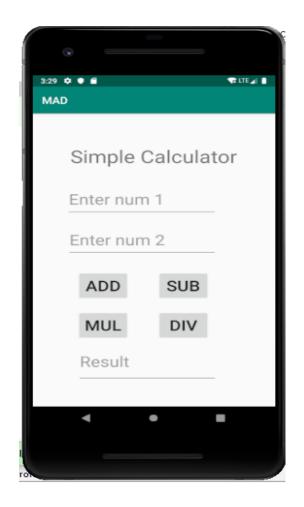
1. SIMPLE CALCULATOR (Buttons)

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout</pre>
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">
<TextView
android:id="@+id/textView"
android:layout width="329dp"
android:layout height="107dp"
android: gravity="center"
android:text="Simple Calculator"
android: textSize="36sp"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout_constraintVertical_bias="0.068" />
<EditText
android:id="@+id/t1"
android:layout width="255dp"
android:layout height="69dp"
android:ems="10"
android:inputType="textPersonName"
android:hint="Enter num 1"
android: textSize="30sp"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.371"
app:layout constraintStart toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout constraintVertical bias="0.265" />
<EditText
android:id="@+id/t2"
android:layout width="254dp"
android:layout height="68dp"
android: ems="10"
android:inputType="textPersonName"
android:hint="Enter num 2"
android: textSize="30sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.375"
app:layout_constraintStart_toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout_constraintVertical_bias="0.422" />
android: id="@+id/addbtn"
android:layout width="wrap content"
android:layout height="wrap content"
android:text="ADD"
android: textSize="30sp"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.235"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout constraintVertical bias="0.596" />
android:id="@+id/subbtn"
android:layout width="wrap content"
android:layout height="wrap content"
android:text="SUB"
android: textSize="30sp"
app:layout constraintBottom toBottomOf="parent"
```

```
app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.656"
app:layout constraintStart toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout constraintVertical bias="0.596" />
<Button
android:id="@+id/mulbtn"
android:layout width="wrap content"
android: layout height="wrap content"
android:text="MUL"
android: textSize="30sp"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.235"
app:layout constraintStart toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout_constraintVertical bias="0.746" />
<Button
android:id="@+id/divbtn"
android:layout width="wrap content"
android: layout height="wrap content"
android:text="DIV"
android: textSize="30sp"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.656"
app:layout_constraintStart_toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout constraintVertical bias="0.746" />
<EditText
android:id="@+id/res"
android:layout width="237dp"
android:layout height="85dp"
android: ems="10"
android:inputType="textPersonName"
android:hint="Result"
android:textSize="30sp"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.439"
app:layout constraintStart toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout constraintVertical bias="0.903" />
</androidx.constraintlayout.widget.ConstraintLayout>
```



package com.example.mad;

```
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
public class MainActivity extends AppCompatActivity
{ EditText t1,t2,res;
  Button addbtn, subbtn, mulbtn, divbtn;
@Override
protected void onCreate(Bundle savedInstanceState)
  { super.onCreate(savedInstanceState);
    setContentView(R.layout.activity main);
t1 = (EditText) findViewById(R.id.t1);
t2 = (EditText) findViewById(R.id.t2);
res = (EditText) findViewById(R.id.res);
addbtn = (Button) findViewById(R.id.addbtn);
subbtn = (Button) findViewById(R.id.subbtn);
mulbtn = (Button) findViewById(R.id.mulbtn);
divbtn = (Button) findViewById(R.id.divbtn);
```

import androidx.appcompat.app.AppCompatActivity;

