MOBILE APPLICATION DEVELOPMENT
(3170726)

Index

Experiment Sr. No.	Tasks
1.	Install Android Studio with Latest Configuration in your System.
2.	Develop an android app which displays "Hello World" message
3.	Design Login activity and implement control events : Use EditText, Checkbox and Buttons
4.	Develop an android app which displays a form to get following information from user. 1) Username 2) Password 3) Email Address 4) Phone Number 5) Country
5.	Implement Practical 3 and 4 using following layouts: 1. Linear Layout 2. Relative Layout 3. Table Layout
6.	Create sample application that demonstrates activity life cycle's all methods.
7.	Create Activities & implement following 1. Implicit intent 2. Explicit Intent 3. StartActivityForResult
8.	Using Android, Create a login Activity. It asks "username" and "password" from user. If username and password are valid, it displays Welcome message using new activity
9.	"Happy Birth Day" App using TextView and ImageView
10.	Create "Hello Toast" App by implementing a click handler method for the button to display a message on the screen when the user clicks. Use Linear Layout for creating view.
11.	Create a Recycler View and list the details of student using following fields: 1. Name 2. Address 3. Photo (Image) 4. Delete (Button Operation)
12.	Practical: Theme, Custom Styles, Drawables

| 13.	Create the MP3 player like application with service
14.	The Simple Calculator app has two edit texts and four buttons. When you enter two numbers and click a button, the app performs the calculation for that button and displays the result.
15.	Develop one App. Which Contains Specific User Interface and design Interface.
16.	Using experiment 4 and Save user data in a database.

Mandatory Online Courses:

1. https://learn.udacity.com/courses/ud851
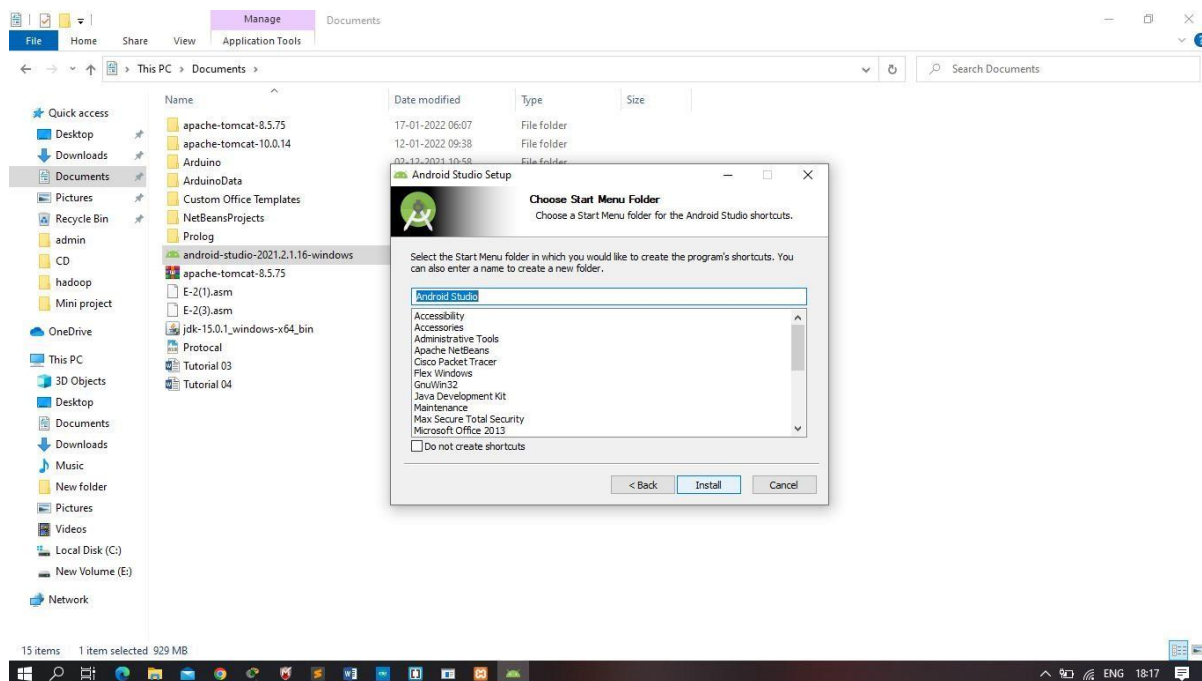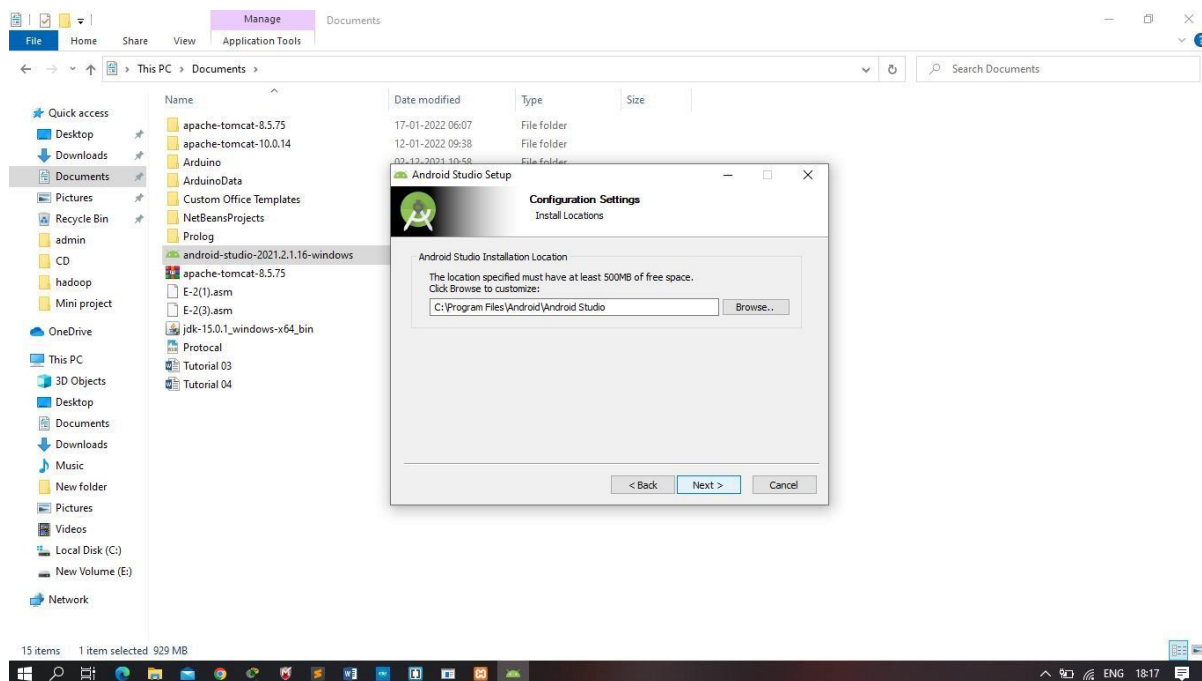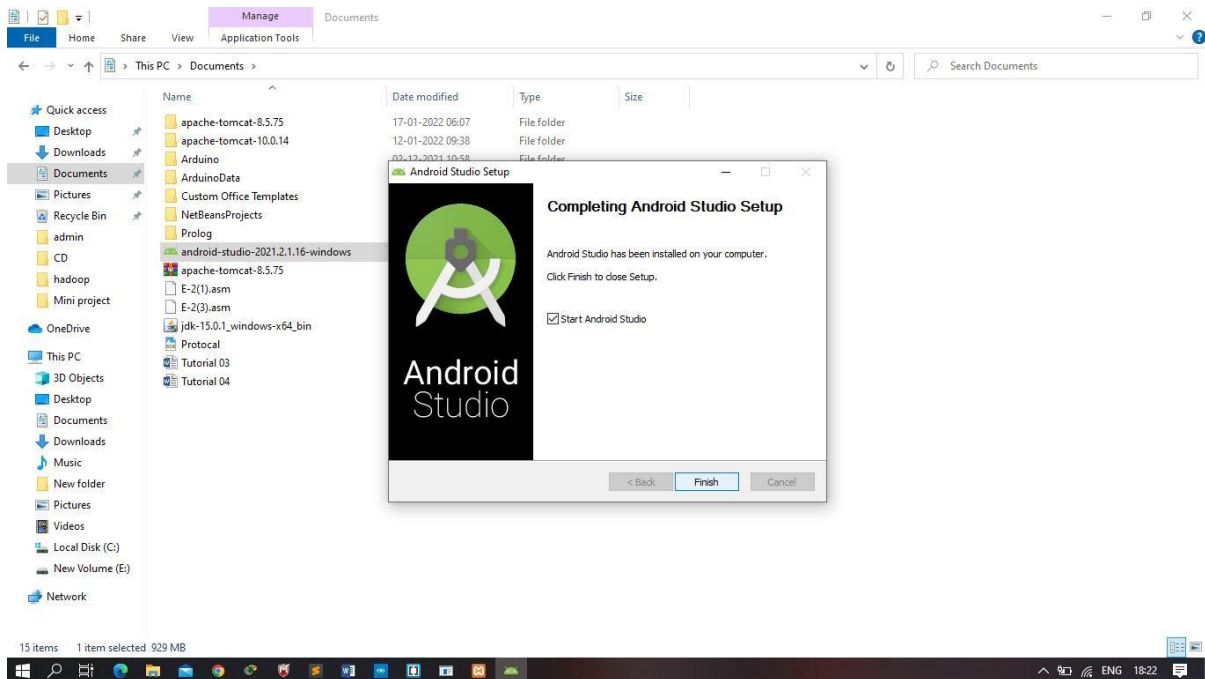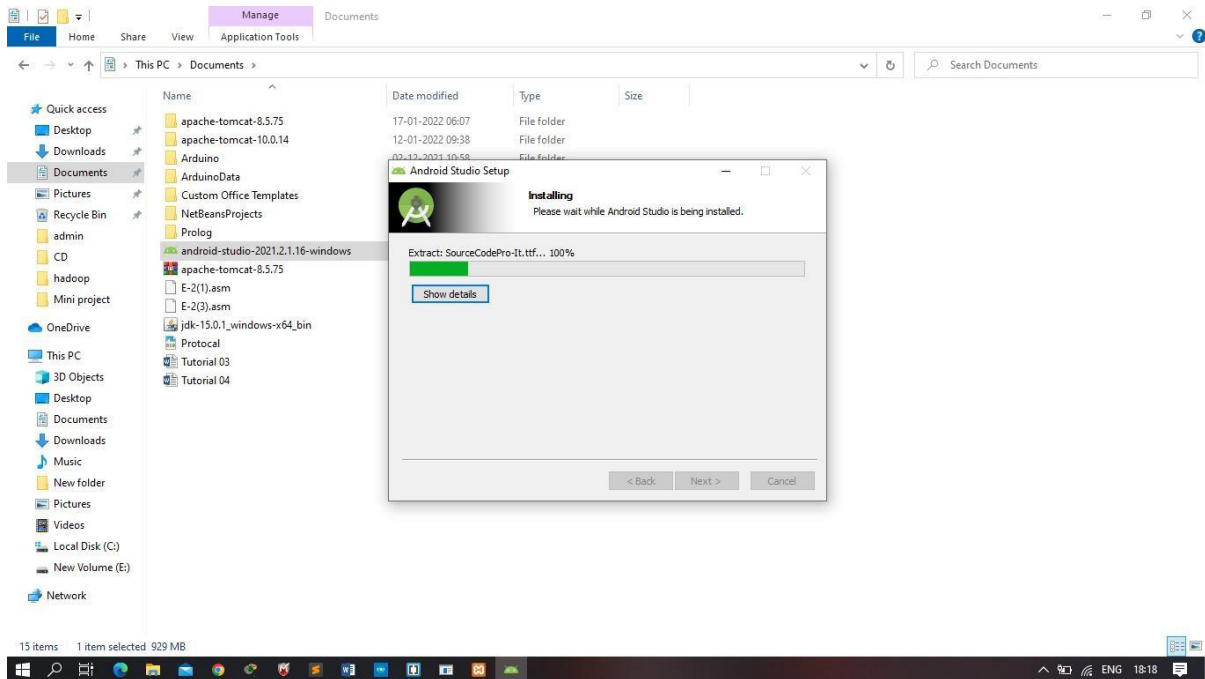2. https://www.udemy.com/course/learn-android-application-development-y/

