```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
  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" />
  <Button
    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" />
<Button
  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.myapplication;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import androidx.appcompat.app.AppCompatActivity;
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);
     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); }
    });
  }
}
EXP2 Small bussness app-----
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
  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" />
  <lmageView</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/download"/>
  <TextView
    android:id="@+id/textView2"
    android:layout_width="195dp"
     android:layout_height="104dp"
```

```
android:text="This is a discription"
     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" />
</androidx.constraintlayout.widget.ConstraintLayout>
package com.example.myapplication;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.content.Intent;
import android.net.Uri;
import android.view.View;
import android.widget.*;
public class MainActivity extends AppCompatActivity
  TextView t1;
  @Override
  protected void onCreate(Bundle savedInstanceState)
  { super.onCreate(savedInstanceState):
    setContentView(R.layout.activity_main);
    t1=(TextView)findViewById(R.id.t2);
    t1.setOnClickListener(new View.OnClickListener() {
```

```
@Override
       public void onClick(View v) {
         String url="https://books.google.com/";
         Intent i=new Intent(Intent.ACTION_VIEW,Uri.parse(url));
         startActivity(i);
       }
    });
  }
}
Exp 3 Visitting Card------
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/a</p>
ndroid"
  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/textView7"
    android:layout_width="303dp"
    android:layout_height="40dp"
    android:text="Bharath Group"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.388"
    app:layout_constraintStart_toStartOf="parent"
    app:layout constraintTop toTopOf="parent"
    app:layout_constraintVertical_bias="0.306" />
  <ImageView</pre>
    android:id="@+id/imageView3"
    android:layout_width="255dp"
    android:layout_height="163dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.423"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout constraintVertical bias="0.056"
    app:srcCompat="@drawable/download"/>
  <TextView
    android:id="@+id/textView2"
    android:layout width="303dp"
    android:layout_height="40dp"
    android:text="Name: BHARATH"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout constraintHorizontal bias="0.388"
```

```
app:layout constraintStart toStartOf="parent"
    app:layout constraintTop toTopOf="parent"
    app:layout constraintVertical bias="0.409" />
  <TextView
    android:id="@+id/textView3"
    android:layout width="303dp"
    android:layout_height="40dp"
    android:text="Disignation: -----"
    app:layout constraintBottom toBottomOf="parent"
    app:layout constraintEnd toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.388"
    app:layout constraintStart toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout constraintVertical bias="0.499" />
  <TextView
    android:id="@+id/textView4"
    android:layout width="303dp"
    android:layout height="40dp"
    android:text="Phone:1234567890"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout constraintEnd toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.388"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.602" />
  <TextView
    android:id="@+id/textView5"
    android:layout width="303dp"
    android:layout_height="40dp"
    android:text="Address:-----"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout constraintEnd toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.388"
    app:layout constraintStart toStartOf="parent"
    app:layout constraintTop toTopOf="parent"
    app:layout_constraintVertical_bias="0.7" />
  <TextView
    android:id="@+id/textView6"
    android:layout width="303dp"
    android:layout_height="40dp"
    android:text="Email:example@gmail.com"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.388"
    app:layout_constraintStart_toStartOf="parent"
    app:layout constraintTop toTopOf="parent"
    app:layout constraintVertical bias="0.78"/>
</androidx.constraintlayout.widget.ConstraintLayout>
```

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
  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" />
  <FditText
    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" />
     <RadioButton
       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" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

package com.example.myapplication; 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)findViewBvId(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();
       }
    });
  }
}
Exp 5 CURRENCY CONVERTER ( Spinner )------
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
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
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" />
</androidx.constraintlayout.widget.ConstraintLayout>
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 s1;
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>
```

Exp 6. LOGIN PAGE (Explict Intents)------

Develop an Android application using Explicit intent to display the login page. On giving the wrong credent ials it

should display the toast message and if credentials are correct it should display Welcome and the userna me.

