Following table describe the use case of “Insert”.

Use case name	Insert
Actor	Developer
Pre-condition	None
Primary path	<ol style="list-style-type: none"> 1. Insert data 2. Insert theme 3. Insert images. 4. Add database 5. Click ok.
Exceptional path	<ol style="list-style-type: none"> 5.1 Interface is not selected, select it. 5.2 Name is not set, add name. 5.3 Missing Interface size, add size

Table: 3.6: Following table describe the use case of “Update”

Use case name	Update
Actor	Developer
Pre-condition	None
Primary path	<ol style="list-style-type: none"> 1. Select new item. 2. Edit specific item. 3. Add new item. 4. Click ok.
Exceptional path	<ol style="list-style-type: none"> 4.1 Selected specific item is not correct, Correct it. 4.2 Missing adds to new item, add new item. 4.3 Selected item is needed to delete, delete

Table: 3.7: Following table describe the use case of “Delete”.

Use case name	Delete
Actor	Developer
Pre-condition	None
Primary path	<ol style="list-style-type: none"> 1. Select new item. 2. Edit specific item. 3. Delete new item. 4. Click ok.
Exceptional path	<ol style="list-style-type: none"> 4.1 Selected specific item is not correct, Correct it. 4.2 Selected item is needed to delete, delete

For User:

Following figure shows the use case model for user. Where users can do some tasks which are given below.

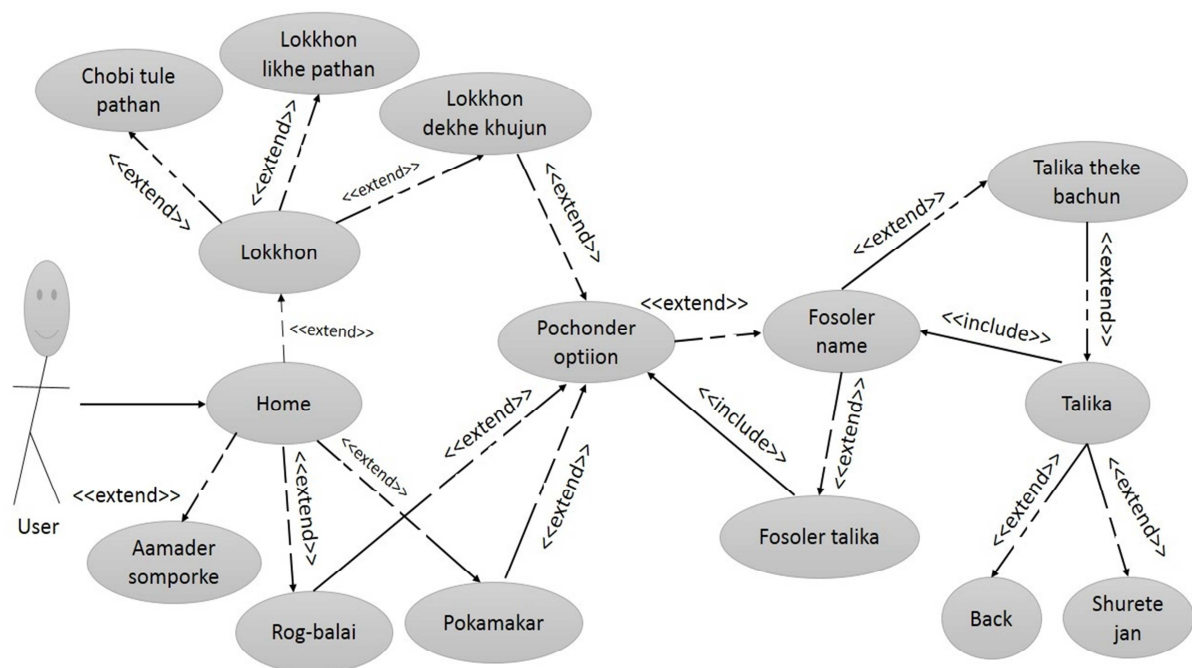


Figure 3.2: Use Case Model for User

Table: 3.8: Following table describe the use case of “Home”.

Use case name	Home
Actor	User
Pre-condition	None
Primary path	<ol style="list-style-type: none"> 1. View theme 2. View app name. 3. View menu. 4. Select menu. 5. View images. 6. Click ok.
Exceptional path	<ol style="list-style-type: none"> 6.1 Start app not selected, select it. 6.2 About us not selected, select it.

Table: 3.9: Following table describe the use case of “Lokhon”.

Use case name	Lokhon
Actor	User
Pre-condition	None
Primary path	<ol style="list-style-type: none"> 1. View all categories name. 2. Select categories one by one. 3. Click ok.
Exceptional path	<ol style="list-style-type: none"> 3.1 If not view any categories, view it. 3.2 If not want view any categories, show it.

Table: 3.10: Following table describe the use case of “Rogbalai”.

Use case name	Rogbalai
Actor	User
Pre-condition	None
Primary path	<ol style="list-style-type: none"> 1. View all categories name. 2. Select categories one by one. 3. Click ok.
Exceptional path	<ol style="list-style-type: none"> 3.1 If not view any categories, view it. 3.2 If not want view any categories, show it.

Table: 3.11: Following table describe the use case of “Pokamakor”.

Use case name	Pokamakor
Actor	User
Pre-condition	None
Primary path	<ol style="list-style-type: none"> 1. View all categories name. 2. Select categories one by one. 3. Click ok.
Exceptional path	<ol style="list-style-type: none"> 3.1 If not view any categories, view it. 3.2 If not want view any categories, show it.

Table: 3.12: Following table describe the use case of “Amader somporke”.

Use case name	Amader somporke
Actor	User
Pre-condition	None
Primary path	<ol style="list-style-type: none"> 1. Developer name. 2. Developer email. 3. Developer id.
Exceptional path	<ol style="list-style-type: none"> 3.1 If not view developer name, view it. 3.2 If not check developer email address, check it.

Table: 3.13: Following table describe the use case of “Posonder option”

Use case name	Posonder option
Actor	User
Pre-condition	None
Primary path	<ol style="list-style-type: none"> 1. View all categories name. 2. Select categories one by one. 3. Click ok.
Exceptional path	<ol style="list-style-type: none"> 3.1 If not view any categories, view it. 3.2 If not want view any categories, show it.