```
addbtn.setOnClickListener(new View.OnClickListener()
     { @Override
public void onClick(View v) {
          String v1 = t1.getText().toString();
          String v2 = t2.getText().toString();
int a = Integer.parseInt(v1);
int b = Integer.parseInt(v2);
int c = a + b;
res.setText("Result =" + c); }
     });
subbtn.setOnClickListener(new View.OnClickListener()
     { @Override
public void onClick(View v) {
          String v1 = t1.getText().toString();
          String v2 = t2.getText().toString();
int a = Integer.parseInt(v1);
int b = Integer.parseInt(v2);
int c = a - b:
res.setText("Result =" + c); }
     });
mulbtn.setOnClickListener(new View.OnClickListener()
     { @Override
public void onClick(View v) {
          String v1 = t1.getText().toString();
          String v2 = t2.getText().toString();
int a = Integer.parseInt(v1);
int b = Integer.parseInt(v2);
int c = a * b;
res.setText("Result =" + c); }
     });
divbtn.setOnClickListener(new View.OnClickListener()
{@Override
public void onClick(View v) {
          String v1 = t1.getText().toString();
          String v2 = t2.getText().toString();
int a = Integer.parseInt(v1);
int b = Integer.parseInt(v2);
int c = a / b;
res.setText("Result =" + c); }
     });
```

2. Business Application

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout</pre>
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">
<TextView
android:id="@+id/t1"
android:layout width="329dp"
android:layout height="107dp"
android: gravity="center"
android:text="BOOK HUB"
android: textSize="36sp"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout constraintVertical bias="0.068" />
<ImageView</pre>
android:id="@+id/imageView3"
android:layout width="253dp"
android:layout_height="188dp"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.436"
app:layout constraintStart toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout_constraintVertical_bias="0.331"
app:srcCompat="@drawable/a" />
<TextView
android:id="@+id/textView2"
android:layout width="195dp"
android:layout height="104dp"
android:text="DESCRIPTION: -----
                                    app:layout_constraintBottom_toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.134"
app:layout_constraintStart_toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout constraintVertical bias="0.649" />
<TextView
android:id="@+id/textView3"
android:layout width="174dp"
android:layout height="66dp"
android:text="CONTACT NO:- 123456789"
android: textSize="24sp"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.797"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout constraintVertical bias="0.79" />
<TextView
android:id="@+id/t2"
android:layout width="282dp"
android:layout height="52dp"
android:text="Check website ....."
android: textSize="24sp"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
```

```
app:layout_constraintHorizontal_bias="0.751"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.895" />
```



import android.net.Uri; import android.support.v7.app.AppCompatActivity; import android.os.Bundle; import android.view.View; import android.widget.*; public class MainActivityextends AppCompatActivity { TextView t1; @Override protected void onCreate(Bundle savedInstanceState) { super.onCreate(savedInstanceState); setContentView(R.layout.activity_hello_world);

tv1.setOnClickListener(new View.OnClickListener()

t1=(TextView)findViewById(R.id.t1);

{ @Override

public void onClick(View v) {

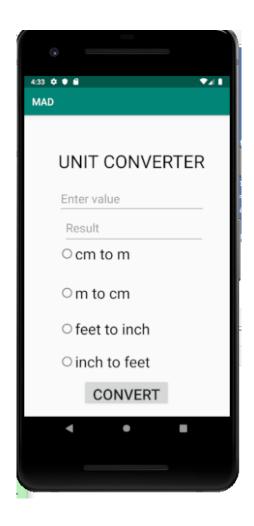
package com.example.user.mad;

import android.content.Intent;

3. UNIT CONVERTER (Radio Buttons)

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout</pre>
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">
<TextView
android:id="@+id/textView"
android:layout width="329dp"
android:layout height="107dp"
android: gravity="center"
android:text="UNIT CONVERTER"
android:textColor="#0A0A0A"
android:textSize="36sp"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.621"
app:layout constraintStart toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout constraintVertical bias="0.076" />
<EditText
android:id="@+id/t1"
android:layout width="292dp"
android:layout height="56dp"
android: ems="10"
android:inputType="textPersonName"
android:hint="Enter value"
android: textSize="24sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout_constraintHorizontal_bias="0.588"
app:layout_constraintStart_toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout_constraintVertical_bias="0.254" />
<EditText
android:id="@+id/res"
android:layout width="280dp"
android:layout height="60dp"
android:ems="10"
android:inputType="textPersonName"
android:hint="Result"
android:textSize="24sp"
app:layout constraintBottom toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout constraintHorizontal bias="0.608"
app:layout constraintStart toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout constraintVertical bias="0.36" />
```

