MINI PROJECT

(2021-22)

"MULTIPURPOSE APP"

Project Report

Institute of Engineering & Technology

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Declaration

I/we hereby declare that the work which is being presented in the Bachelor of technology. Project **"Multipurpose App"**, in partial fulfillment of the requirements for the award of the ***Bachelor of Technology*** in Computer Science and Engineering and submitted to the Department of Computer Engineering and Applications of GLA University, Mathura, is an authentic record of my/our own work carried under the supervision of **Mr. Mandeep Singh, Technical Trainer, Dept. of CEA, GLA University.**

The contents of this project report, in full or in parts, have not been submitted to any other Institute or University for the award of any degree.

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Certificate

This is to certify that the project entitled “Multipurpose App”, carried out in Mini Project – I Lab, is a bonafide work by Krishan Bansal, Prashant Sahu and Prateek Sagar Richhariya is submitted in partial fulfillment of the requirements for the award of the degree Bachelor of Technology (Computer Science & Engineering).

Signature of Supervisor:

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He has been helping us since Day 1 in this project. He provided us with the roadmap, the basic guidelines explaining on how to work on the project. He has been conducting regular meeting to check the progress of the project and providing us with the resources related to the project. Without his help, we wouldn't have been able to complete this project.

And at last but not the least we would like to thank our dear parents for helping us to grab this opportunity to get trained and also my colleagues who helped me find resources during the training.

Thanking You

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ABSTRACT

In this project , I am building a multipurpose Android Application. The application is a multi-functional app that consist of many operation including some media and some device functionality action. Also the application consist of all types of log in methods possible for eg. login with otp, login with gmail, etc. Using google's firebase authentication service. The application also store some data in real-time database of google's firebase realtime database service. The application is build using java programming language. As the name suggest , user can perform a bunch of tasks just by using single application. The tasks includes sensor action ,media action ,calculator actions , camera actions, browser action , quiz action ,mp3 player ,mp4 player, image capture, video recording and much more.

Android App ecosystem is diverse and is changing people's life all over the world. Android users are expected to increase because of the advance changes of the operating system and the way it deals with issues and compatibility with other mobile devices. Furthermore designing solutions for the problems that we may face in future is essential. Like this application definitely stands the need of students at any time at their fingertips without any barrier of place.

CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER-1

INTRODUCTION

1.1 CONTEXT

This Android Application “Multipurpose” has been submitted in partial fulfilment of the requirements for the award of the degree of Bachelor of Technology in Computer Science and Engineering at GLA University, Mathura supervised by Mr.Mandeep Singh. This project has been completed approximately three months and has been executed in modules, meetings have been organised to check the progress of the work and for instructions and guidelines.

1.2 MOTIVATION

Mobile apps that can perform multiple functions is a treat for all of us in terms of the time & effort it saves along with saving a lot of space on our mobiles. Single-purpose apps were just beginning of the app era, now it has shifted to the development of more multi-purpose applications encountering broader customer needs. A lot of apps that started off with delivering single service but quickly developed themselves to be an app that is multi-functional. Multipurpose app specially designed for creating, your daily utilities to run smoothly and fast. Quick and Easy to use that your app will look stunning and work smoothly on all devices. Multipurpose app is the right choice if you want to create a professional and truly unique application for all purposes.

1.3 OBJECTIVE

The main objective of this application is to create a All in One app named “Multipurpose” which in addition to the inconvenience, there’s a problem of phone space the average app fight against other apps for space on the phone. As a, result most app developers lose 60-70% of their app user with in 90 days of the user installing the app. Our Multipurpose application work on various fields which makes a user more convenient to use applications at one place which reduces the time of the user and also make our ram management more efficient because user can perform several task just in single application.

1.4 EXISTING SYSTEM

Some Application are present in market like multi-functioning which provide user many application in one place. It helps user but it takes more memory of the smartphones. Some application provide functions but not provide all function. They use more cookies and make our phone less optimise.

➢ Existing Apps :- ▪ Universal Full Multi-Purpose Android App

▪ Web two App

▪Modulio for Android

1.5 SOURCES

The source of our project (including all the project work, documentations and presentations) will is available at the following link.

https://github.com/Prateek7401/Mini-Project_MultipurposeApp/

CHAPTER-2

HARDWARE REQUIREMENT

2.3 HARDWARE AND SOFTWARE REQUIREMENTS

Hardware Requirement

- Processor :intel i5
- Operating System :Any Operating System
- RAM : 8 GB (or higher)
- Hard disk : 256GB

Software Requirement

- Software used: Android Studio
- Language used : Java
- Database: Firebase
- User Interface Design : Android Application

2.4 MODULES AND FUNCTIONALITIES

- **Splash Screen**: The first screen with which the user interacts will be this screen containing the logo and the app name .This will disappear within 5 seconds after the app is displayed.

- **Login Page**: This page is for those users who have already registered themselves on the app and have a username and a password. There is also a way on this page for the new users to register themselves which will take them to the registration page.

- **Registration Page:** This is page is solely designed for the new users of the app who are willing to register themselves. This page takes input of the various details of the user and stores it in the database, later helping the user to login into the account with credentials they have provided.

- **Dashboard Page:** This is the page displayed for every user after entering the app successfully. It contains the search bar where the user can search the book according to the wish as well as some of the books are suggested with the genres recently searched or the most popular one.

- **FAQ Pages:** This page contains some of the questions that might arise in the mind of the users while using the app and to answer those, these answers are pre-written.

- **Logout page**: Then is this last panel for the users to sign out from the account. As soon as the users sign out they are brought back to the login page.

CHAPTER-3
TECHNOLOGY USED

4.1 ANDROID

Android is a linux-based operating system designed primarily for touch screen devices such as smart phone tablets and computers. Released in 2008, is now owned by Google. So android is a operating system like Windows, Ubuntu and Mac OS and a lot number of devices use Android these days like mobile phones, watches, laptop and television. So we also created an android application “Bookopedia”, a library of e-books. Play Store is a market place for all the Android Apps. So we need to know what basically an android app is. An Android app is software running on a Android Platform. So this can be concluded that like all the software it is a combination of Backend and Frontend. Backend to design the logical parts of the app, for the functionality whereas Front End to develop the User Interface. And to implement the various parts of the android app, we require a number of tools and technologies which will come into picture. But first it would be great to see the three different type of Android Apps:-

- **Native Apps:** An executable program coded in the machine language of the hardware platform it is running in. **Native applications** are compiled into the machine language of that CPU. For example, **Windows** and Mac executable **apps** are in x86 machine language, while **mobile apps** are ARM based. Native apps are the most common. They're coded in a specific language like Swift for **iOS** or Java for Android. A popular example is WhatsApp.
- **Web Apps:** are accessed via the internet browser and will adapt to whichever device you’re viewing them on. They are not native to a particular system, and don’t need to be downloaded or installed. Due to their responsive nature, they do indeed look and function a lot like mobile apps — and this is where the confusion arises.
- **Hybrid Apps:** Hybrid apps are deployed in a native container that uses a mobile Web View object. When the app is used, this object displays web content thanks to the use of web technologies (CSS, JavaScript, HTML, HTML5).It is in fact displaying web pages from a desktop website that are adapted to a Web View display. The web content can either be displayed as soon as the app is opened or for certain parts of the app only i.e. for the purchase funnel. In order to access a device's hardware features (accelerometer, camera, contacts…) for which the native apps are

installed, it is possible to include native elements of each platform's user interfaces (iOS, Android): native code will be used to access the specific features in order to create a seamless user experience. Hybrid apps can also rely on platforms that offer JavaScript

APIs if those functionalities are called within a Web View

4.2 VERSION OF ANDROID

Each year Android releases a new version with better features, better security and better User Interface experience and a new symbol. Here is the table of list of versions

Figure-5: Android Kitkat

Code name	Version number	Initial release date
(No codename)	1.0	September 23, 2008
Petit Four	1.1	February 9, 2009
Cupcake	1.5	April 27, 2009
Donut	1.6	September 15, 2009
Eclair	2.0 - 2.1	October 26, 2009
Froyo	2.2 - 2.2.3	May 20, 2010
Gingerbread	2.3 - 2.3.7	December 6, 2010
Honeycomb	3.0 - 3.2.6	February 22, 2011
Ice Cream Sandwich	4.0 - 4.0.4	October 18, 2011
Jelly Bean	4.1 - 4.3.1	July 9, 2012
KitKat	4.4 - 4.4.4	October 31, 2013
Lollipop	5.0 - 5.1.1	November 12, 2014
Marshmallow	6.0 - 6.0.1	October 5, 2015
Nougat	7.0 - 7.1.2	August 22, 2016
Oreo	8.0 - 8.1	August 21, 2017
Pie	9.0	August 6, 2018

Table -1: Versions of Android

4.3 TOOLS AND LANGUAGES

Tools used to build the Android App are:-

- **Android Studio**: Android Studio is an environment that help us create and edit Android applications. It is the official IDE for Android App Development. It has intelliJ's powerful code editor and developer tools and various features that enhance productivity while developing apps.

- **Software Development Kit (SDK)**: Android Studio requires a collection of libraries and data therefore SDK is mandatory.

Languages used in building an Android Application are classified as per the Front End and Back End. For designing the Front End of an application we have used XML and for designing the Back End we have used Kotlin.

- **XML:** XML is the extensible Markup Language. It is the met language which allows users to define their own customized markup language especially in order to display documents on Internet. It is the language that contains tags that store information. And the tags can be used to present data on the screen.

- **Java:** Java is one of the powerful general-purpose programming languages, created in 1995 by Sun Microsystems (now owned by Oracle). Java is Object-Oriented. However, it is not considered as pure object-oriented as it provides support for primitive data types (like int, char, etc). Java syntax is similar to C/C++. But Java does not provide low-level programming functionalities like pointers. Also, Java code is always written in the form of classes and objects. Android heavily relies on the Java programming language all the SDKs required to build for android applications use the standard libraries of Java. If one is coming from a traditional programming background like C, C++, Java is easy to learn. So in this discussion, there is a complete guide to learn Java specifically considering Android App Development.

4.4 BASIC TERMINOLOGY

- **Layout:** Layout is the parent of view. It arranges all the views in a proper manner on the screen.

- **Activity**: An activity can be referred as your device's screen which you see. User can place UI elements in any order in the created window of user's choice.

- **View**: A view is an UI which occupies rectangular area on the screen to draw and handle user events.

- **Emulator**: An emulator is an Android virtual device through which you can select the target Android version or platform to run and test your developed application.

- **Manifest file**: Manifest file acts as a metadata for every application. This file contains all the essential information about the application like app icon, app name, launcher activity, and required permissions etc.

- **API:** Short for Application Programming Interface. APIs are functions that developers can call on to access specific features by calling upon programs, code, and services that others have written. For example, if a developer wants to draw a button on the screen, she can insert a small bit of code that says "draw this kind of button, with this color and size and style, at this location" instead of dozens of lines of code that tells the graphics processor, in detail, exactly how to draw a button. If the application wants your location, it can use the location API to "get the device's location" and let Google's code handle the rest, instead of requiring the developer to build an entire location service from scratch just for her own app. There are thousands of APIs in Android, covering everything from drawing interface elements, to the cameras, to location access, to accessing storage, to 3D graphics (see: OpenGL ES) and much more.

- **Intent:** Intents are an essential part of the Android ecosystem. They are used to express an action to be performed. Intents allow you to interact with components from the same applications as well as with components contributed by other applications. It can be classified into implicit and explicit intents.

- **Implicit intent:** It does not name a specific component, but instead declare a general action to perform, which allows a component from another app to handle it.
- **Explicit Intent:** It specifies the component to start by name. You'll typically use an explicit intent to start a component in your own app, because you know the class name of the activity or service you want to start.

- **APK**: Short for "Android application package." The extension used in Android app installation files (e.g., app.apk). Similar in nature to an EXE file on Windows.

- **SDK:** Short for "Software Development Kit." As it pertains to Android, the SDK is a set of tools such as code libraries, a debugger, and a handset emulator that can be run on Windows, Mac, or Linux to facilitate the creation of Android apps by developers. While the SDK is generally intended for use by developers, end users can install the software on their home computer to execute ADB and Fast boot commands.

- **Action Bar**: The action bar is an important design element, usually at the top of each screen in an app that provides a consistent familiar look between Android apps. It is used to provide better user interaction and experience by supporting easy navigation through tabs and drop-down lists.

- **Fragment**: A Fragment represents a behavior or a portion of user interface in a Fragment Activity. You can combine multiple fragments in a single activity to build a multi-pane UI and reuse a fragment in multiple activities.

- **Firebase** is a Backend-as-a-Service (Baas). It provides developers with a variety of tools and services to help them develop quality apps, grow their user base, and earn profit. It is built on Google's infrastructure. Firebase is categorized as a NoSQL database program,

which stores data in JSON-like documents. Firebase has three core services: a real-time database, user authentication and hosting. With the Firebase iOS SDK, you can use these services to create apps without writing any server code.

JSON stands for JavaScript Object Notation. It is an independent data exchange format and is the best alternative for XML. JSON is used for data interchange (posting and retrieving) from the server. Hence knowing the syntax and it's usability is important.
JSON is the best alternative for XML and its more readable by human

CHAPTER -5

IMPLEMENTATION AND USER INTERFACE

Creating an app concept design with screen sketches and functional flow diagrams is the best way to communicate your vision to the mobile app developer. Making the concept clear to the developer is probably the most important factor in successful mobile app development. Yet it is one of the most common problems or obstacles in a mobile app development outsourcing project.

