CHAPTER 1

INSTALLING AND RUNNING APPLICATIONS ON ANDROID STUDIO

Step 1 - System Requirements

The required tools to develop Android applications are open source and can be downloaded from the Web. Following is the list of software's you will need before you start your Android application programming. Java JDK5 or later version 5 Java Runtime Environment (JRE) 6H Android Studio.

Step 2 - Setup Android Studio

Android Studio is the official IDE for android application development. It works based on IntelliJ IDEA, You can download the latest version of android studio from Android Studio 2.2 Download, If you are new to installing Android Studio on windows, you will find a file, which is named as android-studio-bundle-143.3101438-windows.exe. So just download and runs on windows machine according to android studio wizard guideline

If you are installing Android Studio on Mac or Linux, you can download the latest version from Android Studio Mac Down1oad, or Android Studio Linux Download, check the instructions provided along with the downloaded file for MacOS and Linux. This tutorial will consider that you are going to setup your environment on Windows machine having Windows8.1 operating system.

Installation

To launch Android Studio.exe, Make sure before launch Android Studio, Our should require installed Java JDK. To install Java JDK, take references of Android environment setup.

Once you launched Android Studio, its time to mention JDK7 path or later version in android studio installer.

Need to check the components, which are required to create applications, below the image has selected Android Studio, Android SDK, Android Virtual Machine and performance (Intel chip).

Need to specify the location of local machine path for Android studio and Android SDK below image has taken default location of windows 8.1 x64 bit architecture.

Need to specify the ram space for Android emulator by default it would take 512MB of local machine RAM.

At final stage, it would extract SDK packages into our local machine, it would take a while time to finish the task and would take 2626MB of Hard diskspace.

At final stage, it would extract SDK packages into our local machine, it would take a while time to Finish the task and would take 2626MB of Hard diskspace.

You can start your application development by calling start a new android studio project .in a new installation frame should ask Application name, package information and location of the project.

After entered application name, it going to be called select the form factors your application runs on, here need to specify Minimum SDK, in our tutorial, I have declared as API23: Android 6.0 (Mash ma1low).

The next level of installation should contain selecting the activity to mobile, it specifies the default layout for Applications. At the final stage it going to be open development tool to write the application code.

Step 3 - Create Android Virtual Device

To test your Android applications, you will need a virtual Android device. So before we start writing our code, let us create an Android virtual device. Launch Android AVD Manager Clicking AVD Manager icon as shown below.

After Click on a virtual device icon, it going to be shown by default virtual devices which are present on your SDK, or else need to create a virtual device by clicking Create new Virtual device button.

If your AVD is created successfully it means your environment is ready for Android application development. If you like, you can close this window using top-right cross button. Better you restart your machine and once you are done with this last step, you are ready to proceed for your first Android example but before that we will see few more important concepts related to Android Application Development.

CHAPTER 2

INTRODUCTION

2.1 Overview of the project

Food ordering app is an application designed primarily to use in food ordering industry. In this current scenario of the busy schedule of people, it may cause many inconveniences while getting food in restaurant manually with respect to time and energy. And for many who don’t know cooking, this app is very helpful. In a modern generation .

Online food ordering is a mobility of food delivery or takeout from a local restaurant or food cooperative. Now a day the rapid growth in the use of internet and the technologies associated with it, several opportunities are coming up on the web or mobile application. This is made possible through the use of electronic payment system. The payment can be done through the customer’s credit card, debit card. It is possible for everyone to order any goods from anywhere the internet and have the goods delivered at his/her home.

This online application enables the end-users to register to the system online, select the food items from a specific restaurant. It also allows user to opt either takeaway or delivery to the required address. The payment is made through online transactions so that a proxy person can receive the order in their absentia and there’ll be no issues with the amount exchange. By this system the workload of the waiter and other staffs are reduced and the time of the people is saved All types made by internet transaction add to the economics of digital cash, the necessary tool for this process telecommunication with customers.

2.2 AIMS AND OBJECTIVES

The system will become an important tools use for restaurant to improve the management aspect by use of computer system to connect each and every food ordering transaction instead of data record on it. In addition, it can also provide efficiency for the restaurant by reducing time consuming; minimize human errors or delivery and providing good quality and service to customers. In terms of the integrity and availability of the system provided, it can be concluded that this system is a suitable solution.

Well-designed self-service ordering systems give customers actual control over the pace of their transaction and allow them to limit the amount of personal interaction of restaurant. In most cases, an increased level of control has been shown to lead to higher level of customer satisfaction and greater intent to use or recommend suggested the service. Perceived convenience of a self-service system also leads to an increase in satisfaction

A new user-friendly app aims to overcome most if not all the drawbacks of existing system. So we have developed android application based food ordering system.

- User friendly GUI: Here we can use this application in mobiles which provide better graphical and touch user interface. The attractive graphical user interface attracts the customers and provides better service.
- To develop a food ordering system done based on client-server application.
- Reduce paper works.
- To computerize the food ordering system and error free software (No chance to create errors during bill calculation).
- To evaluate the way of interaction with customers

CHAPTER 3

REQUIREMENT SPECIFICATION

A software requirement definition is an abstract description of the services which the system should provide, and the constraints under which the system must operate. It should only specify the external behavior of the system.

User interface:

- Sign up
- Sign in
- Restaurant list
- Menu
- Checkout
- Pickup/Delivery
- Order confirmed
- Exit - close the app.

3.1Functional requirements

In software engineering, a functional requirement defines a function of a software system or its component. A function is described as a set of inputs, the behavior, and outputs (see also software).

Functional requirements may be calculations, technical details, data manipulation and processing and other specific functionality that define what a system is supposed to accomplish. Behavioral requirements describing all the case where the system uses the functional requirements are captured in use cases.

The various methods used in this project are as follows :-

•t• **Emulator**

To perform and display the functionality of the project.

•t• **Android studio**

To create, design, test, debug and run the android project.

•t• **Mouse**

To navigate through the emulator.

•t• Keyboard

To give inputs to the project.

