

OLX Android Application for JUIT

Project Report submitted in partial fulfillment of the requirement for the
degree of

Bachelor of Technology.

in

Computer Science & Engineering

under the Supervision of

Dr. Pooja Jain

Professor, Dept. of CSE

By

Akash Agrawal

Enrollment No: 111127

to



Jaypee University of Information and Technology
Waknaghat, Solan – 173234, Himachal Pradesh

Certificate

This is to certify that project report entitled “**OLX Android Application for JUIT**”, submitted by **Akash Agarwal** in partial fulfillment for the award of degree of Bachelor of Technology in Computer Science & Engineering to Jaypee University of Information Technology, Waknaghat, Solan has been carried out under my supervision.

This work has not been submitted partially or fully to any other University or Institute for the award of this or any other degree or diploma.

Signature of Supervisor :

Supervisor's Name : Dr. Pooja Jain

Designation : Professor

Date :

Acknowledgement

I would like to express my gratitude to all those who gave me the possibility to do this project. I want to thank the Department of CSE & IT in JUIT for giving us the permission to commence this project in the first instance, to do the necessary research work.

The satisfaction that accompanies that the successful completion of any task would be incomplete without the mention of people whose ceaseless cooperation made it possible, whose constant guidance and encouragement crown all efforts with success. I am grateful to my project guide Dr. Pooja Jain for the guidance, inspiration and constructive suggestions that helped me in the preparation of this project. I also thank my faculty who have helped in successful completion of the project.

Date:

Akash Agrawal

Table of Content

S. No.	Topic	Page No.
1.	Motivation	1
2.	Introduction to Android	2
2.1	The birth of Android	3
2.1.1	Open Handset alliance found	3
2.1.2	Hardware	3
2.2	Features of android OS	4
2.3	Interface of android	4
2.4	Sensors in Android devices	5
3.	Literature Review	6
3.1	Literature Survey	6
3.1.1	Research Paper1	6
3.1.2	Research paper 2	7

4.	Android architecture	9
4.1	Application framework	10
4.2	Libraries	10
4.3	Android Runtime	11
4.4	Android Versions	12
4.5	Symbol of Android OS	13
5.	Security and permissions in Android	14
5.1	Development Tools	15
5.2	Android Emulator	15
5.3	Memory management of Android OS	16
6.	Design	17
6.1	Android Development Life Cycle	18
6.2	State Diagram	19, 20
6.3	Requirements	21
6.4	Level-0 DFD	22

6.5	Level-1 DFD	23
6.6	System Chart	24
6.7	Building Blocks of Android Code	25
6.8	Screenshots	26
7.	Implementation	29
8.	Future Enhancements	49
9.	Conclusion	50
10.	References	51

List of Figures

S.No.	Title	Page No.
1.	Interface of Android	5
2.	Android Architecture	9
3.	Android Runtime	11
4.	Android Version Distribution	12
5.	Symbol of Android OS	13
6.	Design	17
7.	Android Development Lifecycle	18
8.	State Diagram	19, 20
9.	Level-0 DFD	22
10.	Level-1 DFD	23
11.	System Chart	24
12.	Building blocks of Android code	25
13.	External Database	26

14.	Message Table	27
15.	User Table	27
16.	Bid Table	28
17.	Product Table	28
18.	Screen Shot 1	37
19.	Screen Shot 2	38
20.	Screen Shot 3	39
21.	Screen Shot 4	40
22.	Screen Shot 5	41
23.	Screen Shot 6	42
24.	Screen Shot 7	43
25.	Screen Shot 8	44
26.	Screen Shot 9	45
21.	Screen Shot 10	46
21.	Screen Shot 11	47
21.	Screen Shot 12	48

Abstract

This software is used for android operating system, it can be used easily for buying and selling things and its convenient and quick, use simple UI and unique menu can give the users perfect experience.

This paper gives our researching work on how to design an e-commerce application based on Android OS. The OLX application, which uses the front-back end architecture, is divided into the part of database and the part of menu interface and identification part.

The Android platform provides resources for handling images, which was uploaded by a user or search by another user, this application can use to create an interface between the user and the different image files and their description. Through this report, we will create a basic e-commerce application for Android. The app will present a list of images on the user device according to their search, so that the user can select what they want.

Application will be written using Android SDK in Java and should run on all Android OS handsets.

The android application runs stably and conveniently during testing.

1. Motivation

Use of **Android OS** with more public interest and make it more user friendly so all can use it. As today's market speaks lot of android and lots of app are being built on it and most common of them all is e-commerce application, music player application and games. Everyone loves to do shopping, listen music and playing games.

So, we are trying to make a new e-commerce application i.e. an application like OLX and is only for our college. This application should have valid users i.e. who are the part of this university.

Taking a simple example, there are chances like some students want to sell something and another student want to buy the same thing, but they never come to know that thing. For this we have to move to wagnaghat which is full waste of money and time.

So, for the convenience of the Juitians this application was developed.

Chapter 1

2. Introduction to Android

Android is an operating system based on the Linux , and designed primarily for touch screen mobile devices such as Smartphone's and tablet computers. The first Android-powered phone was sold in October 2008.

The user interface of Android is based on direct manipulation, using touch inputs that loosely correspond to real-world actions, like swiping, tapping, pinching and reverse pinching to manipulate on-screen objects.

Android allows users to customize their home screens with shortcuts to applications and widgets, which allow users to display live content, such as emails and weather information, directly on the home screen. Applications can further send notifications to the user to inform them of relevant information, such as new emails and text messages.

Android is open source and Google releases the code under the Apache License.

Android has a large community of developers writing applications ("apps") that extend the functionality of devices, written primarily in the Java programming language

Android is the world's most widely used smart phone platform, overtaking Symbian in the fourth quarter of 2010. Android is popular with technology companies who require a ready-made, low-cost, customizable and lightweight operating system for high tech devices.

Despite being primarily designed for phones and tablets, it also has been used in televisions, games consoles, digital cameras and other electronics.

Android's open nature has encouraged a large community of developers and enthusiasts to use the open-source code as a foundation for community-driven projects, which add new features for advanced users or bring Android to devices which were officially released running other operating systems.

Android has a large community of developers writing applications that extend the functionality of devices, written primarily in the Java programming language

Android is popular with technology companies who require a ready-made, low-cost, customizable and lightweight operating system for high tech devices.

2.1 THE BIRTH OF ANDROID

Google Acquires Android Inc. In July 2005, Google acquired Android Inc., a small startup company based in Palo Alto, CA. Android's co-founders who went to work at Google included Andy Rubin (co-founder of Danger), Rich Miner (co-founder of Wildfire Communications, Inc.), Nick Sears (once VP at T-Mobile), and Chris White (one of the first engineers at WebTV). At the time, little was known about the functions of Android Inc. other than they made software for mobile phones.

2.1.1 Open Handset Alliance Founded

On 5 November 2007, the Open Handset Alliance, a consortium of several companies which include Google, HTC, Intel, Motorola, Qualcomm, T-Mobile, Sprint Nextel and NVIDIA, was unveiled with the goal to develop open standards for mobile devices. Along with the formation of the Open Handset Alliance, the OHA also unveiled their first product, Android, an open source mobile device platform based on the Linux operating system.

2.1.2 Hardware

Google has unveiled at least three prototypes for Android, at the Mobile World Congress on February 12, 2008. One prototype at the ARM booth displayed several basic Google applications. A d-pad' control zooming of items in the dock with a relatively quick response.

2.2 Features of Android OS

- Application framework enabling reuse and replacement of components
- Dalvik virtual machine optimized for mobile devices
- Integrated browser based on the open source WebKit engine Optimized graphics powered by a custom 2D graphics library; 3D graphics based on the OpenGL ES 1.0 specification (hardware acceleration optional)
- SQLite for structured data storage
- Media support for common audio, video, and still image formats (MPEG4, H.264, MP3, AAC, AMR, JPG, PNG, GIF)
- GSM Telephony (hardware dependent)
- Bluetooth, EDGE, 3G, and WiFi (hardware dependent)
- Camera, GPS, compass, and accelerometer (hardware dependent)
- Rich development environment including a device emulator, tools for debugging, memory and performance profiling, and a plugin for the Eclipse IDE.

2.3 Interface of Android

Android home screens are typically made up of app icons and widgets. A home screen may be made up of several pages that the user can swipe back and forth between, though Android's home screen interface is heavily customizable, allowing the user to adjust the look and feel of the device to their taste.

Present along the top of the screen is a status bar, showing information about the device and its connectivity. This status bar can be "pulled" down to reveal a notification screen where apps display important information or updates, such as a newly received email or SMS text, in a way that does not immediately interrupt or inconvenience the user.



Fig 1: Interface of Android

2.4 Sensors in Android Devices

Interesting for music making:

- Gyro Sensors
- Accelerometer
- Geomagnetic Sensors
- Touchscreen
- Microphone
- Camera
- Motion Sensors
- Environmental Sensors
- Position Sensors
- Gesture Sensor

Chapter 2

3. Literature Review

3.1 Literature Survey:

3.1.1 Paper 1: Research and Development of Mobile Application for Android Platform

Abstract:

Today, as the developing of hardware of mobile is getting better, the performance index is much higher than the actual requirements of the software configuration. Phone's features more depend on software. As the Android operating system is getting more popular, the application based on Android SDK attracts much more attention. But now, some of the Android application interface is too cumbersome, pop-up ads is overmuch and the function is too single, these cause some inconvenience to the users. This article presents the application by eliminating the redundancy. Three kinds of applications are developed base on Java and Android SDK --- Weibo client, video player and audio player. The audio player uses the Content Resolver and Cruor to obtain music files and plays the music by using the Service Components to call the Media Player class in the background. The video player uses the Media Player class provided by Android SDK. This class loads the file through URL, realize the multimedia file parsing by calling the Open Core Library, which is at the bottom of Android, through JNI and by calling the Surface Flinger interface to realize the video files' playback. The users' data is collected through the Sina open platform called by Sina client and the data will be returned under the format of JSON by the Sina server. The system uses the authentication method for user authorization to complete the login process. The specific functions of this system are developed based on Android Weibo SDK. The interfaces of these Android apps are pretty and the operation is smooth. What's more, the cumbersome interface and excessive advertising are eliminated, so that users are able to manipulate these apps more conveniently and smoothly.

Keywords: Android, Weibo client, Video Player, audio player, Android SDK

Introduction

In recent years, the emergence of smart phones has changed the definition of mobile phones. Phone is no longer just a communication tool, but also an essential part of the people's communication and daily life. Various applications added unlimited fun for people's lives. It is certain that the future of the network will be the mobile terminal. Now the Android system in the electronics market is becoming more and more popular, especially in the smartphone market. Because of the open source, some of the development tools are free, so there are plenty of applications generated

3.1.2 Paper 2: Design of Android based e-commerce application and their requirements

Abstract:

Mobile and e-commerce applications are tools for accessing the Internet and for buying products and services. These applications are constantly evolving due to the high rate of technological advances being made. This paper provides a new perspective on the types of applications that can be used. It describes and analyses device requirements, provides a literature review of important aspects of mobile devices that can use such applications and the requirements of websites designed for m-commerce. The design and security aspects of mobile devices are also investigated. As an alternative to existing m-commerce applications, this paper also investigates the characteristics and potential of the PhoneGap cross-mobile platform application. The results suggest that effective mobile applications do exist for various Smartphones, and web applications on mobile devices should be effective. PhoneGap and Spree applications can communicate using JSON instead of the XML language. Android simulators can be used for ensuring proper functionality and for compiling the applications.

Keywords- E-commerce; PhoneGap; M-commerce; Smartphones; Spree –commerce; Ruby on Rails.

Introduction:

A literature review on the two major issues of e-commerce mobile applications has been conducted, these being: firstly, the interface usability of mobile applications; and secondly, design and security considerations. The literature review concluded that mobile applications must effectively operate on different Smartphones and have the ability to use different ecommerce web applications through web services.

A. Software development methodology:

Based on the questions developed for this study a general search was conducted in the first phase of the research. Software architecture was developed based on this research. The results of the research enabled the initial scope of the research to be more precise and achievable. Various software development methodologies were utilized since software engineering is a diverse field and encompasses many diverse factors and contexts. Experimental software engineering was used in the initial development phase so that risk and uncertainty were reduced. An iterative software model was used as it is the best choice for prototype development.