No matter what the marketing and profit goals are or if you are outsourcing an app for your personal use, you need to fully design and document the app concept if you expect a programmer to make your vision a reality. Developers are not mind readers and even descriptions given during conversations can be very fleeting or interpreted differently. Fully documenting your concept, therefore, leaves little to chance. The two most important things to do are: A) make a comprehensive description of how the app works and what it does (functionality) and B) create a comprehensive description of what the user sees and does (look and feel).

5.1 Implementation of the Multipurpose:

Implementation of Multipurpose App is taken place in various phases. Firstly we build the login interface i.e. make fragment for each of the list item using the Navigation view and the make various layout for the supporting features and connect the app with the Google API for fetch the required book. And finally we parse the Jason object to get the data in the required format and then display the result.

5.1.1 Step to be followed to develop the app:

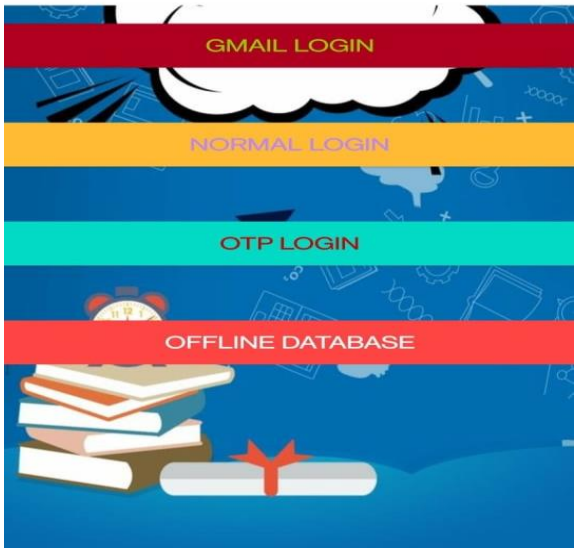
1. Firstly we create the splash screen with animated text using XML and linked it with the main Activity through Java.
2. After that we create login phase which comprises of various phases that are mentioned below:
    - Login Page: allows user to login into the app if the user is existing one
    - Register Page: If the user is new to our app then firstly he/she have to register themselves on the app.
    - **For authenticating the user we have used firebase authentication**.

3. Creating fragment for each of the menu item. Our Menu items are:
    - Dashboard
    - Profile
    - About App
    - FAQ
    - Favourites
    - Sign-Out
4. Now we have created various activities like Camera,Tourch,Music and many more.
5. In this step we connect our app with the GOOGLE BOOK API using Volley (Volley is an HTTP library that makes networking for Android apps easier and most importantly, faster).
6. After that we parse the JASON object that we have received as a response for our query to get the data in the standard form.
7. Now we add data (that we have received from Google API) to the book description activity .
8. In the description Activity there are various functionality. Some of them are mentioned below
    - Preview: We have set OnClickListener to this. With the help of this if user clicks on this button it will redirect the user to the Google book page on Google.
    - OTP : It allow user to login with otp.

5.2 User Interface

- **Register Page**

Activity_main.xml




```
<?xml version="1.0" encoding="utf-8"?>
<ScrollView
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"     tools:context=".MainActivity">
<RelativeLayout
    android:layout_width="match_parent"
android:layout_height="match_parent">


    <Button
        android:id="@+id/button2"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_below="@+id/imageView3"
android:layout_alignParentStart="true"
android:layout_alignParentLeft="true"
android:layout_alignParentEnd="true"
```

```
android:layout_marginTop="10dp"
android:layout_marginEnd="0dp"


android:background="@color/design_default_color_error"
android:text="Gmail Login"


android:textColor="@android:color/holo_green_light"
android:textIsSelectable="false"        android:textSize="18sp"
android:textStyle="normal|bold" />


   <Button
       android:id="@+id/button3"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_below="@+id/button2"
android:layout_alignParentStart="true"
android:layout_alignParentEnd="true"
android:layout_marginTop="60dp"
       android:background="@android:color/holo_orange_light"
android:text="Normal Login"
       android:textColor="?android:attr/colorEdgeEffect"
android:textSize="18sp"        android:textStyle="normal|bold" />
   <Button
       android:id="@+id/button4"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_below="@+id/button3"
android:layout_alignParentStart="true"
android:layout_alignParentEnd="true"
android:layout_marginTop="60dp"
       android:background="@color/design_default_color_secondary"
android:text="OTP Login"
       android:textColor="@android:color/holo_red_dark"
android:textSize="18sp"        android:textStyle="normal|bold" />
    <Button
       android:id="@+id/button5"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_below="@+id/button4"
android:layout_alignParentStart="true"
android:layout_marginTop="60dp"
```

```
        android:background="@android:color/holo_red_light"
android:text="Offline Database"         android:textSize="18sp"
android:textStyle="normal|bold" />

    <ImageView
        android:id="@+id/imageView3"
android:layout_width="match_parent"
android:layout_height="164dp"
android:layout_alignParentStart="false"
android:layout_alignParentTop="true"
android:layout_alignParentEnd="true"
app:srcCompat="@drawable/x" />
</RelativeLayout>
</ScrollView>
```

mainActivity.java

```
package com.example.MultipurposeApp; import android.content.Intent;
import android.os.Bundle; import android.view.View; import
android.widget.Button;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {
    Button b2,b3,b4,b5;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
        getWindow().setBackgroundDrawableResource(R.drawable.fo);
b2=(Button)findViewById(R.id.button2);
b3=(Button)findViewById(R.id.button3);
```

```
b4=(Button)findViewById(R.id.button4);
b5=(Button)findViewById(R.id.button5);
        b2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent j = new Intent(MainActivity.this,GmailLogin.class);
startActivity(j);                finish();
            }        });
        b3.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent k= new Intent(MainActivity.this,NormalLogin.class);
startActivity(k);                finish();
            }        });
        b4.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent l=new Intent(MainActivity.this,OtpLogin.class);
startActivity(l);                finish();
            }        });
        b5.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent m=new Intent(MainActivity.this,LoginOffline.class);
startActivity(m);                finish();
            }
        });
    }
}
```

- ❖ After Click On Gmail Login
- ❖ Sign Up with Using Gmail ID

Activity_gmail_login.xml


```
<?xml version="1.0" encoding="utf-8"?>
<ScrollView
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"      tools:context=".GmailLogin">
<RelativeLayout
   android:layout_width="match_parent"
android:layout_height="match_parent">
   <TextView
      android:id="@+id/textView"
android:layout_width="match_parent"
android:layout_height="42dp"
android:layout_alignParentStart="true"
android:layout_alignParentLeft="true"
android:layout_alignParentTop="true"
```

```
android:layout_alignParentRight="true"
android:layout_marginTop="88dp"


android:background="@android:color/holo_orange_dark"
android:text="Click Here to Sign In with Google"
        android:textColor="@color/purple_700"
android:textSize="20sp" />


    <ImageView
        android:id="@+id/imageView4"
android:layout_width="match_parent"
android:layout_height="80dp"
android:layout_below="@+id/textView"
android:layout_alignParentStart="true"
android:layout_alignParentLeft="true"
android:layout_marginTop="17dp"
android:adjustViewBounds="true"
        app:srcCompat="@drawable/ic_baseline_arrow_downward_24"
tools:ignore="VectorDrawableCompat" />
    <ImageButton
        android:id="@+id/imageButtonG"
android:layout_width="wrap_content"
android:layout_height="226dp"
android:layout_below="@+id/imageView4"
android:layout_alignParentEnd="true"
android:layout_alignParentRight="true"
android:layout_centerInParent="true"
android:layout_marginTop="16dp"
android:layout_marginEnd="90dp"
android:layout_marginRight="90dp"
app:srcCompat="@drawable/g" />
     <Button
        android:id="@+id/buttonGmail"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_below="@+id/imageButtonG"
android:layout_centerHorizontal="true"
android:layout_marginTop="82dp"
android:background="@color/purple_200"          android:text="Back To
main" />
    </RelativeLayout>
 </ScrollView>
```

```
package com.example.MultipurposeApp;

import android.content.Intent; import android.os.Bundle; import
android.view.View; import android.widget.Button; import
android.widget.ImageButton; import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

import com.google.android.gms.auth.api.signin.GoogleSignIn; import
com.google.android.gms.auth.api.signin.GoogleSignInAccount; import
com.google.android.gms.auth.api.signin.GoogleSignInClient; import
com.google.android.gms.auth.api.signin.GoogleSignInOptions; import
com.google.android.gms.common.api.ApiException; import
com.google.android.gms.tasks.OnCompleteListener; import
com.google.android.gms.tasks.Task; import
com.google.firebase.auth.AuthCredential; import
com.google.firebase.auth.AuthResult; import
com.google.firebase.auth.FirebaseAuth; import
com.google.firebase.auth.FirebaseUser; import
com.google.firebase.auth.GoogleAuthProvider;

public class GmailLogin extends AppCompatActivity {
    ImageButton b1;
    Button i1;
    GoogleSignInClient googleSignInClient;
    FirebaseAuth firebaseAuth;



    @Override
    protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_gmail_login);
getWindow().setBackgroundDrawableResource(R.drawable.gm);
i1=(Button)findViewById(R.id.buttonGmail);        b1 =
(ImageButton)findViewById(R.id.imageButtonG);
i1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent i=new Intent(GmailLogin.this,MainActivity.class);
startActivity(i);                finish();
            }
```

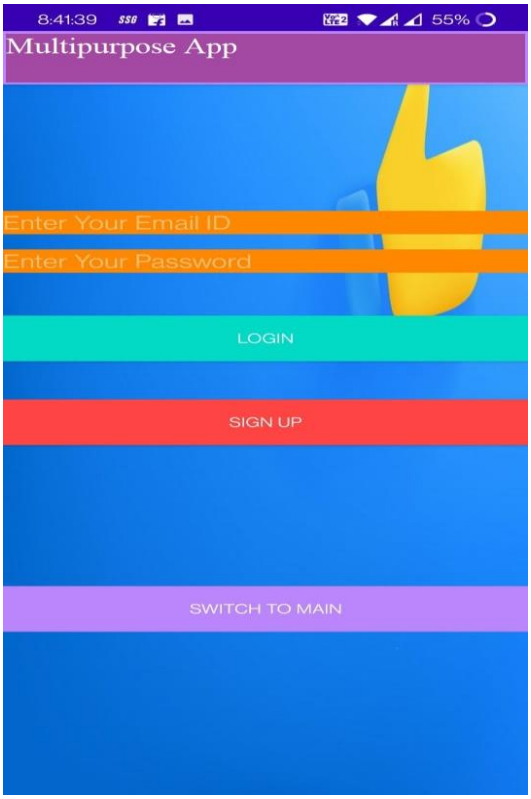
```
        });
        GoogleSignInOptions googleSignInOptions = new
GoogleSignInOptions.Builder(GoogleSignInOptions.DEFAULT_SIGN_I
N).requestIdToken("37119
9397543-
mc8k4en2h6hogml39869uhqfumqkc2jk.apps.googleusercontent.com").r
equestEmail().build();         googleSignInClient =
GoogleSignIn.getClient(GmailLogin.this, googleSignInOptions);
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent i = googleSignInClient.getSignInIntent();
startActivityForResult(i, 100);
            }        });
        firebaseAuth = FirebaseAuth.getInstance();
        FirebaseUser firebaseUser = firebaseAuth.getCurrentUser();
if (firebaseUser != null) {
            Intent j = new Intent(GmailLogin.this,
Menu.class).setFlags(Intent.FLAG_ACTIVITY_NEW_TASK);
startActivity(j);             finish();
        }
    }

    @Override
    protected void onActivityResult(int requestCode, int resultCode,Intent
data) {        super.onActivityResult(requestCode, resultCode, data);
if(requestCode == 100)
        {

Task<GoogleSignInAccount>signInAccountTask=GoogleSignIn.getSign
edInAccountFromIntent(d ata);
            if(signInAccountTask.isSuccessful())
            {
                Toast.makeText(this,"SignIn
Successfully",Toast.LENGTH_SHORT).show();


                try {
                    GoogleSignInAccount googleSignInAccount =
signInAccountTask.getResult(ApiException.class);                    if
```

```
(googleSignInAccount != null) {                    AuthCredential
authCredential =
GoogleAuthProvider.getCredential(googleSignInAccount.getIdToken(),
null);

firebaseAuth.signInWithCredential(authCredential).addOnCompleteList
ener(new
OnCompleteListener<AuthResult>() {                    @Override
                    public void onComplete(Task<AuthResult> task) {
if (signInAccountTask.isSuccessful()) {
                        Toast.makeText(GmailLogin.this, "Data
Updated",
Toast.LENGTH_SHORT).show();
                        Intent j = new Intent(GmailLogin.this,
Menu.class).setFlags(Intent.FLAG_ACTIVITY_NEW_TASK);
startActivity(j);
                    }
                }
            });
        }
    }catch (ApiException e)
    {
        e.printStackTrace();
    }
  }
 }
}
```