3.2 Non-functional requirements:

These are constraints on the services or functions offered by the system. They include timing constraints, constraints on the development process and standards. Non- functional requirements often apply to the system as a whole.

Non-Functional Requirements are as follows:-

3.2.1 Dependability:

The dependability of a computer system is a property of the system that equates to its trustworthiness. Trust worthiness essentially means the degree of user confidence that the system will operate as they expect and that the system will not 'fail' in normal use.

3.2.2 Availability:

The ability of the system to deliver services when requested. There is no error in the program while executing the program.

3.3.3 Reliability:

The ability of the system to deliver services as specified. The program is compatible with all types of operating system without any failure.

3.2.4 Safety:

The ability of the system to operate without cat as trophic failure. This program is user friendly and it will never effects the system.

3.25 Security:

The ability of the system to protect itself against accidental or deliberate intrusion.

3.3 Details of the software

Here, the coding, creating, designing, testing, debugging and running of our project is done in Android Studio.

3.3.1 Android Studio

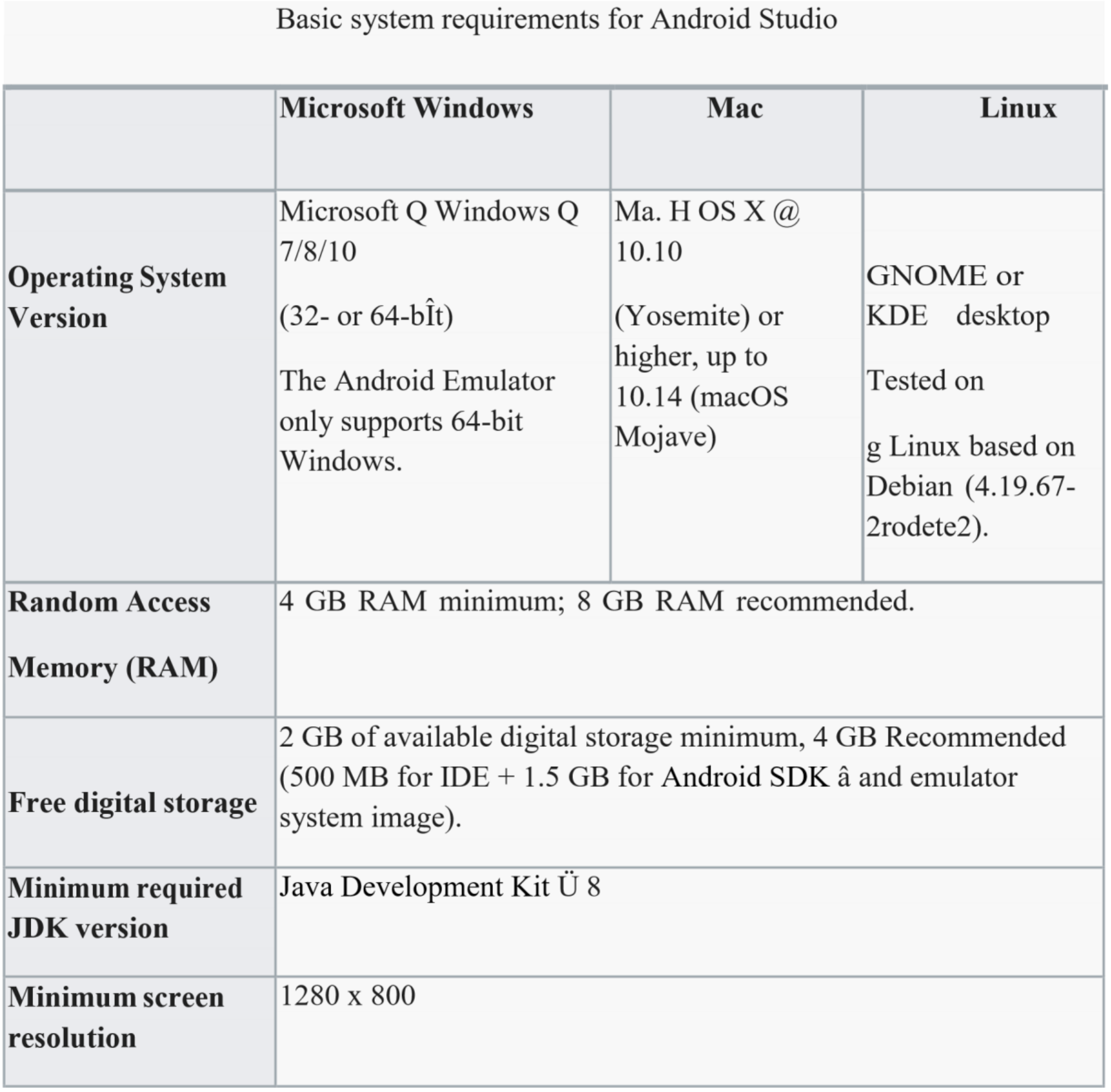
Android Studio is the official integrated development environment (IDE) for Google's Android operating system, built on Jet Brains' Intel li JIDEA software and designed specifically for Android development.

It is available for download on Windows, mac OS and Linux based operating systems or as a subscription-based service in 2020. It is are placement for the Eclipse Android Development Tools (E-ADT) as the primary IDE for native Android application development

Android Studio supports all the same programming languages of IntelliJ (and C Lion) e.g. Java, C++, and more with extensions, such as Go; and Android Studio3.0 or later supports Kotlin and "all Java7 language features and a subset of Java8 language features that vary by platform version." External projects back port some Java 9 features.

While IntelliJ states that Android Studio supports all released Java versions, and Java12, it's not clear to what level Android Studio supports Java versions up to Java 12 (the documentation mentions partial Java8support). At least some new language features up to Java12 are usable in Android.