B. Application Architecture:

The application architecture is explained in terms of how: the Spree web application is hosted on the Ruby on Rails equipped webserver. Web services have been built inside the Spree application; and the mobile phone native applications built using PhoneGap which communicates with the webserver through web services to obtain data and information. (Figure1). This diagram shows how the application architecture used the Spree web server and a native mobile application using PhoneGap which allows the same application to run in different mobile operating systems. This corresponds with the web server which uses web services to obtain data.

Chapter 3

4. Android Architecture

The following diagram shows the major components of Android. [3]



Fig 2: Architecture of Android OS

4.1 Application Framework

Developers have full access to the same framework APIs used by the core applications. The application architecture is designed to simplify the reuse of components; any application can publish its capabilities and any other application may then make use of those capabilities (subject to security constraints enforced by the framework).

This same mechanism allows components to be replaced by the user. Underlying all applications is a set of services and systems, including: A rich and extensible set of Views that can be used to build an application, including lists, grids, text boxes, buttons, and even an embeddable web browser Content Providers that enable applications to access data from other applications (such as Contacts), or to share their own data ·A Resource Manager, providing access to non-code resources such as localized strings, graphics, and lat files.

A Notification Manager that enables all applications to display custom alerts in the status bar An Activity Manager that manages the life cycle of applications and provides a common navigation back stack.

4.2 Libraries

Android includes a set of C/C++ libraries used by various components of the Android system. These capabilities are exposed to developers through the Android application framework.

Some of the core libraries are listed below: System C library - a BSD-derived implementation of the standard C system library (libc), tuned for embedded Linux-based devices Media Libraries - based on PacketVideo's Open CORE; the libraries support playback and recording of many popular audio and video formats, as well as static image files, including MPEG4, H.264, MP3, AAC, AMR, JPG, and PNG.

Surface Manager - manages access to the display subsystem and seamlessly composites 2D and 3D graphic layers from multiple applications

LibWebCore - a modern web browser engine which powers both the Android browser and an embeddable web view

SGL - the underlying 2D graphics engine

3D libraries - an implementation based on OpenGL ES 1.0 APIs; the libraries use either hardware 3D acceleration (where available) or the included, highly optimized 3D software rasterizer

Free Type - bitmap and vector font rendering

SQLite - a powerful and lightweight relational database engine available to all applications.

4.3 Android Runtime

Android includes a set of core libraries that provides most of the functionality available in the core libraries of the Java programming language. Every Android application runs in its own process, with its own instance of the Dalvik virtual machine. Dalvik has been written so that a device can run multiple VMs efficiently. The Dalvik VM executes files in the Dalvik Executable (.dex) format which is optimized for minimal memory footprint. The VM is register-based, and runs classes compiled by a Java language compiler that have been transformed into the .dex format by the included "dx" tool. The Dalvik VM relies on the Linux kernel for underlying functionality such as threading and low-level memory management.

At the same level there is Android Runtime, where the main component Dalvik Virtual Machine is located. It was designed specifically for Android running in limited environment, where the limited battery, CPU, memory and data storage are the main issues. Android gives an integrated tool "dx", which converts generated byte code from .jar to .dex file, after this byte code becomes much more efficient to run on the small processors.

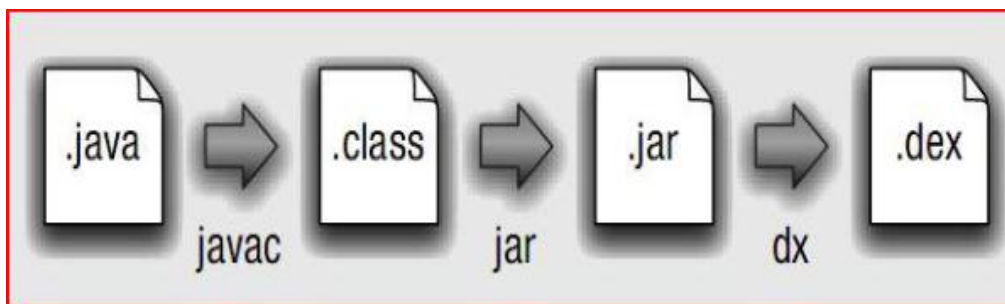


Fig 3: Conversion from .java to .dex file

As the result, it is possible to have multiple instances of Dalvik virtual machine running on the single device at the same time. The Core libraries are written in Java language and contains of the collection classes, the utilities, IO and other tools.

4.4 Android Versions:

Android 1.0 (API level 1)

Android 1.1 (API level 2)

Android 1.5 Cupcake (API level 3)

Android 1.6 Donut (API level 4)

Android 2.0 Eclair (API level 5)

Android 2.1 Eclair (API level 7)

Android 2.2–2.2.3 Froyo (API level 8)

Android 2.3–2.3.2 Gingerbread (API level 9)

Android 2.3.3–2.3.7 Gingerbread (API level 10)

Android 3.0 Honeycomb (API level 11)

Android 3.1 Honeycomb (API level 12)

Android 4.3 Jelly Bean (API level 18)

Android 4.4 KitKat (API level 19)

Android 5.0 Lollipop (API level 21)

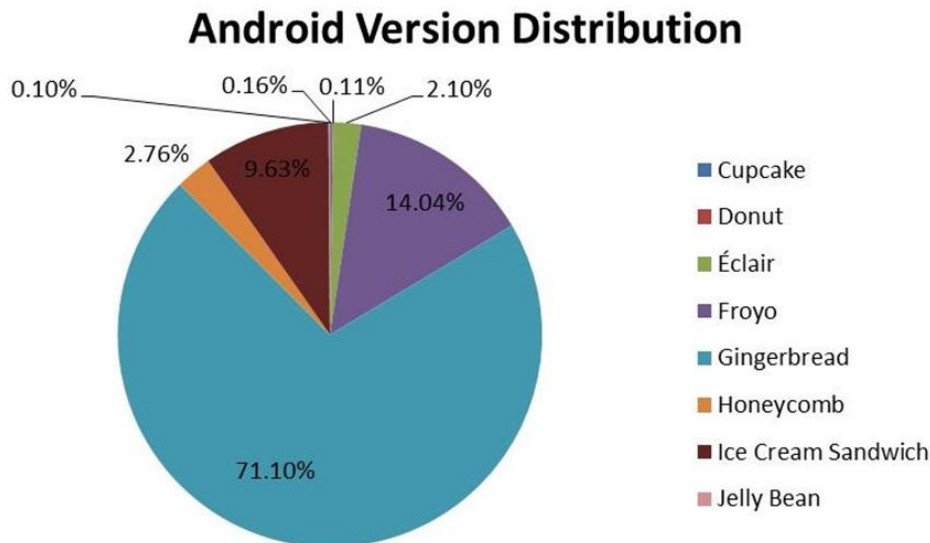


Fig 4: Android version Distribution

4.5 Symbol OF Android OS



F.

Fig 5: Symbol of Android OS

Chapter 4

5. Security and permissions in Android

Android is a multi-process system, where each application (and parts of the system) runs in its own process. Most security between applications and the system is enforced at the process level through standard Linux facilities, such as user and group IDs that are assigned to applications. Additional finer-grained security features are provided through a "permission" mechanism that enforces restrictions on the specific operations that a particular process can perform.

Android mobile phone platform is going to be more secure than Apple's iPhone or any other device in the long run. There are several solutions nowadays to protect Google phone from various attacks. One of them is security vendor McAfee, a member of Linux Mobile (LiMo) Foundation. This foundation joins particular companies to develop an open mobile-device software platform. Many of the companies listed in the LiMo Foundation have also become members of the Open Handset Alliance (OHA).

As a result, Linux secure coding practice should successfully be built into the Android development process. However, open platform has its own disadvantages, such as source code vulnerability for black-hat hackers. In parallel with great opportunities for mobile application developers, there is an expectation for exploitation and harm. Stealthy Trojans hidden in animated images, particular viruses passed from friend to friend, used for spying and identity theft, all these threats will be active for a long run.

Another solution for such attacks is SMobile Systems mobile package. Security Shield –an integrated application that includes anti-virus, anti-spam, firewall and other mobile protection is up and ready to run on the Android operating system. Currently, the main problem is availability for viruses to pose as an application and do things like dial phone numbers, send text messages or multi-media messages or make connections to the Internet during normal device use. It is possible for somebody to use the GPS feature to track a person's location without their knowledge. Hence SMobile Systems is ready to notify and block these secure alerts. But the truth is that it is not possible to secure r mobile device or personal computer completely, as it

connects to the internet. And neither the Android phone nor other devices will prove to be the exception. [5]

5.1 Development Tools

The Android SDK includes a variety of custom tools that help develop mobile applications on the Android platform. The most important of these are the Android Emulator and the Android Development Tools plugin for Eclipse, but the SDK also includes a variety of other tools for debugging, packaging, and installing r applications on the emulator.

5.2 Android Emulator

A virtual mobile device that runs on computer use the emulator to design, debug, and test r applications in an actual Android run-time environment.

Android Development Tools Plugin for the Eclipse IDE.The ADT plugin adds powerful extensions to the Eclipse integrated environment, making creating and debugging r Android applications easier and faster. If use Eclipse, the ADT plugin gives an incredible boost in developing Android applications:

It gives access to other Android development tools from inside the Eclipse IDE. For example, ADT lets access the many capabilities of the DDMS tool — taking screenshots, managing port-forwarding, setting breakpoints, and viewing thread and process information — directly from Eclipse.

It provides a New Project Wizard, which helps quickly create and set up all of the basic files'll need for a new Android application. It automates and simplifies the process of building r Android application.

It provides an Android code editor that helps write valid XML for r Android manifest and resource files.

5.3 Memory Management of Android OS

Since Android devices are usually battery-powered, Android is designed to manage memory (RAM) to keep power consumption at a minimum.

When an Android app is no longer in use, the system will automatically suspend it in memory – while the app is still technically "open," suspended apps consume no resources (e.g. battery power or processing power)

Android manages the apps stored in memory automatically: when memory is low, the system will begin killing apps and processes that have been inactive for a while, in reverse order since they were last used (i.e. oldest first).

This process is designed to be invisible to the user, such that users do not need to manage memory or the killing of apps themselves. [6]