❖ After Click On Normal Login

❖ Login Page With Normal Email ID

Activity_Normal_Login.xml




```
<?xml version="1.0" encoding="utf-8"?>
<ScrollView
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"     tools:context=".NormalLogin">
   <RelativeLayout
      android:layout_width="match_parent"
android:layout_height="match_parent">


   <EditText
      android:id="@+id/editTextN"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_alignParentTop="true"
android:layout_marginTop="133dp"


android:background="@android:color/holo_orange_dark"
android:ems="10"
```

```
        android:hint="Enter Your Email ID"
android:inputType="textPersonName"         android:textSize="20sp" />

    <EditText
        android:id="@+id/editTextN2"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_below="@+id/editTextN"
android:layout_alignParentStart="true"
android:layout_alignParentLeft="true"
android:layout_marginStart="0dp"
android:layout_marginLeft="0dp"
android:layout_marginTop="16dp"

android:background="@android:color/holo_orange_dark"
android:ems="10"
        android:hint="Enter Your Password"
android:inputType="textPassword"         android:textSize="20sp" />
     <Button
        android:id="@+id/buttonN"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_below="@+id/editTextN2"
android:layout_centerHorizontal="true"
android:layout_marginTop="45dp"
        android:background="@color/design_default_color_secondary"
android:text="Login" />

    <Button
        android:id="@+id/buttonN2"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_below="@+id/buttonN"
android:layout_alignParentStart="true"
android:layout_alignParentLeft="true"
android:layout_marginTop="40dp"
android:background="@android:color/holo_red_light"
android:text="Sign Up" />

    <ProgressBar
        android:id="@+id/progressBarN"
style="?android:attr/progressBarStyle"
```

```
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_below="@+id/buttonN2"
android:layout_centerHorizontal="true"
android:layout_marginTop="40dp"         android:visibility="invisible" />
    <Button
       android:id="@+id/buttonN5"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_below="@+id/progressBarN"
android:layout_alignParentStart="true"
android:layout_marginTop="60dp"
android:background="@color/purple_200"         android:text="Switch to
Main" />
   </RelativeLayout>
</ScrollView>
```

Normallogin.java

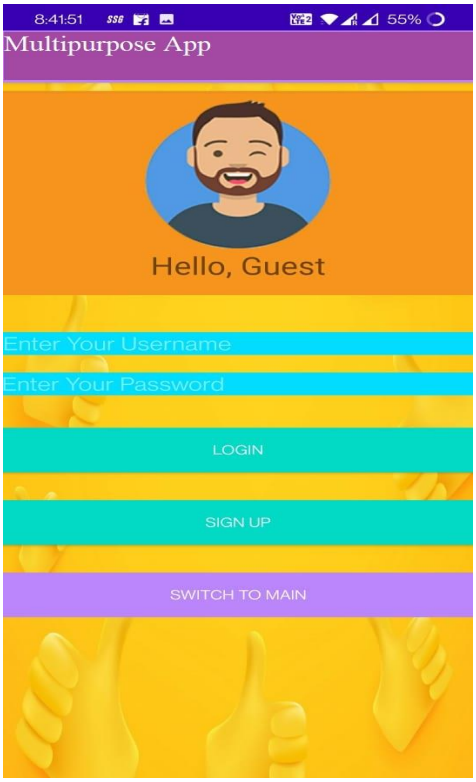
```
package com.example.MultipurposeApp;

import android.content.Intent; import android.os.Bundle; import
android.view.View; import android.widget.Button; import
android.widget.EditText; import android.widget.ProgressBar; import
android.widget.Toast;

import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;

import com.google.android.gms.tasks.OnCompleteListener; import
com.google.android.gms.tasks.Task; import
com.google.firebase.auth.AuthResult; import
com.google.firebase.auth.FirebaseAuth;

import org.jetbrains.annotations.NotNull;

public class NormalLogin extends AppCompatActivity {

    Button b1, b2,b3;
    EditText e1, e2;
    ProgressBar p1;
    FirebaseAuth firebaseAuth;
    String s1, s2;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_normal_login);
getWindow().setBackgroundDrawableResource(R.drawable.si);        b1
= (Button) findViewById(R.id.buttonN);        b2 = (Button)
findViewById(R.id.buttonN2);
b3=(Button)findViewById(R.id.buttonN5);        e1 = (EditText)
findViewById(R.id.editTextN);        e2 = (EditText)
findViewById(R.id.editTextN2);        p1 = (ProgressBar)
findViewById(R.id.progressBarN);        firebaseAuth =
FirebaseAuth.getInstance();        b2.setOnClickListener(new
View.OnClickListener() {
```

```
        @Override
        public void onClick(View v) {
            Intent i = new Intent(NormalLogin.this, Normal.class);
startActivity(i);                finish();
        }       });
      b3.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            Intent i=new Intent(NormalLogin.this,MainActivity.class);
startActivity(i);                finish();
        }       });
      b1.setOnClickListener(new View.OnClickListener() {
@Override
        public void onClick(View v) {               s1 =
e1.getText().toString();               s2 = e2.getText().toString();
if (s1.isEmpty()) {
            e1.setError("Please Fill Email Id");                  return;
} else {
            if (s2.isEmpty()) {
                e2.setError("Please Fill Password");
return;
            }               }
          p1.setVisibility(View.VISIBLE);
firebaseAuth.signInWithEmailAndPassword(s1,
s2).addOnCompleteListener(new OnCompleteListener<AuthResult>() {
            @Override
            public void onComplete(@NonNull @NotNull
Task<AuthResult> task) {                    if (task.isSuccessful()) {
                    Toast.makeText(NormalLogin.this, "Login
Successfully",
Toast.LENGTH_SHORT).show();
                    Intent j = new Intent(NormalLogin.this, Menu.class);
startActivity(j);                        finish();
                    p1.setVisibility(View.INVISIBLE);

                } else {
                    Toast.makeText(NormalLogin.this, "Invalid Email ID or
Password", Toast.LENGTH_SHORT).show();
```

```
                    Intent k = new Intent(NormalLogin.this, Normal.class);
startActivity(k);                   finish();
                    p1.setVisibility(View.INVISIBLE);
                }
            }
        });
    }
});
}
}
```

❖ After Click On Sign Up button

Activity_normal.xml




```
<?xml version="1.0" encoding="utf-8"?>
<ScrollView
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"     tools:context=".Normal">
<RelativeLayout
   android:layout_width="match_parent"
android:layout_height="match_parent">
   <EditText
      android:id="@+id/editTextN3"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_below="@+id/imageView2"
android:layout_alignParentStart="true"
android:layout_alignParentLeft="true"
android:layout_marginTop="40dp"

android:background="@android:color/holo_blue_bright"
android:ems="10"
```

```
        android:hint="Enter Your Email ID"
android:inputType="textPersonName"         android:textSize="20sp" />


    <EditText
        android:id="@+id/editTextN4"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_below="@+id/editTextN3"
android:layout_alignParentStart="true"
android:layout_alignParentLeft="true"
android:layout_marginTop="10dp"


android:background="@android:color/holo_blue_bright"
android:ems="10"
        android:hint="Enter Your Password"
android:inputType="textPassword"         android:textSize="20sp" />
    <Button
        android:id="@+id/buttonN3"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_below="@+id/editTextN4"
android:layout_centerHorizontal="true"
android:layout_marginTop="40dp"
        android:background="@android:color/holo_red_light"
android:text="Sign Up" />
    <Button
        android:id="@+id/buttonN4"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_below="@+id/progressBarN2"
android:layout_alignParentStart="true"
android:layout_alignParentEnd="true"
android:layout_marginStart="-1dp"
android:layout_marginTop="43dp"
android:layout_marginEnd="0dp"
android:background="@color/purple_200"         android:text="Back To
Login" />
    <ImageView         android:id="@+id/imageView2"
android:layout_width="match_parent"
android:layout_height="214dp"
android:layout_alignParentStart="true"
android:layout_alignParentTop="true"
```

```
android:layout_marginTop="3dp"        app:srcCompat="@drawable/l"
android:layout_alignParentLeft="true" />
    <ProgressBar        android:id="@+id/progressBarN2"
style="?android:attr/progressBarStyle"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_below="@+id/buttonN3"
android:layout_centerHorizontal="true"
android:layout_marginTop="44dp"        android:visibility="invisible" />
</RelativeLayout>
 </ScrollView>
```

Normal.java

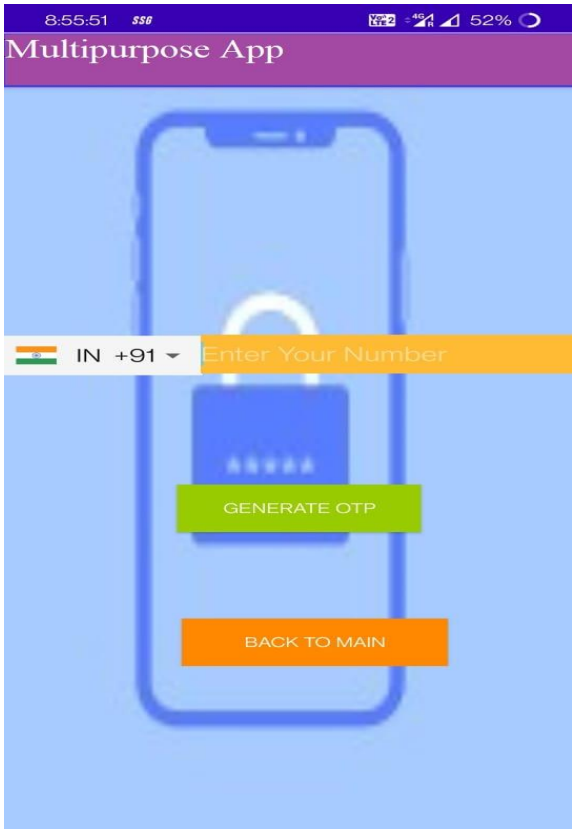
```
package com.example.MultipurposeApp;

import android.content.Intent; import android.os.Bundle; import
android.text.InputType; import android.view.View; import
android.widget.Button; import android.widget.EditText; import
android.widget.ProgressBar; import android.widget.Toast;

import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;

import com.google.android.gms.tasks.OnCompleteListener; import
com.google.android.gms.tasks.Task; import
com.google.firebase.auth.AuthResult; import
com.google.firebase.auth.FirebaseAuth;

public class Normal extends AppCompatActivity {

    Button b1,b2;
    EditText e1,e2;
    ProgressBar p1;
    FirebaseAuth firebaseAuth;
    String s1,s2;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_normal);
        getWindow().setBackgroundDrawableResource(R.drawable.lp);
b1=(Button)findViewById(R.id.buttonN3);
b2=(Button)findViewById(R.id.buttonN4);
e1=(EditText)findViewById(R.id.editTextN3);
e2=(EditText)findViewById(R.id.editTextN4);
e2.setInputType(InputType.TYPE_CLASS_TEXT |
InputType.TYPE_TEXT_VARIATION_PASSWORD);
```

```
        p1=(ProgressBar)findViewById(R.id.progressBarN2);
firebaseAuth=FirebaseAuth.getInstance();
b2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent i=new Intent(Normal.this,NormalLogin.class);
startActivity(i);                finish();
            }        });
        b1.setOnClickListener(new View.OnClickListener() {
                            @Override
                            public void onClick(View v) {
s1 = e1.getText().toString();                                    s2 =
e2.getText().toString();                                    if (s1.isEmpty()) {
                                    e1.setError("Please Fill Email Id");
return;                                    } else {
if(s2.isEmpty()) {                                            e2.setError("Please Fill
Password");                                        return;
                                    }
                                }

firebaseAuth.createUserWithEmailAndPassword(s1,s2).addOnComplet
eListener(new
OnCompleteListener<AuthResult>() {                    @Override
                    public void onComplete(@NonNull
@org.jetbrains.annotations.NotNull Task<AuthResult> task) {
                        if(task.isSuccessful()){
                            Toast.makeText(Normal.this, "Data Updated",
Toast.LENGTH_SHORT).show();
                            p1.setVisibility(View.VISIBLE);
                            Intent j=new Intent(Normal.this,NormalLogin.class);
startActivity(j);                                finish();
                        }else{
                            Toast.makeText(Normal.this, "Data Not Updated",
Toast.LENGTH_SHORT).show();
                        }


                    }
                });
            }
```

```
        });
    }
}
```

❖ After Click On OTP Login ❖ Login Page With Phone Number

Activity_Otp_login.xml




```
android:background="@color/browser_actions_bg_grey"></com.hbb20.
CountryCodePicker>
   <EditText
      android:id="@+id/editTextOT"        android:layout_width="272dp"
android:layout_height="39dp"
android:layout_alignParentTop="true"
android:layout_alignParentEnd="true"
android:layout_alignParentRight="true"
android:layout_marginStart="-1dp"        android:layout_marginLeft="-
1dp"        android:layout_marginTop="249dp"
android:layout_marginEnd="0dp"
android:layout_marginRight="0dp"
android:layout_toEndOf="@+id/cpp"
android:layout_toRightOf="@+id/cpp"
      android:background="@android:color/holo_orange_light"
android:ems="10"
      android:hint="Enter Your Number"
android:inputType="number"        android:textSize="20sp" />

   <Button
```

```
        android:id="@+id/buttonOT"         android:layout_width="165dp"
android:layout_height="wrap_content"
android:layout_below="@+id/editTextOT"
android:layout_alignParentStart="true"
android:layout_alignParentLeft="true"
android:layout_centerHorizontal="true"
android:layout_marginStart="117dp"
android:layout_marginLeft="117dp"
android:layout_marginTop="112dp"
        android:background="@android:color/holo_green_light"
android:text="Generate OTP" />
    <Button
        android:id="@+id/buttonOT3"         android:layout_width="180dp"
android:layout_height="wrap_content"
android:layout_below="@+id/buttonOT"
android:layout_alignParentStart="true"
android:layout_alignParentLeft="true"
android:layout_centerHorizontal="true"
android:layout_marginStart="104dp"
android:layout_marginLeft="104dp"
android:layout_marginTop="89dp"
        android:background="@android:color/holo_orange_dark"
android:text="Back to Main" />
</RelativeLayout>

</ScrollView>
```