3.4 Software and Hardware requirements



Basic system requirements for Android Studio

	Microsoft Windows	Mac	Linux
Operating System Version	Microsoft Q Windows Q 7/8/10 (32- or 64-bÎt) The Android Emulator only supports 64-bit Windows.	Ma. H OS X @ 10.10 (Yosemite) or higher, up to 10.14 (macOS Mojave)	GNOME or KDE desktop Tested on g Linux based on Debian (4.19.67-2rodete2).
Random Access Memory (RAM)	4 GB RAM minimum; 8 GB RAM recommended.		
Free digital storage	2 GB of available digital storage minimum, 4 GB Recommended (500 MB for IDE + 1.5 GB for Android SDK â and emulator system image).		
Minimum required JDK version	Java Development Kit Ü 8		
Minimum screen resolution	1280 x 800		

CHAPTER 4

SYSTEM DESIGN

4.1 Project Flow Chart

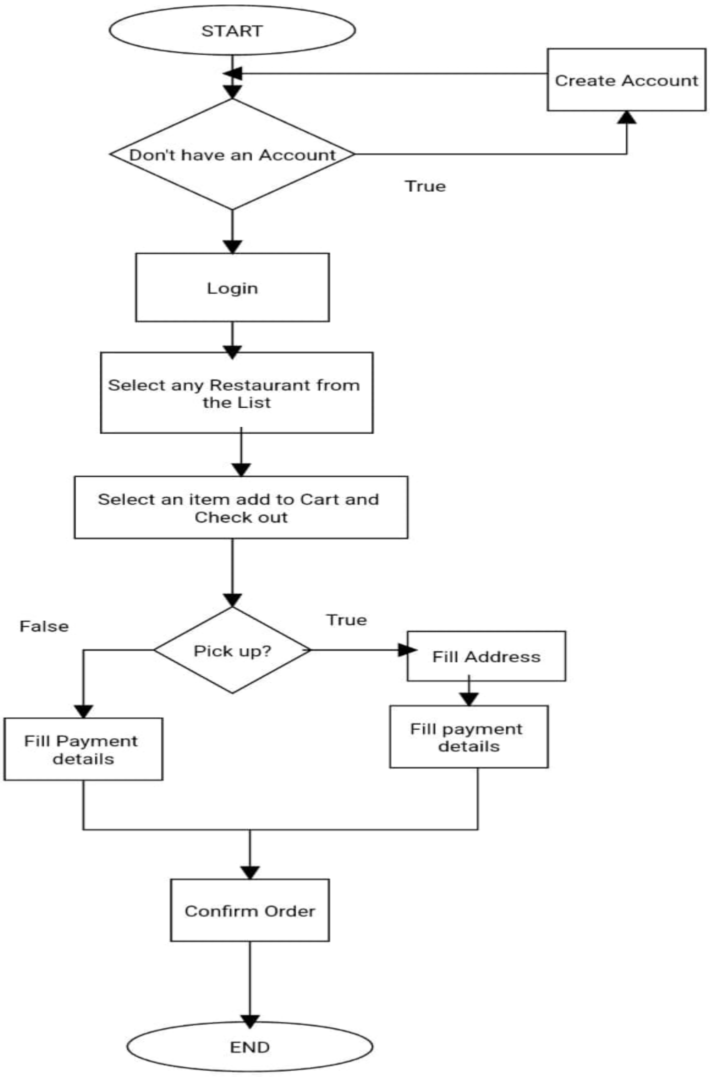


Fig 4.1 Flow Chart Representing Application's Operation

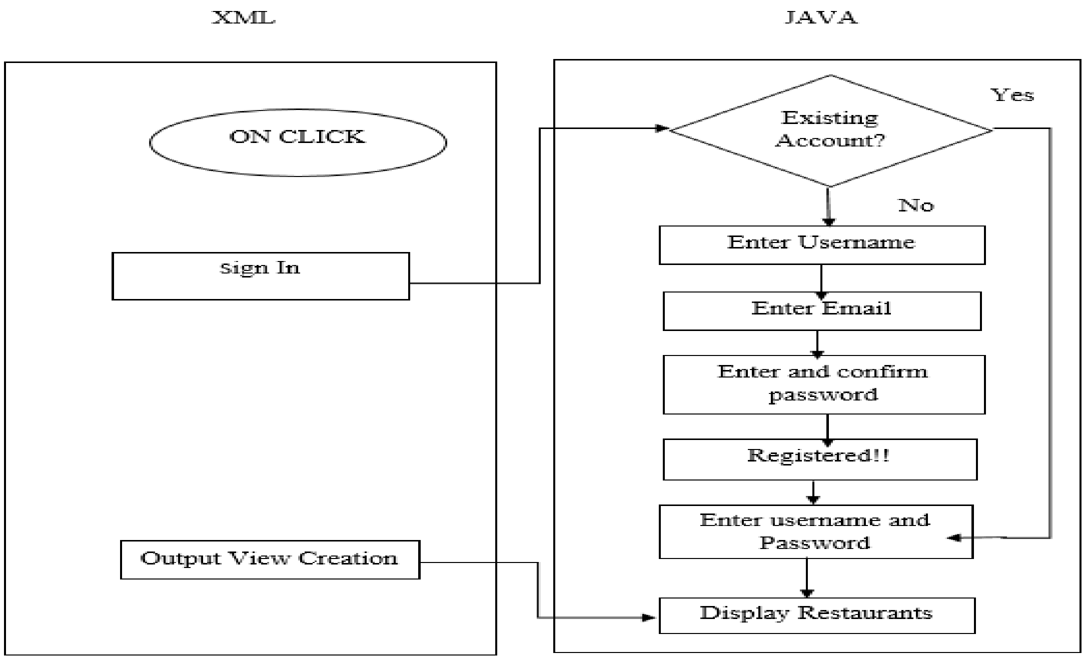


Fig 4.2 Data Flow from xml to java for sign-in activity

.