```
<RadioGroup
android: id="@+id/radioGroup"
android:layout width="295dp"
android:layout height="299dp"
app:layout constraintBottom toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.603"
app:layout constraintStart toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout constraintVertical bias="0.773">
<RadioButton
android:id="@+id/r1"
android:layout width="match parent"
android:layout_height="83dp"
android:text="cm to m"
android:textSize="30sp" />
<RadioButton
android:id="@+id/r2"
android:layout width="match_parent"
android:layout height="74dp"
android:text="m to cm"
android:textSize="30sp" />
<RadioButton
android:id="@+id/r3"
android:layout_width="match_parent"
android:layout height="70dp"
android:text="feet to inch"
android:textSize="30sp" />
< Radio Button
android:id="@+id/r4"
android:layout width="match parent"
android:layout height="62dp"
android:text="inch to feet"
android:textSize="30sp" />
</RadioGroup>
<Button
android:id="@+id/btn"
android:layout width="173dp"
android:layout height="52dp"
android: text="CONVERT"
android: textSize="30sp"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.498"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout constraintVertical bias="0.959" />
```



package com.example.mad;

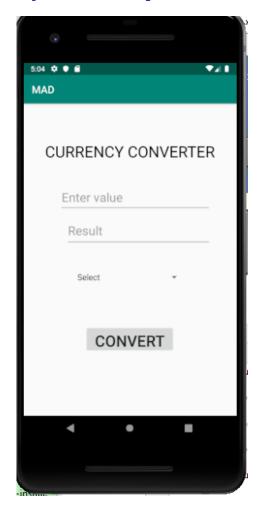
```
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.RadioButton;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity
{ EditText t1,res;
  RadioButton r1,r2,r3,r4;
  Button btn;
@Override
protected void onCreate(Bundle savedInstanceState)
  { super.onCreate(savedInstanceState);
    setContentView(R.layout.activity main);
t1=(EditText)findViewById(R.id.t1);
res=(EditText)findViewById(R.id.res);
r1=(RadioButton)findViewById(R.id.r1);
```

```
r2=(RadioButton)findViewById(R.id.r2);
r3=(RadioButton)findViewById(R.id.r3):
r4=(RadioButton)findViewById(R.id.r4);
btn=(Button)findViewById(R.id.btn);
btn.setOnClickListener(new View.OnClickListener()
     { @Override
public void onClick(View v)
       { String a=t1.getText().toString();
float aa=Float.parseFloat(a);
float c;
if(r1.isChecked())
         \{ c=aa/100;
res.setText("Result ="+c);
else if(r2.isChecked())
         \{ c=aa*100;
res.setText("Result ="+c);
else if(r3.isChecked())
         { c=aa*12;
res.setText("Result ="+c);
else if(r4.isChecked())
         \{ c=aa/12;
res.setText("Result ="+c);
else {
           Toast.makeText(MainActivity.this, "Choose any one radio button",
Toast.LENGTH_SHORT).show();
    });
  }
```

4. CURRENCY CONVERTER (Spinner)

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout</pre>
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">
<TextView
android:id="@+id/textView"
android:layout width="421dp"
android:layout height="106dp"
android:gravity="center"
android:text="CURRENCY CONVERTER"
android: textColor="#0A0A0A"
android:textSize="30sp"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout_constraintVertical_bias="0.078" />
<EditText
android:id="@+id/t1"
android:layout width="292dp"
android:layout height="56dp"
android: ems="10"
android:hint="Enter value"
android:inputType="textPersonName"
android: textSize="24sp"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.588"
app:layout constraintStart toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout constraintVertical bias="0.28" />
<EditText
android:id="@+id/res"
android:layout width="280dp"
android:layout height="60dp"
android:ems="10"
android:hint="Result"
android:inputType="textPersonName"
android:textSize="24sp"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.625"
app:layout constraintStart toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout constraintVertical bias="0.396" />
<Button
android:id="@+id/btn"
android:layout width="173dp"
android:layout height="52dp"
android: text="CONVERT"
android:textSize="30sp"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintStart toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout constraintVertical bias="0.777" />
<Spinner</pre>
android:id="@+id/s1"
android:layout_width="219dp"
android:layout_height="102dp"
android:entries="@array/app name"
app:layout_constraintBottom_toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintStart toStartOf="parent"
```

```
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.567" />
```



package com.example.mad;

```
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.RadioButton;
import android.widget.Spinner;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity
{ EditText t1,res;
  Spinner $1;
  Button btn;
@Override
protected void onCreate(Bundle savedInstanceState)
  { super.onCreate(savedInstanceState);
    setContentView(R.layout.activity main);
```

```
t1=(EditText)findViewById(R.id.t1);
res=(EditText)findViewById(R.id.res);
s1=(Spinner)findViewById(R.id.s1);
btn=(Button)findViewById(R.id.btn);
btn.setOnClickListener(new View.OnClickListener()
    { @Override
public void onClick(View v)
       { String v1=t1.getText().toString();
int a=Integer.parseInt(v1);
int x=s1.getSelectedItemPosition();
double num1=0;
if(x==1)
         \{ num1=a/71.99; 
res.setText("Result ="+num1);
else if(x==2)
         \{ num1=a*71.99; 
res.setText("Result ="+num1);
else if(x==3)
         \{ num1=a/0.68; 
res.setText("Result ="+num1);
else if(x==4)
         \{ num1=a*0.68; 
res.setText("Result ="+num1);
else
{ Toast.makeText(MainActivity.this, "Choose any", Toast.LENGTH SHORT).show(); }
    });
 }
res->values->string.xml
<resources>
<string name="app_name"> MAD </string>
<string-array name="app name">
<item>Select</item>
```

```
<item>Rupee to Dollor</item>
<item>Dollor to Rupee</item>
<item>Rupee to Yen</item>
<item>yen to Rupee</item>
</string-array>
</resources>
```