Table: 3.14: Following table describe the use case of “Lokhon jukto korun”

Use case name	Lokhon jukto korun
Actor	User
Pre-condition	None
Primary path	<ol style="list-style-type: none"> 1. View all categories name. 2. Add categories one by one. 3. Click ok.
Exceptional path	<ol style="list-style-type: none"> 3.1 If not view any categories, add it. 3.2 If not want view any categories, view it.

Table: 3.15: Following table describe the use case of “Sobi jukto korun”

Use case name	Sobi jukto korun
Actor	User
Pre-condition	None
Primary path	<ol style="list-style-type: none"> 1. View all categories. 2. Add images. 3. Click ok.
Exceptional path	<ol style="list-style-type: none"> 3.1 If not view any categories, add it. 3.2 If not want view any categories, view it.

Table: 3.16: Following table describe the use case of “Fosoler nam”

Use case name	Fosoler nam
Actor	User
Pre-condition	None
Primary path	<ol style="list-style-type: none"> 1. View all categories name. 2. Select categories one by one. 3. Click ok.
Exceptional path	<ol style="list-style-type: none"> 3.1 If not view any categories, view it. 3.2 If not want view any categories, show it.

Table: 3.17: Following table describe the use case of “Fosoler talika”

Use case name	Fosoler talika
Actor	User
Pre-condition	None
Primary path	<ol style="list-style-type: none"> 1. View all categories name. 2. Select categories one by one. 3. Click ok.
Exceptional path	<ol style="list-style-type: none"> 3.1 If not view any categories, view it. 3.2 If not want view any categories, show it.

Table: 3.18: Following table describe the use case of “Fosoler nam”

Use case name	Fosoler nam
Actor	User
Pre-condition	None
Primary path	<ol style="list-style-type: none"> 1. View all categories name. 2. Select categories one by one. 3. Click ok.
Exceptional path	<ol style="list-style-type: none"> 3.1 If not view any categories, view it. 3.2 If not want view any categories, show it.

Table: 3.19: Following table describe the use case of “Talika thake basun”

Use case name	Talika thake basun
Actor	User
Pre-condition	None
Primary path	<ol style="list-style-type: none"> 1. View all categories name. 2. Select categories one by one. 3. Click ok.
Exceptional path	<ol style="list-style-type: none"> 3.1 If not view any categories, view it. 3.2 If not want view any categories, show it.

Table: 3.20: Following table describe the use case of “Talika”

Use case name	Talika
Actor	User
Pre-condition	None
Primary path	<ol style="list-style-type: none"> 1. View all categories name. 2. Select categories one by one. 3. Click ok.
Exceptional path	<ol style="list-style-type: none"> 3.1 If not view any categories, view it. 3.2 If not want view any categories, show it.

Table: 3.21: Following table describe the use case of “Fire jan”

Use case name	Fire Jan
Actor	User
Pre-condition	None
Primary path	<ol style="list-style-type: none"> 1. View back button. 2. Select back button. 3. Click ok.
Exceptional path	<ol style="list-style-type: none"> 3.1 If back button is not selected to exit, Select it.

Table: 3.22: Following table describe the use case of “Surute jan”

Use case name	Surute Jan
Actor	User
Pre-condition	None
Primary path	<ol style="list-style-type: none"> 1. View back button. 2. Select back button. 3. Click ok.
Exceptional path	<ol style="list-style-type: none"> 3.1 If back button is not selected to exit, Select it.

3.2 Conceptual Data Model

In software engineering, an entity-relationship model (E-R model) is a data model for detailing the data or information perspective of a business domain or its process requirements, in a discrete way that sharpness itself to ultimately being implemented in a database such as a relational database. The main material of E-R models is entities and relationships that can exist among them [6].

Dr. Peter Chen is the originator of the Entity-Relationship Model. His original paper about E-R modeling is one of the most alluded papers in the computer software field. At present the E-R model serves as the foundation of many system analysis and design methodologies, computer-aided software engineering tools.

E-R diagram

Following figure shows the total E-R (Entity-Relationship) diagram.

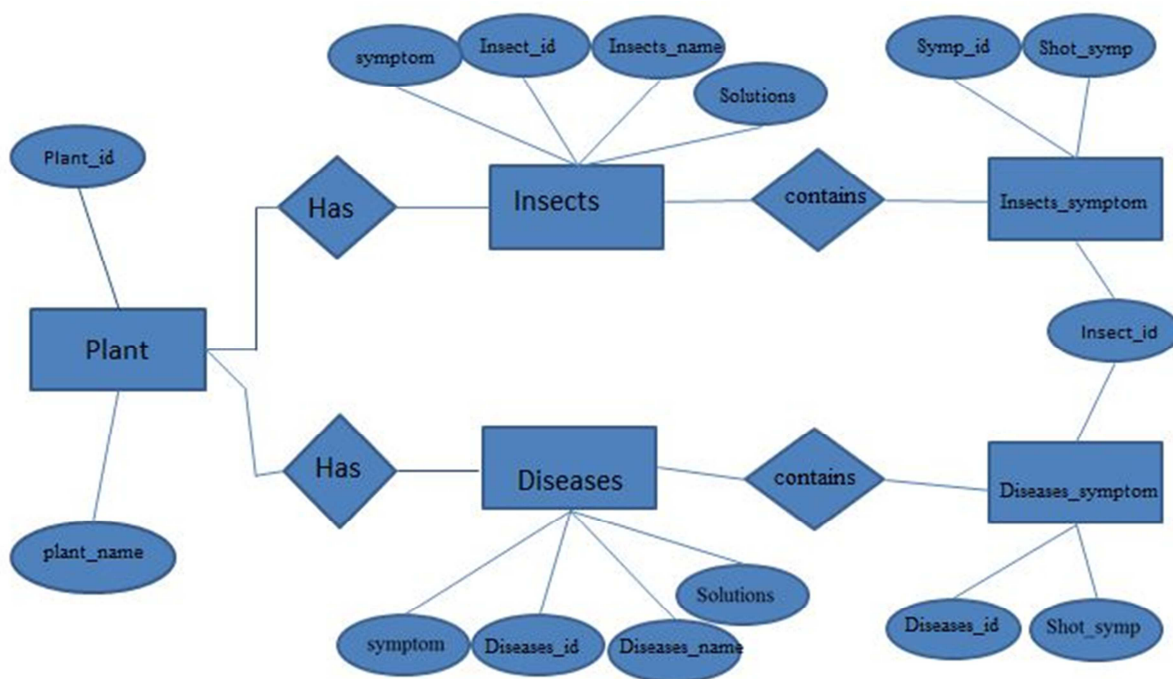


Figure 3.3: E-R (Entity-Relationship) diagram.