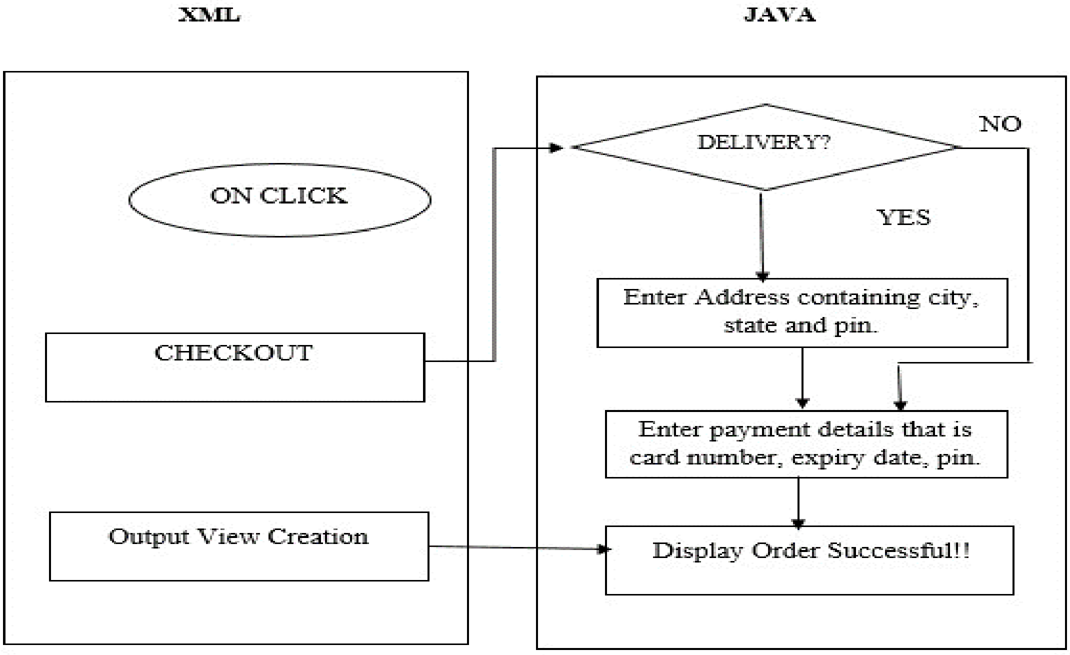

XML
JAVA
ON CLICK
CHECKOUT
Output View Creation
DELIVERY?
NO
YES
Enter Address containing city, state and pin.
Enter payment details that is card number, expiry date, pin.
Display Order Successful!!

Fig 4.3 Data flow from xml to java for Checkout activity.

Referring to depiction in the fig 4.1, the user has to first login or sign in page ,if the user does not have an account then the user has to create an account and then login using username and password in Edit text and logs into home page successfully.

Then the screen containing restaurant-list pops out and then the user selects the item from the menu-list of the particular Restaurant and adds the items to the Cart .

After clicking Checkout button the user is asked whether user would like to pick up the order from the Restaurant,if yes then the user fills up the payment details in Edit text and confirms the order. If the user doesn't opt to pickup the order from the restaurant then user has to fill up the address and payment details in Edit text and then cofirm the order successfully.

Referring the depiction made in the fig 4.2 the flow of data from the xml file to the java file can be understood. The sign-up/sign-in screen which asks to input the username and password contain Edit text widgets for the input to be given from the user.

Each of these widgets is given with a unique 'id'. Using the id of the widget the contents can be accessed in the java file. To do this the java objects of these widgets must be declared and initialized in the java program. The initialization of the object is done using findViewById() method.

After this, the widgets can be manipulated from the java program. The text in edit text is parsed to String data type and later, the appropriate computations are performed. After performing the operations the home page is opened which is present in the xml file.

Referring the depiction made in fig 4.3 the flow of data from the xml file to the java file can be understood.when the user clicks out the checkout button it takes to customer details page where user selects whether to pickup or deliver the order which is implemented using compound button switch Compat.

If the user chooses to pickup the order then it asks to input the name and payment details like card details, card number, pin and card expiry date implemented using Edit text widgets for input to be given from the user.

If the user chooses for delivery the screen which asks to input the address ,city,state,zip,and card details password contain Edit text widgets for the input to be given from the user.

Each of these widgets is given with a unique 'id'. Using the id of the widget the contents can be accessed in the java file. To do this the java objects of these widgets must be declared and initialized in the java program. The initialization of the object is done using findViewById() method.

After this, the widgets can be manipulated from the java program. The text in edit text is parsed to String data type and later, the appropriate computations are performed. After performing the operations the bill is generated and order is placed successfully which is present in the xml file.

CHAPTER 5

IMPLEMENTATION

5.1 XML Widgets and elements

5.1.1 Linear Layout

Linear Layout is the most basic layout in android studio,that aligns all the children sequentially either in horizontal or vertical manner by specifying the android:orientation attribute.If one applies android:orientation=”vertical” then elements will be arranged one after another in a vertical manner and if you apply android:orientation=”horizontal” then elements will be arranged one after another in a horizontal manner.

The Linear Layout can be created in the following way:

```
<LinearLayout

        xmlns:android="http://schemas.android.com/apk/res/android"

        xmlns:app="http://schemas.android.com/apk/res-auto"

        xmlns:tools="http://schemas.android.com/tools"

        android:layout_width="match_parent"

        android:layout_height="match_parent"

        android:orientation="vertical"

        tools:context=".MainActivity">

</LinearLayout>
```

5.1.2 Text View

A TextView displays text to the user and optionally allows them to edit it. A TextView is a complete text editor, however the basic class is configured to not allow editing.

TextView can be created by specifying the appropriate attributes within the <TextView> </TextView> tags.

Some attributes of text view are

- android:id

  This is the ID which uniquely identifies the control.

- android:gravity

  Specifies how to align the text by the view's x- and/or y-axis when the text is smaller than the view

5.1.3 EditText

A EditText is an overlay over TextView that configures itself to be editable. It is the predefined subclass of TextView that includes rich editing capabilities.

An EditText widget can be created by specifying the appropriate attributes in between <EditText > </EditText>

Some of the attributes of EditText are:

- android:hint

  This attribute sets the hint that will be vanished as soon as the text is entered in the Edit text
- android:inputType"

  The 'android:inputType' attribute specifies the type of input that can be entered.

5.1.4 Button

Button is a user interface element the user can tap or click to perform an action.

Button can be created by giving appropriate values to the attributes enclosed within the <Button> </Button> tags

Some of the attributes of the button element are

- android:text

  This attribute is used to set desired text inside the button.
- android:drawableLeft

  This attributes puts the image inside the drawable folder to the button when specified with the right path.