Other
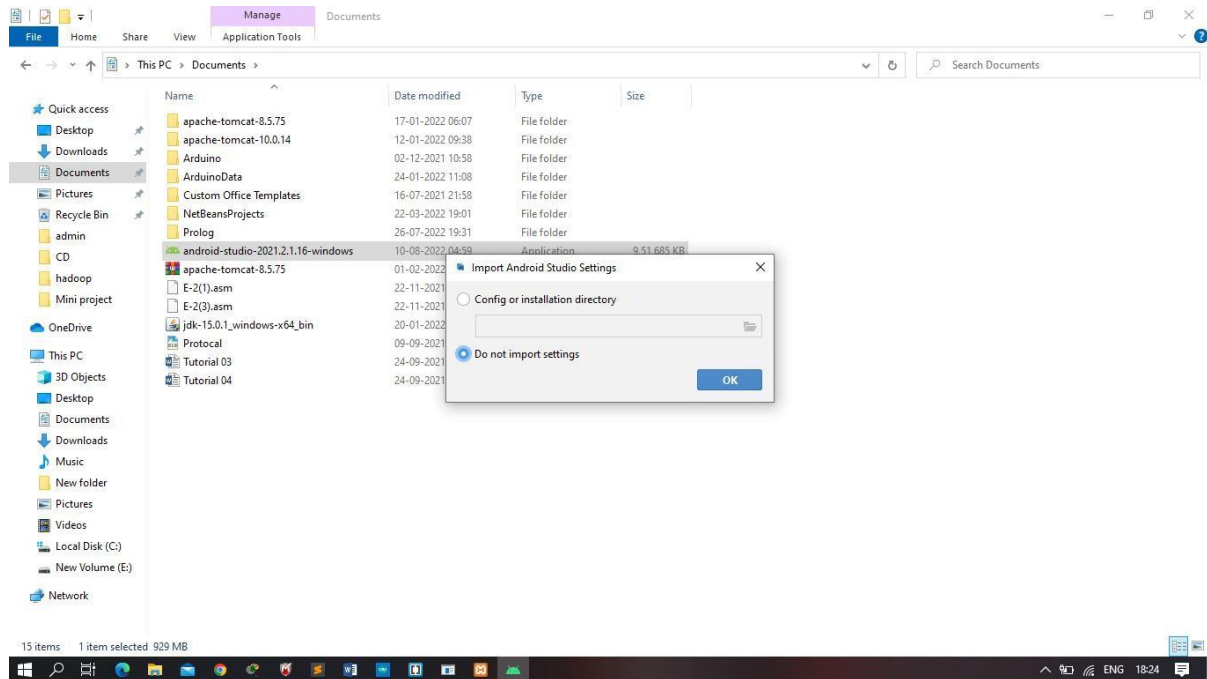1. Mini Project by including all relevant concepts. (In team of max. 3)

EXPERIMENT-1

Title: Install Android Studio with Latest Configuration in your System.
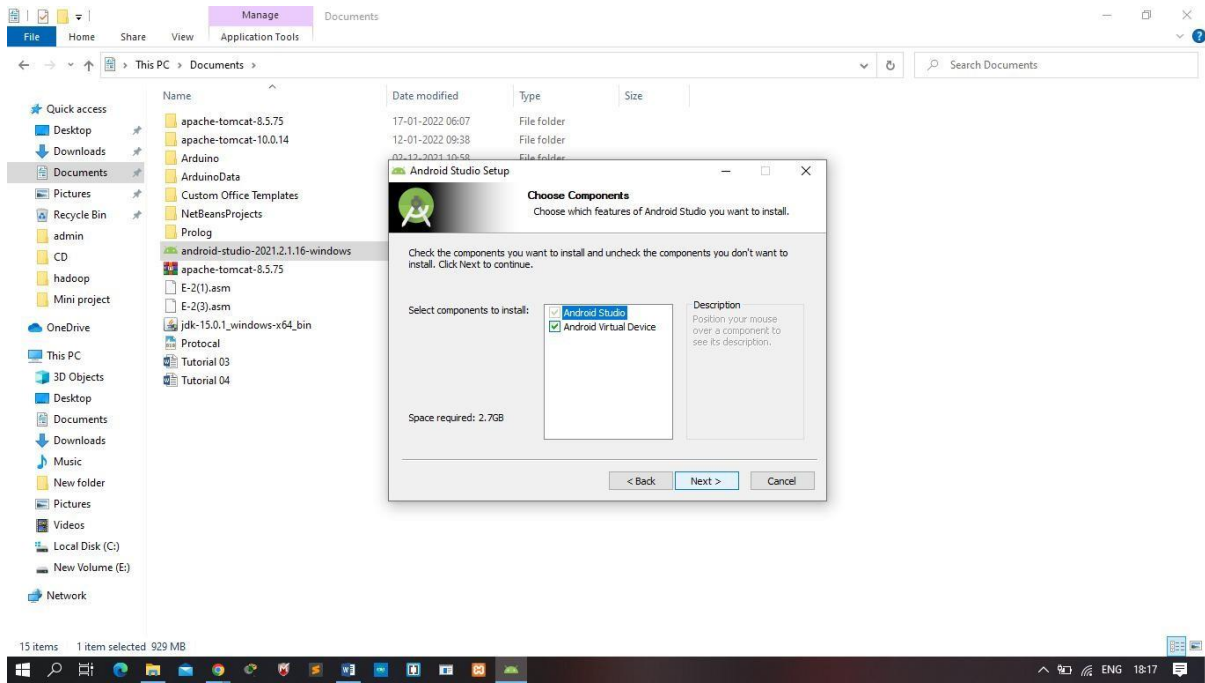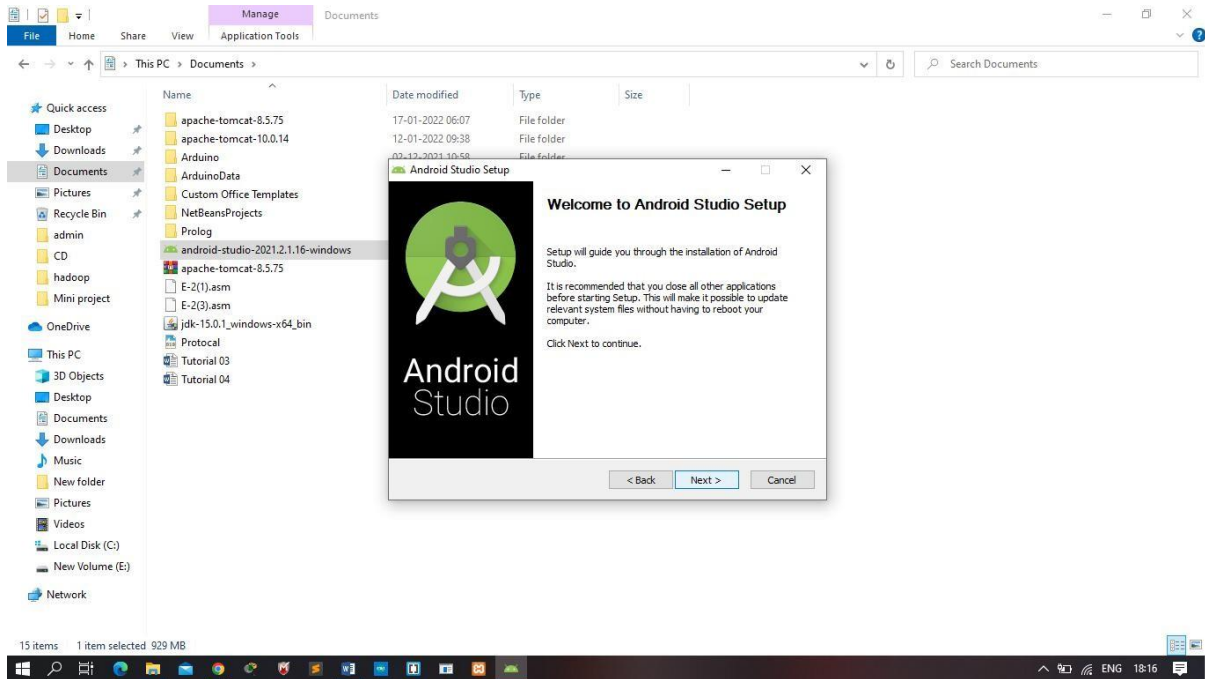
EXPERIMENT-2

Title: Develop an android app which displays "Hello World" message

CODE
activity_main.xml

```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:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```java
package com.example.practical2;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
}
```

SCREENSHOTS OF APP
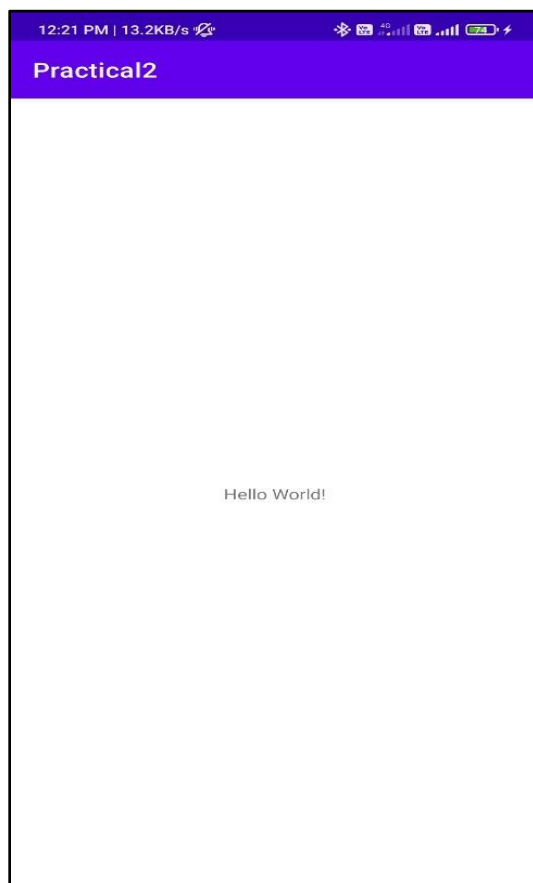
EXPERIMENT-3

Title: Design Login activity and implement control events : Use EditText, Checkbox and Buttons

COMPONENTS USED TO DEVELOP APP:

CODE (LAYOUTS+ACTIVITIES):