Otplogin.java

```
package com.example.MultipurposeApp;

import android.content.Intent; import android.os.Bundle; import
android.view.View; import android.widget.Button; import
android.widget.EditText; import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

import com.hbb20.CountryCodePicker;

public class OtpLogin extends AppCompatActivity {
    Button b1,b2;
    EditText e1;
    CountryCodePicker ccp;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_otp_login);
getWindow().setBackgroundDrawableResource(R.drawable.oq);
b1=(Button)findViewById(R.id.buttonOT);
b2=(Button)findViewById(R.id.buttonOT3);
e1=(EditText)findViewById(R.id.editTextOT);
ccp=(CountryCodePicker)findViewById(R.id.cpp);
ccp.registerCarrierNumberEditText(e1);
        b2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent j= new Intent(OtpLogin.this,MainActivity.class);
startActivity(j);                finish();
            }        });
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {                if
(e1.getText().toString().isEmpty()) {                    e1.setError("Please
```

```
Enter Number");                Toast.makeText(OtpLogin.this, "Enter
Number",
Toast.LENGTH_SHORT).show();            }
            else if(e1.getText().toString().length()!=10) {
e1.setError("Invalid Number");
                Toast.makeText(OtpLogin.this, "Enter Valid Number",
Toast.LENGTH_SHORT).show();            }            else{
                Intent i = new Intent(OtpLogin.this, Otp.class);
                i.putExtra("Mobile", ccp.getFullNumberWithPlus().trim());
startActivity(i);
            }
        }
    });
  }
}
```

❖ After Click On Generate OTP

Activity_otp.xml

```
<?xml version="1.0" encoding="utf-8"?>
<ScrollView
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"      tools:context=".Otp">
<RelativeLayout
   android:layout_width="match_parent"
android:layout_height="match_parent">
   <EditText
      android:id="@+id/editTextOT2"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_alignParentStart="true"
android:layout_alignParentLeft="true"
android:layout_alignParentTop="true"
android:layout_centerHorizontal="true"
android:layout_marginTop="143dp"

android:background="@android:color/holo_orange_light"
android:ems="10"        android:hint="Enter Your OTP"
android:inputType="number"        android:textSize="25sp" />
    <Button
      android:id="@+id/buttonOT2"        android:layout_width="200dp"
android:layout_height="58dp"
android:layout_below="@+id/editTextOT2"
android:layout_alignParentStart="true"
android:layout_alignParentLeft="true"
android:layout_centerHorizontal="true"
android:layout_marginStart="112dp"
android:layout_marginLeft="112dp"
android:layout_marginTop="139dp"
android:background="@color/teal_200"        android:text="Verify" />
</RelativeLayout>
</ScrollView>
```

Otp.java

```
package com.example.MultipurposeApp;

import android.content.Intent; import android.os.Bundle; import
android.view.View; import android.widget.Button; import
android.widget.EditText; import android.widget.Toast;

import androidx.annotation.NonNull; import
androidx.appcompat.app.AppCompatActivity;

import com.google.android.gms.tasks.OnCompleteListener; import
com.google.android.gms.tasks.Task; import
com.google.firebase.FirebaseException; import
com.google.firebase.auth.AuthResult; import
com.google.firebase.auth.FirebaseAuth; import
com.google.firebase.auth.PhoneAuthCredential; import
com.google.firebase.auth.PhoneAuthProvider; import
com.google.firebase.database.annotations.NotNull;

import java.util.concurrent.TimeUnit;

public class Otp extends AppCompatActivity {
    Button b1;
    EditText e1;
    FirebaseAuth firebaseAuth;
    String phone;
    String otp;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_otp);
        getWindow().setBackgroundDrawableResource(R.drawable.sc);
b1=(Button)findViewById(R.id.buttonOT2);
e1=(EditText)findViewById(R.id.editTextOT2);
phone=getIntent().getStringExtra("Mobile").toString();
firebaseAuth= FirebaseAuth.getInstance();        genotp();
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
```

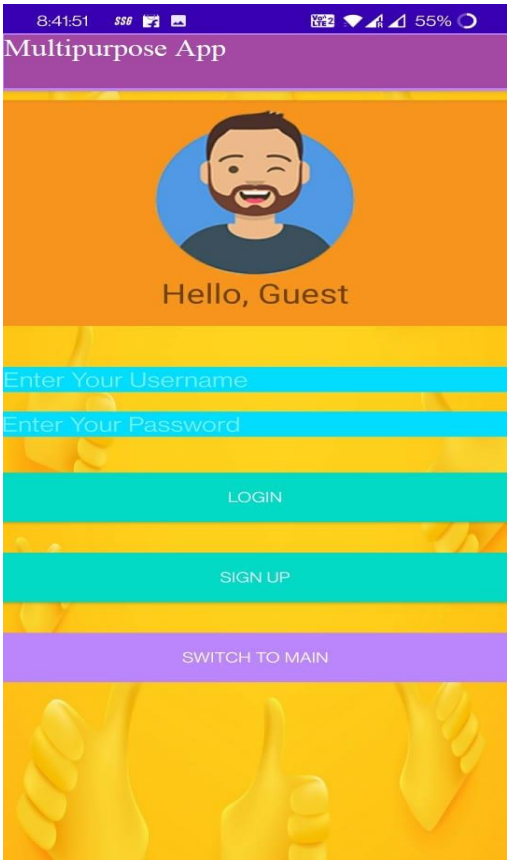
```
        public void onClick(View v) {
if(e1.getText().toString().isEmpty()){                  e1.setError("Enter
OTP");
            }else{
                if(e1.getText().toString().length()!=6){
e1.setError("Invalid OTP");
                    Toast.makeText(Otp.this, "Fill Valid OTP",
Toast.LENGTH_SHORT).show();
                }else{
                    PhoneAuthCredential credential=
PhoneAuthProvider.getCredential(otp,e1.getText().toString());
                    SignWithPhoneAuthCredential(credential);
                }
            }
        }
    });
  }private void genotp(){
PhoneAuthProvider.getInstance().verifyPhoneNumber(
phone,
            60,
            TimeUnit.SECONDS,               this,
            new
PhoneAuthProvider.OnVerificationStateChangedCallbacks() {
                @Override
                public void onCodeSent(@NonNull @NotNull String s,
@NonNull @NotNull PhoneAuthProvider.ForceResendingToken
forceResendingToken) {                    super.onCodeSent(s,
forceResendingToken);                    otp=s;
                }


                @Override
                public void onVerificationCompleted(@NonNull
@org.jetbrains.annotations.NotNull PhoneAuthCredential
phoneAuthCredential) {
                    SignWithPhoneAuthCredential(phoneAuthCredential);
                }


                @Override
```

```
                public void onVerificationFailed(@NonNull
@org.jetbrains.annotations.NotNull FirebaseException e) {
                    Toast.makeText(Otp.this, "NOT MAtch",
Toast.LENGTH_SHORT).show();


                }
            }


        );
    }private void SignWithPhoneAuthCredential(PhoneAuthCredential
credential){
firebaseAuth.signInWithCredential(credential).addOnCompleteListener(
new
OnCompleteListener<AuthResult>() {
            @Override
            public void onComplete(@NonNull @NotNull Task<AuthResult>
task) {                if(task.isSuccessful()){
                Toast.makeText(Otp.this, "Login Successfully",
Toast.LENGTH_SHORT).show();
                Intent i= new Intent(Otp.this,Menu.class);
startActivity(i);                    finish();
            }               else{
                Toast.makeText(Otp.this, "Not VAlid",
Toast.LENGTH_SHORT).show();
            }
          }
        });
    }
}
```

❖ After Click On Offline Database

❖ Login Page With Username and Password

Activity_login_offline.xml




```
<?xml version="1.0" encoding="utf-8"?>
<ScrollView
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"     tools:context=".LoginOffline">
<RelativeLayout
    android:layout_width="match_parent"
android:layout_height="match_parent">


    <EditText
        android:id="@+id/editTextO"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_below="@+id/imageViewCA"
android:layout_alignParentStart="true"
android:layout_alignParentLeft="true"
android:layout_alignParentRight="true"
android:layout_marginStart="0dp"
```

```
android:layout_marginLeft="0dp"
android:layout_marginTop="31dp"
android:layout_marginRight="5dp"


android:background="@android:color/holo_blue_bright"
android:ems="10"
      android:hint="Enter Your Username"
android:inputType="textPersonName"        android:textSize="20sp" />


   <EditText
      android:id="@+id/editTextO2"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_below="@+id/editTextO"
android:layout_alignParentStart="true"
android:layout_alignParentLeft="true"
android:layout_marginStart="-1dp"        android:layout_marginLeft="-
1dp"        android:layout_marginTop="19dp"
      android:background="@android:color/holo_blue_bright"
android:ems="10"
      android:hint="Enter Your Password"
android:inputType="textPassword"        android:textSize="20sp" />
   <Button
      android:id="@+id/buttonO"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_below="@+id/editTextO2"
android:layout_centerHorizontal="true"
android:layout_marginTop="35dp"
      android:background="@color/design_default_color_secondary"
android:text="Login" />
   <Button        android:id="@+id/buttonO2"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_below="@+id/buttonO"
android:layout_centerHorizontal="true"
android:layout_marginTop="30dp"
android:background="@color/teal_200"        android:text="Sign Up" />
   <ImageView        android:id="@+id/imageViewCA"
android:layout_width="match_parent"
android:layout_height="237dp"
android:layout_alignParentStart="true"
```

```
android:layout_alignParentTop="true"
android:layout_alignParentEnd="true"
android:layout_marginStart="0dp"
android:layout_marginTop="0dp"        android:layout_marginEnd="0dp"
app:srcCompat="@drawable/l" />
    <Button        android:id="@+id/buttonO5"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_below="@+id/buttonO2"
android:layout_alignParentStart="true"
android:layout_alignParentLeft="true"
android:layout_marginStart="0dp"
android:layout_marginLeft="0dp"
android:layout_marginTop="30dp"
android:background="@color/purple_200"        android:text="Switch To
Main" />


   </RelativeLayout>
 </ScrollView>
```

Loginoffline.java

```
package com.example.MultipurposeApp;

import android.content.Intent; import android.database.Cursor; import
android.database.sqlite.SQLiteDatabase; import android.os.Bundle;
import android.view.View; import android.widget.Button; import
android.widget.EditText; import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

public class LoginOffline extends AppCompatActivity {
   Button b1,b2,b3;     EditText e1,e2;


   @Override
   protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_login_offline);
getWindow().setBackgroundDrawableResource(R.drawable.of);
b1=(Button)findViewById(R.id.buttonO);
b2=(Button)findViewById(R.id.buttonO2);
b3=(Button)findViewById(R.id.buttonO5);
e1=(EditText)findViewById(R.id.editTextO);
e2=(EditText)findViewById(R.id.editTextO2);
b2.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
             Intent i= new Intent(LoginOffline.this,Offline.class);
startActivity(i);                finish();
          }        });
       b3.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
             Intent k= new Intent(LoginOffline.this,MainActivity.class);
startActivity(k);                finish();
          }        });
       b1.setOnClickListener(new View.OnClickListener() {
          @Override
```

```
        public void onClick(View v) {                String
s1=e1.getText().toString();              String s2=e2.getText().toString();
if(s1.isEmpty()) {
              e1.setError("Please Enter Username");
            }else if(s2.isEmpty()) {
              e2.setError("Please Enter Password");
            }              else{
              SQLiteDatabase
sql=openOrCreateDatabase("rohit",MODE_PRIVATE,null);
              sql.execSQL("create table if not exists student (name
varchar,username varchar,email varchar,password varchar)");
              String s3="select * from student where username='"+s1+"'
and password='"+s2+"'";
              Cursor c1=sql.rawQuery(s3,null);
              if(c1.getCount()>0){
                Intent j= new Intent(LoginOffline.this,Menu.class);
startActivity(j);                    finish();
              }                  else{
                Toast.makeText(LoginOffline.this, "Invalid name or
Email",
Toast.LENGTH_SHORT).show();
              }
            }
          }
      });
   }
}
```

❖ After Click On Sign Up button

Activity_offline.xml

```
<?xml version="1.0" encoding="utf-8"?>
<ScrollView
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"     tools:context=".Offline">
<RelativeLayout
   android:layout_width="match_parent"
android:layout_height="match_parent">
   <EditText
      android:id="@+id/editTextO3"        android:layout_width="412dp"
android:layout_height="wrap_content"
android:layout_below="@+id/imageView"
android:layout_alignParentStart="true"
android:layout_alignParentLeft="true"
android:layout_alignParentEnd="true"
android:layout_alignParentRight="true"
android:layout_marginTop="10dp"

android:background="@android:color/holo_blue_bright"
android:ems="10"        android:hint="Enter Your Name"
android:inputType="textPersonName"        android:textSize="20sp" />

   <EditText
      android:id="@+id/editTextO4"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_below="@+id/editTextO3"
android:layout_alignParentStart="true"
android:layout_alignParentLeft="true"
android:layout_centerHorizontal="true"
android:layout_marginTop="10dp"

android:background="@android:color/holo_blue_bright"
android:ems="10"
      android:hint="Enter Your Username"
android:inputType="textPersonName"        android:textSize="20sp" />
```

```
    <EditText
        android:id="@+id/editTextO5"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_below="@+id/editTextO4"
android:layout_alignParentStart="true"
android:layout_alignParentLeft="true"
android:layout_marginTop="10dp"
        android:background="@android:color/holo_blue_bright"
android:ems="10"
        android:hint="Enter Your Email ID"
android:inputType="textPersonName"         android:textSize="20sp" />
<EditText
        android:id="@+id/editTextO6"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_below="@+id/editTextO5"
android:layout_alignParentStart="true"
android:layout_alignParentLeft="true"
android:layout_marginTop="10dp"
        android:background="@android:color/holo_blue_bright"
android:ems="10"         android:hint="Enter Your Password"
android:inputType="textPassword"         android:textSize="20sp" />
    <Button
        android:id="@+id/buttonO3"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_below="@+id/editTextO6"
android:layout_centerHorizontal="true"
android:layout_marginTop="50dp"
        android:background="@android:color/holo_orange_light"
android:text="Sign up" />
    <Button
        android:id="@+id/buttonO4"
android:layout_width="match_parent"
android:layout_height="47dp"
android:layout_below="@+id/buttonO3"
android:layout_centerHorizontal="true"
android:layout_marginTop="50dp"
        android:background="@android:color/holo_blue_light"
android:text="Back to Login" />
```

```
    <ImageView
        android:id="@+id/imageView"
android:layout_width="match_parent"
android:layout_height="208dp"
android:layout_alignParentTop="true"
app:srcCompat="@drawable/he" />
    </RelativeLayout>
</ScrollView>
```