5.2 Some general functions

5.2.1 onCreate(Bundle)

This function is called when the activity is starting. Parameters for the function are as follows: Bundle savedInstanceState
If the activity is being re-initialized after previously being shut down then this Bundle contains the data it most recently supplied in onSaveInstanceState.

5.2.2 onClick(View v)

This function is called when a view has been clicked. Parameters for the function are as follows: View v where, v is the view that was clicked.

5.2.3 parseDouble(String s)

The parseDouble() method of Java Double class is a built in method in Java that returns a new double initialized to the value represented by the specified String. The parameters for the function are as follows: String s

's' is the string that is to be parsed to the double data type.
Return type of the function is the passed argument (String data type) converted to double data type.

5.2.4 findViewById(R.id.someId)

The above function finds the widget from the xml file using the id of that particular widget. The parameter for this function is as follows:
R.id.someId
R denotes the resource package which contains the element with the specified id.Return type of the function is the element with the specified id.

5.2.5 setOnClickListener(Class c)

This function is called to link a listener with certain attributes. The parameter for the function is as follows: Class c 'c' has to be a class which contains the action for the element on which the method is being called.

5.3 Creating Order Placing Activity Using Java

1. Firstly the MainActivity.java is opened. In this file, there are clickable text views that helps the users to navigate through the application.
# text view objects from xml file are accessed in the java file
TextView tv1= findViewById(R.id.text1)
# make text view clickable tv1.setOnClickListener(this)

2. The inputs like username ,password , etc are taken using Edit text widget from the xml file. Once again the edit text object is used to convert the text entered to String data type as follows
EditText et=findViewById(R.id.edit1);
To get the String value from edit text the following snippet is used
String s=et.getText().toString();

3. Later when the user navigates through the menu list and places order using clickable button called checkout which is created using the code snippet :
# buttonCheckout = findViewById(R.id.buttonCheckout);

4. The Checkout button navigates through the placeyourorderactivity.java and a switch compat button is created which askes whether to pickup or deliver the order.
# SwitchCompat switchDelivery;

If Switch Compat button is switched to Delivery
#switchDelivery.setOnCheckedChangeListener(new CompoundButton.OnCheckedChangeListener(){..});

Then all card details and address is taken as input usit EditText Widgets and passed to javafile using
# inputCardNumber = findViewById(R.id.inputCardNumber);
#inputName = findViewById(R.id.inputName);

Else button is switched to Pickup then all card details are taken as input usit EditText Widgets and passed to javafile usingfindViewById() method.

5. Then the total Amount is Calculated by adding delivery charges and the cost which is shown in the code below:

```
 private void calculateTotalAmount(RestaurantModel restaurantModel) {
        float subTotalAmount = 0f;

        for(Menu m : restaurantModel.getMenus()) {
            subTotalAmount += m.getPrice() * m.getTotalInCart();
        }

        tvSubtotalAmount.setText("Rs."+String.format("%.2f", subTotalAmount));
        if(isDeliveryOn) {
            tvDeliveryChargeAmount.setText("Rs."+String.format("%.2f",
restaurantModel.getDelivery_charge()));
            subTotalAmount += restaurantModel.getDelivery_charge();
        }
        tvTotalAmount.setText("Rs."+String.format("%.2f", subTotalAmount));
    }
```

CHAPTER 6

TESTING

Below we listed the Most of the top mobile testing types that are applied by the Top mobile testing companies in the USA.

- Usability Testing
- Performance Testing
- Security Testing
- Interruption Testing
- Manual Testing
- Compatibility Testing
- Localization Testing
- Functional Testing
- Installation Testing
- Automation Testing

1. **Usability Testing**

From the list of web application testing types, Usability testing is ideal for determining how the app makes it easier for users to accomplish their objectives. This test involves assigning specific, realistic scenarios of using the app to certain participants. Usability testing is also reliable on the basis of collecting direct feedback from the end-user.

2. **Performance Testing**

Performance testing is also a crucial variant of mobile app testing that reviews the speed, stability, and responsiveness of an application under different workload conditions. The primary objective of a performance test is to ensure that an application aligns perfectly with the performance objectives.

3. **Security Testing**

Security is one of the prominent concerns of almost every mobile app owner in the present times. Reportedly, 80 percent of users are more likely to uninstall an app due to security issues. Therefore, it is highly essential to focus on security testing for mobile apps.

4. **Installation Testing**

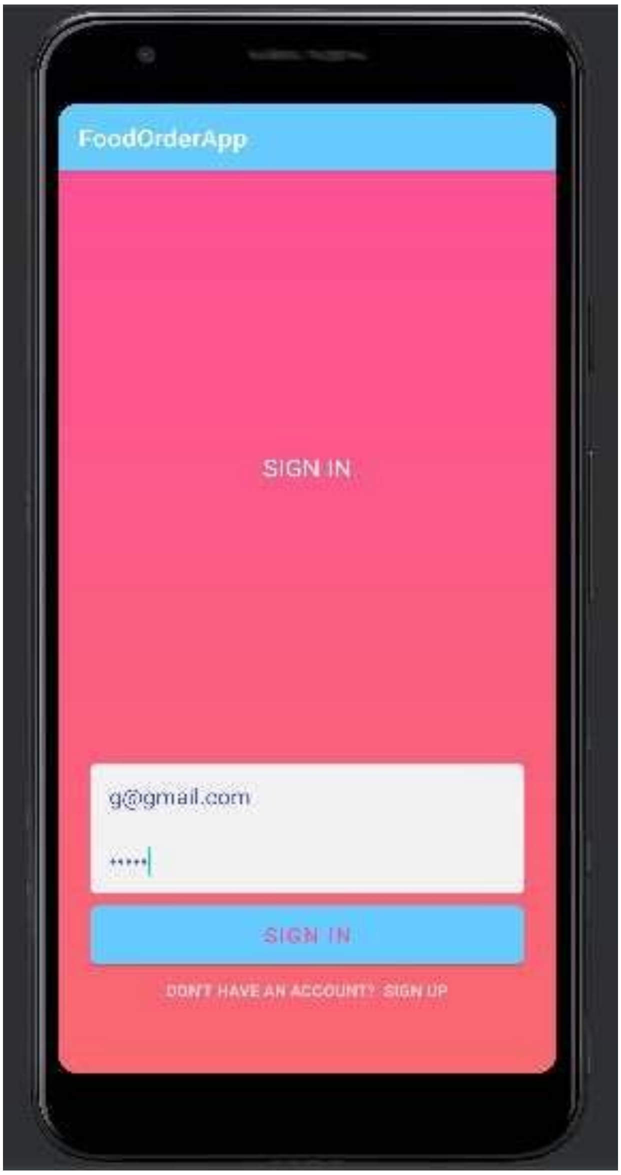
Installation testing or implementation testing is ideal for verifying that a mobile app is properly installed and uninstalled. In addition, installation testing is vital for ensuring that updates are seamless and free of errors. Installation testing also checks for outcomes when users don’t update a specific mobile app.