LAYOUTS:
activity_main.xml

```xml
<?xml version = "1.0" encoding = "utf-8"?>
<RelativeLayout xmlns:android = "http://schemas.android.com/apk/res/android"
    xmlns:tools = "http://schemas.android.com/tools" android:layout_width="match_parent"
    android:layout_height = "match_parent"
    android:paddingLeft= "50dp"
    android:paddingRight = "50dp"
    android:paddingTop = "50dp"
    android:paddingBottom = "400dp"
    tools:context = ".MainActivity">

    <TextView
        android:id="@+id/textview"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentTop="true"
        android:layout_centerHorizontal="true"
        android:text="Login"
        android:textColor="@color/white"
        android:textSize="35dp"
        android:textStyle="bold" />

    <EditText
        android:id="@+id/editText"
        android:layout_width="wrap_content"
        android:layout_below="@+id/textview"
        android:layout_height="wrap_content"
        android:layout_alignParentStart="true"
        android:layout_alignParentLeft="true"
        android:layout_alignParentEnd="true"
        android:layout_alignParentRight="true"
        android:layout_marginTop="46dp"
        android:focusable="true"
        android:hint="Enter Name" />
```

```xml
<EditText
    android:id="@+id/editText2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/editText"


    android:layout_alignEnd="@+id/editText"
    android:layout_alignRight="@+id/editText"
    android:layout_alignParentStart="true"
    android:layout_alignParentLeft="true"
    android:ems="10"
    android:hint="Password"
    android:inputType="textPassword" />

<Button
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="login"
    android:id="@+id/button"
    android:layout_alignParentBottom="true"
    android:layout_toLeftOf="@+id/textview"
    android:layout_toStartOf="@+id/textview" />

<Button
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Cancel"
    android:id="@+id/button2"
    android:layout_alignParentBottom="true"
    android:layout_toRightOf="@+id/textview"
    android:layout_toEndOf="@+id/textview" />
</RelativeLayout>
```

MainActivity.java
```java
package com.example.practical3;

import androidx.appcompat.app.AppCompatActivity;

import android.graphics.Color;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
```

```java
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    Button b, c;
    EditText e, e1;
    TextView t;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        b = (Button) findViewById(R.id.button);
        c = (Button) findViewById(R.id.button2);
        e = (EditText) findViewById(R.id.editText);
        e1 = (EditText) findViewById(R.id.editText2);
        t = (TextView) findViewById(R.id.textview);
        b.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                if(e.getText().toString().equals("abhi")&&
                e1.getText().toString().equals("abhi")){
                    Toast.makeText(getApplicationContext(),"Successfully logged
in...",Toast.LENGTH_SHORT).show();
                }
                else {
                    Toast.makeText(getApplicationContext(),"Wrong
details",Toast.LENGTH_SHORT).show();
                    t.setVisibility(View.VISIBLE);
                    t.setBackgroundColor(Color.RED);
                }
            }
        });
        c.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                finish();
            }
        });
    }
}
```

SCREENSHOTS OF APP
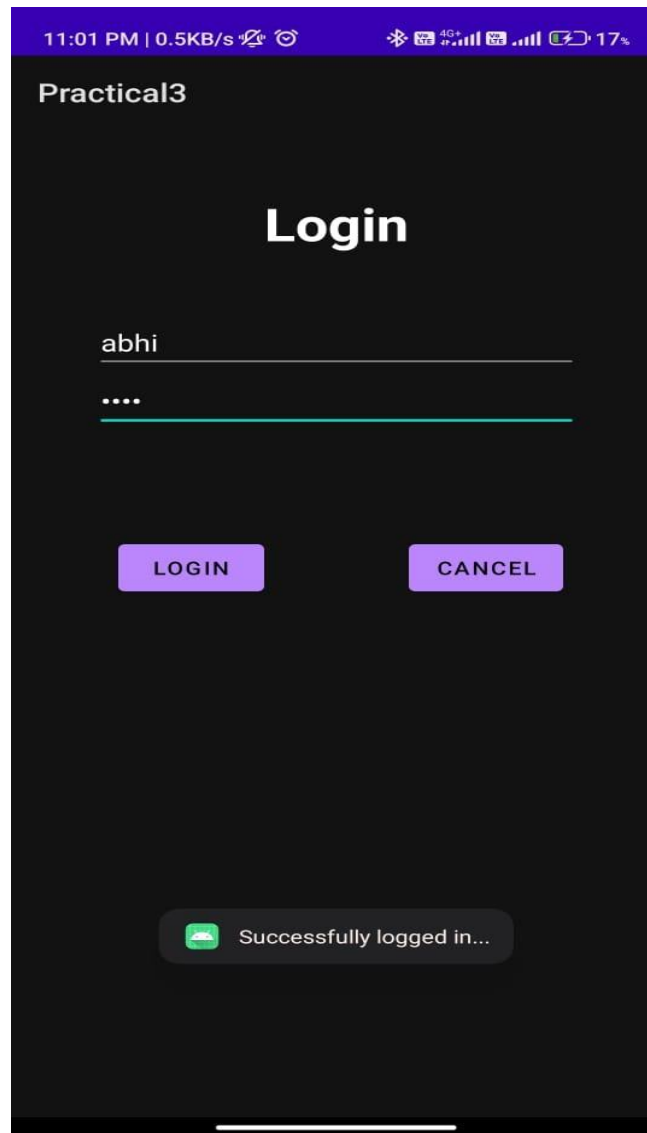
Login page

EXPERIMENT-4

Title: Develop an android app which displays a form to get following information from user. 1) Username 2) Password 3) Email Address 4) Phone Number 5) Country

CODE
activity_main.xml

```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">

    <EditText
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="Enter First Name"
        app:layout_constraintBottom_toTopOf="@id/textView3"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.502"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.07999998" />

    <EditText
        android:id="@+id/textView3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="Enter Last Name"
        app:layout_constraintBottom_toTopOf="@+id/editTextTextEmailAddress"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/textView"
        app:layout_constraintVertical_bias="0.01999998" />

    <EditText
        android:id="@+id/editTextTextEmailAddress"
```

```
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textEmailAddress"
    android:hint="Enter Email Address"
    app:layout_constraintBottom_toTopOf="@+id/editTextPhone"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/textView3"
    app:layout_constraintVertical_bias="0.01999998" />

<EditText
    android:id="@+id/editTextPhone"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="phone"
    android:hint="Enter Phone Number"
    app:layout_constraintBottom_toTopOf="@+id/textView2"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/editTextTextEmailAddress"
    app:layout_constraintVertical_bias="0.01999998" />

<EditText
    android:id="@+id/textView2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="Enter Country Name"
    app:layout_constraintBottom_toTopOf="@+id/checkBox"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.502"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/editTextPhone"
    app:layout_constraintVertical_bias="0.016" />

<CheckBox
    android:id="@+id/checkBox"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"        android:layout_marginTop="20dp"
    android:text="Display Details"
    app:layout_constraintBottom_toTopOf="@+id/button2"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.351"
```

```
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/textView2"
        app:layout_constraintVertical_bias="0.005" />

    <Button
        android:id="@+id/button2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Submit"
        app:layout_constraintBottom_toTopOf="@+id/textArea_information"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.554"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/checkBox"
        app:layout_constraintVertical_bias="0.027" />

    <TextView
        android:id="@+id/textArea_information"
        android:layout_width="384dp"
        android:layout_height="113dp"
        android:layout_marginStart="20dp"
        android:layout_marginEnd="20dp"
        android:layout_marginBottom="100dp"
        android:inputType="textMultiLine"
        android:lines="6"
        android:text="Your Details:"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/button2" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```java
package com.example.registerform;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.CheckBox;
import android.widget.EditText;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {
```
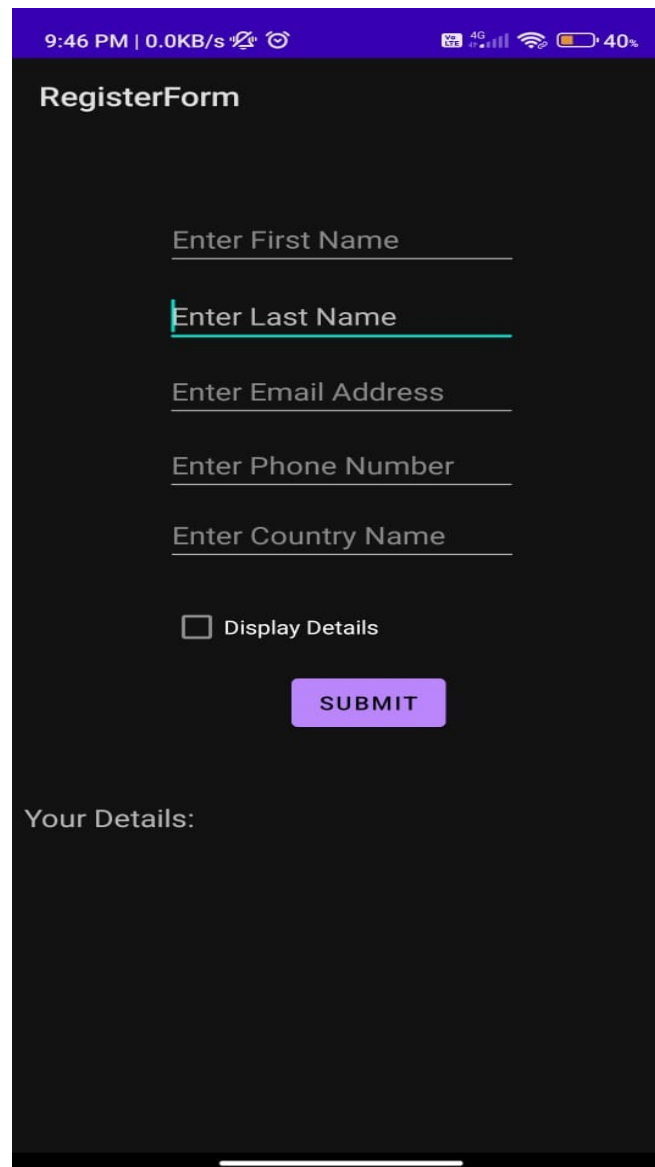
```java
EditText firstname;
EditText lastname;
EditText mail;
EditText phone;
EditText country;
CheckBox checkbox;
Button button;
TextView textview;
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    firstname = (EditText)findViewById(R.id.textView);
    lastname = (EditText)findViewById(R.id.textView3);
    mail = (EditText)findViewById(R.id.editTextTextEmailAddress);
    phone = (EditText)findViewById(R.id.editTextPhone);
    country = (EditText) findViewById(R.id.textView2);
    checkbox = (CheckBox) findViewById(R.id.checkBox);
    button = (Button)findViewById(R.id.button2);
    textview = (TextView) findViewById(R.id.textArea_information);
    button.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            // if(!error()) {
                if (checkbox.isChecked()) {
                    String name = firstname.getText().toString();
                    String lname = lastname.getText().toString();
                    String m = mail.getText().toString();
                    String p = phone.getText().toString();
                    String con = country.getText().toString();
                    textview.setText("first Name: " + name + "\nlast Name: " + lname + "\nmail: " +
m + "\nPhone: " + p + "\nCountry: " + con);
                    //textview.setText("first Name: " + name);
                } else {
                    textview.setText("Successfully submitted");
                }
            }
    });
    }
}
```

SCREENSHOTS OF APP

EXPERIMENT-5

Title: Implement Practical 3 and 4 using following layouts:
1. Linear Layout
2. Relative Layout
3. Table Layout

LAYOUTS:
activity_main.xml

```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">

    <Button
        android:id="@+id/linear"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Linear layout"
        app:layout_constraintBottom_toTopOf="@+id/relative"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        android:onClick="linearlayout"/>
    <Button
        android:id="@+id/relative"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="relative layout"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/linear"
        app:layout_constraintBottom_toTopOf="@+id/table"
        android:onClick="relativelayout" />
    <Button
        android:id="@+id/table"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="table layout"
```

```
      app:layout_constraintBottom_toTopOf="@id/other"
      app:layout_constraintEnd_toEndOf="parent"
      app:layout_constraintStart_toStartOf="parent"
      app:layout_constraintTop_toBottomOf="@+id/relative"
      android:onClick="tablelayout"/>
  <Button
      android:id="@+id/other"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Other app"
      app:layout_constraintStart_toStartOf="parent"
      app:layout_constraintEnd_toEndOf="parent"
      app:layout_constraintBottom_toBottomOf="parent"
      app:layout_constraintTop_toBottomOf="@+id/table"
      android:onClick="otherapp"/>
</androidx.constraintlayout.widget.ConstraintLayout>
```

activity_linear_layout.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".LinearLayoutActivity"
    android:padding="40dp"
    android:orientation="vertical">
  <EditText
      android:id="@+id/To"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:width="350dp"
      android:textStyle="bold"
      android:hint="To" />
  <EditText
      android:id="@+id/subject"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:width="350dp"
      android:textStyle="bold"
      android:hint="subject"/>
  <EditText
      android:id="@+id/message"
      android:layout_width="match_parent"
      android:layout_height="0dp"
```