5. TOURIST SPOT (Implict Intents)

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout</pre>
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">
<TextView
android:id="@+id/textView"
android:layout_width="188dp"
android:layout height="55dp"
android:gravity="center"
android: text="INDIA"
android:textColor="#0A0A0A"
android: textSize="30sp"
app:layout constraintBottom toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.497"
app:layout constraintStart toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout constraintVertical bias="0.023" />
<ImageView</pre>
android:id="@+id/ig1"
android:layout_width="166dp"
```

```
android:layout height="110dp"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.497"
app:layout constraintStart toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.186"
app:srcCompat="@drawable/ig1" />
<ImageView</pre>
android:id="@+id/ig3"
android:layout width="167dp"
android:layout height="98dp"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.495"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout constraintVertical bias="0.434"
app:srcCompat="@drawable/ig2" />
<ImageView</pre>
android:id="@+id/ig4"
android:layout width="179dp"
android:layout height="123dp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout_constraintHorizontal_bias="0.525"
app:layout_constraintStart_toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout constraintVertical bias="0.713"
app:srcCompat="@drawable/ig3" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

package com.example.mad;

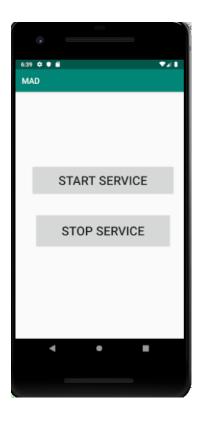


```
import android.content.Intent;
import android.net.Uri;
import android.os.Bundle;
import android.view.View;
import android.widget.ImageView;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity
{ ImageView ig1,ig2,ig3;
@Override
protected void onCreate(Bundle savedInstanceState)
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity main);
ig1= (ImageView) findViewById(R.id.ig1);
ig2=(ImageView) findViewById(R.id.ig2);
ig3=(ImageView) findViewById(R.id.ig3);
ig1.setOnClickListener(new View.OnClickListener()
          @Override
public void onClick(View v) {
            Toast.makeText(MainActivity.this, "Agra UP", Toast.LENGTH_SHORT).show();
```

```
String url="https://en.wikipedia.org/agra";
            Intent i1=new Intent(Intent.ACTION VIEW, Uri.parse(url));
            startActivity(i1);
        }
        });
ig2.setOnClickListener(new View.OnClickListener()
           @Override
public void onClick(View v) {
            Toast.makeText(MainActivity.this, "Gateway of India", Toast.LENGTH SHORT).show();
            String url="https://en.wikipedia.org/wiki/gateway of india";
            Intent i2=new Intent(Intent.ACTION VIEW, Uri.parse(url));
            startActivity(i2);
        });
ig3.setOnClickListener(new View.OnClickListener()
          @Override
public void onClick(View v) {
            Toast.makeText(MainActivity.this, "charminar", Toast.LENGTH SHORT).show();
            String url=" https://en.wikipedia.org/wiki/charminar";
            Intent i3=new Intent(Intent.ACTION_VIEW, Uri.parse(url));
            startActivity(i3);
        });
    }
```

6. Music in Background

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout</pre>
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">
<Button
android:id="@+id/btnStart"
android:layout width="351dp"
android:layout height="76dp"
android:text="Start Service"
android: textSize="30sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.65"
app:layout constraintStart toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout constraintVertical bias="0.337" />
<Button
android:id="@+id/btnStop"
android:layout width="333dp"
android:layout height="86dp"
android:text="Stop Service"
android: textSize="30sp"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.615"
app:layout constraintStart toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout constraintVertical bias="0.572" />
</androidx.constraintlayout.widget.ConstraintLayout>
```