Chapter 5

6. Design

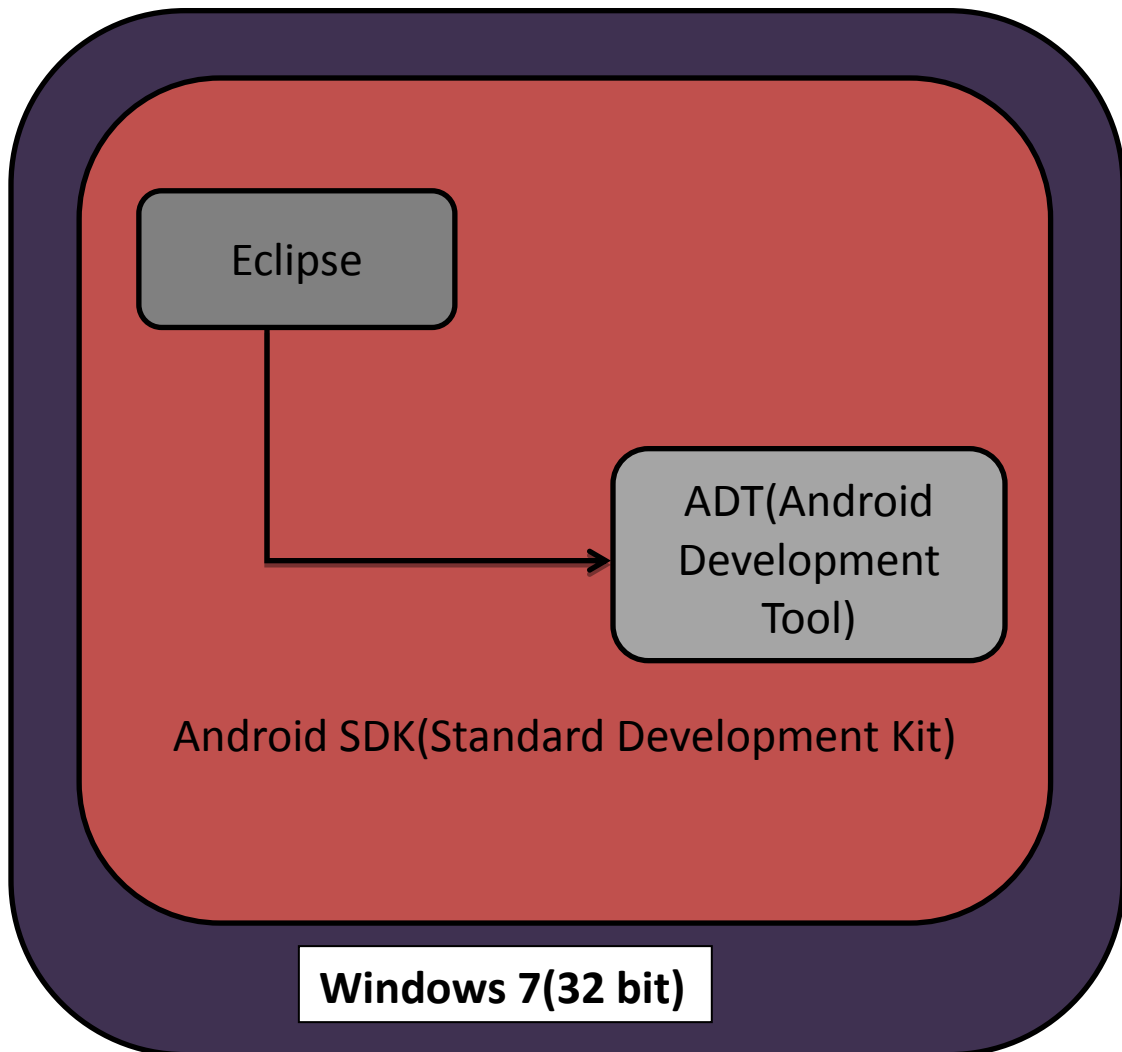


Fig 6: Design

6.1 Android Development Lifecycle

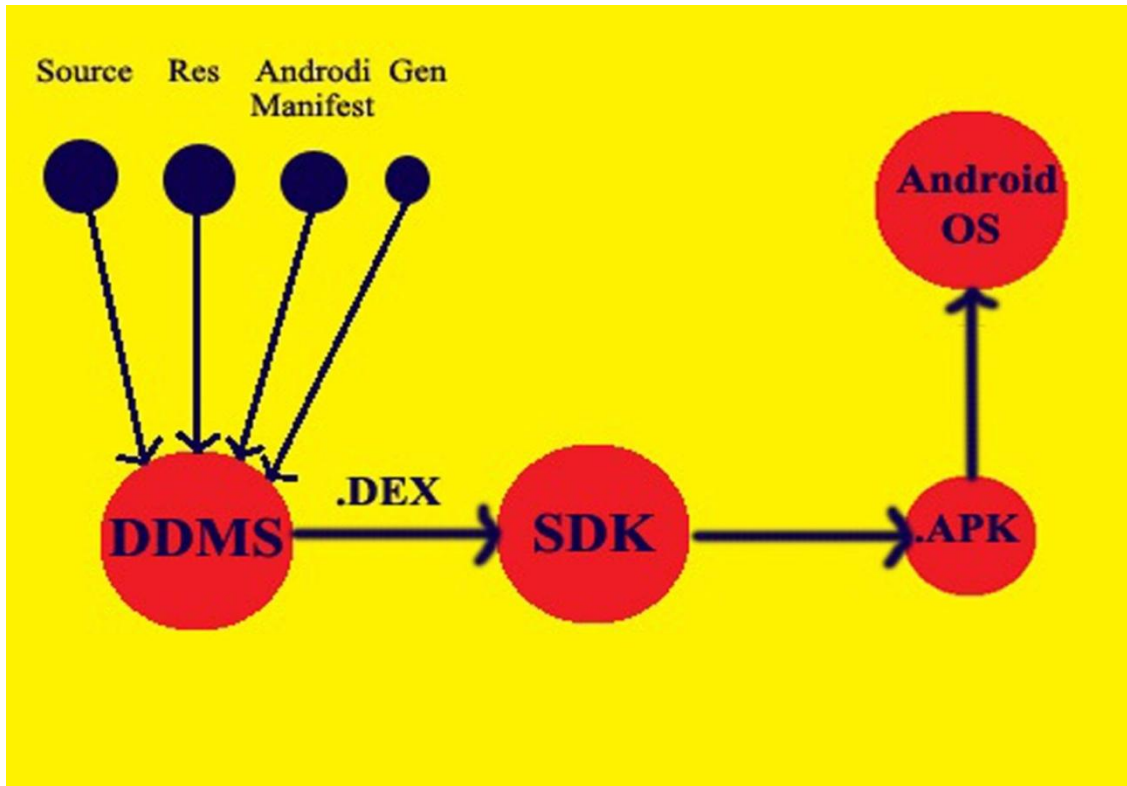


Fig 7: Android Development Life Cycle

6.2 State Diagram

State Diagram for Registration:

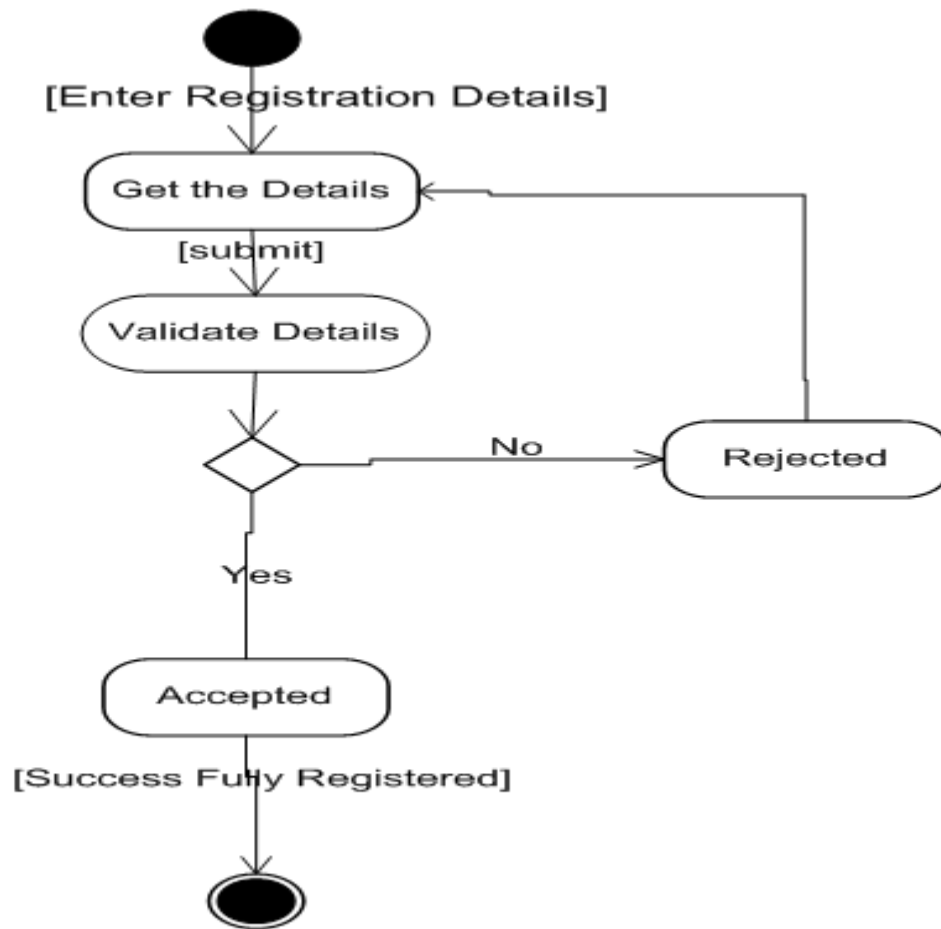


Fig 8:State Diagram for Registration Module

State Diagram for Login:

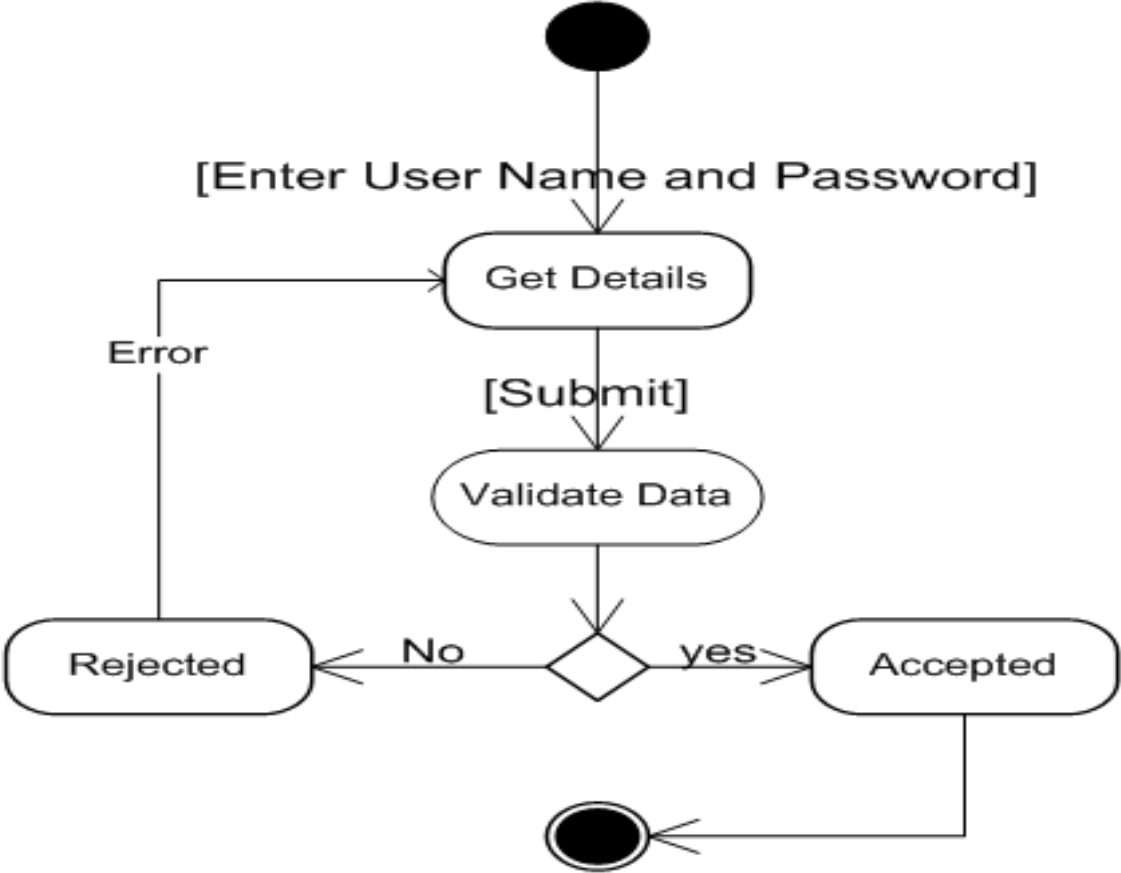


Fig 9: State Diagram for Login Module

6.3 Requirements

Functional Requirements:

- Android operating system on the Smartphone.
- The target device should be web service enabled.
- The android version should not be less than 2.3.5
- Server for storing information.