```xml
        android:layout_weight="1"
        android:hint="Message"
        android:textStyle="bold"
        android:gravity="top" />
    <Button
        android:id="@+id/button"
        android:layout_width="100dp"
        android:layout_height="wrap_content"
        android:layout_gravity="right"
        android:text="send" />
</LinearLayout>
```

activity_relative_layout.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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=".MainActivity2">
    <EditText
        android:id="@+id/text"
        android:hint="Enter full Name"
        android:layout_marginLeft="20dp"
        android:layout_marginRight="20dp"
        android:layout_marginTop="60dp"
        android:layout_width="match_parent"
        android:layout_height="wrap_content" />
    <TextView
        android:id="@+id/name"
        android:layout_below="@+id/text"
        android:layout_marginTop="50dp"
        android:layout_width="384dp"
        android:layout_height="113dp"
        android:layout_marginStart="20dp"
        android:layout_marginEnd="20dp" />
    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="submit"
        android:layout_marginTop="50dp"
        android:layout_marginLeft="160dp"
        android:layout_below="@+id/name"
        />
```

```
</RelativeLayout>
```

table_layout.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<TableLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".Table_layout">

    <TableRow
        android:layout_width="match_parent"
        android:layout_height="match_parent">

        <TextView
            android:id="@+id/txt"
            android:layout_marginLeft="30dp"
            android:layout_marginTop="30dp"
            android:layout_width="350dp"
            android:layout_height="150dp" />
    </TableRow>
    <TableRow
        android:layout_marginTop="20dp">
        <EditText
            android:id="@+id/edt"
            android:layout_marginLeft="30dp"
            android:layout_marginTop="90dp"
            android:hint="Enter your name" />
    </TableRow>
    <TableRow
        android:layout_marginTop="100dp">
        <Button
            android:id="@+id/btm"
            android:layout_width="178dp"
            android:layout_marginLeft="30dp"
            android:text="submit" />
    </TableRow>
</TableLayout>
```

MainActivity.java

```java
package com.example.practical5;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
```

```java
import android.os.Bundle;
import android.util.Log;
import android.view.View;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
    public void linearlayout(View view) {
        Intent intent =new Intent(this, LinearLayoutActivity.class);
        startActivity(intent);
    }
    public void relativelayout(View view) {
        Intent intent = new Intent(this, MainActivity2.class);
        startActivity(intent);
    }
    public void tablelayout(View view) {
        Intent intent = new Intent(this, MainActivity2.class);
        startActivity(intent);
    }
    public void otherapp(View view) {
        String value1 ="8434904553", value2 ="Abhi";
        Log.d("BUTTON","OTHER APP");
        Intent intent = new Intent(MainActivity.this, ExtraPut.class);
        intent.putExtra("name", value1);
        intent.putExtra("name1",value2);
        startActivity(intent);
    }
}
```

LinearLayoutActivity.java

```java
package com.example.practical5;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;

public class LinearLayoutActivity extends AppCompatActivity {
    Button button;
    EditText to;
```

```java
EditText subject;
EditText message;
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_linear_layout2);
    to=(EditText) findViewById(R.id.To);
    subject=(EditText) findViewById(R.id.subject);
    message=(EditText) findViewById(R.id.message);
    button=(Button) findViewById(R.id.button);
    button.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            Intent intent = new Intent(LinearLayoutActivity.this,ReceiverActivity.class);
            String To = to.getText().toString();
            String Subject = subject.getText().toString();
            String Message = message.getText().toString();
            intent.putExtra("to",To);
            intent.putExtra("subject",Subject);
            intent.putExtra("message",Message);
            startActivity(intent);
            finish();
        }
    });
}
}
```

RelativeLayoutActiviyt.java

```java
package com.example.practical5;
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;

public class MainActivity2 extends AppCompatActivity {
    Button button;
    TextView textView;
    EditText name;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main2);
        name = (EditText) findViewById(R.id.text);
```

```java
    button = (Button) findViewById(R.id.button);
    textView = (TextView) findViewById(R.id.name);
    button.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            String fname = name.getText().toString();
            textView.setText("Welcome Dear  "+fname);
        }
    });
    }
}
```

Table_Layout.java

```java
package com.example.practical5;
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;

public class Table_layout extends AppCompatActivity {
    TextView txt;
    Button btm;
    EditText edt;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_table_layout);
        txt = (TextView) findViewById(R.id.txt);
        btm=(Button) findViewById(R.id.btm);
        edt = (EditText) findViewById(R.id.edt);
        btm.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String fname = edt.getText().toString();
                txt.setText("Welcome Dear  "+fname);
            }
        });
    }
}
```
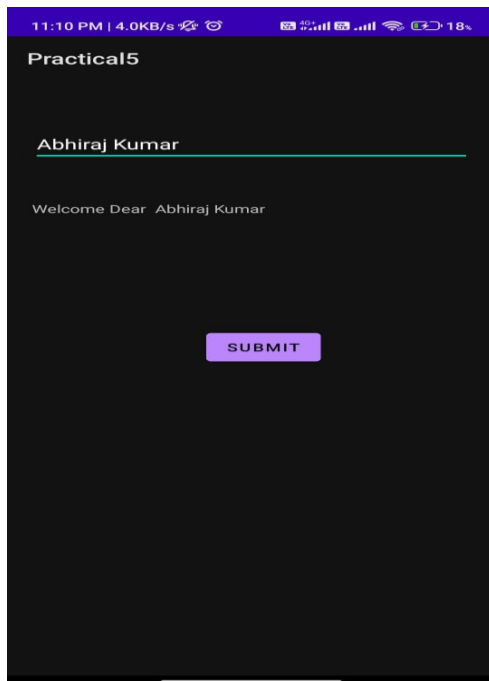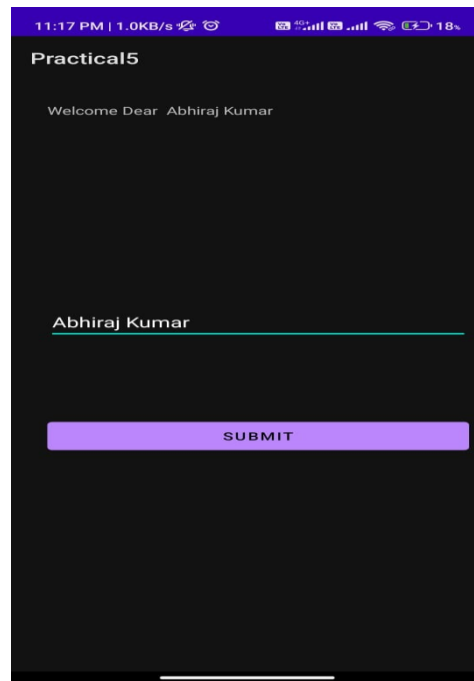
SCREENSHOTS OF APP
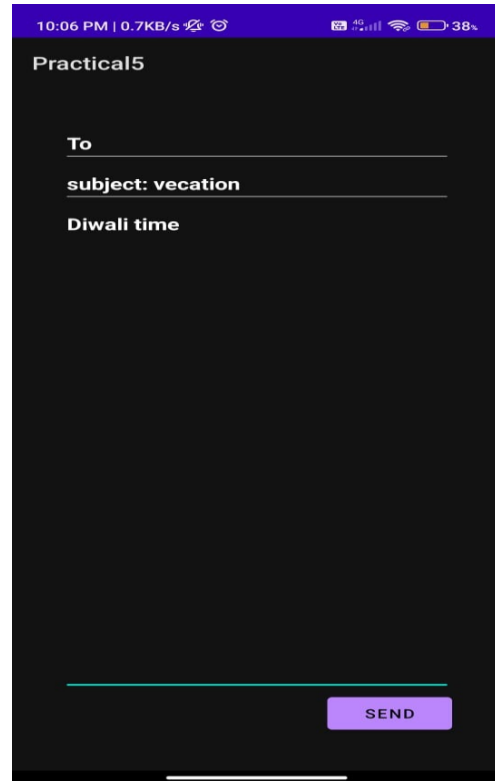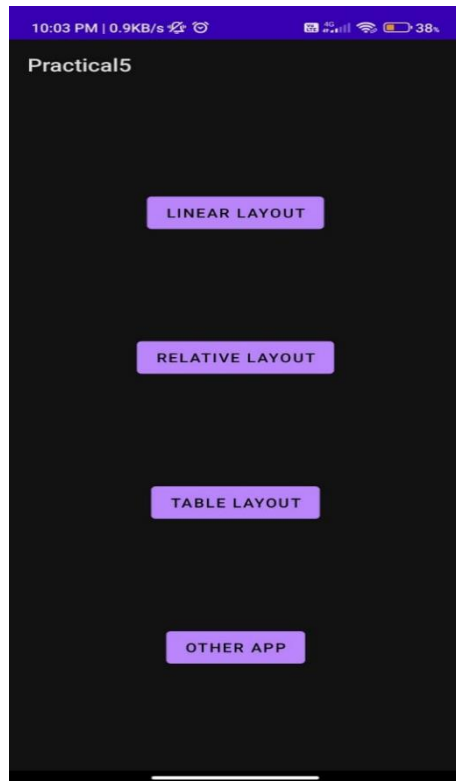
Linear layout

Relative layout   **Table layout**

EXPERIMENT-6

Title: Create sample application that demonstrates activity life cycle's all methods.
COMPONENTS USED TO DEVELOP APP:

CODE (LAYOUTS+ACTIVITIES):
LAYOUTS:
activity_main.xml

```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:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```java
package com.example.practical6;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.util.Log;

public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Log.d("lifecycle","oncreate invoked");
    }
    @Override
    protected void onStart(){
        super.onStart();
```

```java
        Log.d("lifecycle","onstart invoked");
    }
    @Override
    protected void onResume(){
        super.onResume();
        Log.d("lifecycle","onresume invoked");
    }
    @Override
    protected void onPause(){
        super.onPause();
        Log.d("lifecycle","onpause invoked");
    }
    @Override
    protected void onStop(){
        super.onStop();
        Log.d("lifecycle","onstop invoked");
    }
    @Override
    protected void onRestart(){
        super.onRestart();
        Log.d("lifecycle","onresume invoked");
    }
    @Override
    protected void onDestroy(){
        super.onDestroy();
        Log.d("lifecycle","ondestroy invoked");
    }
}
```

EXPERIMENT-7

Title: Create Activities & implement following
1. Implicit intent
2. Explicit Intent
3. StartActivityForResult

CODE
activity_main.xml

```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">

    <Button
        android:id="@+id/startact"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toBottomOf="@id/explicit"
        app:layout_constraintBottom_toBottomOf="parent"
        android:text="StartActivityforResult"
        android:onClick="startact"
         />
    <Button
        android:id="@+id/implicit"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        android:text="implicitIntent"
        app:layout_constraintBottom_toTopOf="@+id/explicit"
        android:onClick="implicit"
        />
    <Button
        android:id="@+id/explicit"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
```

```xml
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/implicit"
        app:layout_constraintBottom_toTopOf="@+id/startact"
        android:text="explicitIntent"
        android:onClick="explicit"/>
</androidx.constraintlayout.widget.ConstraintLayout>
```

activity_implicit_intent.xml