Here is the simple description of this entity relationship model.

Entity: Entities are objects or concepts that represent important data. Entities may be weak, strong or associative. In our model the developer and user is entity.

Relationship: In our model we have used two relationship named update features and view app. we used 'Isa' between the entities that ensure developer can be a user but not the user can be a developer.

Attribute: Attributes are characteristics of an entity, a many-to-many relationship, or a one-to-one relationship. In our model there are some attribute like developer name, developer id, add pic, developer mail etc.

3.3 GUI and Interaction model

GUI (Graphical User Interface):

The User Interface is the junction between a user and a computer program. An interface is a set of commands or menus through which a user communicates with a program [5]. Here below is our GUI design of Amar krishi.

Figure 3.4 Following figure shows Home Page GUI of our app. After installing this app user will open the game and this page will appear.

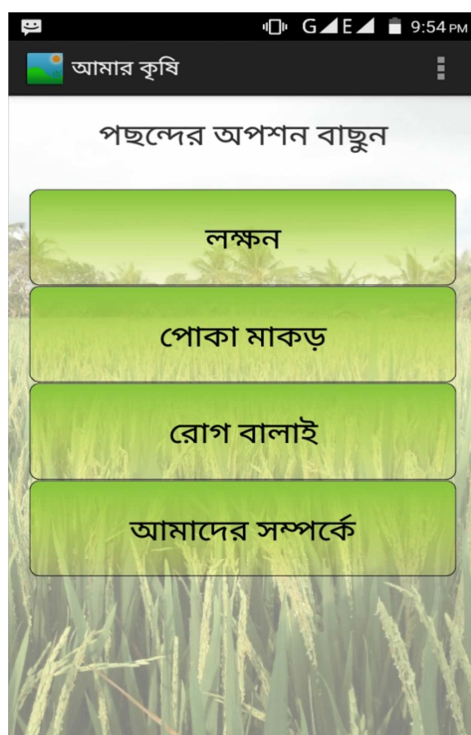


Figure 3.4. GUI of Home Page.

From this page user can view the developer details from about us option as well as personalization from list of all option. Also we can exit from this page. The main option is Lokhon, Pokamakor, Rogbalai from which user can see all feature of this app.

Figure 3.5 Following figure shows when user click or press the “Lokhon” option then the below GUI will appear.

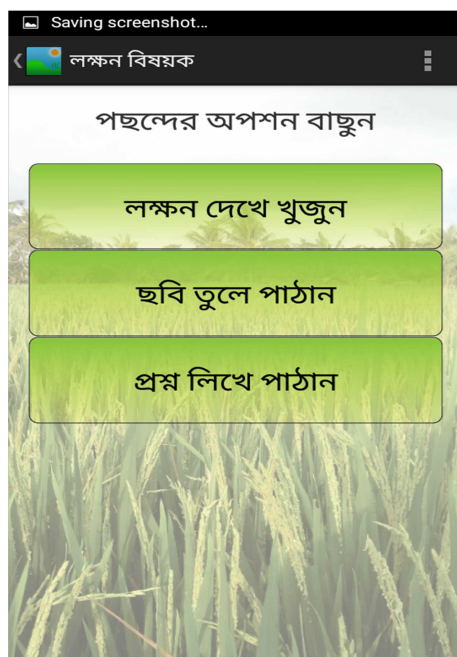


Figure 3.5.GUI when “Lokhon” clicked.

Figure 3.6 Following figure shows the GUI when click “Lokkhon dhake kujun”.In this page user can see all categories of crops name.

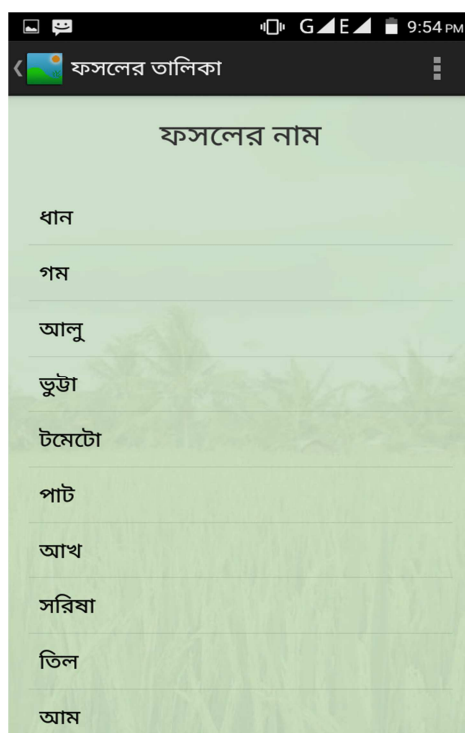


Figure 3.6.GUI when press “Lokkhon dhake kujun”

Figure 3.7 Following figure shows the GUI when press “Dhan”. In this page user can see all categories of insecticides related with paddy crops.

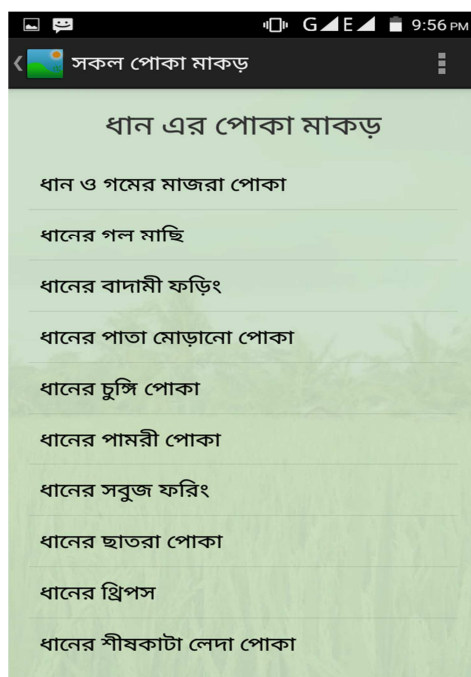


Figure 3.7.GUI when clicked “Dhan”

Figure 3.8 Following figure shows the GUI when press a categories named “Dhaner rog balai”