External Interface Requirements:

User Interface Tested on:

- Android emulator version 4.3
- LG G2 mobile

Software Requirement:

- Android SDK Manager
- Eclipse
- ADT(Android Development Tool)
- Xampp (External Server)
- NetBeans IDE 8.0.2

6.4 Level-0 DFD

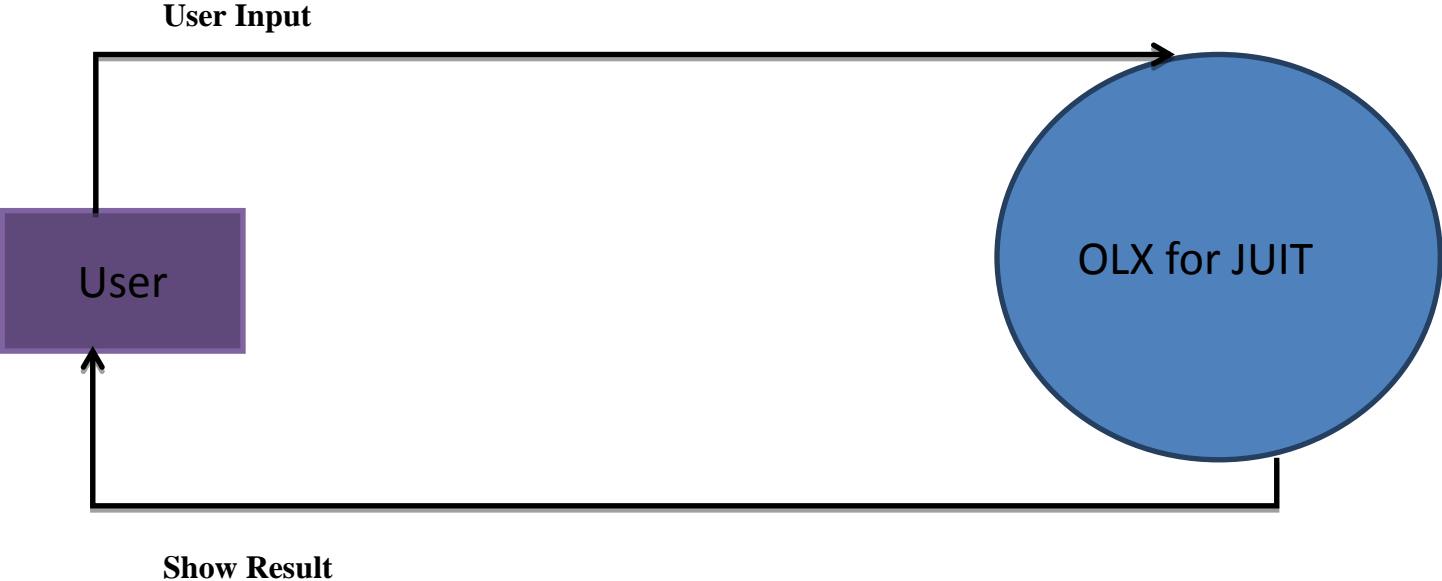


Fig 10: level-0 DFD

6.5 Level-1 DFD

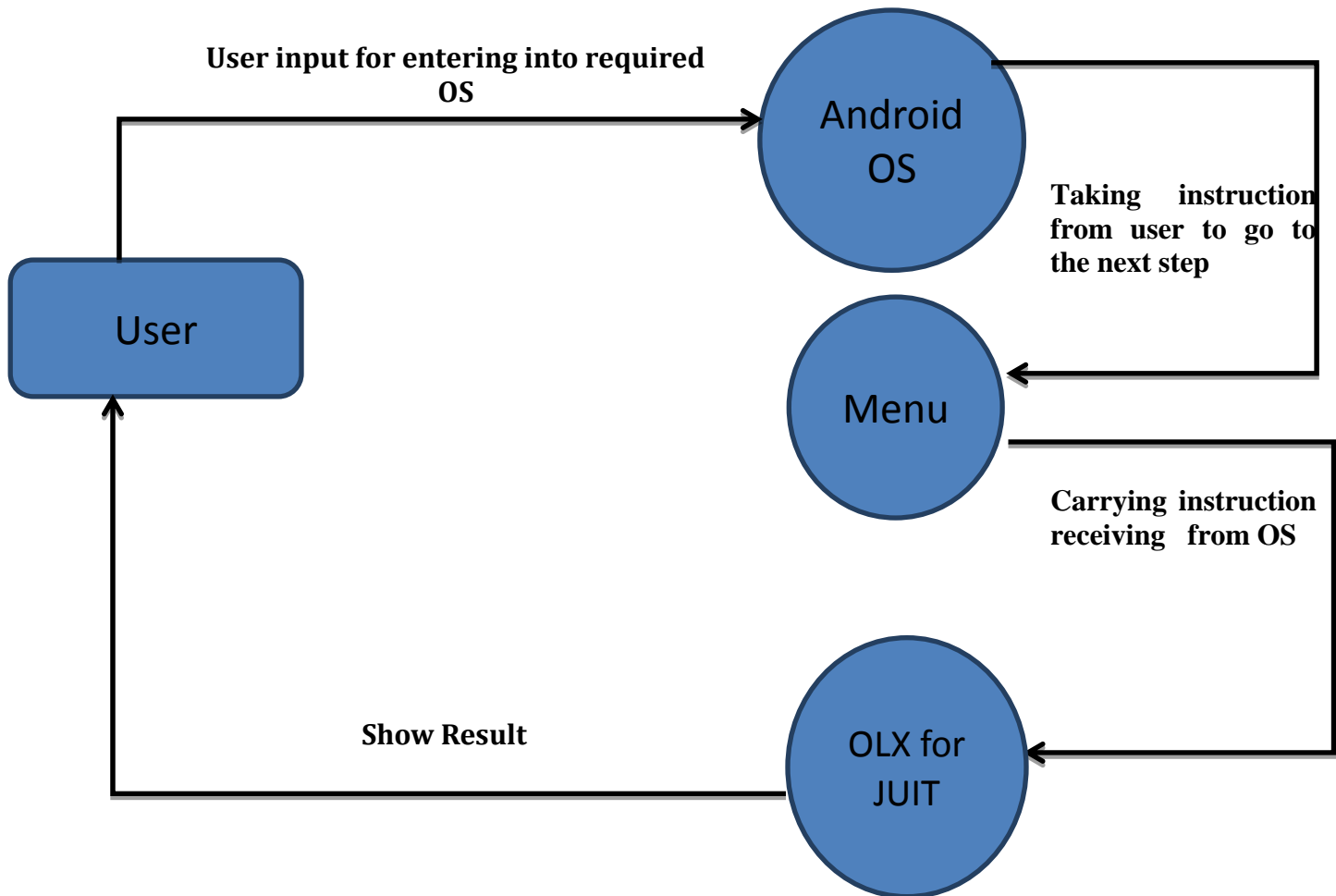


Fig 11: level-1 DFD

6.6 System Chart

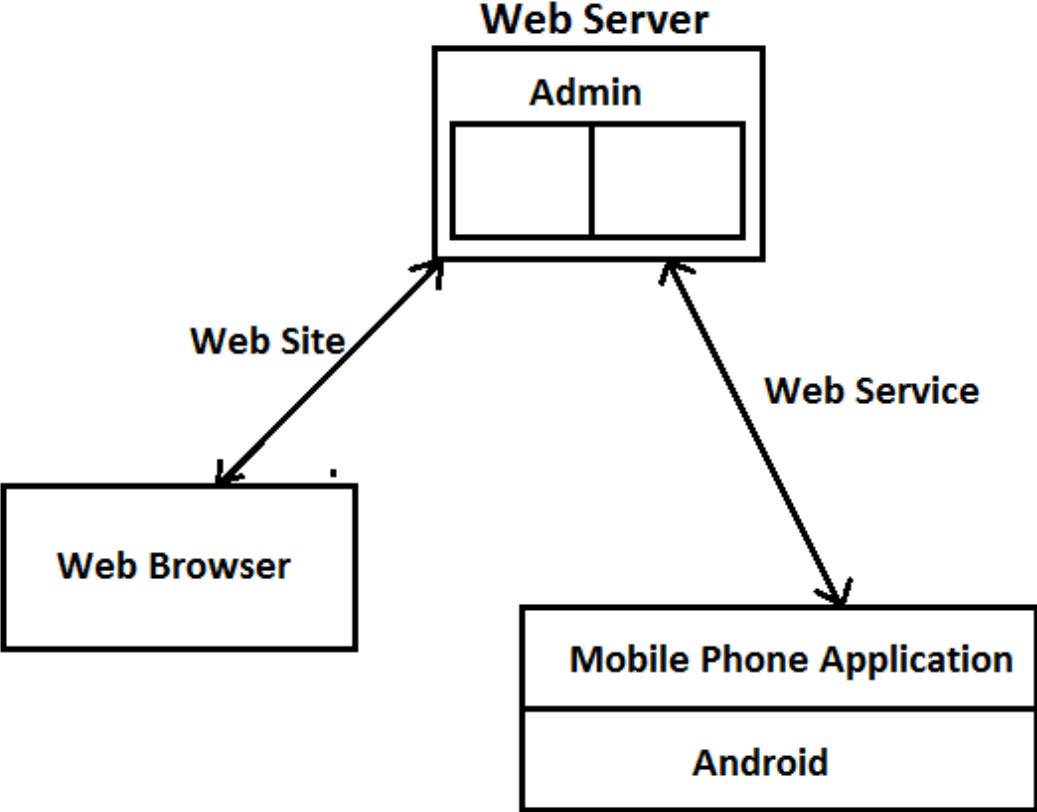


Fig 12: System Architecture

6.7 Building Blocks of Android code

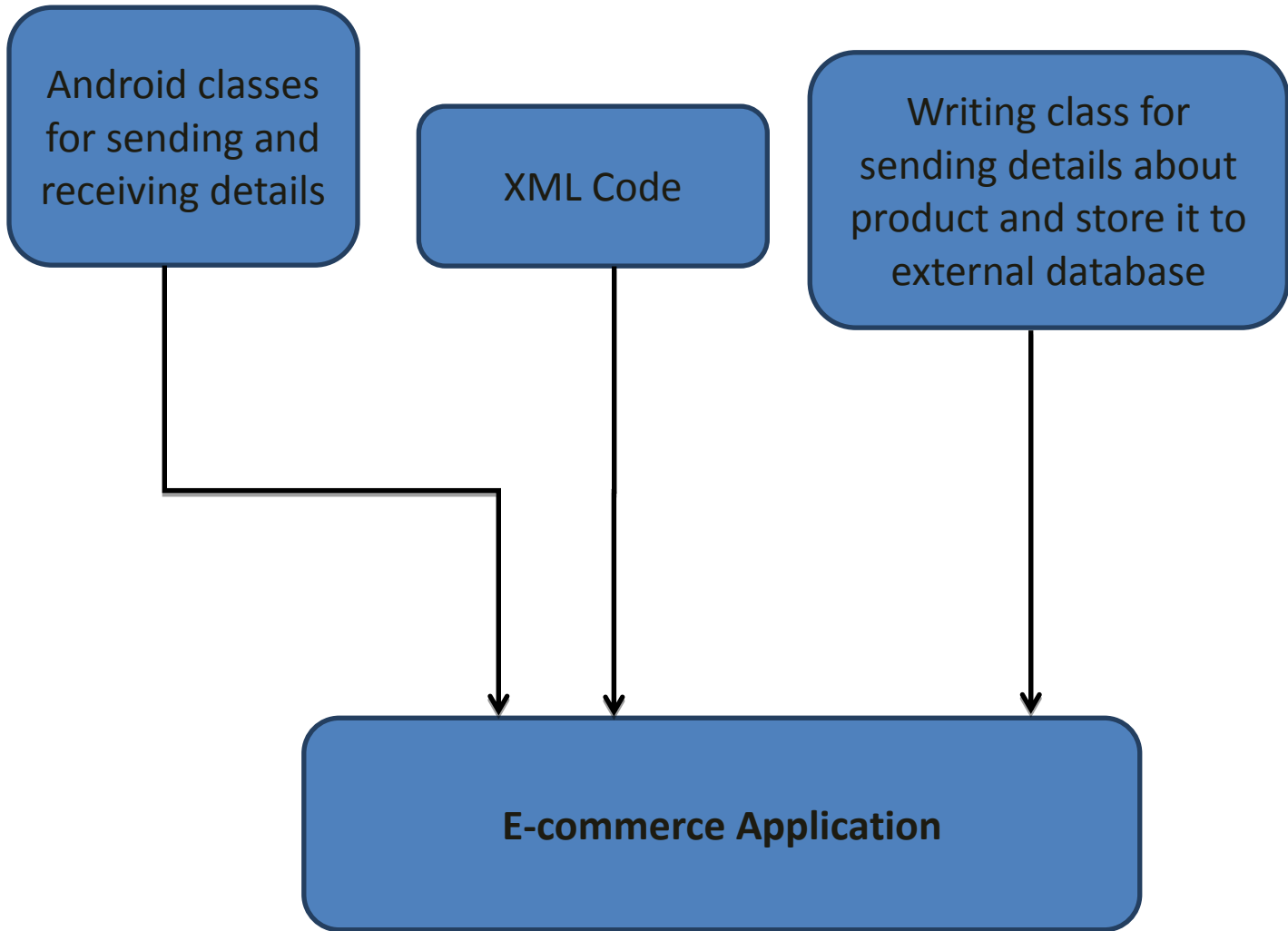


Fig 13: Building Blocks of Android Code

6.9 Screenshots:

External Database:

We used xampp server for the database creation. In xampp we have a database with the name olx_web. In which we have five tables. They are as follows:

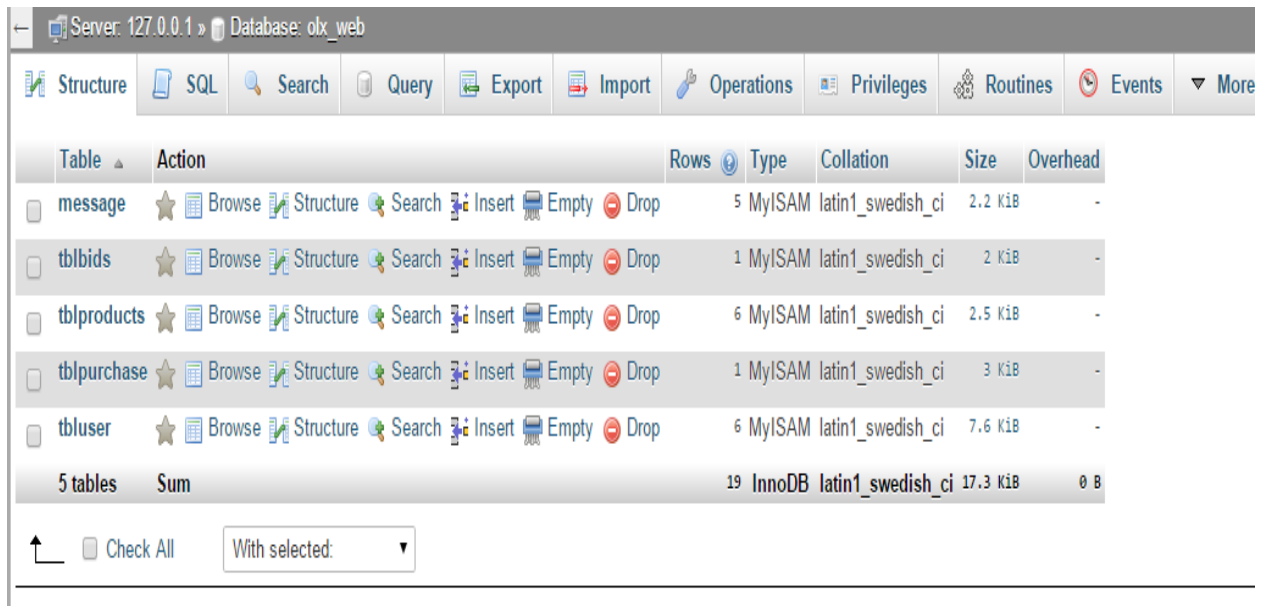


Table	Action	Rows	Type	Collation	Size	Overhead
message	Browse Structure Search Insert Empty Drop	5	MyISAM	latin1_swedish_ci	2.2 KiB	-
tblbids	Browse Structure Search Insert Empty Drop	1	MyISAM	latin1_swedish_ci	2 KiB	-
tblproducts	Browse Structure Search Insert Empty Drop	6	MyISAM	latin1_swedish_ci	2.5 KiB	-
tblpurchase	Browse Structure Search Insert Empty Drop	1	MyISAM	latin1_swedish_ci	3 KiB	-
tbluser	Browse Structure Search Insert Empty Drop	6	MyISAM	latin1_swedish_ci	7.6 KiB	-
5 tables	Sum	19	InnoDB	latin1_swedish_ci	17.3 KiB	0 B

Check All With selected:

Fig 14: Different Tables

Table message:

+ Options

		message_id	message	sent_from	sent_to	msg_date	status
<input type="checkbox"/>	Edit Copy Delete	46	hii hod	15	1	2015-04-05 00:00:00	unread
<input type="checkbox"/>	Edit Copy Delete	45	bbzjz	15	2	2015-04-05 00:00:00	read
<input type="checkbox"/>	Edit Copy Delete	44	vhzjzk	15	1	2015-04-05 00:00:00	unread
<input type="checkbox"/>	Edit Copy Delete	43	babns	2	14	2015-04-02 00:00:00	unread
<input type="checkbox"/>	Edit Copy Delete	47	hii	2	1	2015-05-08 10:59:31	unread

Check All With selected: Change Delete Export

Show all | Number of rows: Filter rows:

Fig 15: Table Message

Table User:

+ Options

		userid	fname	dob	lname	emailid	password	rdate	mobile	address	usertype
<input type="checkbox"/>	Edit Copy Delete	1	Admin	2014-08-19	Kumar	admin@gmail.com	asdfgh	2014-08-18	234242342	asasdas	admin
<input type="checkbox"/>	Edit Copy Delete	23	Anand	2015-03-31	Rajan	colthurling11@gmail.com	asdfgh	2015-04-16	9898989898	ldslfs;dfis;sfdfgd	user
<input type="checkbox"/>	Edit Copy Delete	2	Durges	2014-08-20	Kumar	dkg@gmail.com	asdfgh	2014-08-20	2313213424	Rohini, New Delhi, India	user
<input type="checkbox"/>	Edit Copy Delete	22	Niro	2015-03-31	Thakur	niro@gmail.com	asdfgh	2015-04-16	999999999	dfsdfs	user
<input type="checkbox"/>	Edit Copy Delete	24	Doctor	2015-03-31	Raajev	colthurling@gmail.com	469203	2015-04-19	9898989898	asdasdasdsad	user
<input type="checkbox"/>	Edit Copy Delete	25	Doctor	2015-03-31	Raajev	colthurling@gmail.com	913319	2015-04-19	999999999	dcsdfsdfs	user

Check All With selected: Change Delete Export

Fig 16: Table User

Table Bid:

Options		userid	pid	amount	bdate
<input type="checkbox"/>	Edit Copy Delete	22	7	9000	2015-04-16 00:00:00
<input type="checkbox"/>	Check All	With selected:		Change Delete Export	
<input type="checkbox"/>	Show all	Number of rows:	25	Filter rows:	<input type="text" value="Search this table"/>

Fig 17: Table Bid

Table Product:

productid	pname	demand_price	purchased_price	market_price	status	pimage	rdate	sdate	ptype	pdesc	userid
11	ghhhh	99	999	6999	In Stock	2015_05_03_03_09_36.jpg	2015-05-03	1111-11-11	c_b	vhb	3
10	hhsjsj	949	9797	97974	In Stock	2015_05_03_02_54_47.jpg	2015-05-03	1111-11-11	Cars and Bike	nsjsjs	2
9	Naino	100000	150000	130000	In Stock	2015_04_16_02_52_23.jpg	2015-04-16	1111-11-11	c_b	this is naino III00	2
7	Lenevo Mobile	10000	14000	12000	22	2015_04_16_02_00_25.jpg	2015-04-16	2015-04-16	m_t	lenevo s650	2
8	Sony Xperia	10000	14000	12000	In Stock	2015_04_16_02_43_24.jpg	2015-04-16	1111-11-11	m_t	Sony Xperia	2
12	hdjdj	500	9494	949	In Stock	2015_05_08_11_01_03.jpg	2015-05-08	1111-11-11	c_b	bsbsns	2

Fig 18: Table Product

Chapter 6

7 Implementation:

7.1 Process:

The process starts when a user starts the mobile application.

- The mobile application requests the product listing web service.
- The web application, which operates on remote web servers receives product listing web service requests.
- The web application finds the published products from the database and prepares JSON response.
- The mobile application receives JSON response and will convert it into HTML and render it.
- When the user selects a product the mobile application sends request to the server for the product details web service.
- The server finds full details of the product and sends JSON response.
- The mobile application prepares HTML from JSON response for the display on the screen.

7.2 Screenshots of android Application with code:

XML Code for Registration:

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="fill_parent"
    android:layout_height="fill_parent"
    android:layout_gravity="center"
    android:orientation="vertical"
    android:background="@drawable/android"
    >

    <TextView
        android:id="@+id/tvUser"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Large Text"
        android:textAppearance="?android:attr/textAppearanceLarge"/>

    <TextView
        android:id="@+id/tvSelect"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text=""
        android:textAppearance="?android:attr/textAppearanceMedium"/>

    <Spinner
        android:id="@+id/spnCandidates"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:visibility="gone"/>

    <EditText
        android:id="@+id/etFirstName"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_marginTop="10dp"
        android:hint="@string/etFirstName"
        android:inputType="textPersonName">

    <requestFocus/>
    </EditText>

    <EditText
        android:id="@+id/etLastname"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:hint="@string/etLastName"
    >
```

```
android:inputType="textPersonName"/>

<EditText
android:id="@+id/etusername1"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_gravity="center"
android:hint="@string/etUsername"
android:inputType="textPersonName"/>

<EditText
android:id="@+id/etpassword"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_gravity="center"
android:hint="@string/etpassword"
android:visibility="gone"
android:inputType="textPassword"/>

<EditText
android:id="@+id/etfathername"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_gravity="center"
android:hint="@string/etFatherName"
android:inputType="textPersonName"/>

<EditText
android:id="@+id/etemailid"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_gravity="center"
android:ems="10"
android:hint="@string/etEmailid"
android:inputType="textEmailAddress"/>

<EditText
android:id="@+id/etmobile"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_gravity="center"
android:hint="@string/etMobile"
android:inputType="phone"
android:maxLength="10"/>

<EditText
android:id="@+id/etaddress"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_gravity="center"
android:hint="@string/etAddress"
android:inputType="textPostalAddress"/>

<Button
android:id="@+id/btnSubmit"
```



```
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_gravity="center"
android:text="@string/btnSubmit"/>
```

```
</LinearLayout>
```

XML Code for Products:

```
<?xmlversion="1.0"encoding="utf-8"?>
<TableLayoutxmlns:android="http://schemas.android.com/apk/res/android"
android:layout_width="fill_parent"
android:layout_height="match_parent"
android:background="@drawable/android">
```

```
<TableRow
android:id="@+id/tableRow1"
android:layout_width="fill_parent"
android:layout_height="wrap_content">
```

```
<TableLayout>
```

```
<ImageView
android:id="@+id/imgcars_bikes"
android:layout_width="150dp"
android:layout_height="150dp"
android:layout_weight="1"
android:onClick="carDetails"
android:src="@drawable/car"/>
```

```
<TextView
android:id="@+id/txtProductDetails"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Cars and Bike"
android:textAppearance="?android:attr/textAppearanceLarge"/>
</TableLayout>
```

```
<TableLayout>
```

```
<ImageView
android:id="@+id/img_mobiles_tablets"
android:layout_width="150dp"
android:layout_height="150dp"
android:layout_weight="1"
android:onClick="mobileDetails"
android:src="@drawable/mobile"/>
```

```
<TextView
android:id="@+id/textView33"
android:layout_width="wrap_content"
```

```
android:layout_height="wrap_content"
android:text="Mobiles & Tablet"
android:textAppearance="?android:attr/textAppearanceLarge"/>
</TableLayout>
</TableRow>
<TableRow
android:id="@+id/tableRow2"
android:layout_width="fill_parent"
android:layout_height="wrap_content">
```

```
<TableLayout>
```

```
<ImageView
android:id="@+id/imgcars_bikes11"
android:layout_width="150dp"
android:layout_height="150dp"
android:layout_weight="1"
android:onClick="electronicsDetails"
android:src="@drawable/elec"/>
```

```
<TextView
android:id="@+id/textView11"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Electronics\nAppliances"
android:textAppearance="?android:attr/textAppearanceLarge"/>
</TableLayout>
```