```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=".ImplicitIntent">
    <EditText
        android:id="@+id/etext"
        android:layout_width="300dp"
        android:gravity="center"
        android:hint="Type URL"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintBottom_toTopOf="@+id/btm"
        android:textStyle="bold"
        android:layout_height="wrap_content"/>
    <Button
        android:id="@+id/btm"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        app:layout_constraintTop_toBottomOf="@+id/etext"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintBottom_toBottomOf="parent"
        android:text="submit"/>
</androidx.constraintlayout.widget.ConstraintLayout>
```

activity_explicit_intent.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
```

```xml
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=".ExplicitIntent">
<EditText
    android:id="@+id/etxt"
    android:layout_width="350dp"
    android:layout_height="wrap_content"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintBottom_toTopOf="@+id/btm"
    app:layout_constraintRight_toRightOf="parent"
    app:layout_constraintLeft_toLeftOf="parent"
    android:hint="Type Text URL"
    android:gravity="center"
    android:textStyle="bold"
    />
<Button
    android:id="@+id/btm"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    app:layout_constraintTop_toBottomOf="@+id/etxt"
    android:text="send"
    app:layout_constraintRight_toRightOf="parent"
    app:layout_constraintLeft_toLeftOf="parent"
    app:layout_constraintBottom_toBottomOf="parent"/>
</androidx.constraintlayout.widget.ConstraintLayout>
```

activity_start_intent.xml

```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=".StartIntent">
<TextView
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    app:layout_constraintLeft_toLeftOf="parent"
    app:layout_constraintRight_toRightOf="parent"
    app:layout_constraintBottom_toTopOf="@+id/text"
    app:layout_constraintTop_toTopOf="parent"
    android:paddingBottom="80dp"
```

```xml
    android:id="@+id/tview"
    />
<EditText
    android:id="@+id/text"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="Enter Text Here"
    android:gravity="center"
    app:layout_constraintRight_toRightOf="parent"
    app:layout_constraintLeft_toLeftOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/tview"
    app:layout_constraintBottom_toTopOf="@+id/submit"
    />
<Button
    android:id="@+id/submit"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    app:layout_constraintTop_toBottomOf="@+id/text"
    app:layout_constraintLeft_toLeftOf="parent"
    app:layout_constraintRight_toRightOf="parent"
    app:layout_constraintBottom_toBottomOf="parent"
    android:text="Submit"
    />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```java
package com.example.practical7;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;

public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
    public void startact(View view) {
        Intent intent = new Intent(this, StartIntent.class);
        startActivity(intent);
    }
    public void implicit(View view) {
        Intent intent = new Intent(this, ImplicitIntent.class);
```

```java
        startActivity(intent);
    }
    public void explicit(View view) {
        Intent intent = new Intent(this, ExplicitIntent.class);
        startActivity(intent);
    }
}
```

ImplicitIntent.java

```java
package com.example.practical7;

import androidx.appcompat.app.AppCompatActivity;

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

public class ImplicitIntent extends AppCompatActivity {
    Button btm;
    EditText etext;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_implicit_intent);
        btm = (Button) findViewById(R.id.btm);
        etext = (EditText) findViewById(R.id.etext);

        btm.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String url = etext.getText().toString();
                Intent intent = new Intent(Intent.ACTION_VIEW,Uri.parse(url));
                startActivity(intent);
                //gotoUrl("https://www.twitter.com/");
            }
        });
        Bundle bundle = getIntent().getExtras();
        String expliciturl = bundle.getString("url");
        etext.setText(expliciturl);
    }
```

}

ExplicitIntent.java

```java
package com.example.practical7;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
public class ExplicitIntent extends AppCompatActivity {
    EditText etxt;
    Button btm;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_explicit_intent);
        etxt = (EditText) findViewById(R.id.etxt);
        btm = (Button) findViewById(R.id.btm);

        btm.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String url = etxt.getText().toString();
                Intent intent = new Intent(ExplicitIntent.this, ImplicitIntent.class);
                intent.putExtra("url",url);
                startActivity(intent);
            }
        });
    }
}
```

StartIntent.java

```java
package com.example.practical7;
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
public class StartIntent extends AppCompatActivity {
    Button submit;
    TextView tview;
    EditText text;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
```

```
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_start_intent);
submit = (Button)findViewById(R.id.submit);
tview = (TextView) findViewById(R.id.tview);
text = (EditText) findViewById(R.id.text);

submit.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        String t = text.getText().toString();
        tview.setText("Entered text  "+t);
    }
}); }
}
```

SCREENSHOTS OF APP
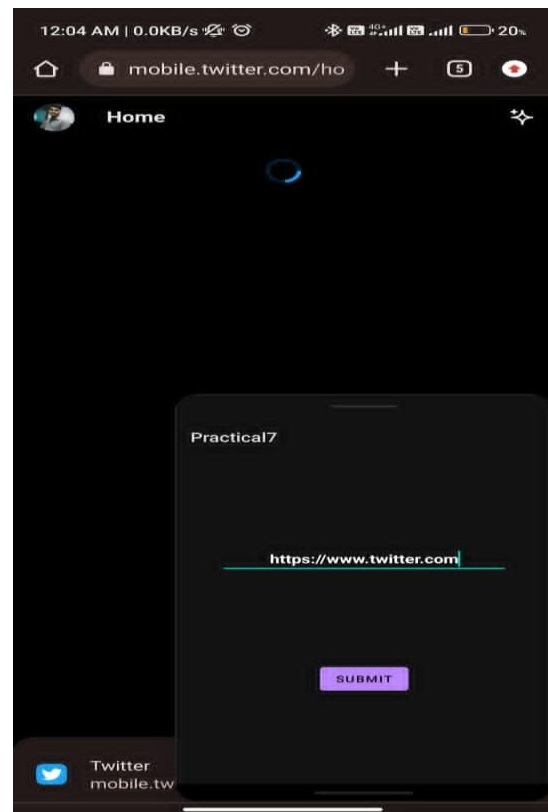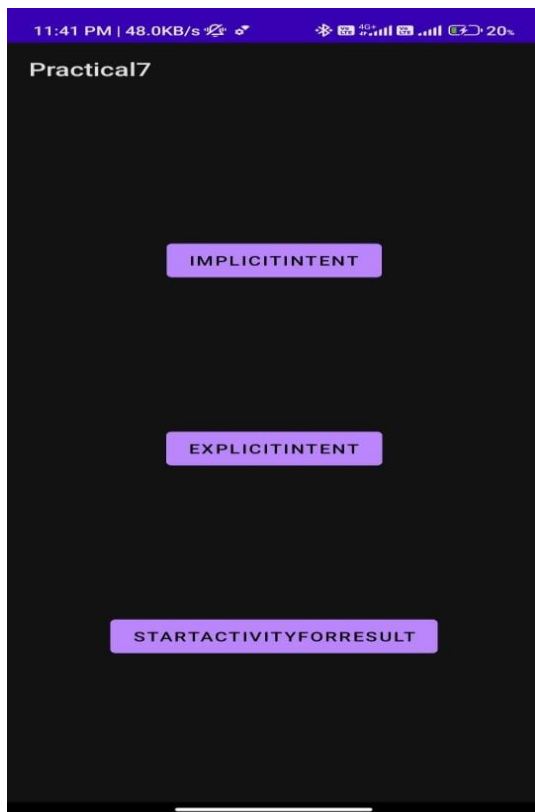
Inplicite intent
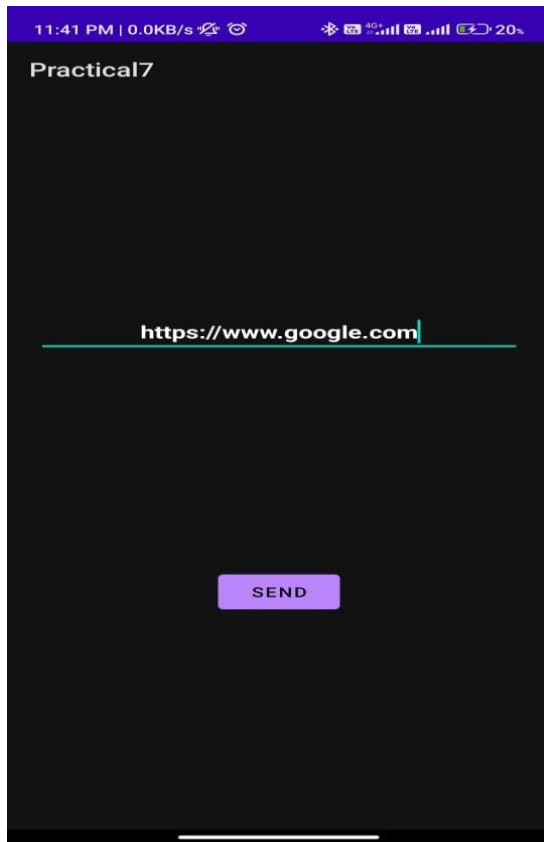
Explicite intent
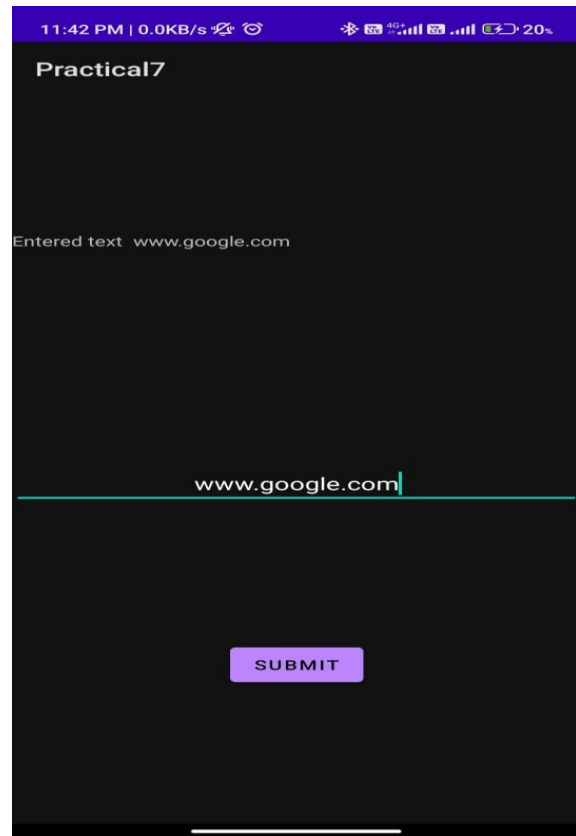
StartActivityforresult

EXPERIMENT-8

Title: Using Android, Create a login Activity. It asks "username" and "password" from user. If username and password are valid, it displays Welcome message using new activity.