```
Activity main.xml:
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
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/tv1"
android:layout_width="73dp"
android:layout height="30dp"
android:text="User Name"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.114"
app:layout constraintStart toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.237" />
<EditText
android:id="@+id/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="0.845"
app:layout constraintStart toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout constraintVertical bias="0.241"/>
<TextView
android:id="@+id/tv2"
android:layout_width="83dp"
android:layout height="45dp"
android:text="Password"
app:lavout constraintBottom toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.14"
app:layout constraintStart toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout constraintVertical bias="0.403" />
<EditText
android:id="@+id/pwd"
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="0.85"
app:layout constraintStart toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout_constraintVertical_bias="0.403" />
<Button
android:id="@+id/btn"
android:layout width="wrap content"
android:layout_height="wrap_content"
android:text="LOGIN"
app:layout constraintBottom toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout constraintHorizontal bias="0.399"
app:layout constraintStart toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout constraintVertical bias="0.549" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java: package com.example.loginpage; import androidx.appcompat.app.AppCompatActivity; 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 android.content.Intent;
public class MainActivity extends AppCompatActivity
EditText e1, e2;
TextView t1, t2;
Button btn:
@Override
protected void onCreate(Bundle savedInstanceState)
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
e1 = (EditText) findViewById(R.id.name);
e2 = (EditText) findViewById(R.id.pwd);
t1 = (TextView) findViewById(R.id.tv1);
t2 = (TextView) findViewById(R.id.tv2);
btn = (Button) findViewById(R.id.btn);
btn.setOnClickListener(new View.OnClickListener()
@Override
public void onClick(View view) {
if (e1.getText().toString().equals("bharath") &&
e2.getText().toString().equals("bharath"))
Toast.makeText(getApplicationContext(), "Login Success",
Toast.LENGTH_LONG).show();
Intent i1 = new Intent(getApplicationContext(), Welcome.class);
i1.putExtra("username", e1.getText().toString());
startActivity(i1);
} else
Toast.makeText(getApplicationContext(), "Login Failure",
Toast.LENGTH_LONG).show();
}
});
```

To create the other pair of xml and java file click on java folder on the right side goto mainactivity, right click -> New -> Activity -> Empty activity and give the filename same as the name you given in intent as a second parameter without the extension.

```
activity_welcome.xml:
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
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=".Welcome">
```

```
<TextView
android:id="@+id/tview"
android:layout width="wrap content"
android:layout_height="wrap_content"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintStart toStartOf="parent"
app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
Welcome.java:
package com.example.loginpage;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle:
import android.widget.TextView;
import android.widget.Toast;
public class Welcome extends AppCompatActivity {
@Override
protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_welcome);
Bundle b1 = getIntent().getExtras();
String s1 = b1.getString("username");
TextView tv1 = (TextView) findViewById(R.id.tview);
tv1.setText("Login Successfull Welcome:" + s1);
}
}
EXP 7. GALLERY AND DIAL (Implict Intents)------
Develop an Android application using Implicit intent to display the Gallery and Dial buttons. On clicking th
buttons, it should goto the respective pages.
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
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/gal"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Gallery"
app:layout constraintBottom toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout constraintTop toTopOf="parent"
```

app:layout constraintVertical bias="0.247" />

<EditText

```
android:id="@+id/et"
android:layout_width="247dp"
android:layout height="49dp"
android:ems="10"
android:hint="Enter Phone Number"
android:inputType="textShortMessage|textPersonName|textEmailAddress|phone"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.579"
app:layout constraintStart toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout_constraintVertical_bias="0.445" />
<Button
android:id="@+id/dial"
android:layout width="wrap content"
android:layout_height="wrap_content"
android:text="Dial"
app:layout_constraintBottom_toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintStart toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout_constraintVertical_bias="0.657" />
</androidx.constraintlayout.widget.ConstraintLayout>
package com.example.galleryanddial;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle:
import android.net.Uri;
import android.view.View;
import android.widget.*;
public class MainActivity extends AppCompatActivity {
EditText et:
Button dial, gal;
@Override
protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
et=(EditText) findViewById(R.id.et);
dial=(Button)findViewById(R.id.dial);
gal=(Button)findViewById(R.id.gal);
gal.setOnClickListener(new View.OnClickListener() {
@Override
public void onClick(View view) {
Intent i=new Intent();
i.setAction(Intent.ACTION_VIEW);
i.setData(Uri.parse("content://media/external/images/media/"));
startActivity(i);
}
dial.setOnClickListener(new View.OnClickListener() {
@Override
public void onClick(View view) {
Intent i = new Intent();
```

```
i.setAction(Intent.ACTION DIAL);
i.setData(Uri.parse("tel:"+et.getText()));
startActivity(i);
}
});
EXP 8. TOURIST SPOT (Explicit and Implict Intents) ------
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
  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
    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/ig2"
    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/ig3"
    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.myapplication;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.content.Intent:
import android.net.Uri;
import android.view.View;
import android.widget.ImageView;
import android.widget.Toast;
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);
    });
  }
EXP 9.Music in Background (Services)------
Develop an Android application to play music in background
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
  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.myapplication;
```

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