```
<TableLayout>
```

```
<ImageView
android:id="@+id/img_mobiles_tablets11"
android:layout_width="150dp"
android:layout_height="150dp"
android:layout_weight="1"
android:onClick="realEstateDetails"
android:src="@drawable/rs1"/>
```

```
<TextView
android:id="@+id/textView12"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Real Estate"
android:textAppearance="?android:attr/textAppearanceLarge"/>
</TableLayout>
```

```
</TableRow>
<TableRow
android:id="@+id/tableRow3"
android:layout_width="fill_parent"
android:layout_height="wrap_content">
```

```
<TableLayout>
```

```
<ImageView
android:id="@+id/imgcars_bikes122"
```

```

android:layout_width="150dp"
android:layout_height="150dp"
android:layout_weight="1"
android:onClick="LifeStyleDetails"
android:src="@drawable/Life"/>

<TextView
android:id="@+id/textView121"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Home & \nLife Style"
android:textAppearance="?android:attr/textAppearanceLarge"/>
</TableLayout>

<TableLayout>

<ImageView
android:id="@+id/img_mobiles_tablets121"
android:layout_width="150dp"
android:layout_height="150dp"
android:layout_weight="1"
android:onClick="entertainmentDetails"
android:src="@drawable/entertainment"/>

<TextView
android:id="@+id/textView122"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Entertainment"
android:textAppearance="?android:attr/textAppearanceLarge"/>
</TableLayout>
</TableRow>
</TableLayout>

```

XML Code for POST Products:

```

<?xml version="1.0" encoding="utf-8"?>
<ScrollView xmlns:android="http://schemas.android.com/apk/res/android"
android:layout_width="fill_parent"
android:layout_height="wrap_content">

<LinearLayout
android:layout_width="fill_parent"
android:layout_height="match_parent"
android:orientation="vertical">

<ImageView
android:id="@+id/imgcars_bikes"
android:layout_width="fill_parent"
android:layout_height="300dp"
android:src="@drawable/Logo"/>

```

```
<Button
android:id="@+id/button1"
android:layout_width="fill_parent"
android:layout_height="wrap_content"
android:onClick="clickPic"
android:text="Click Pic"/>
```

```
<EditText
android:id="@+id/txtproduct"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:ems="10"
android:hint="Product Name"
android:inputType="textPersonName">
```

```
<requestFocus/>
</EditText>
```

```
<EditText
android:id="@+id/txtDescription"
android:layout_width="match_parent"
android:layout_height="100dp"
android:ems="10"
android:hint="Product Description"
android:inputType="textPostalAddress"/>
```

```
<EditText
android:id="@+id/txtprice"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:ems="10"
android:hint="Price"
android:inputType="number"/>
```

```
<EditText
android:id="@+id/txtPurchasedPrice"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:ems="10"
android:hint="Purchased Price"
android:inputType="number"/>
```

```
<EditText
android:id="@+id/txtCurrentPrice"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:ems="10"
android:hint="Current Market Price"
android:inputType="number"/>
```

```
<Spinner
android:id="@+id/spnPType"
android:layout_width="match_parent"
android:layout_height="wrap_content"
```

```
android:entries="@array/strPType"/>

<Button
  android:id="@+id/button2"
  android:layout_width="match_parent"
  android:layout_height="wrap_content"
  android:onClick="saveProduct"
  android:text="Save Product"/>