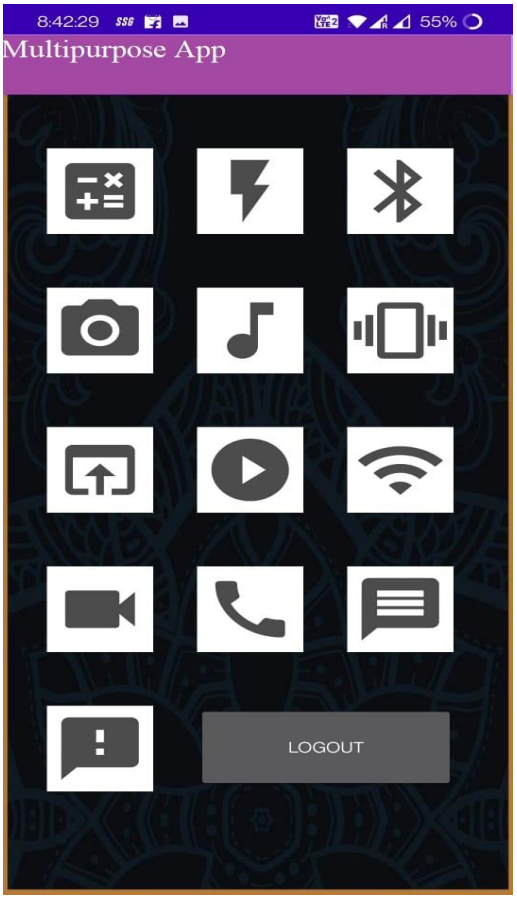
Offline.java

```
package com.example.MultipurposeApp;

import android.content.Intent; import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase; import
android.os.Bundle; import android.view.View; import
android.widget.Button; import android.widget.EditText; import
android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

public class Offline extends AppCompatActivity {
   Button b1,b2;
   EditText e1,e2,e3,e4;


   @Override
   protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_offline);
      getWindow().setBackgroundDrawableResource(R.drawable.op);
b1=(Button)findViewById(R.id.buttonO3);
b2=(Button)findViewById(R.id.buttonO4);
e1=(EditText)findViewById(R.id.editTextO3);
e2=(EditText)findViewById(R.id.editTextO4);
e3=(EditText)findViewById(R.id.editTextO5);
e4=(EditText)findViewById(R.id.editTextO6);
b2.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {
            Intent i= new Intent(Offline.this,LoginOffline.class);
startActivity(i);              finish();
         }       });
      b1.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {              String
s1=e1.getText().toString();
            String s2=e2.getText().toString();
```

```
            String s3=e3.getText().toString();              String
s4=e4.getText().toString();             if(s1.isEmpty()) {
                e1.setError("Please Enter Name");
            }else if(s2.isEmpty()){
                e2.setError("Please Enter Username");
            }else if(s3.isEmpty()){
                e3.setError("Please Enter Email ID");
            }else if(s4.isEmpty()){
                e4.setError("Please Enter Password");
            }               else{
                SQLiteDatabase
sql=openOrCreateDatabase("rohit",MODE_PRIVATE,null);
                sql.execSQL("create table if not exists student(name
varchar,username varchar,email varchar,password varchar)");
                String s5="select * from student where username='"+s2+"'
and password='"+s4+"'";
                Cursor c1= sql.rawQuery(s5,null);
                if(c1.getCount()>0){
                    Toast.makeText(Offline.this, "User Already Exist",
Toast.LENGTH_SHORT).show();                 }else{
                    sql.execSQL("insert into student values
('"+s1+"','"+s2+"','"+s3+"','"+s4+"')");
                    Toast.makeText(Offline.this, "Registration Done!!",
Toast.LENGTH_SHORT).show();
                    Intent j= new Intent(Offline.this,LoginOffline.class);
startActivity(j);                   finish();
                }
            }
        }
    });


  }
}
```

❖ After Login went to Menu File

Activity_menu.xml




```
<?xml version="1.0" encoding="utf-8"?>
<ScrollView
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"      tools:context=".Menu">
<RelativeLayout
   android:layout_width="match_parent"
android:layout_height="match_parent">
   <ImageButton
      android:id="@+id/imageButtonM"
android:layout_width="80dp"        android:layout_height="80dp"
android:layout_alignParentStart="true"
android:layout_alignParentLeft="true"
android:layout_alignParentTop="true"
android:layout_marginStart="33dp"
android:layout_marginLeft="50dp"
android:layout_marginTop="50dp"
android:background="@color/white"
```

```
app:srcCompat="@drawable/ic_calculator"
tools:ignore="VectorDrawableCompat" />

   <ImageButton
      android:id="@+id/imageButtonM2"
android:layout_width="80dp"        android:layout_height="80dp"
android:layout_alignParentStart="false"
android:layout_alignParentLeft="false"
android:layout_alignParentTop="true"
android:layout_alignParentEnd="false"
android:layout_alignParentRight="false"
android:layout_marginStart="33dp"
android:layout_marginLeft="50dp"
android:layout_marginTop="50dp"
android:layout_toEndOf="@+id/imageButtonM"
android:layout_toRightOf="@id/imageButtonM"
android:background="@color/white"
app:srcCompat="@drawable/ic_torch"
tools:ignore="VectorDrawableCompat" />

   <ImageButton
      android:id="@+id/imageButtonM3"
android:layout_width="80dp"        android:layout_height="80dp"
android:layout_alignParentTop="true"
android:layout_marginStart="33dp"
android:layout_marginLeft="50dp"
android:layout_marginTop="50dp"
android:layout_toEndOf="@+id/imageButtonM2"
android:layout_toRightOf="@+id/imageButtonM2"
android:background="@color/white"
app:srcCompat="@drawable/ic_bluetooth"
tools:ignore="VectorDrawableCompat" />

   <ImageButton
android:id="@+id/imageButtonM4" android:layout_width="80dp"
android:layout_height="80dp"
android:layout_below="@+id/imageButtonM"
      android:layout_alignParentStart="true"
android:layout_alignParentLeft="true"
android:layout_alignParentTop="false"
android:layout_alignParentEnd="false"
android:layout_alignParentRight="true"
android:layout_marginStart="33dp"
```

```
android:layout_marginTop="50dp"
android:layout_marginRight="274dp"
android:background="@color/white"
app:srcCompat="@drawable/ic_camera" />
    <ImageButton        android:id="@+id/imageButtonM5"
android:layout_width="80dp"        android:layout_height="80dp"
android:layout_below="@+id/imageButtonM2"
android:layout_alignParentTop="false"
android:layout_marginStart="33dp"
android:layout_marginTop="50dp"
android:layout_toEndOf="@+id/imageButtonM4"
android:background="@color/white"
app:srcCompat="@drawable/ic_music" />
    <ImageButton        android:id="@+id/imageButtonM6"
android:layout_width="80dp"        android:layout_height="80dp"
android:layout_below="@+id/imageButtonM3"
android:layout_marginStart="33dp"
android:layout_marginTop="50dp"
android:layout_toEndOf="@+id/imageButtonM5"
android:background="@color/white"
app:srcCompat="@drawable/ic_vibrator" />
    <ImageButton        android:id="@+id/imageButtonM7"
android:layout_width="80dp"        android:layout_height="80dp"
android:layout_below="@+id/imageButtonM4"
android:layout_alignParentStart="true"
android:layout_alignParentRight="false"
android:layout_marginStart="33dp"
android:layout_marginTop="50dp"
android:background="@color/white"
app:srcCompat="@drawable/ic_browser" />
    <ImageButton        android:id="@+id/imageButtonM8"
android:layout_width="80dp"        android:layout_height="80dp"
android:layout_below="@+id/imageButtonM5"
android:layout_marginStart="33dp"
android:layout_marginTop="50dp"
android:layout_toEndOf="@+id/imageButtonM7"
android:background="@color/white"
android:textAlignment="gravity"
app:srcCompat="@drawable/ic_vedioplayer" />


   <ImageButton
android:id="@+id/imageButtonM9" android:layout_width="80dp"
android:layout_height="80dp"
android:layout_below="@+id/imageButtonM6"
```

```
        android:layout_marginStart="33dp"
android:layout_marginTop="50dp"
android:layout_toEndOf="@+id/imageButtonM8"
android:background="@color/white"
app:srcCompat="@drawable/ic_wifi" />

    <ImageButton
        android:id="@+id/imageButtonM10"
android:layout_width="80dp"        android:layout_height="80dp"
android:layout_below="@+id/imageButtonM7"
android:layout_alignParentStart="true"
android:layout_alignParentLeft="true"
android:layout_alignParentRight="false"
android:layout_marginStart="33dp"
android:layout_marginTop="50dp"
android:background="@color/white"
app:srcCompat="@drawable/ic_vedio" />

    <ImageButton
        android:id="@+id/imageButtonM11"
android:layout_width="80dp"        android:layout_height="80dp"
android:layout_below="@+id/imageButtonM8"
android:layout_marginStart="33dp"
android:layout_marginTop="50dp"
android:layout_toEndOf="@+id/imageButtonM10"
android:background="@color/white"
app:srcCompat="@drawable/ic_call" />

    <ImageButton
        android:id="@+id/imageButtonM12"
android:layout_width="80dp"        android:layout_height="80dp"
android:layout_below="@+id/imageButtonM9"
android:layout_marginStart="33dp"
android:layout_marginTop="50dp"
android:layout_toEndOf="@+id/imageButtonM11"
android:background="@color/white"
app:srcCompat="@drawable/ic_message" />

    <ImageButton
        android:id="@+id/imageButtonM13"
android:layout_width="80dp"        android:layout_height="80dp"
android:layout_below="@+id/imageButtonM10"
android:layout_alignParentStart="true"
```

```
android:layout_alignParentLeft="false"
android:layout_alignParentRight="false"
android:layout_marginStart="33dp"
android:layout_marginTop="50dp"
android:background="@color/white"
app:srcCompat="@drawable/ic_feedback" />
    <Button
      android:id="@+id/buttonLogout"
android:layout_width="194dp"        android:layout_height="78dp"
android:layout_below="@+id/imageButtonM11"
android:layout_marginStart="33dp" android:layout_marginTop="50dp"
android:layout_toEndOf="@+id/imageButtonM13" android:text="Logout"
/>


   </RelativeLayout>
</ScrollView>
```

menu.java

```
package com.example.MultipurposeApp;

import android.content.Intent; import android.os.Build; import
android.os.Bundle; import android.os.Vibrator; import
android.view.View; import android.widget.Button; import
android.widget.ImageButton; import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

import com.google.android.gms.auth.api.signin.GoogleSignIn; import
com.google.android.gms.auth.api.signin.GoogleSignInClient; import
com.google.android.gms.auth.api.signin.GoogleSignInOptions; import
com.google.android.gms.tasks.OnCompleteListener; import
com.google.android.gms.tasks.Task; import
com.google.firebase.auth.FirebaseAuth;

public class Menu extends AppCompatActivity {
    ImageButton i1,i2,i3,i4,i5,i6,i7,i8,i9,i10,i11,i12,i13;
    Button b1;
    Vibrator v1;
    FirebaseAuth firebaseAuth;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_menu);
getWindow().setBackgroundDrawableResource(R.drawable.fr);
firebaseAuth=FirebaseAuth.getInstance();
i1=(ImageButton)findViewById(R.id.imageButtonM);
i2=(ImageButton)findViewById(R.id.imageButtonM2);
i3=(ImageButton)findViewById(R.id.imageButtonM3);
i4=(ImageButton)findViewById(R.id.imageButtonM4);
i5=(ImageButton)findViewById(R.id.imageButtonM5);
i6=(ImageButton)findViewById(R.id.imageButtonM6);
i7=(ImageButton)findViewById(R.id.imageButtonM7);
i8=(ImageButton)findViewById(R.id.imageButtonM8);
i9=(ImageButton)findViewById(R.id.imageButtonM9);
i10=(ImageButton)findViewById(R.id.imageButtonM10);
i11=(ImageButton)findViewById(R.id.imageButtonM11);
i12=(ImageButton)findViewById(R.id.imageButtonM12);
```