CODE
activity_main.xml

```xml
<?xml version = "1.0" encoding = "utf-8"?>
<RelativeLayout xmlns:android = "http://schemas.android.com/apk/res/android"
    xmlns:tools = "http://schemas.android.com/tools" android:layout_width="match_parent"
    android:layout_height = "match_parent"
    android:paddingLeft= "50dp"
    android:paddingRight = "50dp"
    android:paddingTop = "50dp"
    android:background="#046B5F"
    android:paddingBottom = "400dp"
    tools:context = ".MainActivity">

    <TextView
        android:id="@+id/textview"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentTop="true"
        android:layout_centerHorizontal="true"
        android:text="Login"
        android:textColor="@color/white"
        android:textSize="35dp"
        android:textStyle="bold" />

    <EditText
        android:id="@+id/editText"
        android:layout_width="wrap_content"
        android:layout_below="@+id/textview"
        android:layout_height="wrap_content"
        android:layout_alignParentStart="true"
        android:layout_alignParentLeft="true"
        android:layout_alignParentEnd="true"
        android:layout_alignParentRight="true"
        android:layout_marginTop="46dp"
        android:focusable="true"
        android:hint="Enter Name" />

    <EditText
        android:id="@+id/editText2"
```

```
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/editText"
    android:layout_alignEnd="@+id/editText"
    android:layout_alignRight="@+id/editText"
    android:layout_alignParentStart="true"
    android:layout_alignParentLeft="true"
    android:ems="10"
    android:hint="Password"
    android:inputType="textPassword" />

<Button
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="login"
    android:id="@+id/button"
    android:layout_alignParentBottom="true"
    android:layout_toLeftOf="@+id/textview"
    android:layout_toStartOf="@+id/textview" />

<Button
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Cancel"
    android:id="@+id/button2"
    android:layout_alignParentBottom="true"
    android:layout_toRightOf="@+id/textview"
    android:layout_toEndOf="@+id/textview" />
</RelativeLayout>
```

activity_receiver.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=".Receiver">
    <TextView
        android:id="@+id/msg"
        android:layout_width="340dp"
        android:layout_height="300dp"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintBottom_toBottomOf="parent"
```

```xml
        app:layout_constraintStart_toStartOf="parent"
        android:hint="Your Message"
        android:gravity="top"
        android:textSize="25dp"
        app:layout_constraintEnd_toEndOf="parent"
        />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```java
package com.example.practical8;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.graphics.Color;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    Button b, c;
    EditText e, p;
    TextView t;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        b=(Button) findViewById(R.id.button);
        c=(Button) findViewById(R.id.button2);
        e=(EditText) findViewById(R.id.editText);
        p=(EditText) findViewById(R.id.editText2);
        t=(TextView) findViewById(R.id.textview);
        b.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String str = "abhi";
                if(e.getText().toString().equals(str)&&
                        p.getText().toString().equals(str)){
                    Toast.makeText(getApplicationContext(),"Successfully logged in...",
Toast.LENGTH_SHORT).show();
                    Intent intent = new Intent(MainActivity.this,Receiver.class);
                    intent.putExtra("message",str);
                    startActivity(intent);
```

```
                //finish();
            }
        else {
            Toast.makeText(getApplicationContext(),"Wrong
details",Toast.LENGTH_SHORT).show();
            t.setVisibility(View.VISIBLE);
            t.setBackgroundColor(Color.RED);
        }
    }
});
    c.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            finish();
        }
    });
    }
}
```

Receiver.java

```
package com.example.practical8;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.widget.TextView;

public class Receiver extends AppCompatActivity {
    TextView m;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_receiver);
        m = (TextView) findViewById(R.id.msg);
        String s = getIntent().getExtras().getString("message");
        m.setText("Welcome "+s);
    }
}
```

SCREENSHOTS OF APP
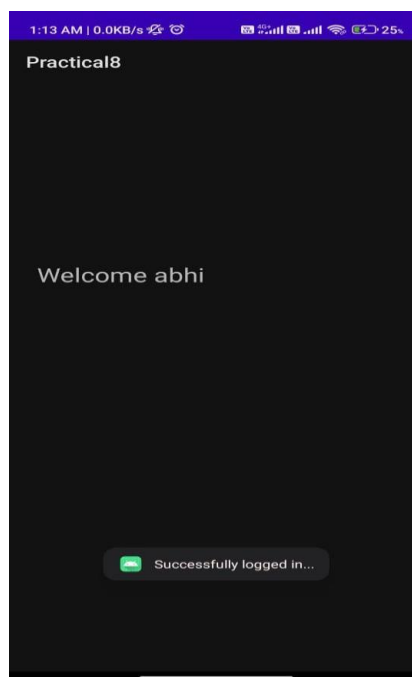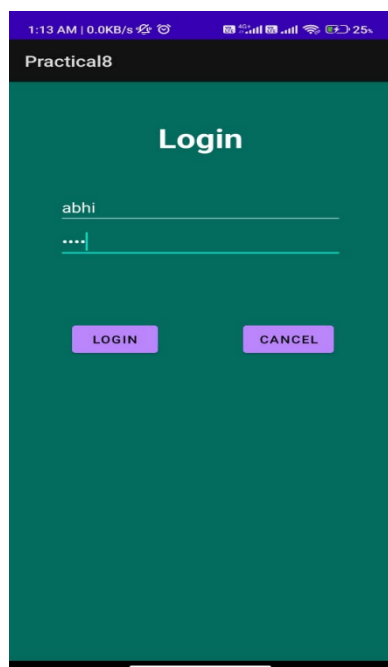
EXPERIMENT-9

Title: "Happy Birth Day" App using TextView and ImageView

CODE
LAYOUTS:
activity_main.xml

```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"
    android:background="#106B2A"
    tools:context=".MainActivity">

    <ImageView
        android:id="@+id/pic"
        android:layout_width="0dp"
        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"
        app:layout_constraintVertical_bias="0.078"
        app:srcCompat="@drawable/gift" />
    <TextView
        android:id="@+id/txt"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Happy BirthDay!"
        android:textColor="@color/black"
        android:textStyle="italic"
        android:textSize="38dp"
        app:layout_constraintVertical_bias="0.18"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/pic"/>

</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```java
package com.example.practical9;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;

public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
}
```

SCREENSHOTS OF APP
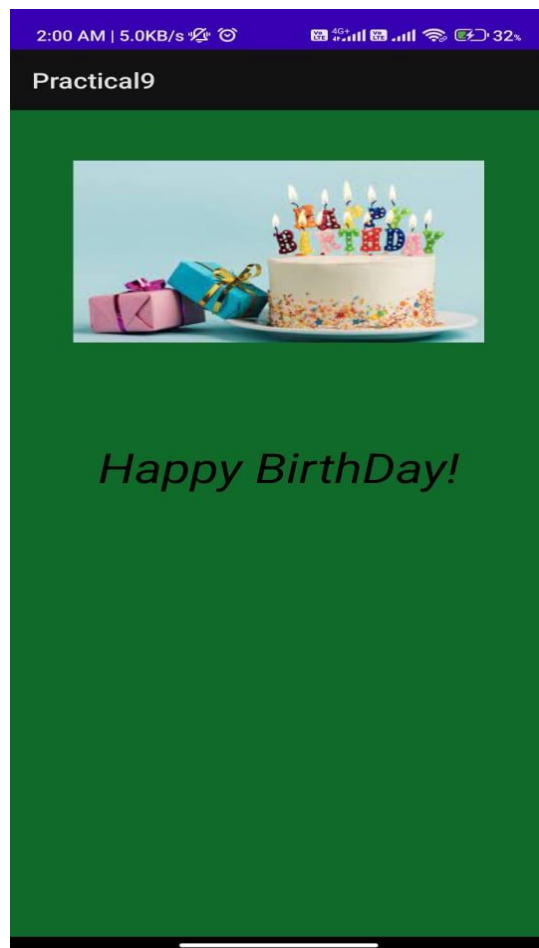
EXPERIMENT-10

Title: Create "Hello Toast" App by implementing a click handler method for the button to display a message on the screen when the user clicks. Use Linear Layout for creating view.

COMPONENTS USED TO DEVELOP APP:
CODE (LAYOUTS+ACTIVITIES):
LAYOUTS:

activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:paddingLeft="150dp"
    android:layout_marginTop="250dp"
    tools:context=".MainActivity">
    <Button
        android:id="@+id/b1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Ashu"
        />
    <Button
        android:id="@+id/b2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Rinku"/>
    <Button
        android:id="@+id/b3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="umang"/>
    <Button
        android:id="@+id/b4"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Amit"/>
</LinearLayout>
```

MainActivity.java

```java
package com.example.practical10;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    Button b1;
    Button b2;
    Button b3;
    Button b4;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        b1 = (Button) findViewById(R.id.b1);
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Toast.makeText(MainActivity.this,"Happy
Birthday!",Toast.LENGTH_SHORT).show();
            }
        });
        b2 = (Button) findViewById(R.id.b2);
        b2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Toast.makeText(MainActivity.this,"Mind on your langauge,
Rinku",Toast.LENGTH_SHORT).show();
            }
        });
        b3 = (Button) findViewById(R.id.b3);
        b3.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Toast.makeText(MainActivity.this,"Your are a show up person",
Toast.LENGTH_SHORT).show();
            }
        });
        b4 = (Button)findViewById(R.id.b4);
        b4.setOnClickListener(new View.OnClickListener() {
            @Override
```

```
    public void onClick(View view) {
        Toast.makeText(MainActivity.this,"Your are a hard
worker",Toast.LENGTH_SHORT).show();
        }
    });
  }
}
```

SCREENSHOTS OF APP:
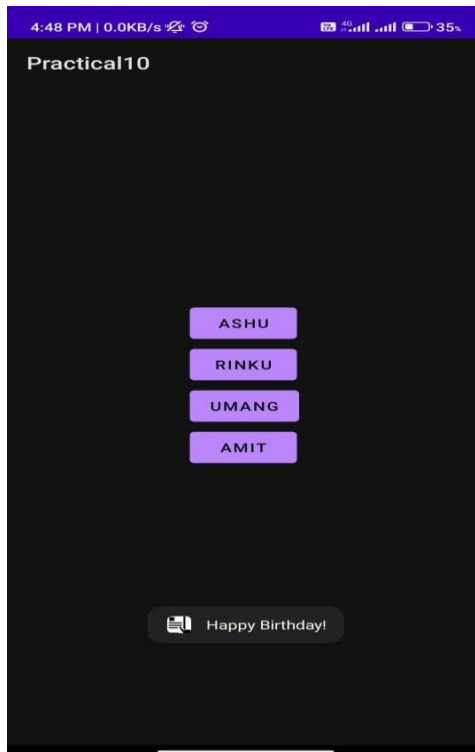
EXPERIMENT-11

Title: Create a Recycler View and list the details of student using following fields:
1. Name
2. Address
3. Photo (Image)
4. Delete (Button Operation)

LAYOUTS:
activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="vertical">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textSize="26sp"
        android:textColor="@color/black"
        android:layout_marginTop="20dp"
        android:layout_gravity="center_horizontal"
        android:text="Add Details"/>
    <EditText
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="30dp"
        android:layout_marginTop="20dp"
        android:hint="Name"
        android:layout_marginRight="30dp"
        android:id="@+id/edName" />
    <EditText
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
```

```xml
                android:layout_marginLeft="30dp"
                android:layout_marginTop="20dp"
                android:hint="Address"
                android:layout_marginRight="30dp"
                android:id="@+id/edAddress" />
            <com.google.android.material.button.MaterialButton
                android:id="@+id/button"
                style="@style/Widget.MaterialComponents.Button.OutlinedButton"
                android:layout_width="wrap_content"
                android:layout_gravity="center_horizontal"
                android:layout_height="wrap_content"
                android:layout_marginTop="20dp"
                android:text="Pick Image and Add Data"
                android:textAllCaps="false"
                app:layout_constraintEnd_toEndOf="parent"
                app:layout_constraintHorizontal_bias="0.445"
                app:layout_constraintStart_toStartOf="parent"
                app:layout_constraintTop_toTopOf="parent"
                app:strokeColor="@color/purple_700" />
        </LinearLayout>
            <androidx.recyclerview.widget.RecyclerView
                android:layout_width="match_parent"
                android:layout_marginTop="15dp"
                android:layout_marginLeft="15dp"
                android:layout_marginRight="15dp"
                android:layout_height="match_parent"
                android:id="@+id/recycler"/>