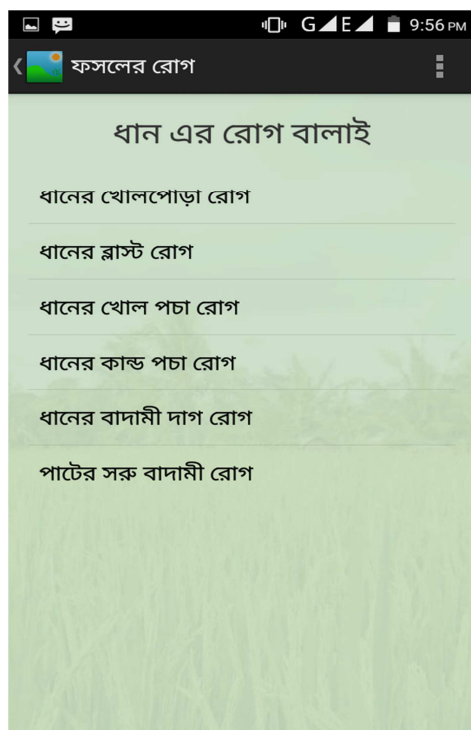


Figure 3.8.GUI when clicked “Dhaner rog balai”

Figure 3.9 Following figure shows the GUI when press a categories named “Dhaner majra poka”



Figure 3.9.GUI when clicked “Dhaner majra poka”

Figure 3.10 Following figure shows the GUI when press a categories named “Pater soru badami rog”



Figure 3.10.GUI when clicked “Pater soru badami rog”

Figure 3.11 Following figure shows the GUI when press a categories named “Sobi tule Pathan”

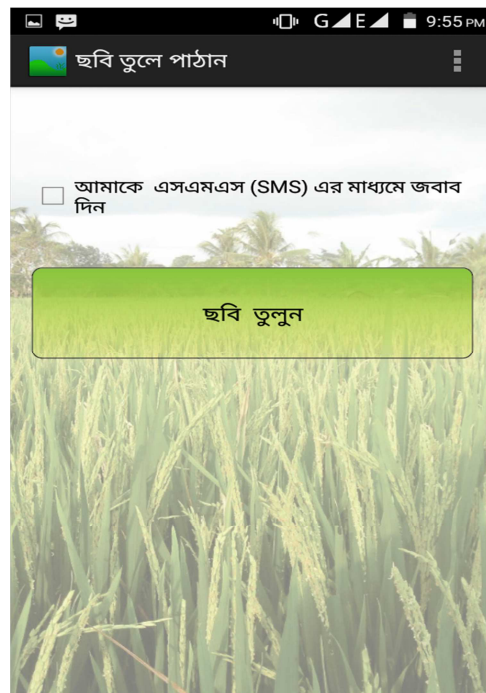


Figure 3.11.GUI when clicked “Sobi tule Pathan”

Figure 3.12 Following figure shows the GUI when press a categories named “Lokhon likhe Pathan”

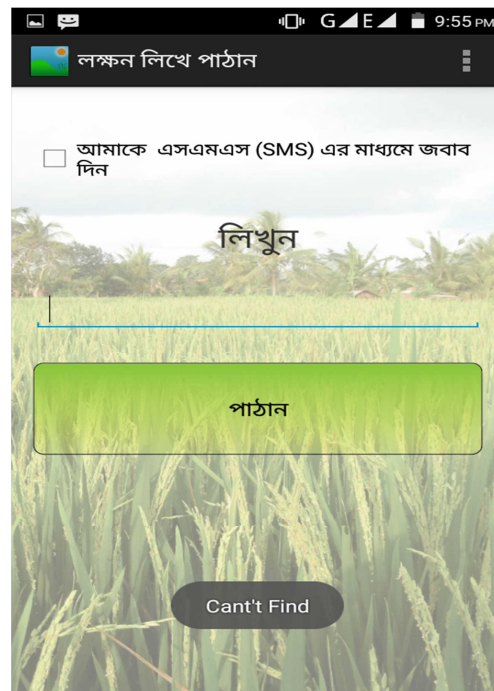


Figure 3.12.GUI when clicked “Lokhon likhe Pathan”

Figure 3.13 Following figure shows the GUI when press a categories named “Lokhon likhe Pathan”

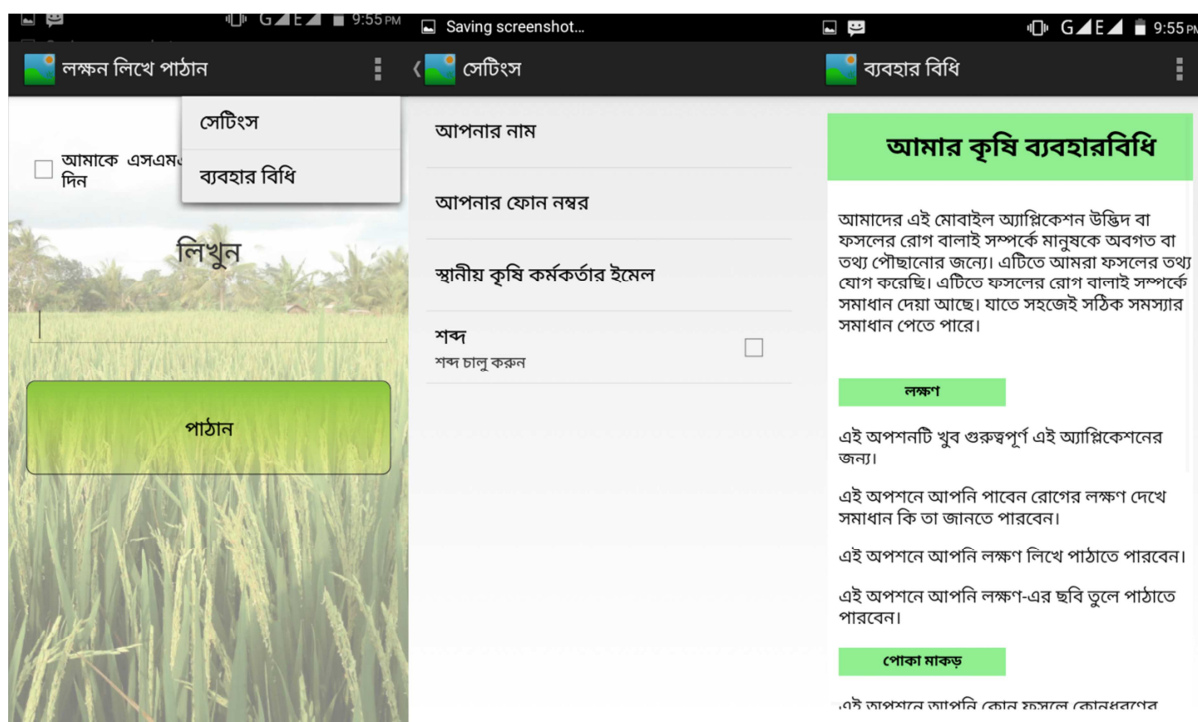


Figure 3.13 .GUI when clicked “Lokhon likhe Pathan”