```
package com.example.mad;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import androidx.appcompat.app.AppCompatActivity;
import com.example.mad.MediaService;
import com.example.mad.R;
public class MainActivity extends AppCompatActivity implements View.OnClickListener
   private Button bStart;
private Button bStop;
@Override
protected void onCreate(Bundle savedInstanceState)
       super.onCreate(savedInstanceState);
        setContentView(R.layout.activity main);
bStart = (Button) findViewById(R.id.btnStart);
bStop = (Button) findViewById(R.id.btnStop);
bStart.setOnClickListener(this);
bStop.setOnClickListener(this);
@Override
public void onClick(View view)
        if (view == bStart)
        { startService(new Intent(this, MediaService.class)); }
else if (view == bStop)
        { stopService(new Intent(this, MediaService.class)); }
```

Create a new Empty Activity - MediaService

```
package com.example.mad;
import android.app.Service;
import android.content.Intent;
import android.media.MediaPlayer;
import android.os.IBinder;
import android.provider.Settings;
import androidx.annotation.Nullable;
public class MediaService extends Service
private MediaPlayer player;
@Nullable
    @Override
public IBinder onBind(Intent intent)
    { return null; }
@Override
public int onStartCommand(Intent intent, int flags, int startId)
    { //getting systems default ringtone
player = MediaPlayer.create(this, Settings.System.DEFAULT RINGTONE URI);
// player = MediaPlayer.create(this,R.raw.song3);
player.setLooping(true);
 //staring the player
player.start();
//start sticky means service will be explicity started and stopped
return START STICKY;
   }
@Override
public void onDestroy()
    { super.onDestroy();
//stopping the player when service is destroyed
player.stop();
in Manifest folder
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"</pre>
package="com.example.mad">
<application
android:allowBackup="true"
android:icon="@mipmap/ic_launcher"
android:label="@string/app name"
android:roundIcon="@mipmap/ic launcher round"
android:supportsRtl="true"
android: theme="@style/AppTheme">
<activity android:name=".MediaService"></activity>
<activity android:name=".MainActivity">
<intent-filter>
<action android:name="android.intent.action.MAIN" />
<category android:name="android.intent.category.LAUNCHER" />
</intent-filter>
</activity>
<service android:name=".MediaService" />
</application>
</manifest>
Note: Everything will come automatically, except <service android:name=".MediaService" />
```

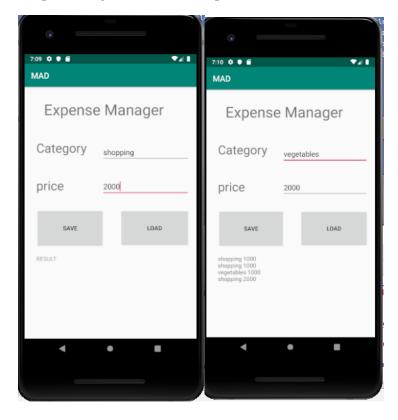
Check and Add this line

7. Expense Manager (Files)

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout</pre>
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">
<TextView
android:id="@+id/textView"
android:layout_width="316dp"
android:layout height="70dp"
android:text="Expense Manager"
android: textSize="36sp"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout_constraintHorizontal bias="0.494"
app:layout constraintStart toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout_constraintVertical_bias="0.054" />
<TextView
android:id="@+id/textView2"
android:layout width="142dp"
android: layout_height="63dp"
android:text="Category"
android:textSize="30sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.107"
```

```
app:layout constraintStart toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout constraintVertical bias="0.232" />
<TextView
android:id="@+id/textView3"
android:layout width="142dp"
android:layout height="58dp"
android: text="price"
android:textSize="30sp"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.107"
app:layout constraintStart toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout constraintVertical bias="0.395" />
<EditText
android:id="@+id/et cat"
android:layout width="wrap content"
android: layout height="wrap_content"
android:ems="10"
android:inputType="textPersonName"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.919"
app:layout constraintStart toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical bias="0.24" />
<EditText
android:id="@+id/et price"
android:layout width="wrap content"
android:layout height="wrap content"
android: ems="10"
android:inputType="textPersonName"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout_constraintHorizontal_bias="0.919"
app:layout_constraintStart_toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout_constraintVertical_bias="0.387" />
<Button
android:layout width="162dp"
android:layout height="93dp"
android: text="SAVE"
android:onClick="save"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.116"
app:layout constraintStart toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout constraintVertical bias="0.572" />
<But.ton
android:id="@+id/button2"
android:layout_width="166dp"
android:layout height="91dp"
android: text="LOAD"
android:onClick="load"
app:layout constraintBottom toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout constraintHorizontal bias="0.934"
app:layout constraintStart toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.57" />
<TextView
android:id="@+id/tv output"
android:layout width="186dp"
android:layout_height="79dp"
android:hint="RESULT"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
```

```
app:layout_constraintHorizontal_bias="0.128"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.766" />
```



```
package com.example.mad;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.TextView;
import java.io.BufferedReader;
import java.io.FileInputStream;
import java.io.FileNotFoundException;
import java.io.FileOutputStream;
import java.io.InputStreamReader;
public class MainActivity extends AppCompatActivity
    String s1, s2;
    EditText et1, et2;
   TextView tv1;
@Override
protected void onCreate(Bundle savedInstanceState)
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity main);
et1=(EditText)findViewById(R.id.et_cat);
et2=(EditText)findViewById(R.id.et price);
tv1=(TextView)findViewById(R.id.tv_output);
public void save (View view)
   { s1 = et1.getText().toString();
s2 = s1+ " "+et2.getText().toString()+"\n";
FileOutputStream fos = openFileOutput("file1.txt", MODE APPEND);
            fos.write(s2.getBytes());
catch (FileNotFoundException e)
```

```
{ e.printStackTrace(); }
catch (Exception e)
       { e.printStackTrace(); }
public void load (View v)
    { try
    FileInputStream fis = openFileInput("file1.txt");
            InputStreamReader isr = new InputStreamReader(fis);
            BufferedReader br = new BufferedReader(isr);
            StringBuilder sb = new StringBuilder();
            String text;
while ((text=br.readLine())!= null)
            { sb.append(text);
                sb.append("\n");
tv1.setText (sb.toString());
catch (FileNotFoundException e)
        { e.printStackTrace(); }
catch (Exception e)
        { e.printStackTrace(); }
}
```