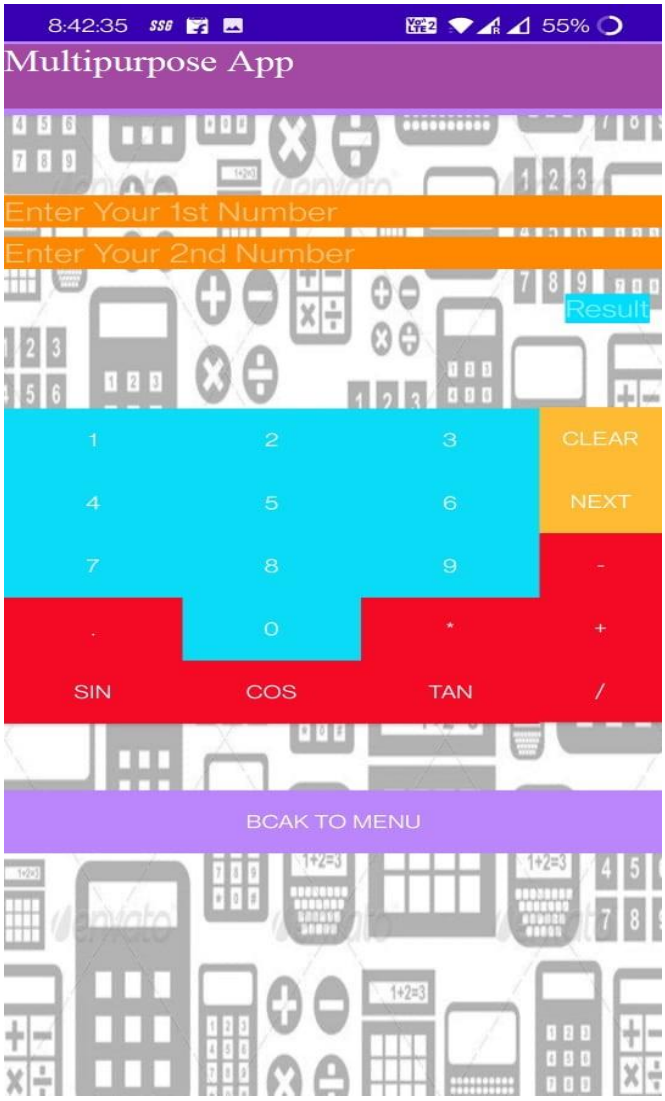
```
i13=(ImageButton)findViewById(R.id.imageButtonM13);
b1=(Button)findViewById(R.id.buttonLogout);


      i1.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {
            Intent i= new Intent(Menu.this,Calci.class);
startActivity(i);              finish();
         }       });
      i2.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {
            Intent j= new Intent(Menu.this,Torch.class);
startActivity(j);              finish();
         }       });
      i3.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {
            Intent k= new Intent(Menu.this,Bluetooth.class);
startActivity(k);               finish();
         }       });
      i4.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {
            Intent l=new Intent(Menu.this,Camera.class);
startActivity(l);              finish();
         }       });
      i5.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {
            Intent m= new Intent(Menu.this,Music.class);
startActivity(m);               finish();
         }       });
      i6.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {
```

```
            v1 = (Vibrator) getSystemService(VIBRATOR_SERVICE);
if (Build.VERSION.SDK_INT > 26) {                    v1.vibrate(500);
} else {                    v1.vibrate(50);
            }
          }        });
       i7.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
             Intent o= new Intent(Menu.this,Browser.class);
startActivity(o);                finish();
          }        });
       i8.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
             Intent p=new Intent(Menu.this,Vedio.class);
startActivity(p);                finish();
          }        });
       i9.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
             Intent q= new Intent(Menu.this,Wifi.class);
startActivity(q);                finish();
          }
       });
       i10.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
             Intent r=new Intent(Menu.this,CameraVedio.class);
startActivity(r);                finish();
          }        });
       i11.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
             Intent s=new Intent(Menu.this,Call.class);
startActivity(s);                finish();
          }        });
       i12.setOnClickListener(new View.OnClickListener() {
          @Override
```

```
        public void onClick(View v) {
            Intent t=new Intent(Menu.this,Message.class);
startActivity(t);               finish();
        }
    });
    i13.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            Intent u=new Intent(Menu.this,Feedback.class);
startActivity(u);               finish();
        }
    });
    b1.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            GoogleSignInClient googleSignInClient =
GoogleSignIn.getClient(Menu.this,
GoogleSignInOptions.DEFAULT_SIGN_IN);
googleSignInClient.signOut().addOnCompleteListener(new
OnCompleteListener<Void>() {                @Override
                public void onComplete(Task<Void> task) {
if (task.isSuccessful()) {
                    Toast.makeText(Menu.this, "Logout",
Toast.LENGTH_SHORT).show();
                    firebaseAuth.signOut();                    finish();
                }
                Intent i= new Intent(Menu.this,MainActivity.class);
startActivity(i);                    finish();
            }
        });
        }
    });
  }
}
```

❖ After Click On Calculator Icon

Activity_calci.xml




```
<?xml version="1.0" encoding="utf-8"?>
<ScrollView
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"     tools:context=".Calci">
<RelativeLayout
    android:layout_width="match_parent"
android:layout_height="match_parent">
    <EditText
        android:id="@+id/editTextC"         android:layout_width="412dp"
android:layout_height="wrap_content"
```

```
android:layout_alignParentTop="true"
android:layout_marginTop="61dp"


android:background="@android:color/holo_orange_dark"
android:ems="10"


      android:focusableInTouchMode="false"        android:hint="Enter
Your 1st Number"        android:inputType="numberDecimal"
android:textSize="20sp" />
   <EditText
      android:id="@+id/editTextC2"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_below="@+id/editTextC"
android:layout_alignParentStart="true"
android:layout_marginStart="0dp"
android:layout_marginTop="7dp"
      android:background="@android:color/holo_orange_dark"
android:ems="10"
      android:focusableInTouchMode="false"        android:hint="Enter
Your 2nd Number"        android:inputType="numberDecimal"
android:textSize="20sp" />
   <TextView
      android:id="@+id/textViewC"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_below="@+id/editTextC2"
android:layout_alignParentEnd="true"
android:layout_alignParentRight="true"
android:layout_marginTop="19dp"
android:layout_marginEnd="7dp"
android:layout_marginRight="7dp"
      android:background="@android:color/holo_blue_bright"
android:hint="Result"        android:textSize="18sp" />


  <Button
      android:id="@+id/buttonC1"        android:layout_width="104dp"
android:layout_height="wrap_content"
android:layout_below="@+id/textViewC"
android:layout_alignParentStart="true"
android:layout_marginStart="0dp"
```

```
android:layout_marginTop="65dp"        android:background="#0adcf8"
android:text="1" />
    <Button
      android:id="@+id/buttonC2"        android:layout_width="104dp"
android:layout_height="wrap_content"
android:layout_below="@+id/textViewC"
android:layout_marginTop="65dp"
android:layout_toEndOf="@+id/buttonC1"
android:layout_toRightOf="@+id/buttonC1"
android:background="#0adcf8"        android:text="2" />
    <Button
      android:id="@+id/buttonC3"        android:layout_width="104dp"
android:layout_height="wrap_content"
android:layout_below="@+id/textViewC"
android:layout_marginTop="65dp"
android:layout_toEndOf="@+id/buttonC2"
android:layout_toRightOf="@+id/buttonC2"
android:background="#0adcf8"        android:text="3" />
    <Button
      android:id="@+id/buttonCclear"
android:layout_width="104dp"
android:layout_height="wrap_content"
android:layout_below="@+id/textViewC"
android:layout_alignParentEnd="true"
android:layout_marginTop="64dp"
android:layout_toEndOf="@+id/buttonC3"
android:layout_toRightOf="@+id/buttonC3"
android:background="@android:color/holo_orange_light"
android:text="Clear" />
    <Button
      android:id="@+id/buttonC4"        android:layout_width="104dp"
android:layout_height="wrap_content"
android:layout_below="@+id/buttonC1"
android:layout_alignParentStart="true"
android:layout_marginStart="0dp"
android:layout_marginTop="0dp"        android:background="#0adcf8"
android:text="4" />
    <Button
      android:id="@+id/buttonC5"        android:layout_width="104dp"
android:layout_height="wrap_content"
android:layout_below="@+id/buttonC2"
android:layout_toEndOf="@+id/buttonC4"
```

```
android:layout_toRightOf="@+id/buttonC4"
android:background="#0adcf8" android:text="5" />
    <Button
      android:id="@+id/buttonC6"        android:layout_width="104dp"
android:layout_height="wrap_content"
android:layout_below="@+id/buttonC3"
android:layout_toEndOf="@+id/buttonC5"
android:layout_toRightOf="@+id/buttonC5"
android:background="#0adcf8"        android:text="6" />
    <Button
      android:id="@+id/buttonCnext"        android:layout_width="104dp"
android:layout_height="wrap_content"
android:layout_below="@+id/buttonCclear"
android:layout_alignParentEnd="true"
android:layout_marginStart="0dp"
android:layout_marginLeft="0dp"        android:layout_marginTop="0dp"
android:layout_marginEnd="0dp"
android:layout_toEndOf="@+id/buttonC6"
android:layout_toRightOf="@+id/buttonC6"
android:background="@android:color/holo_orange_light"
android:text="Next" />
    <Button
      android:id="@+id/buttonC7"        android:layout_width="104dp"
android:layout_height="wrap_content"
android:layout_below="@+id/buttonC4"
android:layout_alignParentStart="true"
android:layout_alignParentLeft="true"
android:layout_marginStart="0dp"
android:layout_marginLeft="0dp"        android:layout_marginTop="0dp"
android:background="#0adcf8"        android:text="7" />
    <Button
      android:id="@+id/buttonC8"        android:layout_width="104dp"
android:layout_height="wrap_content"
android:layout_below="@+id/buttonC5"
android:layout_toEndOf="@+id/buttonC7"
android:layout_toRightOf="@+id/buttonC7"
android:background="#0adcf8"        android:text="8" />
    <Button
      android:id="@+id/buttonC9"        android:layout_width="104dp"
android:layout_height="wrap_content"
android:layout_below="@+id/buttonC6"
android:layout_toEndOf="@+id/buttonC8"
```

```
android:layout_toRightOf="@+id/buttonC8"
android:background="#0adcf8"        android:text="9" />


   <Button android:id="@+id/buttonCminus"
android:layout_width="104dp" android:layout_height="wrap_content"
       android:layout_below="@+id/buttonCnext"
android:layout_alignParentEnd="true"
android:layout_marginStart="0dp"
android:layout_marginLeft="0dp"        android:layout_marginTop="0dp"
android:layout_marginEnd="0dp"
android:layout_marginBottom="0dp"
android:layout_toEndOf="@+id/buttonC9"
android:layout_toRightOf="@+id/buttonC9"
android:background="#FFF50A25"        android:text="-" />
    <Button
       android:id="@+id/buttonCdot"        android:layout_width="104dp"
android:layout_height="wrap_content"
android:layout_below="@+id/buttonC7"
android:layout_alignParentStart="true"
android:layout_marginStart="0dp"
android:layout_marginTop="0dp"
android:background="#FFF50A25"        android:text="." />
    <Button        android:id="@+id/buttonC0"
android:layout_width="104dp"
android:layout_height="wrap_content"
android:layout_below="@+id/buttonC8"
android:layout_toEndOf="@+id/buttonCdot"
android:layout_toRightOf="@+id/buttonCdot"
android:background="#0adcf8"        android:text="0" />
    <Button
       android:id="@+id/buttonCmul"        android:layout_width="104dp"
android:layout_height="wrap_content"
android:layout_below="@+id/buttonC9"
android:layout_toEndOf="@+id/buttonC0"
android:layout_toRightOf="@+id/buttonC0"
android:background="#FFF50A25"        android:text="*" />
    <Button
       android:id="@+id/buttonCadd"        android:layout_width="104dp"
android:layout_height="wrap_content"
android:layout_below="@+id/buttonCminus"
android:layout_alignParentEnd="true"
android:layout_marginStart="0dp"
android:layout_marginLeft="0dp"        android:layout_marginTop="0dp"
```

```
android:layout_marginEnd="0dp"
android:layout_marginBottom="0dp"
android:layout_toEndOf="@+id/buttonCmul"
android:layout_toRightOf="@+id/buttonCmul"
android:background="#FFF50A25"         android:text="+" />


   <Button android:id="@+id/buttonCsin" android:layout_width="104dp"
android:layout_height="wrap_content"
       android:layout_below="@+id/buttonCdot"
android:layout_alignParentStart="true"
android:layout_alignParentLeft="true"
android:layout_marginStart="0dp"
android:layout_marginLeft="0dp"         android:layout_marginTop="0dp"
android:background="#FFF50A25"         android:text="sin" />
    <Button
       android:id="@+id/buttonCcos"         android:layout_width="104dp"
android:layout_height="wrap_content"
android:layout_below="@+id/buttonC0"
android:layout_toEndOf="@+id/buttonCsin"
android:layout_toRightOf="@+id/buttonCsin"
android:background="#FFF50A25"         android:text="cos" />
    <Button
       android:id="@+id/buttonCtan"         android:layout_width="104dp"
android:layout_height="wrap_content"
android:layout_below="@+id/buttonCmul"
android:layout_toEndOf="@+id/buttonCcos"
android:layout_toRightOf="@+id/buttonCcos"
android:background="#FFF50A25"         android:text="tan" />
    <Button
       android:id="@+id/buttonCdivide"
android:layout_width="104dp"
android:layout_height="wrap_content"
android:layout_below="@+id/buttonCadd"
android:layout_alignParentEnd="true"
android:layout_marginStart="0dp"
android:layout_marginLeft="0dp"         android:layout_marginTop="0dp"
android:layout_marginEnd="0dp"
android:layout_toEndOf="@+id/buttonCtan"
android:layout_toRightOf="@+id/buttonCtan"
android:background="#FFF50A25"         android:text="/" />
    <Button
       android:id="@+id/buttonCback"
android:layout_width="match_parent"
```

```
android:layout_height="wrap_content"
android:layout_below="@+id/buttonCcos"
android:layout_alignParentStart="true"
android:layout_centerHorizontal="true"
android:layout_marginStart="0dp"
android:layout_marginTop="51dp"
android:background="@color/purple_200"        android:text="Bcak To
Menu" />
    </RelativeLayout>
</ScrollView>
```