</LinearLayout>
```

Item_layout.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="10dp"
    android:clickable="false"
    android:layout_marginLeft="5dp"
    android:layout_marginRight="5dp"
    xmlns:app="http://schemas.android.com/apk/res-auto">

    <RelativeLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:clickable="false">
```

```xml
<androidx.cardview.widget.CardView
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:padding="10dp"
    android:id="@+id/cardview"
    android:clickable="false"
    android:background="#d3ee81"
    app:cardCornerRadius="6dp"
    android:elevation="30dp">
    <LinearLayout
        android:id="@+id/Ll"
        android:background="@color/white"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:clickable="false"
        android:orientation="vertical">
        <RelativeLayout
            android:layout_width="match_parent"
            android:background="#f7f7f7"
            android:layout_height="wrap_content">
            <LinearLayout
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:orientation="horizontal">
    <ImageView
        android:id="@+id/img"
        android:layout_width="200dp"
        android:layout_height="150dp"
        android:src="@drawable/ic_launcher_background" />
        <LinearLayout
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_gravity="center_vertical"
            android:orientation="vertical">
            <LinearLayout
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:orientation="horizontal">
                <TextView
                    android:layout_width="wrap_content"
                    android:layout_height="wrap_content"
                    android:text="Name : "
                    android:textColor="@color/black"
                    android:textSize="20sp" />
                <TextView
```

```xml
            android:id="@+id/txtName"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Name "
            android:textColor="@color/black"
            android:textSize="20sp" />
        </LinearLayout>
        <LinearLayout
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:orientation="horizontal">
            <TextView
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:text="Address : "
                android:textColor="@color/black"
                android:textSize="20sp" />
            <TextView
                android:id="@+id/txtAddress"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:text="Name "
                android:textColor="@color/black"
                android:textSize="20sp" />
        </LinearLayout>
        <LinearLayout
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            >
            <Button
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:text="Delete"
                android:id="@+id/remvoeItem"/>
        </LinearLayout>
      </LinearLayout>
    </LinearLayout>
  </RelativeLayout>
</LinearLayout>
  </androidx.cardview.widget.CardView>
  </RelativeLayout>
  </RelativeLayout>
```

MainActivity.java
```java
package com.example.practical11;
import androidx.appcompat.app.AppCompatActivity;
```

```java
import androidx.core.app.ActivityCompat;
import androidx.recyclerview.widget.LinearLayoutManager;
import androidx.recyclerview.widget.RecyclerView;
import android.Manifest;
import android.content.Intent;
import android.content.pm.PackageManager;
import android.net.Uri;
import android.os.Build;
import android.os.Bundle;
import android.util.Log;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import java.util.ArrayList;
import java.util.List;
public class MainActivity extends AppCompatActivity
{
    Button mbtnAdd;
    RecyclerView r1;
    List<Model> models;
    Adapter adapter;
    EditText medName,medAdd;
    Button button;
    int SELECT_PICTURE = 200;
    ArrayList<Uri>
        list;String
      colum[]={
    Manifest.permission.WRITE_EXTERNAL_STORAGE,
    Manifest.permission.READ_EXTERNAL_STORAGE};
    @Override
    protected void onCreate(Bundle savedInstanceState)
    {super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        mbtnAdd = findViewById(R.id.button);
        r1 = findViewById(R.id.recycler);
        medName = findViewById(R.id.edName);
        medAdd = findViewById(R.id.edAddress);
        button = findViewById(R.id.button);
        models = new
            ArrayList<>();list=new
          ArrayList<>();
        r1.setLayoutManager(new LinearLayoutManager(getApplicationContext()));
        if((ActivityCompat.checkSelfPermission(
            this,colum[0])!= PackageManager.PERMISSION_GRANTED)&&
            (ActivityCompat.checkSelfPermission(
```

```java
            this,colum[1])!=
            PackageManager.PERMISSION_GRANTED)){if
    (Build.VERSION.SDK_INT >= Build.VERSION_CODES.M) {
        requestPermissions(colum,123);
    }
    }
    button.setOnClickListener(new View.OnClickListener()
    { @Override
    public void onClick(View view)
    {imageChooser();
    }
    });
    }
    void imageChooser() {
// create an instance of the
// intent of the type image
    Intent i = new Intent();
    i.setType("image/*");
    i.setAction(Intent.ACTION_GET_CONTENT);
// pass the constant to compare it
// with the returned requestCode
    startActivityForResult(Intent.createChooser(i, "Select Picture"), SELECT_PICTURE);
    }
    @Override
    public void onActivityResult(int requestCode, int resultCode, Intent data) {
        super.onActivityResult(requestCode, resultCode, data);
        if (resultCode == RESULT_OK) {
// compare the resultCode with the
// SELECT_PICTURE constant
            if (requestCode == SELECT_PICTURE) {
// Get the url of the image from data
            Uri selectedImageUri =
                data.getData();if (null !=
                selectedImageUri) {
// update the preview image in the layout
            Log.e("H", "" + selectedImageUri);
            list.add(selectedImageUri);
            models.add(new
                Model(medName.getText().toString(),medAdd.getText().toString()));
            adapter = new Adapter(getApplicationContext(), models, list);
            r1.setAdapter(adapter);
            adapter.notifyDataSetChanged(); }
        }
    }
    }
```

```
}
```

Adapter.java

```java
package com.example.practical11;

import android.annotation.SuppressLint;
import android.content.Context;
import android.net.Uri;
import android.util.Log;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.Button;
import android.widget.ImageView;
import android.widget.TextView;
import androidx.annotation.NonNull;
import androidx.recyclerview.widget.RecyclerView;
import java.util.ArrayList;
import java.util.List;
public class Adapter extends RecyclerView.Adapter<Adapter.ViewHolder>
    {
        Context ctx;
        List<Model> models;
        private ArrayList list;
        public Adapter(Context ctx, List<Model> models, ArrayList list)
        {
            this.ctx = ctx;
            this.models = models;
            this.list = list;
        }
        @NonNull
        @Override
        public ViewHolder onCreateViewHolder(@NonNull ViewGroup parent, int viewType)
        {
            View v =
LayoutInflater.from(parent.getContext()).inflate(R.layout.item_layout,parent,false);
            return new ViewHolder(v);
        }
        @Override
        public void onBindViewHolder(@NonNull ViewHolder
holder,@SuppressLint("RecyclerView") int position)
        {
            holder.mTvName.setText(models.get(position).getName());Log.e("Name:
",models.get(position).getName());
            holder.mTvAdd.setText(models.get(position).getAddress());
            holder.img.setImageURI((Uri) list.get(position));
```

```java
        holder.btnRemove.setOnClickListener(new View.OnClickListener()
        {
            @Override
            public void onClick(View view)
            {
                models.remove(position);
                list.remove(position);
                notifyDataSetChanged();
            }
        });
    }
    @Override
    public int getItemCount()
    {
        return models.size();
    }
    public class ViewHolder extends RecyclerView.ViewHolder
    {
        TextView mTvName,mTvAdd;
        ImageView img;
        Button btnRemove;
    public ViewHolder(@NonNull View itemView)
    {
        super(itemView);
        mTvName = itemView.findViewById(R.id.txtName);
        mTvAdd = itemView.findViewById(R.id.txtAddress);
        img=itemView.findViewById(R.id.img);
        btnRemove = itemView.findViewById(R.id.remvoeItem);
    }
  }
}
}
```

Model.java
```java
package com.example.practical11;

public class Model {
    String name,address;
    public Model(String name, String address)
    {this.name = name;
        this.address = address;
    }
    public String getName()
        return name;
    public void setName(String name)
        this.name = name;
    public String getAddress()
```

```
        return address;
    public void setAddress(String address)
        this.address = address;
}
```
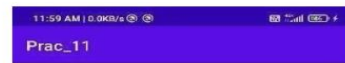
SCREENSHOTS OF APP:
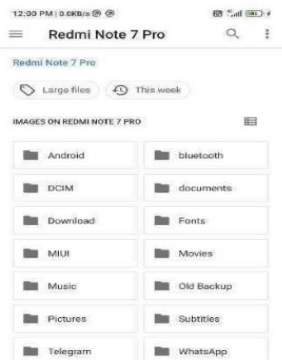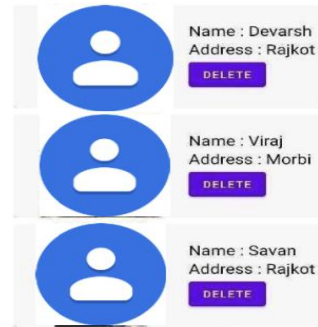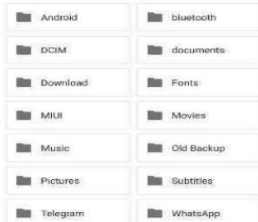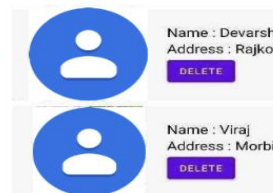
EXPERIMENT-12

Title: Practical: Theme, Custom Styles, Drawables
LAYOUTS:
activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:id="@+id/mainrl"
    android:background="@drawable/download"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:android="http://schemas.android.com/apk/res/android">
    <RelativeLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:id="@+id/topLine"/>
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:id="@+id/searchL"
        android:padding="5dp"
        android:layout_below="@id/topLine">
        <androidx.cardview.widget.CardView
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginTop="10dp"
            android:layout_margin="5dp"
            android:elevation="30dp"
            app:cardCornerRadius="10dp">
            <LinearLayout
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:orientation="vertical">
                <!--android:background="#36d1dc"-->
                <!--<Spinner
                android:id="@+id/search_type"
                android:layout_width="match_parent
                "
                android:layout_height="wrap_content
                "
                android:background="#f5f5f5"
                android:layout_marginRight="20dp"
                android:layout_marginTop="20dp"
```

```xml
                android:layout_marginLeft="20dp"
                android:padding="8dp"
                />-->
                <EditText
                    android:layout_width="match_parent"
                    android:layout_height="wrap_content"
                    android:layout_marginRight="20dp"
                    android:layout_marginTop="20dp"
                    android:layout_marginLeft="20dp"
                    android:hint="Enter Worker Type"
                    android:padding="8dp"
                    android:background="@drawable/edittext_rounded" >
                </EditText>
                <Spinner
                    android:id="@+id/search_loc"
                    android:layout_width="match_parent"
                    android:layout_height="wrap_content"
                    android:layout_marginRight="20dp"
                    android:layout_marginTop="20dp"
                    android:layout_marginLeft="20dp"
                    android:padding="8dp"
                    android:background="#f5f5f5"
                    android:entries="@array/array_gujarat_districts" />

                <Button
                    android:id="@+id/btn_search"
                    android:layout_width="match_parent"
                    android:layout_height="wrap_content"
                    android:layout_marginLeft="30dp"
                    android:layout_marginTop="20dp"
                    android:layout_marginRight="30dp"
                    android:padding="10dp"
                    android:layout_marginBottom="20dp"
                    android:text="Search"
                    android:textAllCaps="true" />
            </LinearLayout>
        </androidx.cardview.widget.CardView>
    </LinearLayout>
    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:id="@+id/text"
        android:gravity="center"
        android:textSize="20sp"
        android:textStyle="bold"
```

```xml
        android:layout_below="@id/searchL"
        android:text="Best Rated Workers">
    </TextView>
    <androidx.recyclerview.widget.RecyclerView
        android:id="@+id/recycofsearch"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/text"
        android:layout_marginTop="20dp"
        android:fitsSystemWindows="true"
        android:padding="10dp">
    </androidx.recyclerview.widget.RecyclerView>
    <RelativeLayout
        android:id="@+id/loading"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerInParent="true"
        android:background="#f5f5f5"
        android:padding="15dp"
        android:visibility="invisible">
        <ProgressBar
            android:id="@+id/prog"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_centerVertical="true"
            android:visibility="invisible">
        </ProgressBar>
        <TextView
            android:id="@+id/tv"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_centerVertical="true"
            android:layout_marginLeft="10dp"
            android:layout_toRightOf="@id/prog"
            android:text="Loading.."
            android:textSize="20sp"
            android:visibility="invisible">
        </TextView>
    </RelativeLayout>
</RelativeLayout>
```

edittext_rounded.xml :