</LinearLayout>

</ScrollView>
```

Screenshots:

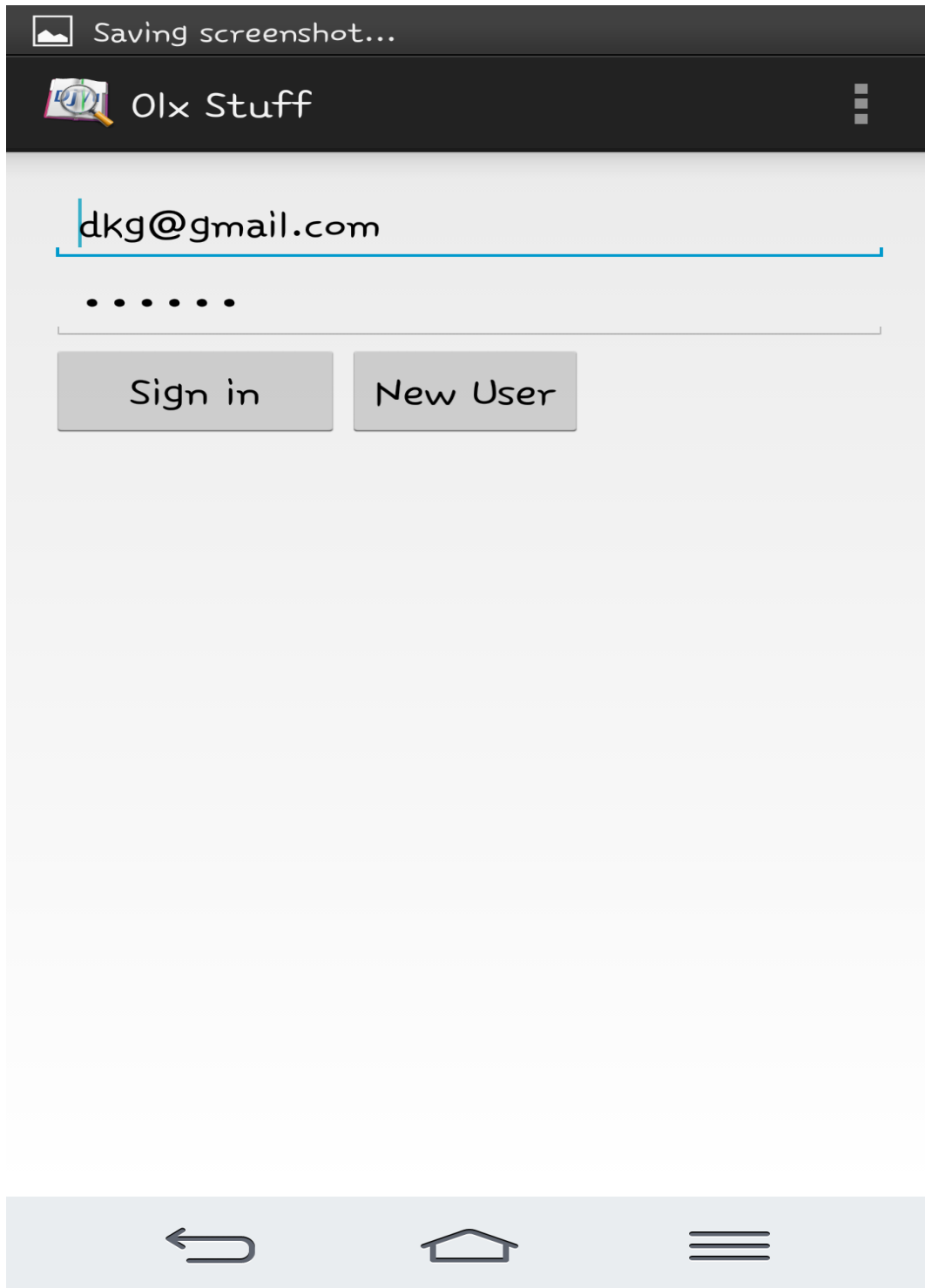


Fig 19: Screen Shot1

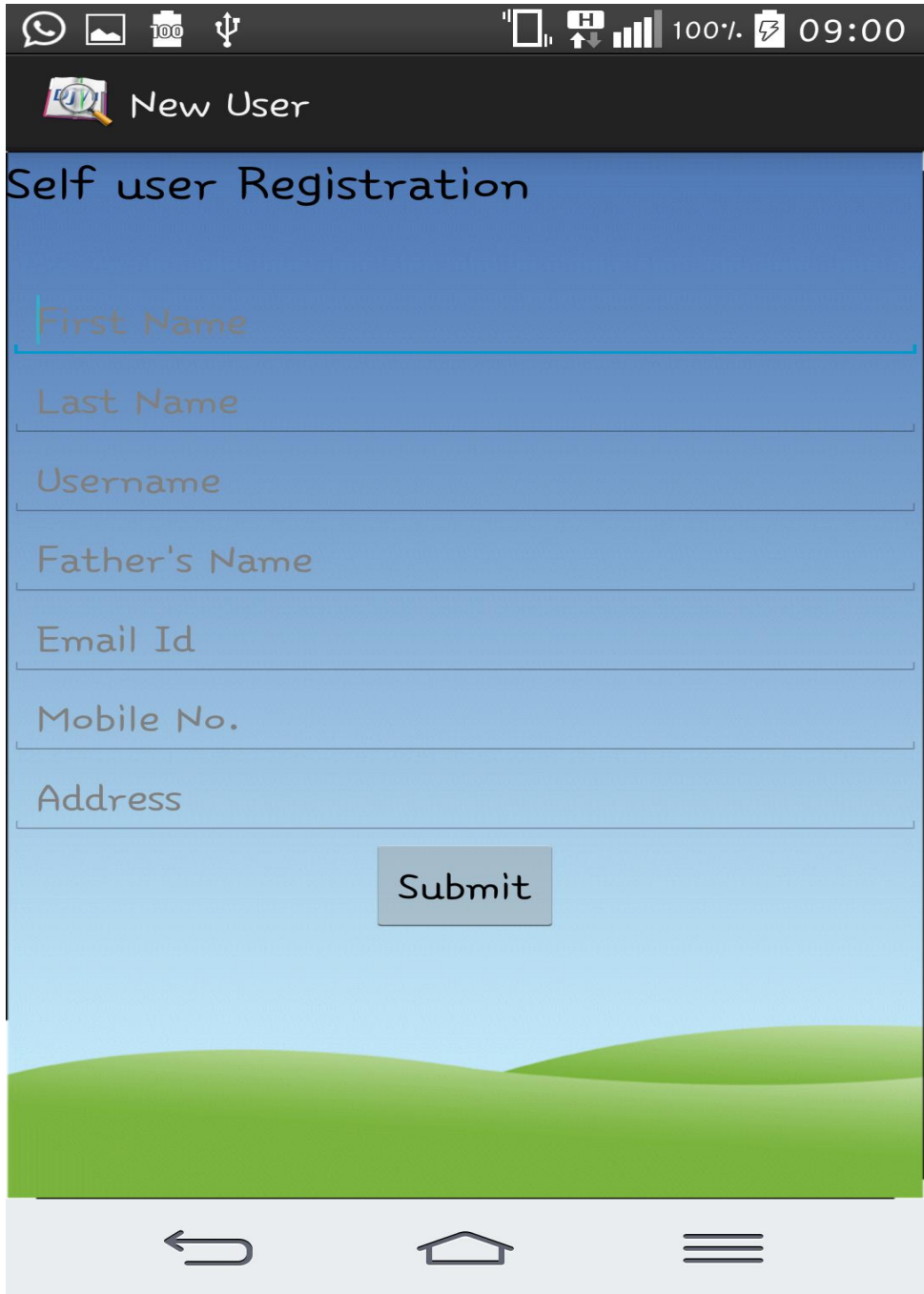


Fig 20: Screen Shot2

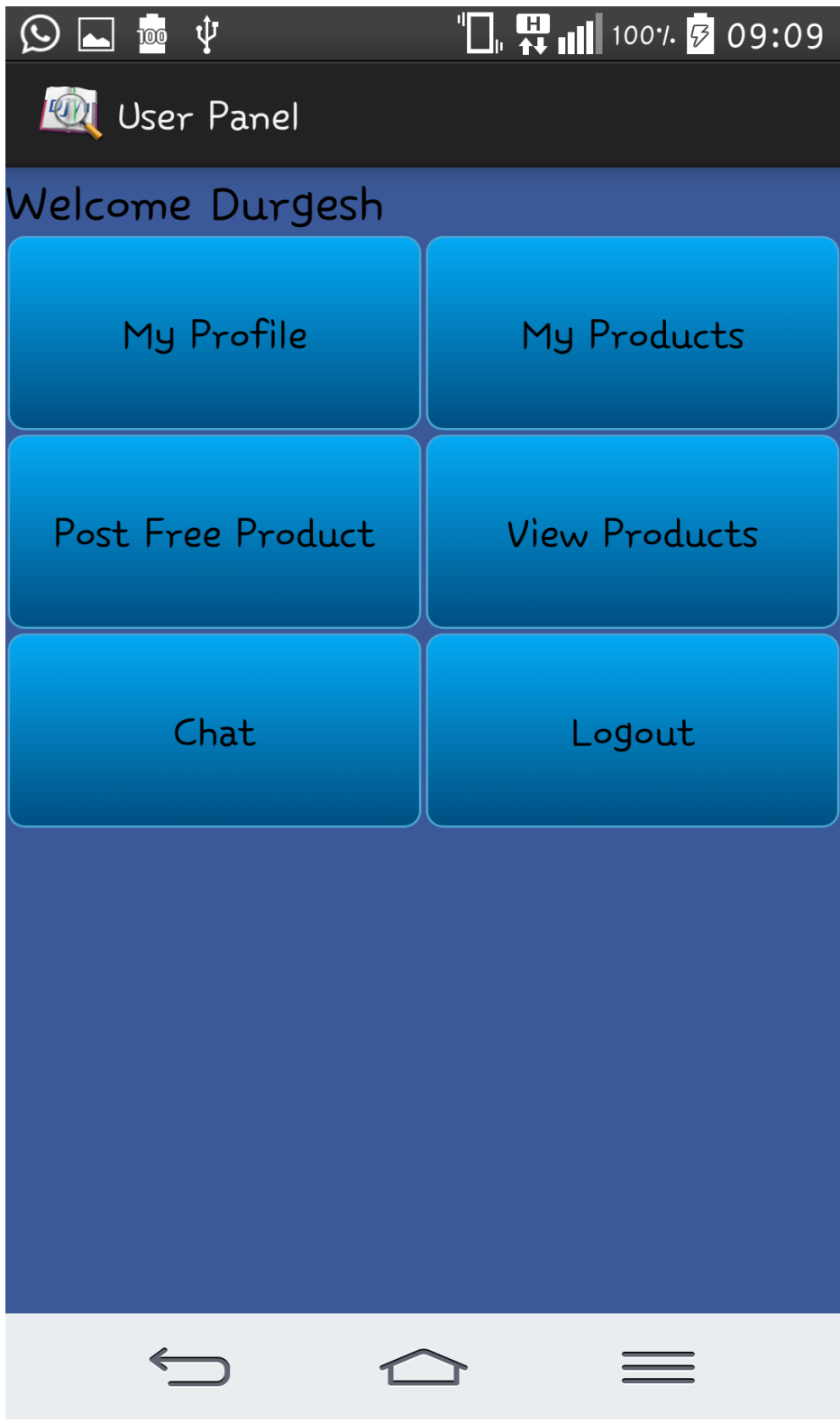


Fig 21: Screen Shot3

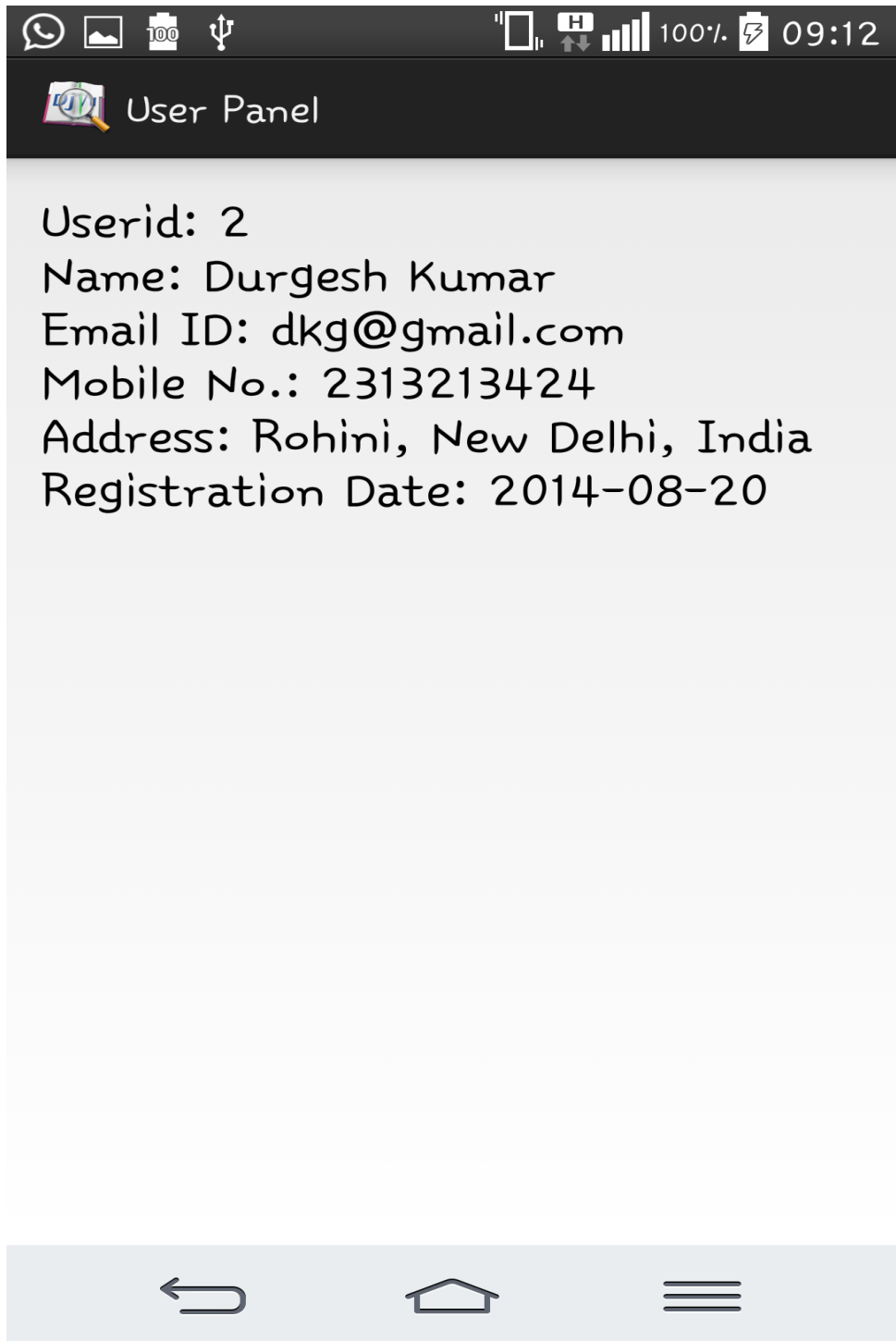


Fig 22: Screen Shot4

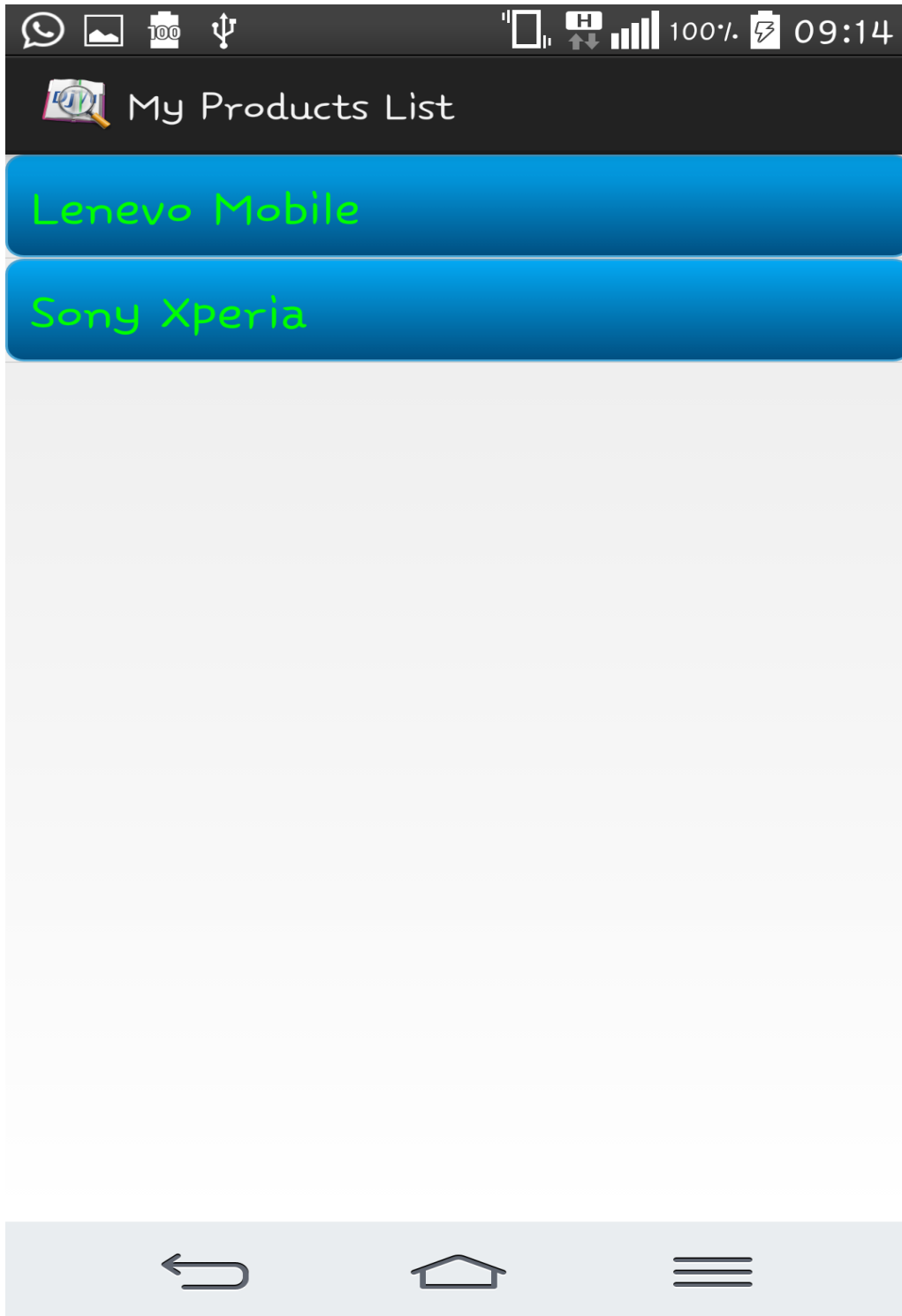


Fig 23: Screen Shot5



Fig 24: Screen Shot6

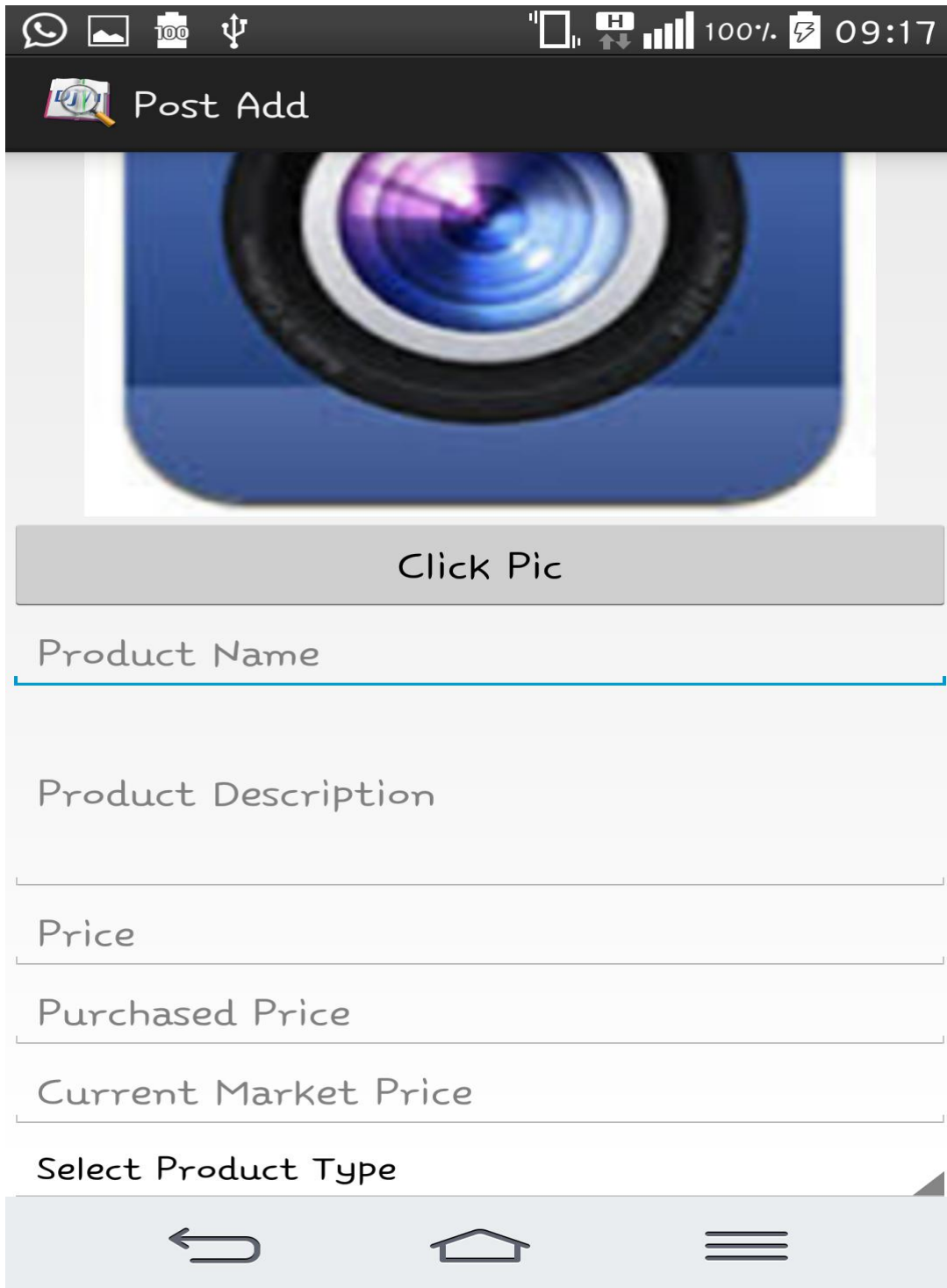


Fig 25: Screen Shot7



Fig 26: Screen Shot8



Fig 27: Screen Shot9

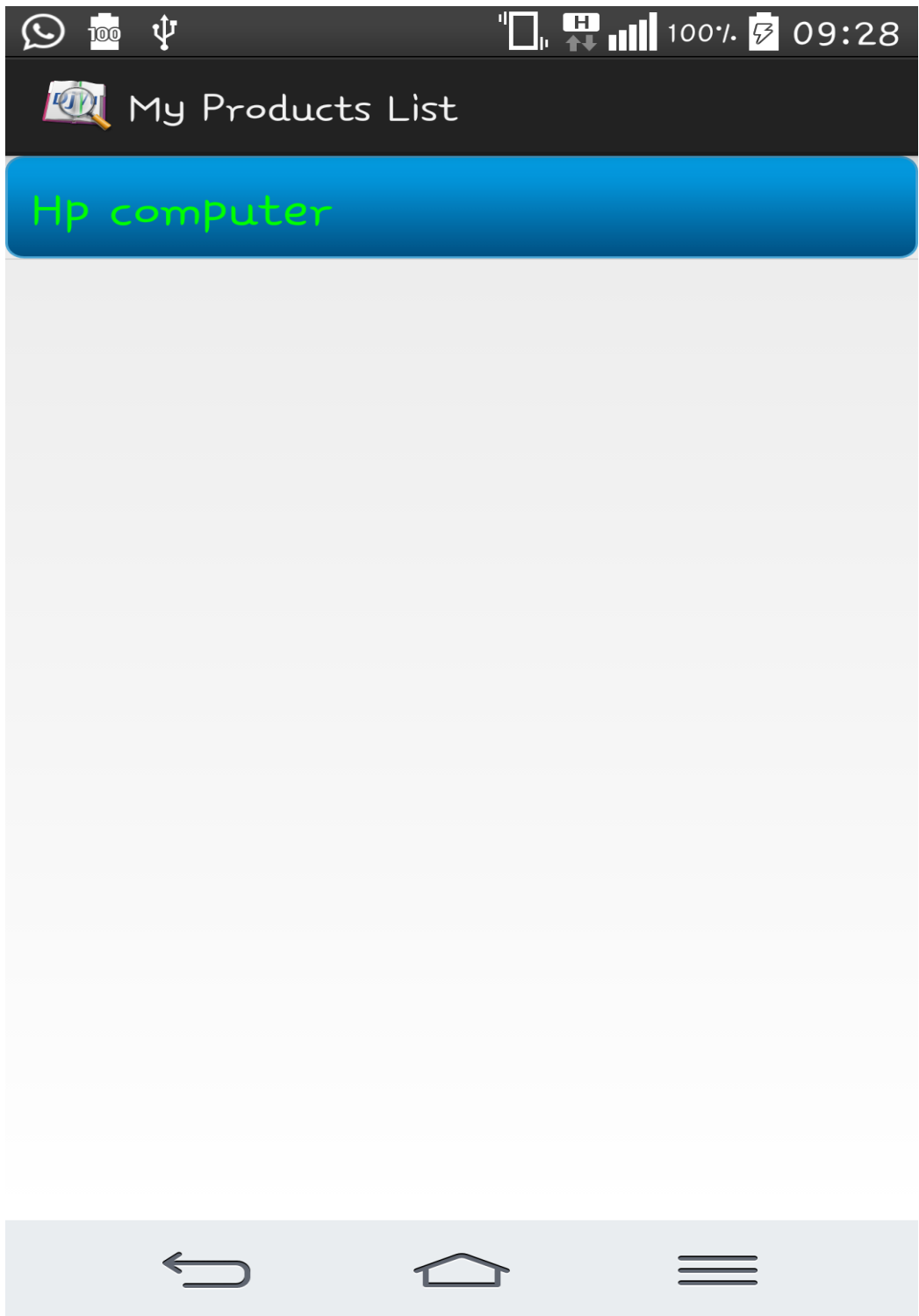


Fig 28: Screen Shot10



My Products



Product Name: Hp computer
Description: 15 inch screen 4 years old
Demand price: 15 inch screen 4 years old
Purchased price: 50000
Market price: 30000
Date of Posting: 2015-05-14
Date of Posting: 2015-05-14
Status: In Stock

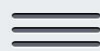


Fig 29: Screen Shot11

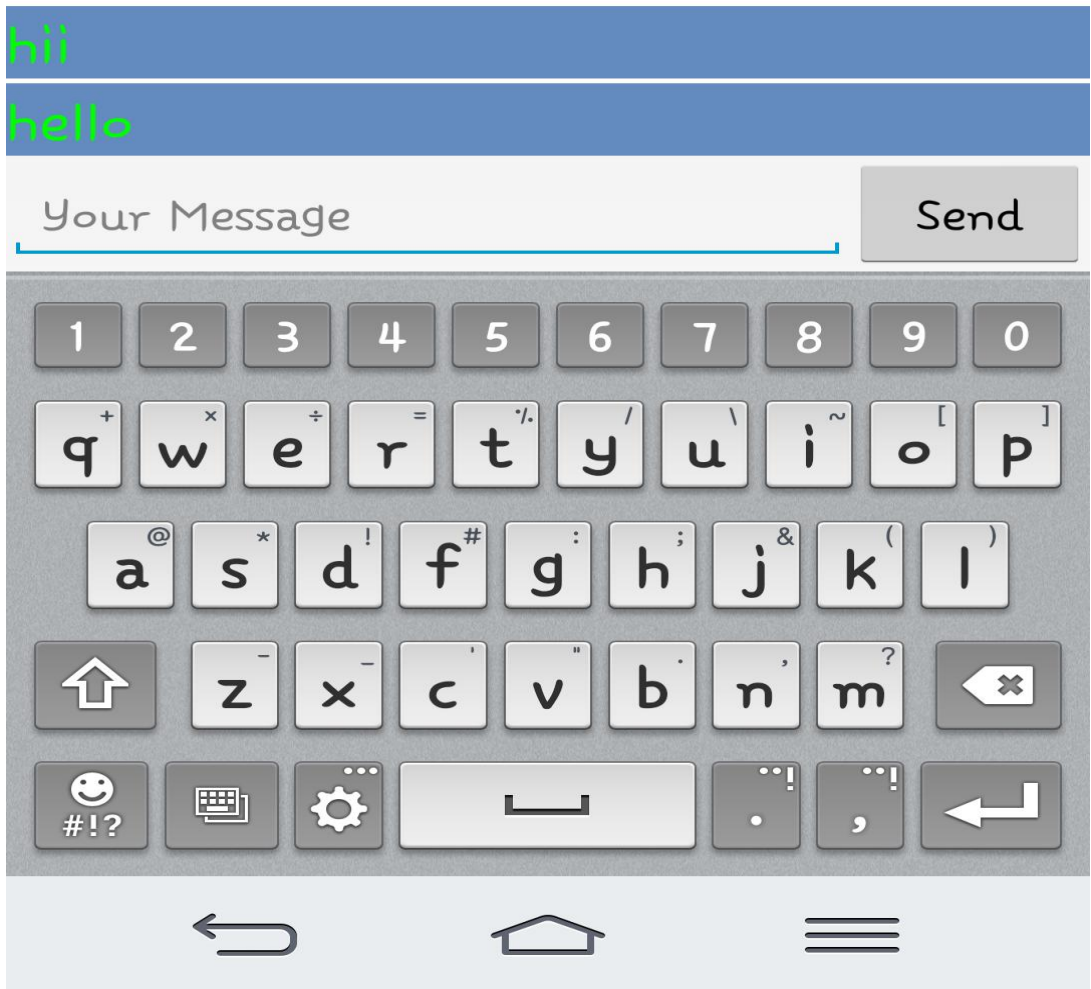
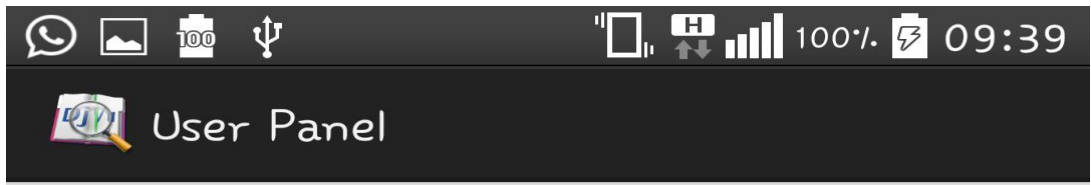


Fig 30: Screen Shot12

Chapter 7

8. Future Enhancements

- Polish interface.
- Add chat box working properly.
- Security features.
- Thumbs Up/ Thumbs Down product details
- Several other functionalities like speechrecognition,etc.

Chapter 8

9. Conclusion

Android is a truly open, free development platform based on Linux and open source. Handset makers can use and customize the platform without paying a royalty. Mobility of people and technologies are key factors in today's economy. Mobile applications are of utmost importance when companies market their products or services. Mobile phones have generated an incredible opportunity for accessing the Internet, while