Calci.java

```
package com.example.MultipurposeApp;


import android.content.Intent; import android.os.Bundle; import
android.view.View; import android.widget.Button; import
android.widget.EditText; import android.widget.TextView; import
android.widget.Toast;


import androidx.appcompat.app.AppCompatActivity;


public class Calci extends AppCompatActivity {
    Button
b0,b1,b2,b3,b4,b5,b6,b7,b8,b9,b10,b11,b12,b13,b14,b15,b16,b17,b18,
b19,b20;
    EditText e1,e2;
    String s1,s2;      TextView t1;


    @Override
    protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_calci);
        getWindow().setBackgroundDrawableResource(R.drawable.ca);
b0=(Button)findViewById(R.id.buttonC0);
b1=(Button)findViewById(R.id.buttonC1);
b2=(Button)findViewById(R.id.buttonC2);
b3=(Button)findViewById(R.id.buttonC3);
b4=(Button)findViewById(R.id.buttonC4);
b5=(Button)findViewById(R.id.buttonC5);
b6=(Button)findViewById(R.id.buttonC6);
b7=(Button)findViewById(R.id.buttonC7);
b8=(Button)findViewById(R.id.buttonC8);
b9=(Button)findViewById(R.id.buttonC9);
b10=(Button)findViewById(R.id.buttonCdot);
b11=(Button)findViewById(R.id.buttonCmul);
b12=(Button)findViewById(R.id.buttonCadd);
b13=(Button)findViewById(R.id.buttonCminus);
b14=(Button)findViewById(R.id.buttonCnext);
b15=(Button)findViewById(R.id.buttonCdivide);
b16=(Button)findViewById(R.id.buttonCsin);
b17=(Button)findViewById(R.id.buttonCcos);
b18=(Button)findViewById(R.id.buttonCtan);
b19=(Button)findViewById(R.id.buttonCclear);
```

```
b20=(Button)findViewById(R.id.buttonCback);
e1=(EditText)findViewById(R.id.editTextC);
e2=(EditText)findViewById(R.id.editTextC2);
t1=(TextView)findViewById(R.id.textViewC);


      e1.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View view) {
            b0.setOnClickListener(new View.OnClickListener() {
               @Override
               public void onClick(View view) {
e1.setText(e1.getText() + "0"); }
            });
            b1.setOnClickListener(new View.OnClickListener() {
               @Override
               public void onClick(View view) {
e1.setText(e1.getText() + "1");
               }
            });
            b2.setOnClickListener(new View.OnClickListener() {
               @Override
               public void onClick(View view) {
e1.setText(e1.getText() + "2");
               }
            });
            b3.setOnClickListener(new View.OnClickListener() {
               @Override
               public void onClick(View view) {
e1.setText(e1.getText() + "3");
               }
            });
            b4.setOnClickListener(new View.OnClickListener() {
               @Override
               public void onClick(View view) {
e1.setText(e1.getText() + "4");
               }
            });
            b5.setOnClickListener(new View.OnClickListener() {
```

```
                @Override
                public void onClick(View view) {
e1.setText(e1.getText() + "5");
                }
            });
            b6.setOnClickListener(new View.OnClickListener() {
                @Override
                public void onClick(View view) {
e1.setText(e1.getText() + "6");
                }
            });
            b7.setOnClickListener(new View.OnClickListener() {
                @Override
                public void onClick(View view) {
e1.setText(e1.getText() + "7");
                }               });

            b8.setOnClickListener(new View.OnClickListener() {
                @Override
                public void onClick(View view) {
e1.setText(e1.getText() + "8");
                }
            });
            b9.setOnClickListener(new View.OnClickListener() {
                @Override
                public void onClick(View view) {
e1.setText(e1.getText() + "9");
}
});
            b10.setOnClickListener(new View.OnClickListener() {
                @Override
                public void onClick(View view) {
e1.setText(e1.getText() + ".");
                }               });

        }
    });
    b11.setOnClickListener(new View.OnClickListener() {
```

```
        @Override
        public void onClick(View view) {                s1 =
e1.getText().toString();              s2 = e2.getText().toString();
if (s1.isEmpty()  || s2.isEmpty()) {
Toast.makeText(Calci.this, "Enter Number",
Toast.LENGTH_SHORT).show();
            }else{
                Float f1 = Float.parseFloat(s1);
                Float f2 = Float.parseFloat(s2);
                Float f3 = f1 * f2;                  String s3 = Float.toString(f3);
t1.setText(s3);
            }


        }
    });
    b12.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {                s1 =
e1.getText().toString();              s2 = e2.getText().toString();
if (s1.isEmpty()  || s2.isEmpty()) {
Toast.makeText(Calci.this, "Enter Number",
Toast.LENGTH_SHORT).show();
            } else {
                Float f1 = Float.parseFloat(s1);
                Float f2 = Float.parseFloat(s2);
                Float f3 = f1 + f2;                  String s3 = Float.toString(f3);
t1.setText(s3);
            }
        }
    });
    b13.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {                s1 =
e1.getText().toString();              s2 = e2.getText().toString();
if (s1.isEmpty()  || s2.isEmpty()) {
Toast.makeText(Calci.this, "Enter Number",
Toast.LENGTH_SHORT).show();
            } else {
                Float f1 = Float.parseFloat(s1);
```

```
                Float f2 = Float.parseFloat(s2);
                Float f3 = f1 - f2;                String s3 = Float.toString(f3);
t1.setText(s3);
}
          }

       });
       b14.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View view) {
             b0.setOnClickListener(new View.OnClickListener() {
                @Override
                public void onClick(View view) {
e2.setText(e2.getText() + "0");
                }            });

             b1.setOnClickListener(new View.OnClickListener() {
                @Override
                public void onClick(View view) {
                   e2.setText(e2.getText() + "1");                }
             });
             b2.setOnClickListener(new View.OnClickListener() {
                @Override
                public void onClick(View view) {
                   e2.setText(e2.getText() + "2");                }
             });
             b3.setOnClickListener(new View.OnClickListener() {
                @Override
                public void onClick(View view) {
                   e2.setText(e2.getText() + "3");                }
             });
             b4.setOnClickListener(new View.OnClickListener() {
                @Override
                public void onClick(View view) {
                   e2.setText(e2.getText() + "4");                }
             });
             b5.setOnClickListener(new View.OnClickListener() {
```

```
            @Override
            public void onClick(View view) {
                e2.setText(e2.getText() + "5");                 }
        });
        b6.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                e2.setText(e2.getText() + "6");                 }
        });
        b7.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                e2.setText(e2.getText() + "7");                 }
        });
        b8.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                e2.setText(e2.getText() + "8");                 }
        });

b9.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                e2.setText(e2.getText() + "9");                 }
        });

        b10.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                e2.setText(e2.getText() + ".");                 }
        });

    }
});

    b15.setOnClickListener(new View.OnClickListener() {
        @Override
```

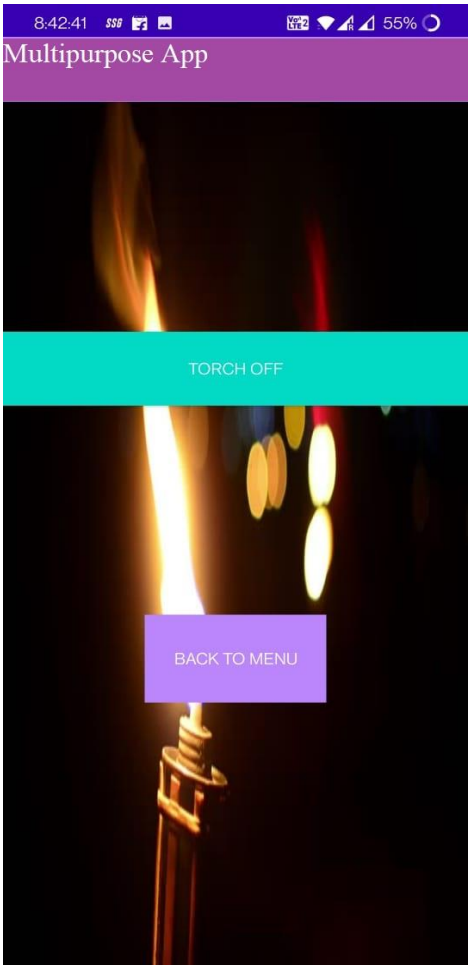
```
        public void onClick(View view) {

            s1 = e1.getText().toString();                s2 =
e2.getText().toString();              if (s1.isEmpty() || s2.isEmpty()) {
                Toast.makeText(Calci.this, "Enter Number",
Toast.LENGTH_SHORT).show();
            } else {
                Float f1 = Float.parseFloat(s1);
                Float f2 = Float.parseFloat(s2);
                Float f3 = f1 / f2;
                String s3 = Float.toString(f3);                t1.setText(s3);
            }
        }
    });
    b16.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {

            s1 = t1.getText().toString();
            if (s1.isEmpty()){
                Toast.makeText(Calci.this, "First Perform Operation",
Toast.LENGTH_SHORT).show();
            } else {
                Float f3 = Float.parseFloat(s1);                double r =
Math.toRadians(f3);                double f4 = Math.sin(r);
String s2 = Double.toString(f4);
                t1.setText(s2);
                Toast.makeText(Calci.this, "Consider the previous result as
a value", Toast.LENGTH_SHORT).show();
            }
        }
    });
    b17.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {            String s1 =
t1.getText().toString();
            if (s1.isEmpty()) {
                Toast.makeText(Calci.this, "First Perform Operation",
```

```
Toast.LENGTH_SHORT).show();
            } else {
                Float f3 = Float.parseFloat(s1);
                double r = Math.toRadians(f3);                    double f4 =
Math.cos(r);                    String s2 = Double.toString(f4);
                t1.setText(s2);
                Toast.makeText(Calci.this, "Consider the previous result as
a value", Toast.LENGTH_SHORT).show();
            }
        }
    });
    b18.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {                String s1 =
t1.getText().toString();
            if (s1.isEmpty()) {
                Toast.makeText(Calci.this, "First Perform Operation",
Toast.LENGTH_SHORT).show();
            } else {
                Float f3 = Float.parseFloat(s1);                    double r =
Math.toRadians(f3);                    double f4 = Math.tan(r);
String s2 = Double.toString(f4);
                t1.setText(s2);
                Toast.makeText(Calci.this, "Consider the previous result as
a value", Toast.LENGTH_SHORT).show();
            }
        }
    });
    b19.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {                e1.setText("");
e2.setText("");                t1.setText("");
        }
    });
    b20.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
```

```
            Intent i= new Intent(Calci.this,Menu.class);
startActivity(i);                finish();
        }
    });


  }
}
```

❖ After Click On Flash/Torch Icon

Activity_torch.xml




```
<?xml version="1.0" encoding="utf-8"?>
<ScrollView
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"      tools:context=".Torch">
<RelativeLayout
    android:layout_width="match_parent"
android:layout_height="match_parent">
    <ToggleButton
        android:id="@+id/toggleButtonT"
android:layout_width="match_parent"
android:layout_height="64dp"
android:layout_alignParentStart="true"
android:layout_alignParentLeft="true"
android:layout_alignParentTop="true"
android:layout_centerHorizontal="true"
```

```
android:layout_marginStart="0dp"
android:layout_marginLeft="0dp"
android:layout_marginTop="199dp"
android:background="@color/teal_200"        android:checked="false"
android:text="ToggleButton"        android:textOff="Torch OFF"
android:textOn="Torch ON" />
    <Button
      android:id="@+id/buttonT"        android:layout_width="150dp"
android:layout_height="76dp"
android:layout_below="@+id/toggleButtonT"
android:layout_centerHorizontal="true"
android:layout_marginTop="181dp"
android:background="@color/purple_200"        android:text="Back to
Menu" />
</RelativeLayout>
</ScrollView>
```

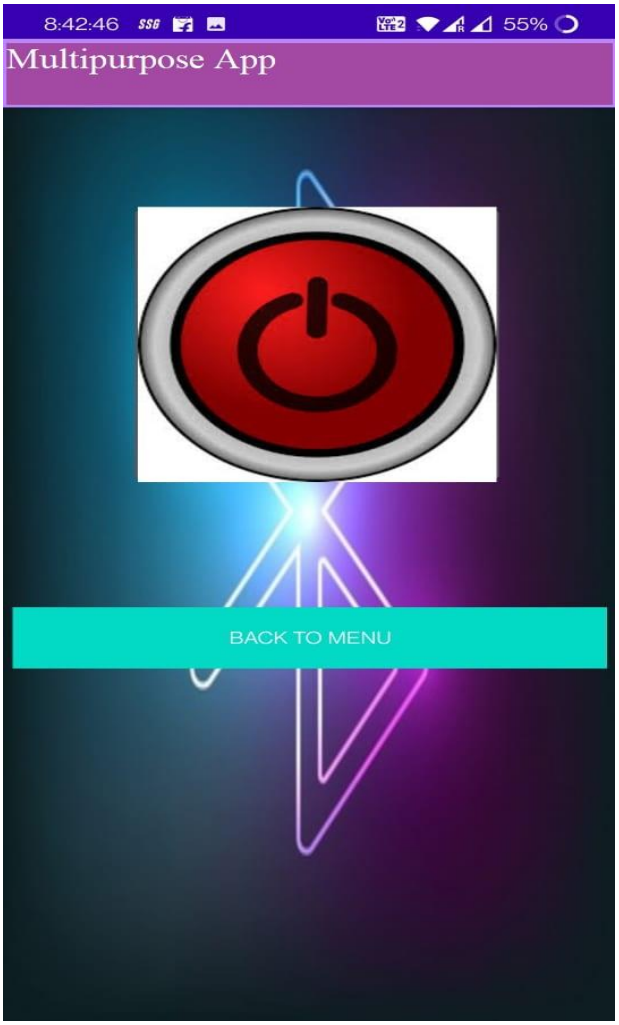
torch.java

```
package com.example.MultipurposeApp;


import android.content.Intent;
import android.hardware.camera2.CameraAccessException; import
android.hardware.camera2.CameraManager; import android.os.Bundle;
import android.view.View; import android.widget.Button; import
android.widget.CompoundButton; import android.widget.ToggleButton;


import androidx.appcompat.app.AppCompatActivity;


public class Torch extends AppCompatActivity {
   ToggleButton t1;
   Button b1;
   CameraManager cm;     @Override
   protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_torch);
       getWindow().setBackgroundDrawableResource(R.drawable.to);
t1=(ToggleButton)findViewById(R.id.toggleButtonT);
b1=(Button)findViewById(R.id.buttonT);
cm=(CameraManager)getSystemService(CAMERA_SERVICE);
b1.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
             Intent i= new Intent(Torch.this,Menu.class);
startActivity(i);                finish();
          }        });
       t1.setOnCheckedChangeListener(new
CompoundButton.OnCheckedChangeListener() {
          @Override
          public void onCheckedChanged(CompoundButton buttonView,
boolean isChecked)
{
             try{
                if(isChecked) {
                   String s1 = cm.getCameraIdList()[0];
cm.setTorchMode(s1, true);
                }                else{
```

```
                    String s1=cm.getCameraIdList()[0];
cm.setTorchMode(s1,false);
                }
            }catch (CameraAccessException e){

            }
        }
    });
  }
}
```