Figure 3.14 Following figure shows the GUI when “About Us” is selected from option menu. From this option user can view the developers detail and the GUI is look like this



Figure 3.14.GUI when “About Us” clicked

CHAPTER 4

IMPLEMENTATION AND TESTING

We viewed in this chapter how to perfection and testing our environment for Android development. We used at improvement operating system choices as well as the Android tools available.

4.1 Using Android Platform

We observed in this point about basic android in a general way. Here given the total description.

4.1.1 Android Versions

First Android commercial version, Android 1.0 was unprejudiced in September 2008. Still today Android is undergoing development by Google. Since April 2009, Android versions have been developed under a confection theme code name and released in alphabetical order

4.1.2 Basic Android review

Android is a Smartphone operating method which is founded on the Linux Kernel and developed by Google. Android shift a framework for the developers which is very rich and gives the opportunities to make innovative attractive and user friendly app for mobile and tablets in java language environment. Android provides a large-scale amount of various APIs to developed App.

4.1.3 Portability issue

Linux is a portable platform operating system. It makes Linux relatively easy to compile on different hardware architecture. So Linux gives Android a level of hardware abstractions. As a result developers don't have to concern too much about hardware features. Low level of Linux is written in portable C language that makes Android variety of devices.

4.1.4 Linux Based Construct

Android operating system is based on Linux kernel. Linux is an open source and great operating system. Because of Linux portability, security, and features it has been chosen for Android.

4.2 Implementation of Using Android Platform

An application programming interface (API) is a specification intended to be used as an interface by software element to communicate with each other. API may include routines, data structures, object classes, and variables. It is also include the libraries of programming language (e.g. C++ or Java API). Given below the detail process about implementation of Android platform.

4.2.1 Installing Eclipse

Firstly we want describe about Eclipse. Eclipse is an open source tools to programming and it originally launch by IBM for java. Java communities bias Eclipse as their Integrated Development Environment (IDE). Eclipse lives at <http://eclipse.org> [7]. Although we do Android development with any favorite text editor or integrated development environment, most developers seem to be using Eclipse.

Java support

While most android applications are written in Java, there is no Java Virtual Machine in the stage and byte code is not executed. Java classes are compiled into Dalvik executable and run on Dalvik, a specialized virtual machine designed specifically for Android and optimized for battery-powered mobile devices with narrow memory and CPU. J2ME support can be provided via third-party applications.

Figure 4.1 After installing the Eclipse when we open it which page will come is given below and from here we can start our procedure.

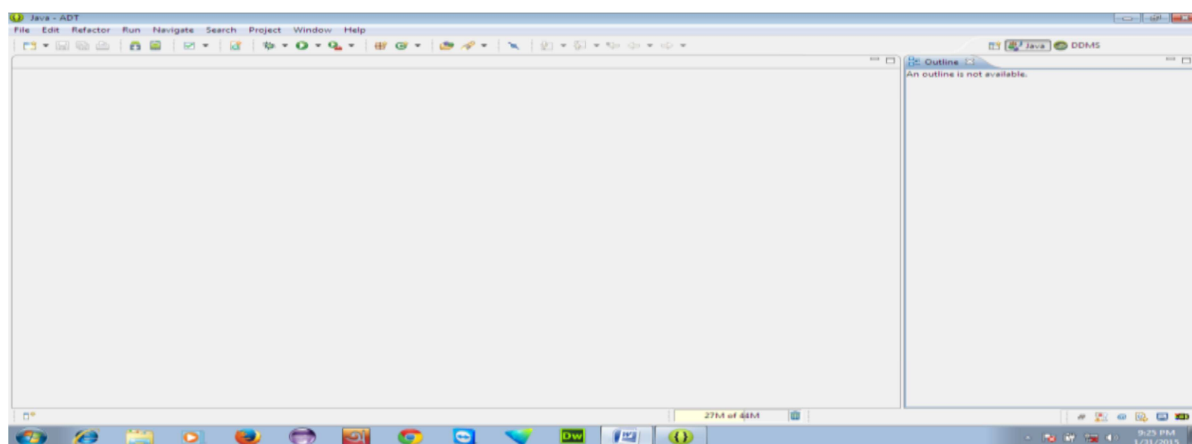


Figure 4.1: After installing Eclipse.

eclipse organizes all your work by projects. Project is placed in a workspace; which is a location you choice. We recommend workspace as a simple place code. C:\workspace is a good choice for Windows Users [7].

4.2.2 Implementation of SDK and ADT

If you want to setup your computer an android platform then you need to setup Android Development Tools and SDK for Eclipse. The Android SDK has a folder that contains all its main tools. Since we are going to use these tools from command line, it is very conducive to add your android-sdk and your android-sdk, platform-tools/directories to your system path variable.

Given below the instructions to ADT setting up a path to tools:

1. Start Eclipse, and then select help install new software.
2. In the obtainable software dialog, click add.
3. In the add site dialog that appears, admit a name for the remote site in the “Name” field.
4. In the “Location” field, enter this URL: <http://dl-ssl.google.com/android/eclipse/>.
5. Click ok.
6. Back in the available software view, you should now see “Developers Tools” added to the list. Select the checkbox next to developer tools, which will mechanically select the nested tools Android DDMS and Android Development Tools. Click next.
7. In the resulting install details dialog, the android DDMS and android development tools features are listed. Click next to read and accept the license agreement and install any dependencies then clicks finish.
8. Restart Eclipse.

Figure 4.2 After installing the Eclipse when we open it and want to start new application this procedure will come which is given below.