m-commerce has increased the level of using a mobile phone for business. Applications for electronic and mobile commerce are, however, developed sufficiently to cover all aspects of the market. The ideal applications do not distract the user from his/her intent and they provide on appropriately level of security, accessibility and speed. Screen size, input device, urgency, task based interfaces, and design are important aspects that developers have to consider when designing mobile phone applications. Such applications should be implemented on different operating systems, whether using JavaScript, CSS3 or HTML5, or combining these three together. The installation of a Spree application allows partial web services to function because not all applications may work with these web services. The device screen size proved to be of great importance but the Spree application solved these issues. Simulators for android and iPhone represent an excellent way to test applications.

10. References

[1]Li Ma, Lei Gu and Jin Wangl “Research and Development of Mobile Application for Android Platform” International Journal of Multimedia and Ubiquitous Engineering Vol.9, No.4 (2014)

[2]Abdullah Saleh Alqahtani&Robert Goodwin“E-commerce Smartphone Application”, (IJACSA) International Journal of Advanced Computer Science and Applications, Vol. 3, No.8, 2012

[3] http://www.tutorialspoint.com/android/android_architecture.htm

[4] <http://developer.android.com/guide/faq/framework.html>

[5] <http://developer.android.com/training/articles/security-tips.html>

[6] <http://mobworld.wordpress.com/2010/07/05/memory-management-in-android/>