Testing has been conducted as tabulated below:

No	Functions with parameters under test	Expected result	Actual Result	Comments
1	When the run is executed an emulator must be opened	Emulator should pop up on screen within a minute	The emulator appeared	PASS
2	When Mary’s pizza is clicked	Items with add to cart button should be seen	Items served in the restaurant will be appeared.	PASS
3	Click on Checkout Button	Customer Details should be seen	Customer details is appeared	PASS
4	Click on Place your order button after appropriate pay details are entered	Order placed successfully should be displayed	Order placed successfully is displayed	PASS

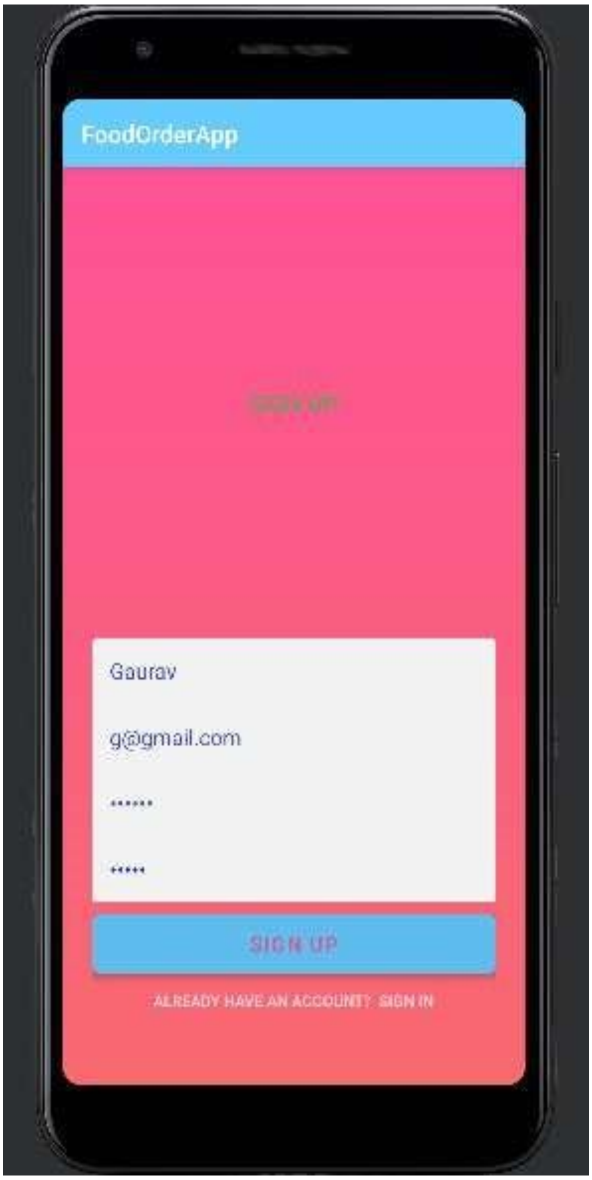
CHAPTER 7

RESULTS



g@gmail.com

•••••



Gaurav

g@gmail.com

••••••

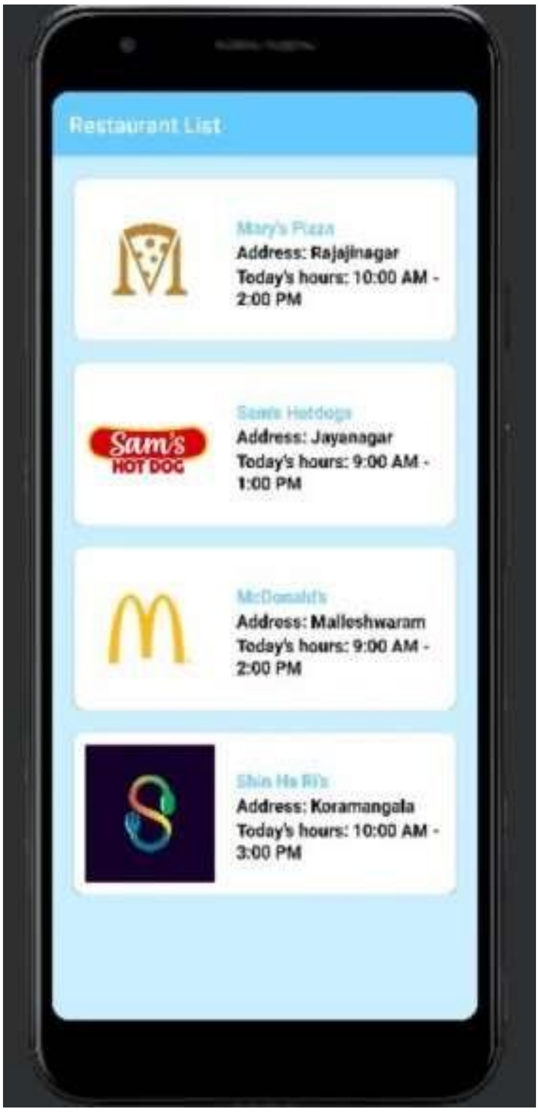
•••••

Fig 7.1 Sign In Page

Sign In Page which appears when app is started and user can login if the user has the account

Fig 7.2 Sign Up

Sign Up Page appears when user account doesn’t exist.User can create an Account.