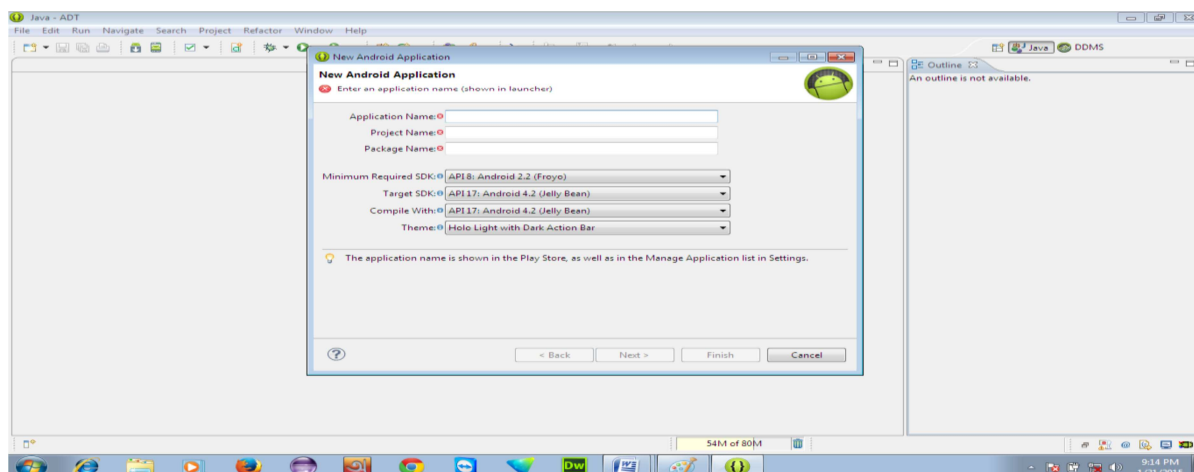


Figure 4.2: Android Application with ADT.

4.2.3 Start Emulator

Now we recount about emulator installing. Running our application on a physical device versus an emulator device is fantastic much same thing. That is because the emulator is an actual code emulator, meaning it runs the same code base as the actual device, all the way down to the machine layer. To emulate means to imitate the machine executing the binary code. To use the emulator, we have created an Android Virtual Device (AVD). We started this tool from Eclipse by clicking on the icon called android, which is located SDK/tools directory [12].

Figure 4.3 While starting the emulator we have to do a task otherwise emulator will not work properly. Here below is shown the way to start emulator.

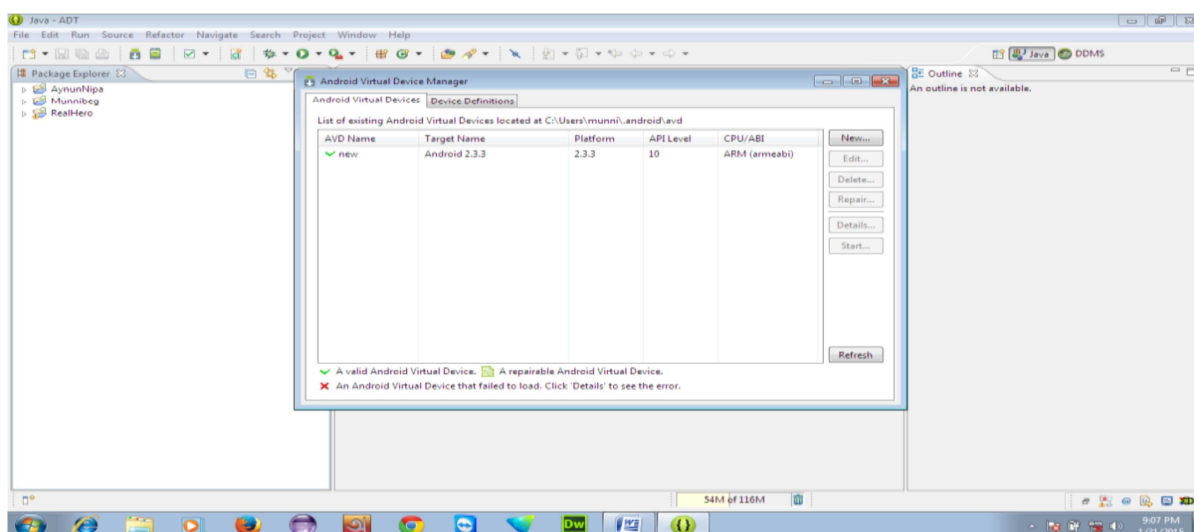


Figure 4.3: Android AVD Manager

Figure 4.4 After setting up the AVD manager the emulator will read. Here below is shown the screen to start the emulator.

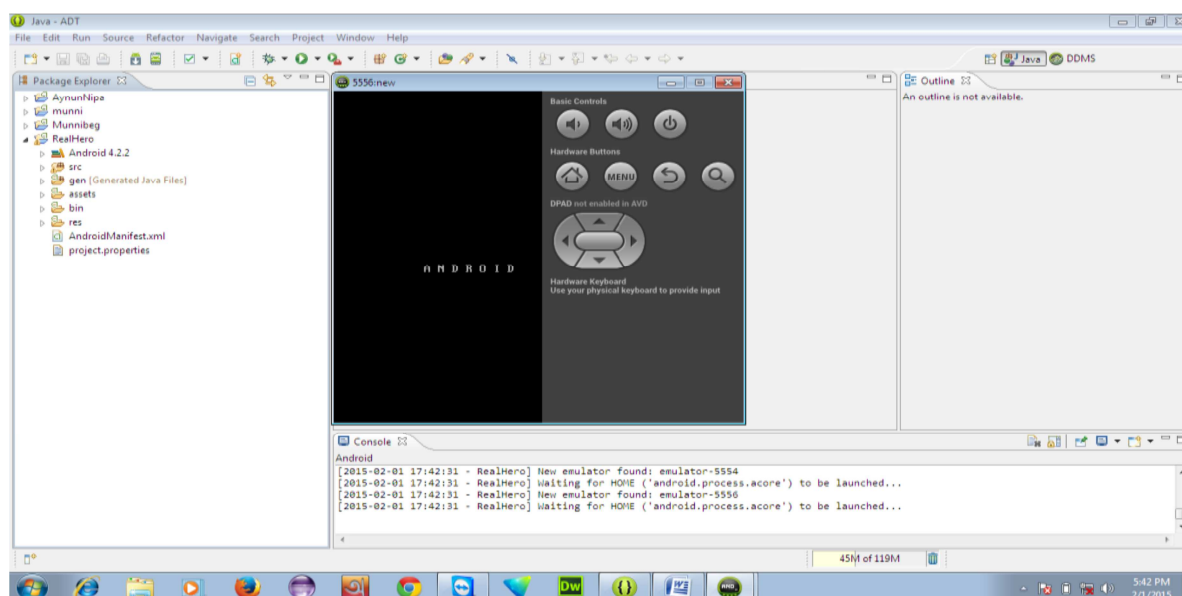


Figure 4.4: Starting Emulator.