NOTE: here onclick of button is registered in XML Code

8. Health Monitoring (Database)

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout</pre>
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">
<TextView
android:id="@+id/textView"
android:layout width="316dp"
android:layout height="70dp"
android:text="Health Monitor"
android: textSize="36sp"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.494"
app:layout_constraintStart_toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout constraintVertical bias="0.083" />
<TextView
android:id="@+id/textView2"
android:layout_width="142dp"
android:layout height="63dp"
android:text="Name"
android:textSize="30sp"
app:layout constraintBottom toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout constraintHorizontal bias="0.107"
```

```
app:layout constraintStart toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout constraintVertical bias="0.232" />
<TextView
android:id="@+id/textView3"
android:layout width="142dp"
android:layout height="58dp"
android: text="Age"
android: textSize="30sp"
app:layout constraintBottom toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout constraintHorizontal bias="0.107"
app:layout constraintStart toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout constraintVertical bias="0.343" />
<EditText
android:id="@+id/et name"
android:layout width="wrap content"
android:layout height="wrap content"
android:ems="10"
android:inputType="textPersonName"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.919"
app:layout constraintStart toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical bias="0.24" />
<EditText
android:id="@+id/et age"
android:layout width="wrap content"
android:layout_height="wrap_content"
android: ems="10"
android:inputType="textPersonName"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout_constraintHorizontal_bias="0.964"
app:layout_constraintStart_toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout_constraintVertical_bias="0.355" />
<TextView
android:id="@+id/textView5"
android:layout width="134dp"
android:layout height="41dp"
android:text="HB Level"
android: textSize="30sp"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.104"
app:layout_constraintStart_toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout constraintVertical bias="0.444" />
<TextView
android:id="@+id/textView6"
android:layout width="128dp"
android:layout height="86dp"
android:text="Blood Sugar"
android: textSize="30sp"
app:layout constraintBottom toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout constraintHorizontal bias="0.109"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout constraintVertical bias="0.561" />
<EditText
android:id="@+id/et hb"
android:layout width="wrap content"
android:layout height="wrap content"
android: ems="10"
android:inputType="textPersonName"
```