Restaurant List

Mary's Pizza
Address: Rajajinagar
Today's hours: 10:00 AM - 2:00 PM

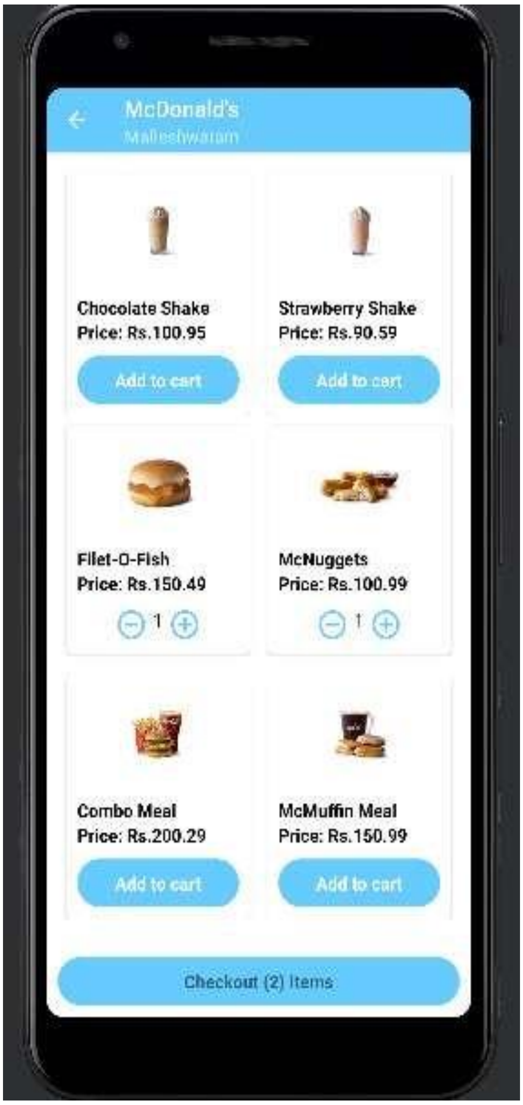
Sam's Hotdogs
Address: Jayanagar
Today's hours: 9:00 AM - 1:00 PM

McDonald's
Address: Malleshwaram
Today's hours: 9:00 AM - 2:00 PM

Shin Ha Ri's
Address: Koramangala
Today's hours: 10:00 AM - 3:00 PM

Fig 7.3 Restaurants Page

User can choose any restaurant from the list.



McDonald's
Malleshwaram

Chocolate Shake
Price: Rs.100.95

Strawberry Shake
Price: Rs.90.59

Filet-O-Fish
Price: Rs.150.49

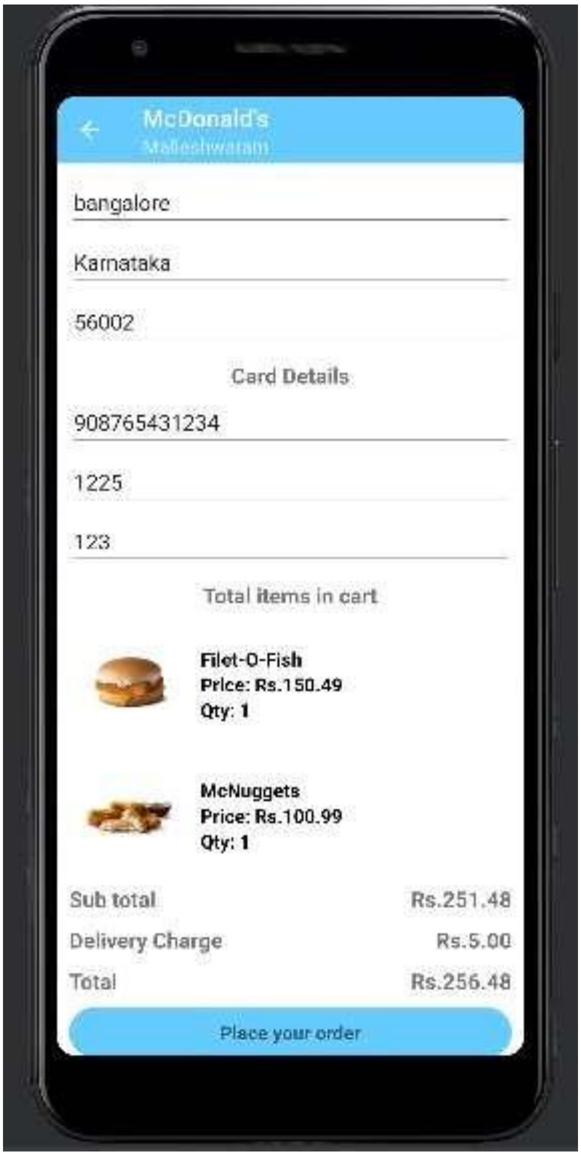
McNuggets
Price: Rs.100.99

Combo Meal
Price: Rs.200.29

McMuffin Meal
Price: Rs.150.99

Fig 7.4 Menu Page

User can choose an item from the list and place an Order.