❖ After Click On Bluetooth Icon

Activity_bluetooth.xml




```
<?xml version="1.0" encoding="utf-8"?>
<ScrollView
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"     tools:context=".Bluetooth">
<RelativeLayout
   android:layout_width="match_parent"
android:layout_height="match_parent">
   <ImageButton         android:id="@+id/imageButtonB"
android:layout_width="236dp"         android:layout_height="230dp"
android:layout_alignParentStart="true"
android:layout_alignParentTop="true"
android:layout_alignParentEnd="true"
android:layout_marginStart="100dp"
```

```
android:layout_marginTop="76dp"
android:layout_marginEnd="75dp"
android:contentDescription="TODO"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.497"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:srcCompat="@drawable/r" />
    <Button
      android:id="@+id/buttonB"        android:layout_width="409dp"
android:layout_height="50dp"
android:layout_below="@+id/imageButtonB"
android:layout_alignParentStart="true"
android:layout_alignParentEnd="true"
android:layout_marginStart="6dp"
android:layout_marginTop="100dp"
android:layout_marginEnd="5dp"
      android:background="@color/design_default_color_secondary"
android:text="Back to Menu"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/imageButtonB" />
</RelativeLayout>
   </ScrollView>
```

Bluetooth.java

```
package com.example.MultipurposeApp;

import android.bluetooth.BluetoothAdapter; import
android.content.Intent; import android.os.Bundle; import
android.view.View; import android.widget.Button; import
android.widget.ImageButton;

import androidx.appcompat.app.AppCompatActivity;

public class Bluetooth extends AppCompatActivity {

    ImageButton i1;
    Button b1;     BluetoothAdapter ba;     private boolean blue=false;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_bluetooth);
getWindow().setBackgroundDrawableResource(R.drawable.bl);
b1=(Button)findViewById(R.id.buttonB);
i1=(ImageButton)findViewById(R.id.imageButtonB);
ba=BluetoothAdapter.getDefaultAdapter();
b1.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
             Intent i= new Intent(Bluetooth.this,Menu.class);
startActivity(i);               finish();
          }        });
       i1.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {               if(blue==false){
ba.enable();                  blue=true;
                i1.setImageResource(R.drawable.o);
             }else{                  ba.disable();                  blue=false;
                i1.setImageResource(R.drawable.r);
```

```
                }
            }
        });
    }
}
```

Activity.camera.xml


```
<?xml version="1.0" encoding="utf-8"?>
<ScrollView
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"     tools:context=".Camera">
<RelativeLayout      android:layout_width="match_parent"
android:layout_height="match_parent">
    <Button
        android:id="@+id/buttonCA"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_below="@+id/imageViewCA"
android:layout_alignParentStart="true"
android:layout_alignParentLeft="true"
android:layout_centerHorizontal="true"
android:layout_marginTop="40dp"
```

```
android:background="@color/design_default_color_on_primary"

android:backgroundTint="@android:color/holo_blue_bright"
android:text="Click Here to Take Selfi" />

   <ImageView
      android:id="@+id/imageViewCA"
android:layout_width="match_parent"
android:layout_height="350dp"
android:layout_alignParentStart="true"
android:layout_alignParentLeft="false"
android:layout_alignParentTop="false"
android:layout_alignParentEnd="true"
android:layout_marginStart="0dp"
android:layout_marginTop="50dp"
android:layout_marginEnd="1dp"
tools:srcCompat="@tools:sample/avatars" />
    <Button
      android:id="@+id/buttonCA2"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_below="@+id/buttonCA"
android:layout_alignParentStart="true"
android:layout_alignParentEnd="false"
android:layout_marginTop="50dp"
      android:backgroundTint="@android:color/holo_purple"
android:text="Back to Menu" />
   </RelativeLayout>
</ScrollView>
```

Camera.java

```
package com.example.MultipurposeApp;

import android.content.Intent; import android.graphics.Bitmap; import
android.os.Bundle; import android.provider.MediaStore; import
android.view.View; import android.widget.Button; import
android.widget.ImageView; import android.widget.Toast;

import androidx.annotation.Nullable;
import androidx.appcompat.app.AppCompatActivity;

public class Camera extends AppCompatActivity {

    Button b1,b2;
    ImageView i1;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_camera);
        getWindow().setBackgroundDrawableResource(R.drawable.cp);
b1=(Button)findViewById(R.id.buttonCA);
b2=(Button)findViewById(R.id.buttonCA2);
i1=(ImageView)findViewById(R.id.imageViewCA);
b2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent j= new Intent(Camera.this,Menu.class);
startActivity(j);                finish();
            }        });
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent i= new
Intent(MediaStore.ACTION_IMAGE_CAPTURE);
startActivityForResult(i,10);
            }
        });
```

```
    }

    @Override
    protected void onActivityResult(int requestCode, int resultCode,
@Nullable
@org.jetbrains.annotations.Nullable Intent data) {
super.onActivityResult(requestCode, resultCode, data);
if(requestCode==10){
            Bitmap bp=(Bitmap)data.getExtras().get("data");
i1.setImageBitmap(bp);
        }else {
            Toast.makeText(Camera.this, "Not Capture Photo",
Toast.LENGTH_SHORT).show();
        }
    }
}
```

Activity_music.xml


```
<?xml version="1.0" encoding="utf-8"?>
<ScrollView
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"     tools:context=".Music">
<RelativeLayout      android:layout_width="match_parent"
android:layout_height="match_parent">
   <Button
       android:id="@+id/buttonM"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_alignParentStart="true"
android:layout_alignParentLeft="false"
android:layout_alignParentTop="true"
android:layout_alignParentEnd="false"
android:layout_centerHorizontal="false"
android:layout_marginTop="50dp"
android:layout_marginEnd="0dp"
```

```
android:backgroundTint="@android:color/holo_orange_light"
android:text="Play Song" />
   <Button
      android:id="@+id/buttonM2"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_below="@+id/imageViewM"
android:layout_alignParentStart="false"
android:layout_marginTop="40dp"

android:backgroundTint="@android:color/holo_orange_light"
android:text="Stop Song" />

   <ImageView
      android:id="@+id/imageViewM"
android:layout_width="416dp"        android:layout_height="291dp"
android:layout_below="@+id/buttonM"
android:layout_alignParentStart="true"
android:layout_alignParentEnd="true"
android:layout_marginTop="40dp"
app:srcCompat="@drawable/mu" />
    <Button
      android:id="@+id/buttonM3"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_below="@+id/buttonM2"
android:layout_alignParentStart="true"
android:layout_marginStart="0dp"
android:layout_marginTop="30dp"
android:backgroundTint="@color/purple_200"        android:text="Back
to Menu" />
   </RelativeLayout>

</ScrollView>
```

Music.java

```
package com.example.MultipurposeApp;

import android.content.Intent; import android.media.MediaPlayer; import
android.os.Bundle; import android.view.View; import
android.widget.Button; import android.widget.ImageView;

import androidx.appcompat.app.AppCompatActivity;

public class Music extends AppCompatActivity {
    Button b1,b2,b3;
    MediaPlayer m1;
    ImageView i1;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_music);
getWindow().setBackgroundDrawableResource(R.drawable.mp);
b1=(Button)findViewById(R.id.buttonM);
b2=(Button)findViewById(R.id.buttonM2);
b3=(Button)findViewById(R.id.buttonM3);
i1=(ImageView)findViewById(R.id.imageViewM);
m1=MediaPlayer.create(this,R.raw.a);
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {               m1.start();
                i1.setImageResource(R.drawable.a);
            }       });
        b2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {               m1.pause();
                i1.setImageResource(R.drawable.mu);
            }       });
        b3.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                m1.pause();
```

```
            Intent i= new Intent(Music.this,Menu.class);
startActivity(i);            finish();
        }
      });
   }
}
```

CHAPTER - 6

TESTING

Once source code has been generated, software must be tested to uncover as many errors as possible before delivery. It is very important to work the system successfully and achieve high quality of software. Testing include designing a series of test cases that have a high likelihood of finding errors by applying software-testing techniques.

System testing makes logical assumptions that if all the parts of the system are correct, the goal will be successfully achieved. The system should be checked logically. Validations and cross checks should be there. Avoid duplications of record that cause redundancy of data.

In other Words, Testing is the process of evaluating a system or its component(s) with the intent to find whether it satisfies the specified requirements or not. It is executing a system in order to identify any gaps, errors, or missing requirements in contrary to the actual requirements.

The Android framework includes an integrated testing framework that helps you test all aspects of your 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 tools help you set up and run your tests within an emulator or the device you are targeting.

There are different types of testing some of them are listed below:

6.1 Installation Testing:

There are two types of apps on an Android device i.e., Pre-installed applications and the applications which are installed later by the user.

For both of the above, installation testing is carried out by our teammates. It is ensuring smooth installation of the application without ending up in errors, partial installation etc.

6.2 Unit Testing

It focuses on smallest unit of software design. In this we test an individual unit or groups of inter related units. It is often done by programmer by using sample input and observing its corresponding outputs. In this testing technique we are primarily focuses on

- Loop methods and function is working fine or not. Misunderstood or incorrect Arithmetic precedence
- Incorrect Initialization

Unit Testing of the app:

Test cases	**Description**	**Expected Outcome**	**Result**
1	Start Page – Launch Screen	Should display splash screen with animated text	Pass

2	Register Screen	Should display register activity where you need to fill the required details	Pass

3	Login Screen	Should display login screen And ask for your credentials.	Pass

4	Dashboard	Show all Functionalites	Pass
5	FAQ	Should display the Frequently asked question	Pass

6	Bluetooth	Allow user to share files by directly turn ON/Off bluetooth	Pass

7	Flash	Turn ON/OFF Flash Light	Pass
8	Calculator	To perform Calculations	Pass
9	Login with OTP	Should allow user to login with phone number using otp	Pass

10	Login with Gmail	Should allow user to login with gmail account	Pass
11	Guest Login	Should allow user to use app without login credentials	Pass
12	Camera	Allow user to click Pics	Pass
13	Music	Allow user to Play Favourites Tunes.	Pass

14	Logout	Sign out you from the app	Pass

Table 1: Unit Testing of Multipurpose App

6.3 User Testing

User testing is the process through which the interface and functions of a website, app, product, or service are tested by real users who perform specific tasks in realistic conditions. The purpose of this process is to evaluate the usability of that website or app and to decide whether the product is ready to be launched for real users.

This app was tested by our team mates and friends who are using different mobile phones (and having different android version) also tested on different emulator to check its performance and it seems to be working fine and users of this app are satisfied with the facilities and performance of the app and like the way how the app is worked.

6.4 Performance Testing

In this type of testing we have checked the performances of our application under some peculiar conditions are checked. Those conditions include:

- Low memory in the device.
- The battery in extremely at a low level.
- Poor/Bad network reception.

Performance is basically tested from 2 ends, application end, and the application server end. Our app is also performing well in this phase of testing as well. And we are getting positive feedback from user of our app.

6.5 Compability Testing

This application was tested and used on different devices like LG G3, Google Nexus 4. The application worked fine and is stable. The application worked fine in portrait mode and there isn't any problem with compatibility.

On all types of testing (that we have performed above) our performing well on our app i.e. Multipurpose App.

CHAPTER -7
CONCLUSION

A person has 50+ apps on the phone including the pre-installed apps you cannot delete. Out of which the apps you use on a regular basis are probably somewhere around 25-30 max.

Apparently, there are no good reasons to keep those apps installed but here are some more ‘no good reasons’ to help you uninstall those apps:

• It’s a no brainer that devices with apps stuffed in it lack performance.

• Your battery drains faster than you were promised by the device manufacturer.

• To avoid the chaos of using multiple apps for different requirements.

• It is very difficult to manage ‘n’ no. of apps in your device without putting extra load on the phone. Not everyone has a phone with bigger RAM!

• With the introduction of multipurpose apps, single-purpose apps lost a huge chunk of its users. Including all the above reasons and considering the busy schedules our day is occupied with.

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