```
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.919"
app:layout_constraintStart_toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout constraintVertical bias="0.441" />
android:id="@+id/et sugar"
android:layout width="wrap content"
android:layout height="wrap content"
android: ems = "1\overline{0}"
android:inputType="textPersonName"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.919"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout constraintVertical bias="0.571" />
android:layout width="142dp"
android:layout height="53dp"
android: onClick="insert"
android: text="INSERT"
android: textSize="18sp"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout_constraintHorizontal bias="0.064"
app:layout constraintStart toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout constraintVertical bias="0.68" />
<But.ton
android:id="@+id/button2"
android:layout width="152dp"
android:layout_height="50dp"
android: onClick="report"
android: text="REPORT"
android:textSize="18sp"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.877"
app:layout constraintStart toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout constraintVertical bias="0.678" />
<TextView
android:id="@+id/tv report"
android:layout_width="304dp"
android:layout height="138dp"
android:hint="RESULT"
app:layout_constraintBottom_toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.439"
app:layout_constraintStart_toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout_constraintVertical_bias="0.919" />
</androidx.constraintlayout.widget.ConstraintLayout>
```



```
package com.example.mad;
import androidx.appcompat.app.AppCompatActivity;
import android.database.Cursor;
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity
   DatabaseHelper db;
   EditText name;
   EditText age;
   EditText hb;
   EditText sugar;
    TextView tv;
@Override
protected void onCreate(Bundle savedInstanceState)
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity main);
db = new DatabaseHelper(this);
name = (EditText) findViewById(R.id.et name);
age = (EditText) findViewById(R.id.et age);
hb = (EditText) findViewById(R.id.et_hb);
sugar = (EditText) findViewById(R.id.et sugar);
tv= (TextView) findViewById(R.id.tv_report);
public void insert (View view)
    { boolean status = db.insert(name.getText().toString(),
                Integer.parseInt(age.getText().toString()),
                Integer.parseInt(hb.getText().toString()),
                Integer.parseInt(sugar.getText().toString()));
    }
public void report(View view)
   { Cursor c = db.select();
if (c.getCount() ==0)
return;
        StringBuffer buf = new StringBuffer();
while (c.moveToNext())
            buf.append ("Name: "+c.getString(1));
            buf.append (" Age: "+c.getString(2));
            buf.append (" Hemoglobin: "+c.getString(3));
            buf.append (" Sugar: "+c.getString(4));
            buf.append("\n");
```

```
tv.setText(buf);
    }
 *public void cleartext (View view)
   { name.setText("");
age.setText("");
hb.setText("");
sugar.setText("");
    } * /
Create new empty activity – DatabaseHelper
package com.example.mad;
import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
public class DatabaseHelper extends SQLiteOpenHelper
    DatabaseHelper (Context context)
super(context, "Health.db", null, 1); }
@Override
public void onCreate (SQLiteDatabase sqLiteDatabase)
    { sqLiteDatabase.execSQL("CREATE TABLE LAB ( PATID integer PRIMARY KEY AUTOINCREMENT, PANAME
TEXT, AGE INTEGER, HM INTEGER, SUGAR INTEGER );");
    }
@Override
public void onUpgrade (SQLiteDatabase sqLiteDatabase, int i, int i1)
       sqLiteDatabase.execSQL("DROP TABLE IF EXISTS LAB ");
    {
        onCreate(sqLiteDatabase);
public boolean insert (String name, int age, int hb, int sug)
       SQLiteDatabase db = this.getWritableDatabase();
        ContentValues cv = new ContentValues();
        cv.put("PANAME", name);
        cv.put("AGE", age);
        cv.put("HM", hb);
        cv.put("SUGAR", sug);
long status = db.insert("LAB", null, cv);
if (status == -1)
return false:
else
            return true;
    }
public Cursor select()
    { SQLiteDatabase db = this.getWritableDatabase();
        Cursor cr = db.rawQuery("SELECT * FROM LAB", null);
return cr;
    }
                                               9. SMS
       <?xml version="1.0" encoding="utf-8"?>
       <androidx.constraintlayout.widget.ConstraintLayout</pre>
      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">
       <TextView
      android:id="@+id/textView"
      android:layout_width="93dp"
      android:layout height="55dp"
      android: text="SMS"
      android: textSize="36sp"
```

}

```
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.494"
app:layout_constraintStart_toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout constraintVertical bias="0.083" />
android:id="@+id/msg"
android:layout width="345dp"
android:layout height="59dp"
android: ems="10"
android:inputType="textPersonName"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.712"
app:layout constraintStart toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout constraintVertical bias="0.633" />
<Button
android:id="@+id/send"
android:layout_width="284dp"
android:layout height="112dp"
android:onClick="report"
android:text="Send Message"
android: textSize="30sp"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.496"
app:layout constraintStart toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout constraintVertical bias="0.862" />
<TextView
android:id="@+id/textView7"
android:layout width="159dp"
android:layout height="43dp"
android:text="Mobile No:"
android:textSize="30sp"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.156"
app:layout constraintStart toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout constraintVertical bias="0.28" />
<TextView
android:id="@+id/textView8"
android:layout width="147dp"
android:layout height="49dp"
android:text="Message: "
android: textSize="30sp"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout_constraintHorizontal_bias="0.152"
app:layout constraintStart toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout constraintVertical bias="0.526" />
<EditText
android:id="@+id/mb"
android:layout width="307dp"
android:layout_height="61dp"
android: ems="10"
android:inputType="phone"
app:layout_constraintBottom_toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.375"
app:layout constraintStart toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout_constraintVertical_bias="0.38" />
</androidx.constraintlayout.widget.ConstraintLayout>
```