bangalore

Karnataka

56002

Card Details

908765431234

1225

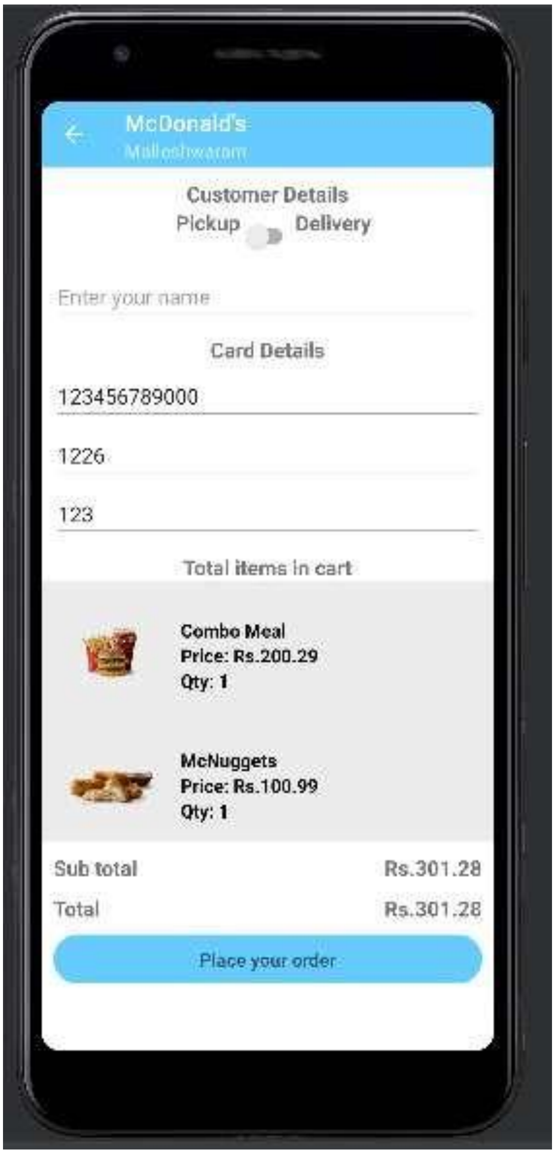
123

Total items in cart

Filet-O-Fish
Price: Rs.150.49
Qty: 1

McNuggets
Price: Rs.100.99
Qty: 1

Sub total	Rs.251.48
Delivery Charge	Rs.5.00
Total	Rs.256.48



Customer Details

Pickup Delivery

Enter your name

Card Details

123456789000

1226

123

Total items in cart

Combo Meal
Price: Rs.200.29
Qty: 1

McNuggets
Price: Rs.100.99
Qty: 1

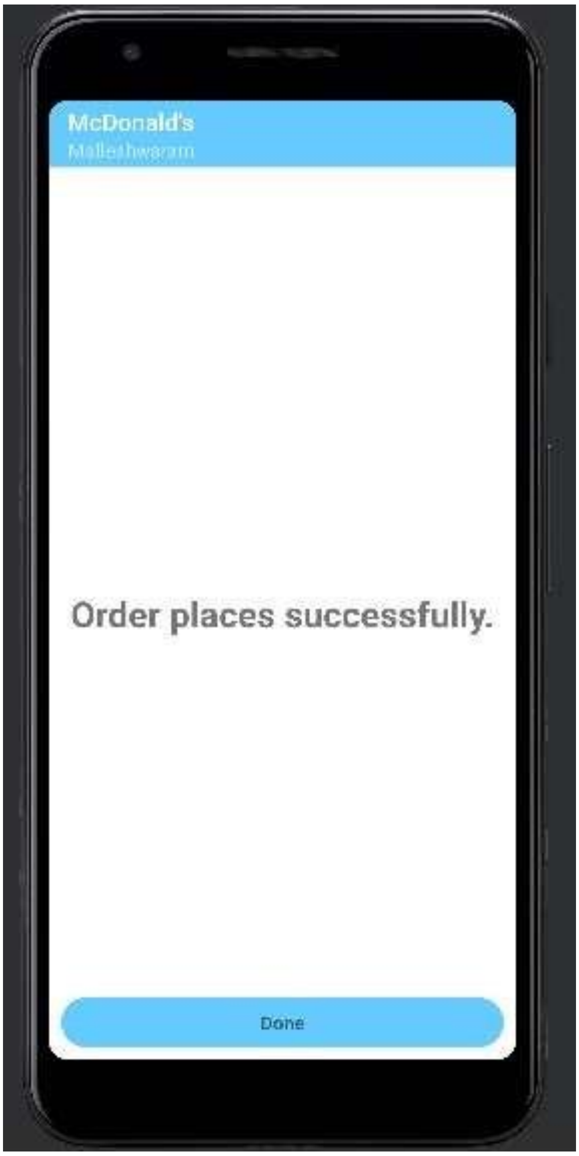
Sub total	Rs.301.28
Total	Rs.301.28

Fig 7.5 Checkout(Delivery)

If user chooses for home delivery then should fill the details asked on the screen and place order

Fig 7.6 Checkout(Pickup)

If user chooses for pickup then should enter the Card details for payment.



McDonald's
Malleshwaram

Order places successfully.

Fig 6.7 Order Placed.

This screen appears to acknowledge the order confirmation.

CHAPTER 8

CONCLUSION

The project entitled "FOOD ORDERING APP" was completed on time with total satisfaction after testing with possible sample data. The performance was found to be efficient and error free. This is a user-friendly packaged application which is very easy to access.

An online food ordering system is developed where the customers can make an order for the food and avoid the hassles of waiting for the order to be taken by the waiter. It is developed for restaurants to simplify their routine managerial and operational task and to improve the dining experience of the clients.

Online Food Order App also helps the restaurant owners develop healthy customer relationships by providing reasonably good services. The system also enables the restaurant to know the items available in real time and make changes to their food and beverage inventory based on the orders placed and the orders completed. It is totally time saving and energy saving for both customers and restaurant staffs

FUTURE ENHANCEMENTS

Enhancing the models is very necessary for any application to make it better. Even for this application there is always a need for the enhancements. Some of the enhancements that are necessary for this app are

- Show live tracking of order.
- Add security for money transactions.
- Adding notification concept where details regarding order is sent to user .
- Data filtering concepts can be added.

BIBILOGRAPHY

Websites:

- Trupthi B, Rakshitha Raj R, J B Akshaya, Srilaxmi C P, ”Online Food Ordering System”, International Journal of Recent Technology and Engineering (IJRTE) ISSN: 2277-3878, Volume-8, Issue-2S3, July 2019 .

- Habeebullah Hussaini Syed ,University of the Cumberlands, “Online food ordering system”, Article in SSRN Electronic Journal · December 2018

- www.github.com

- www.w3schools.com

- https://developer.android.com