```
import android.content.Intent;
import android.view.View:
import android.widget.Button;
import com.example.myapplication.MediaService;
import com.example.myapplication.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:roundlcon="@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
Exp 10 Hospital database using files (Files )------
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/a
ndroid"
  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="Hospital Database"
    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="141dp"
  android:layout_height="62dp"
  android:text="Hospital id:"
  android:textSize="25sp"
  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="Name:"
  android:textSize="25sp"
  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" />
<TextView
  android:id="@+id/textView3a"
  android:layout width="142dp"
  android:layout_height="58dp"
  android:text="Location:"
  android:textSize="25sp"
  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="0.555" />
<EditText
  android:id="@+id/Hid"
  android:layout_width="214dp"
  android:layout_height="55dp"
  android:ems="10"
  android:inputType="textPersonName"
  app:layout constraintBottom toBottomOf="parent"
  app:layout_constraintEnd_toEndOf="parent"
  app:layout constraintHorizontal bias="0.918"
  app:layout_constraintStart_toStartOf="parent"
```

android:hint="id"

```
app:layout constraintTop toTopOf="parent"
  app:layout_constraintVertical_bias="0.229" />
<EditText
  android:id="@+id/Hname"
  android:layout_width="212dp"
  android:layout height="61dp"
  android:ems="10"
  android:hint="name"
  android:inputType="textPersonName"
  app:layout_constraintBottom_toBottomOf="parent"
  app:layout_constraintEnd_toEndOf="parent"
  app:layout constraintHorizontal bias="0.894"
  app:layout_constraintStart_toStartOf="parent"
  app:layout constraintTop toTopOf="parent"
  app:layout_constraintVertical_bias="0.397" />
<EditText
  android:id="@+id/Hlocation"
  android:layout width="209dp"
  android:layout_height="54dp"
  android:ems="10"
  android:hint="location"
  android:inputType="textPersonName"
  app:layout constraintBottom toBottomOf="parent"
  app:layout_constraintEnd_toEndOf="parent"
  app:layout_constraintHorizontal_bias="0.92"
  app:layout constraintStart toStartOf="parent"
  app:layout_constraintTop_toTopOf="parent"
  app:layout_constraintVertical_bias="0.564" />
<Button
  android:layout width="162dp"
  android:layout_height="93dp"
  android:onClick="save"
  android:text="SAVE"
  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="0.761" />
<Button
  android:id="@+id/button2"
  android:layout_width="166dp"
  android:layout_height="91dp"
  android:onClick="load"
  android:text="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="0.762" />

```
<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="0.071"
           app:layout constraintStart toStartOf="parent"
           app:layout constraintTop toTopOf="parent"
           app:layout_constraintVertical_bias="0.946" />
</androidx.constraintlayout.widget.ConstraintLayout>
package com.example.exp10;
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,et3;
     TextView tv1:
      @Override
      protected void onCreate(Bundle savedInstanceState)
     { super.onCreate(savedInstanceState);
           setContentView(R.layout.activity_main);
           et1=(EditText)findViewById(R.id.Hid);
           et2=(EditText)findViewById(R.id.Hname);
           et3=(EditText)findViewById(R.id.Hlocation);
           tv1=(TextView)findViewById(R.id.tv_output);
     public void save (View view)
     { s1 = et1.getText().toString();
           s2 = s1 + " + et2.getText().toString() + " + et3.getText().toString() + et3.getText() 
           try
           { 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(); }
}
Exp 11 Expense Manager (Files)------
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/a
ndroid"
  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:onClick="save"
  android:text="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" />
```

```
<Button
    android:id="@+id/button2"
    android:layout width="166dp"
    android:layout_height="91dp"
    android:onClick="load"
    android:text="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" />
</androidx.constraintlayout.widget.ConstraintLayout>
package com.example.myapplication;
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(); }
Exp 12 studdent database ------
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/a
ndroid"
  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="Student database"
     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="USN"
  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="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="0.343" />
<EditText
  android:id="@+id/Susn"
  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/Sname"
  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="Sem"
  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="150dp"
  android:layout height="59dp"
  android:text="Department"
  android:textSize="25sp"
  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/Ssem"
  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" />
<EditText
  android:id="@+id/Sdepartment"
  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="0.571" />
<Button
  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" />
  <Button
    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.myapplication;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.database.Cursor:
import android.view.View;
import android.widget.EditText;
import android.widget.TextView;
public class MainActivity extends AppCompatActivity
{ DatabaseHelper db;
  EditText usn;
  EditText name:
  EditText sem;
  EditText department;
  TextView tv;
  @Override
  protected void onCreate(Bundle savedInstanceState)
  { super.onCreate(savedInstanceState);
```

```
setContentView(R.layout.activity main);
    db = new DatabaseHelper(this);
    usn = (EditText) findViewById(R.id.Susn);
    name = (EditText) findViewById(R.id.Sname);
    sem = (EditText) findViewById(R.id.Ssem);
    department = (EditText) findViewById(R.id.Sdepartment);
    tv= (TextView)findViewById(R.id.tv_report);
  public void insert (View view)
  { boolean status = db.insert(usn.getText().toString(), name.getText().toString(), sem.getText().toString()
, department.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 ("USN: "+c.getString(1));
       buf.append (" Name: "+c.getString(2));
       buf.append (" Sem: "+c.getString(3));
       buf.append (" Department: "+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.myapplication;
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, "student.db",null,1); }
  @Override
  public void onCreate (SQLiteDatabase sqLiteDatabase)
  { sqLiteDatabase.execSQL("CREATE TABLE LAB ( STUID integer PRIMARY KEY AUTOINCREMENT
, USN TEXT, NAME TEXT, SEM TEXT, DEPART TEXT );");
  }
  @Override
  public void on Upgrade (SQLiteDatabase sqLiteDatabase, int i, int i1)
```

```
{ sqLiteDatabase.execSQL("DROP TABLE IF EXISTS LAB ");
    onCreate(sqLiteDatabase);
  }
  public boolean insert (String usn, String name, String sem, String department)
  { SQLiteDatabase db = this.getWritableDatabase();
    ContentValues cv = new ContentValues();
    cv.put("USN", usn);
    cv.put("NAME", name);
    cv.put("SEM",sem);
    cv.put("DEPART",department);
    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;
  }
}
Exp 13 Health Monitoring -----
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/a
ndroid"
  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" />
<EditText
  android:id="@+id/et sugar"
  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="0.571"/>
<Button
  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" />
  <Button
    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.myapplication;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.database.Cursor;
import android.view.View;
import android.widget.EditText;
import android.widget.TextView;
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(age.getText()), Integer.parseInt(age.getText()), Integer.parseInt(age.getText()), Integer.parseInt(age.getText()), Integer.parseInt(age.getText()), Integer.parseInt(age.getText()), Integer.parseInt(age.getText()), Integer.parseInt(age.getText()), Integer.pa
r.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.myapplication;
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 on Upgrade (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:
  }
}
Exp 14 SMS Application -----
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/a
ndroid"
  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" />
  <EditText
    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"
```

```
<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.myapplication;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle:
import android. Manifest;
import android.app.PendingIntent;
import android.content.pm.PackageManager:
import android.telephony.SmsManager;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
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) findViewByld(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) != P
ackageManager.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, sentPl, deliveredPl);
         Toast.makeText(getApplicationContext(), "SMS sent successfully!", Toast.LENGTH SHORT).s
how();
       { Toast.makeText(getApplicationContext(), "SMS not sent!", Toast.LENGTH SHORT).show();
         Toast.makeText(getApplicationContext(), "Enter 10 digit number!", Toast.LENGTH_SHORT).s
how();
       }
    });
```

```
In manifest
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"</pre>
  xmlns:tools="http://schemas.android.com/tools">
  <uses-feature
    android:name="android.hardware.telephony"
    android:required="false" />
  <uses-permission android:name="android.permission.SEND_SMS"/>
  <application
    android:allowBackup="true"
    android:dataExtractionRules="@xml/data_extraction_rules"
    android:fullBackupContent="@xml/backup_rules"
    android:icon="@mipmap/ic_launcher"
    android:label="@string/app_name"
    android:roundlcon="@mipmap/ic_launcher_round"
    android:supportsRtl="true"
    android:theme="@style/Theme.MyApplication"
    tools:targetApi="31">
    <activity
       android:name=".MainActivity"
       android:exported="true">
       <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"/>
or
<uses-feature
    android:name="android.hardware.telephony"
    android:required="false" />
  <uses-permission android:name="android.permission.SEND_SMS"/>
Exp 15 google maps Application -----
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=CLIEN
T_SIDE_AND
ROID&r=E2:B7:D0:A1:8B:ED:EE:80:77:F8:A5:BC:13:B8:26:71:AD:D5:D9:DB%3Bcom.example.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
Step 5:- Google, New Horizon College Latitude and Longitude
Step 6:- paste the latitude and longitude in MapsActivity.java

Step 7:-