```
package com.example.mad;
import android.Manifest;
import android.app.Activity;
import android.app.PendingIntent;
import android.content.BroadcastReceiver;
import android.content.Context;
import android.content.Intent;
import android.content.IntentFilter;
import android.content.pm.PackageManager;
import android.os.Bundle;
import android.telephony.SmsManager;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;
import androidx.core.content.ContextCompat;
public class MainActivity extends AppCompatActivity
   EditText etPhone, etMessage;
    Button btnSendSMS;
    PendingIntent sentPI, deliveredPI;
@Override
protected void onCreate(Bundle savedInstanceState)
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
etPhone = (EditText) findViewById(R.id.mb);
etMessage = (EditText) findViewById(R.id.msg);
btnSendSMS = (Button) findViewById(R.id.send);
btnSendSMS.setOnClickListener(new View.OnClickListener()
           @Override
       {
public void onClick(View v)
                String message = etMessage.getText().toString();
                String telNr = etPhone.getText().toString();
if (telNr.length() ==10)
                  if (ContextCompat.checkSelfPermission(MainActivity.this,
                {
                            Manifest.permission. SEND SMS) != PackageManager. PERMISSION GRANTED)
                        ActivityCompat.requestPermissions (MainActivity.this, new
String[]{Manifest.permission.SEND SMS}, 1);
                        Toast.makeText(getApplicationContext(), "SMS not sent!",
                                Toast. LENGTH SHORT) . show();
```

```
}
else {
                        SmsManager sms = SmsManager.getDefault();
                        sms.sendTextMessage(telNr, null, message, sentPI, deliveredPI);
                        Toast.makeText(getApplicationContext(), "SMS sent successfully!",
Toast. LENGTH SHORT) . show();
                    }
else
    Toast.makeText(getApplicationContext(), "SMS not sent !", Toast.LENGTH SHORT).show();
                    Toast.makeText(getApplicationContext(), "Enter 10 digit number !",
Toast. LENGTH SHORT) . show();
        });
    }
In manifest
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"</pre>
package="com.example.mad">
<uses-permission android:name="android.permission.SEND SMS" />
<application
android:allowBackup="true"
android:icon="@mipmap/ic launcher"
android:label="@string/app name"
android:roundIcon="@mipmap/ic_launcher_round"
android:supportsRtl="true"
android: theme="@style/AppTheme">
<activity android:name=".MainActivity">
<intent-filter>
<action android:name="android.intent.action.MAIN" />
<category android:name="android.intent.category.LAUNCHER" />
</intent-filter>
</activity>
</application>
</manifest>
```

Note: everything will be there automatically, check permission and add <uses-permission android:name="android.permission.SEND SMS"/>

10. Map

Step 1:- create a Google Map Activity (file -> new project -> google map activity)

Step 2:- in google map api.xml, click on first link

(https://console.developers.google.com/flows/enableapi?apiid=maps_android_backend&keyType= CLIENT_SIDE_ANDROID&r=E2:B7:D0:A1:8B:ED:EE:80:77:F8:A5:BC:13:B8:26:71:AD:D5:D9:DB%3Bcom.ex ample.mymap)

Or copy paste in browser

Step 3:- click on continue -> create API key -> copy the api key created

Step 4:- paste the key in google map api.xml

```
;#get-key

poogle_maps_key"

translatable="false">YOUR_KEY_HERE\\
</string>
```

Step 5:- Google, New Horizon College Latitude and Longitude

Step 6:- paste the latitude and longitude in MapsActivity.java

```
// Add a marker in Sydney and move the camera
LatLng sydney = new LatLng( v: 12.933453, v1: 77.691381);
mMap.addMarker(new MarkerOptions().position(sydney).title
mMap.moveCamera(CameraUpdateFactory.newLatLng(sydney));
```

Step 7:- save, build and run