4.3 Integration and Testing Implementation

We tested the case with which the user interfaces can be used. We checked the application or the product built is user-friendly or not. Our application is comfortable with different parameters- the flow, navigation and layout, speed and content especially in comparison prior or similar applications. The android framework includes a compact testing framework that helps you test all aspects of our application and the SDK tools include tools for setting up and running test applications. Whether you are working in eclipse with ADT or working from the command line, the SDK tool help you put in and run your tests within an emulator or the device you are targeting.

4.3.1 System Test

System testing has been carried out prior to installation and it is observed that the system works according to requirements as there is no problem.

4.3.2 Unit test

Each part of the application is tested to ensure that the detailed design is correctly implemented. It has been carried out to ensure that each part of the system works as per requirements.

4.3.3 Usability Test

Usability test were carried out by users. These verify that the system provides the required functionality. Firstly, we selected five users to test our system for usability test. Two of them were expert and the rest were novice. Expert users were running the app very smoothly and fast, facing no problem. Novice user's also running the application very smoothly and facing no problem too but they spend much time than expert users. However, from the usability test it is sure that the users do not face big problem while using this application. During program testing two kinds of errors occurred namely, syntax errors and logical errors.

- Syntax errors have to be corrected before the program is executed.
- Handling of data, improper sequence of program statement etc.

Also the following are the various stages in the testing process.

4.3.4 Black Box Testing

In this testing we give input to the system and test the output. Here we do not go for watching the internal variable in the system and what are the changes made on them for the required output, any invalid input for the above leads to failure in establishing the connection between the front end and back end. We tried to the system without authentication, but the system does not respond.

CHAPTER 5

CONCLUSION AND FUTURE SCOPE

5.1 Discussion and Conclusion

This report has submitted a relatively current snapshot of insecticide use in Bangladesh for a number of major crops. As elaborate, dis-aggregated, information on Insecticides usage is not currently available, the findings of this report attempts to cast some light on the overall extent of insecticides use in Bangladesh, as well as, highlight field where particularly toxic insecticides are evaporated. After addressing more short-term objectives, longer-term strategies may involve decreasing complete in all parts insecticides use, and shifting agricultural production towards, say, IPM taking. In this case, efforts may be directed towards areas that are more dependent on high quantities. In sum, policymakers may use this information for a variety of targeted interventions from the monitoring of particularly venom insecticide.

5.2 Future Scope

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

This project also has the scope of enhancements those can be given with some points. Points are given below:

- Sharing and rating facility
- With Bengali supported language
- Implement on website
- High scores- compare score with friends

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APPENDIX

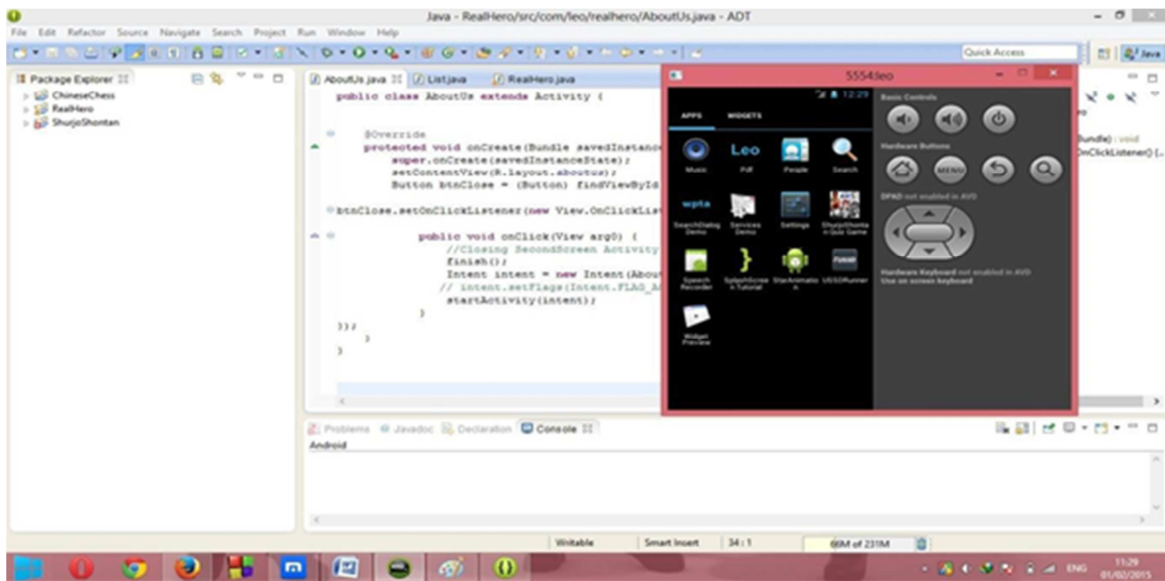


Figure A1: Amar krishi App Logo in AVD

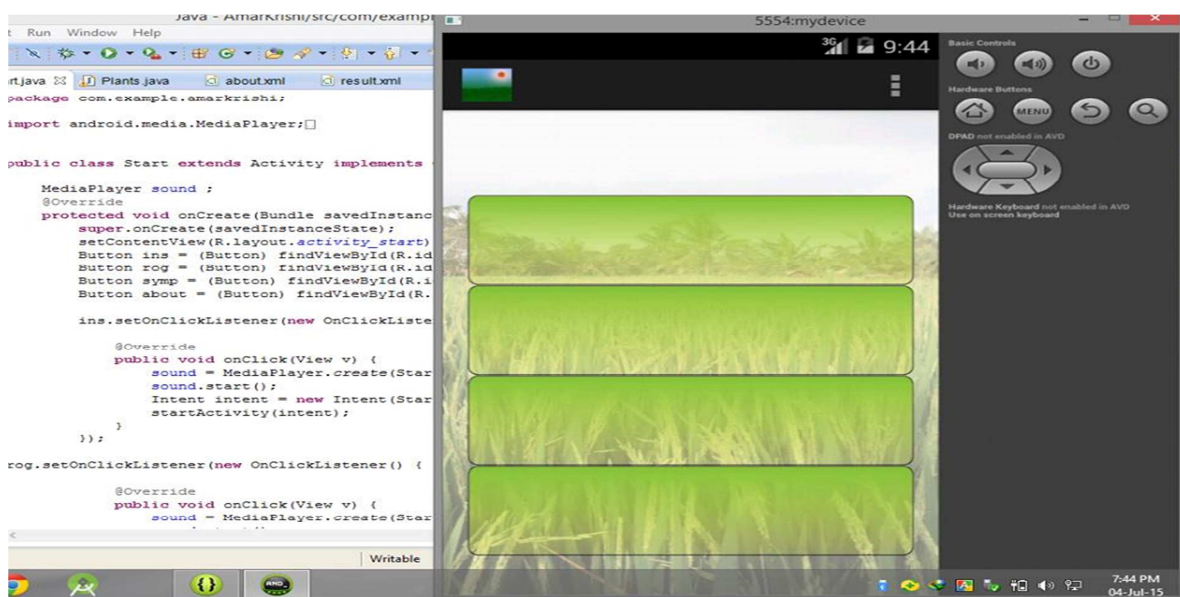


Figure B2: Name List of AMAR KRISHI App in AVD

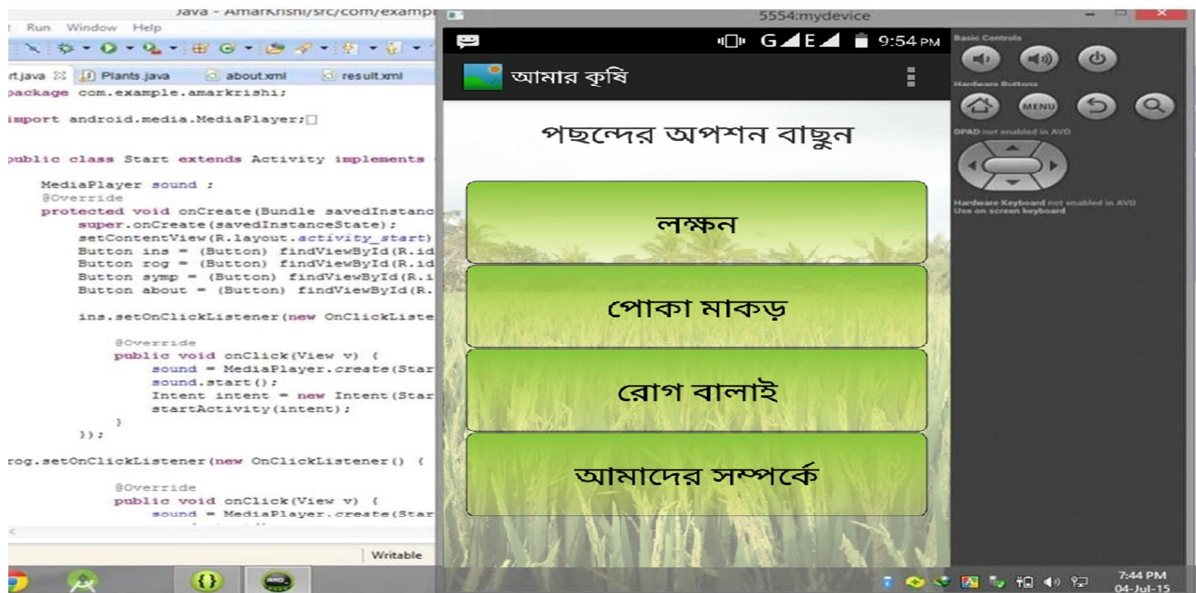


Figure C3: Button of Amar krishi App in AVD

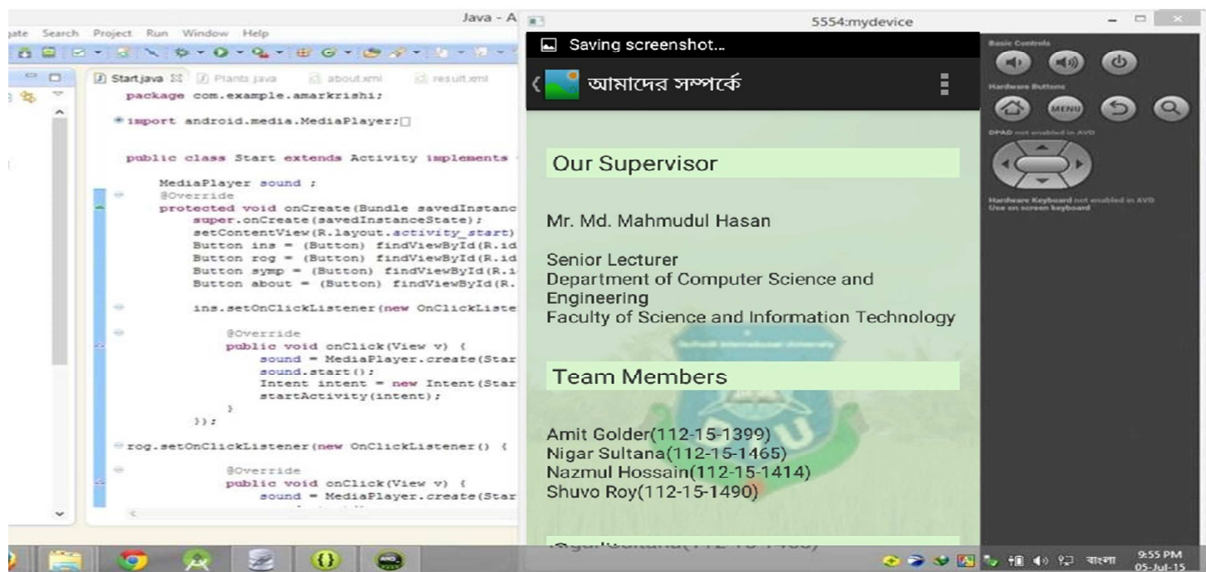


Figure D4: About us of Amar krishi App in AVD