```xml
<?xml version="1.0" encoding="utf-8"?>
<shape xmlns:android="http://schemas.android.com/apk/res/android">
<solid android:color="#f9f9f9"> </solid>
<corners android:radius="7dp"> </corners>
</shape>
```

themes.xml :

```xml
<resources xmlns:tools="http://schemas.android.com/tools">
<!-- Base application theme. -->
<style name="Theme.EServices"
parent="Theme.MaterialComponents.DayNight.DarkActionBar">
<!-- Custom Theme Color -->
<item name="colorPrimary">@color/button</item>
<item name="colorPrimaryVariant">@color/teal_700</item>
<item name="colorOnPrimary">@color/black</item>
<!-- Secondary brand color. -->
<item name="colorSecondary">@color/teal_200</item>
<item name="colorSecondaryVariant">@color/teal_700</item>
<item name="colorOnSecondary">@color/black</item>
<!-- Status bar color. -->
<item name="android:statusBarColor"
tools:targetApi="l">?attr/colorPrimaryVariant</item>
        <!-- Customize your theme here. -->
</style>
<style name="Theme.EServices.NoActionBar">
<item name="windowActionBar">false</item>
<item name="windowNoTitle">true</item>
</style>
<style name="Theme.EServices.AppBarOverlay"
parent="ThemeOverlay.AppCompat.Dark.ActionBar" />
<style name="Theme.EServices.PopupOverlay"
parent="ThemeOverlay.AppCompat.Light" />
</resources>
```

colors.xml :

```xml
<?xml version="1.0" encoding="utf-8"?>
<resources>
        <color name="purple_200">#FFBB86FC</color>
        <color name="purple_500">#FF6200EE</color>
        <color name="purple_700">#FF3700B3</color>
        <color name="black">#FF000000</color>
        <color name="white">#FFFFFFFF</color>
        <color name="button"> #ff5f6d </color>
```

```
        <color name="teal_200">#FF03DAC5</color>
        <color name="teal_700">#FF018786</color>
</resources>
```
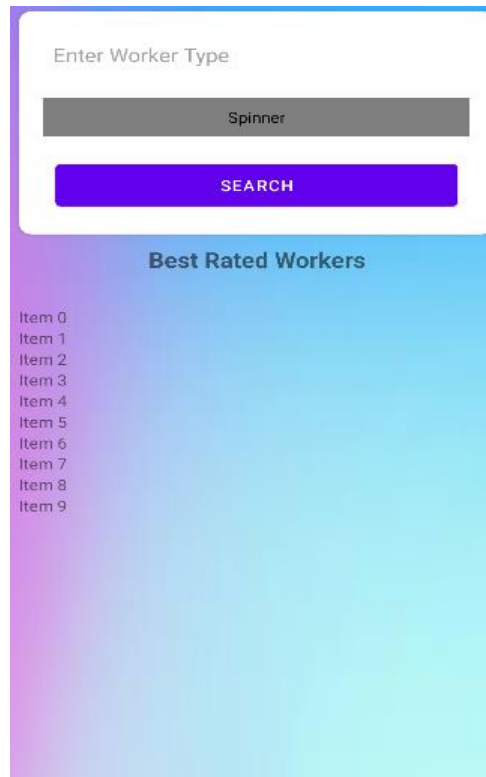
MainActivity.java

```java
package com.example.practical12;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;

public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
}
```

SCREENSHOTS OF APP:

EXPERIMENT-13

Title: Create the MP3 player like application with service
LAYOUTS:
activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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/songs_text"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerHorizontal="true"
        android:padding="10dp"
        android:text="SONGS"
        android:textColor="#BBB000"
        android:textSize="20dp"
        android:textStyle="bold" />
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/no_songs_text"
        android:text="NO SONGS FOUND"
        android:layout_centerInParent="true"
        android:visibility="gone"/>
    <androidx.recyclerview.widget.RecyclerView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:id="@+id/recycler_view"
        android:layout_below="@id/songs_text"/>
</RelativeLayout>
```

MainActivity.java

```java
package com.example.practical13;
import androidx.recyclerview.widget.RecyclerView;
import android.Manifest;
import android.provider.MediaStore;
import android.view.View;
import android.widget.TextView;
```

```java
import android.widget.Toast;
import java.io.File;
import java.util.ArrayList;

public class MainActivity extends AppCompatActivity {
    RecyclerView recyclerView;
    TextView noMusicTextView;
    ArrayList<AudioModel> songsList = new ArrayList<>();

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        recyclerView = findViewById((R.id.recycler_view));
        noMusicTextView = findViewById(R.id.no_songs_text);
        if (checkPermission() == false) {
            requestPermission();
            return;
        }
        String[] projection = {
                MediaStore.Audio.Media.TITLE,
                MediaStore.Audio.Media.DATA,
                MediaStore.Audio.Media.DURATION
        };
        String selection = MediaStore.Audio.Media.IS_MUSIC + "!=0";
        Cursor cursor =
                getContentResolver().query(MediaStore.Audio.Media.EXTERNAL_CONTENT_URI,
projection, selection, null, null);
        while (cursor.moveToNext()) {
            AudioModel songData= new
AudioModel(cursor.getString(1),cursor.getString(0),cursor.getString(1));
            if (new File(songData.getPath()).exists())
                songsList.add(songData);
        }
        if (songsList.size() == 0) {
            noMusicTextView.setVisibility(View.VISIBLE);
        } else {
            recyclerView.setLayoutManager(new LinearLayoutManager(this));
            recyclerView.setAdapter(new MusicListAdapter(songsList, getApplicationContext()));
        }
    }

    boolean checkPermission() {
        int result = ContextCompat.checkSelfPermission(MainActivity.this,
Manifest.permission.READ_EXTERNAL_STORAGE);
```

```
      if (result == PackageManager.PERMISSION_GRANTED) {
         return true;
      } else {
         return false;
      }
   }
   void requestPermission() {
      if (ActivityCompat.shouldShowRequestPermissionRationale(MainActivity.this,
Manifest.permission.READ_EXTERNAL_STORAGE)) {
         Toast.makeText(MainActivity.this, "READ PERMISSION IS REQUIRED, PLEASE
ALLOW FROM SETTINGS", Toast.LENGTH_SHORT).show();
      } else
         ActivityCompat.requestPermissions(MainActivity.this, new String[]{
            Manifest.permission.READ_EXTERNAL_STORAGE}, 123);
   }
   @Override
   protected void onResume() {
      super.onResume();
      if (recyclerView != null) {
         recyclerView.setAdapter(new MusicListAdapter(songsList, getApplicationContext()));
      }
   }
}
```

SCREENSHOTS OF APP:
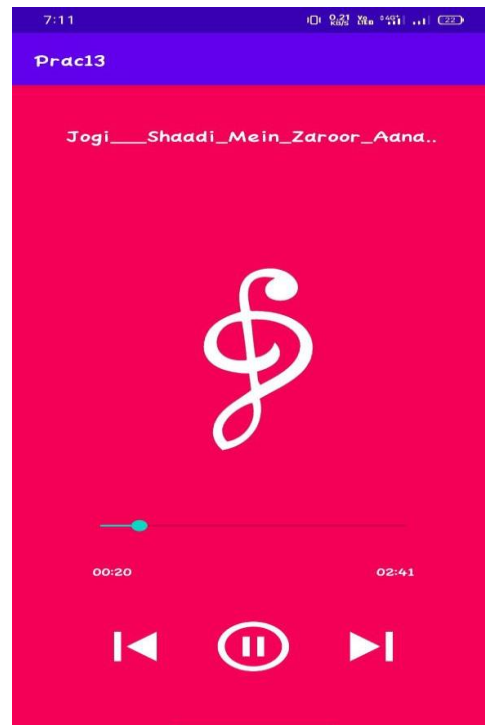
EXPERIMENT-14

Title: The Simple Calculator app has two edit texts and four buttons. When you enter two numbers and click a button, the app performs the calculation for that button and displays the result.

CODE:

MainActivity.java

```java
package com.vipul.prac14;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import org.mozilla.javascript.Context;
import org.mozilla.javascript.Scriptable;
public class MainActivity extends AppCompatActivity implements View.OnClickListener{
    TextView result, solution;
    MaterialButton buttonC,buttonBracOpen, buttonBracClose;
    MaterialButton buttonDivide, buttonMultiply, buttonPlus, buttonMinus, buttonEquals;
    MaterialButton button0, button1, button2, button3, button4, button5, button6, button7,
button8, button9;
    MaterialButton buttonAC, buttonDot;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        result  = findViewById(R.id.result);
        solution = findViewById(R.id.solution);
        assignId(buttonC,R.id.button_c);
        assignId(buttonBracOpen,R.id.button_open_bracket);
        assignId(buttonBracClose,R.id.button_close_bracket);
        assignId(buttonDivide,R.id.button_divide);
        assignId(buttonMultiply,R.id.button_multiply);
        assignId(buttonPlus,R.id.button_plus);
        assignId(buttonMinus,R.id.button_minus);
        assignId(buttonEquals,R.id.button_equals);
        assignId(button0,R.id.button_0);
        assignId(button1,R.id.button_1);
        assignId(button2,R.id.button_2);
        assignId(button3,R.id.button_3);
        assignId(button4,R.id.button_4);
        assignId(button5,R.id.button_5);
```

```java
            assignId(button6,R.id.button_6);
            assignId(button7,R.id.button_7);
            assignId(button8,R.id.button_8);
            assignId(button9,R.id.button_9);
            assignId(buttonAC,R.id.button_ac);
            assignId(buttonDot,R.id.button_dot); }
        void assignId(MaterialButton btn, int id) {
            btn = findViewById(id);
            btn.setOnClickListener(this); }
        @Override
        public void onClick(View view) {
            MaterialButton button = (MaterialButton) view;
            String buttonText = button.getText().toString();
            String dataToCalculate = solution.getText().toString();
            if(buttonText.equals("AC")){
                solution.setText("");
                result.setText("0");
                return; }
            if(buttonText.equals("=")) {
                solution.setText(result.getText());
                return; }
            if(buttonText.equals("C")) {
                dataToCalculate = dataToCalculate.substring(0,dataToCalculate.length()-1); }
            else {dataToCalculate = dataToCalculate + buttonText;}
            solution.setText(dataToCalculate);
            String finalResult = getResult(dataToCalculate);
            if(!finalResult.equals("Error")) {
                result.setText(finalResult); }
}
        String getResult(String data) {
            try {Context context = Context.enter();
                context.setOptimizationLevel(-1);
                Scriptable scriptable = context.initStandardObjects();
                String finalResult = context.evaluateString(scriptable,data,"Javascript",1,null).toString();
                if(finalResult.endsWith(".0")) {
                    finalResult = finalResult.replace(".0", "");}
                return finalResult; } catch (Exception e) {
                return "Error";
        }
```

activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:padding="30dp"
    tools:context=".MainActivity">
    <EditText
        android:id="@+id/num1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter number 1"
        android:inputType="number">
    </EditText>
    <EditText
        android:id="@+id/num2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/num1"
        android:layout_marginTop="15dp"
        android:hint="Enter number 2"
        android:inputType="number">
    </EditText>
    <TextView
        android:id="@+id/val"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/num2"
        android:layout_marginTop="20dp"
        android:text="Select Expression below"
        android:textSize="30sp"
        android:gravity="center"/>
    <LinearLayout
        android:id="@+id/l1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/val"
```

```xml
        android:layout_centerHorizontal="true"
        android:orientation="horizontal">
        <Button
            android:id="@+id/btnAdd"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content
            android:layout_centerHorizontal="true"
            android:layout_marginTop="15dp"
            android:text="+">
        </Button>
        <Button
            android:id="@+id/btnSub"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginLeft="10dp"
            android:layout_marginTop="15dp"
            android:layout_toRightOf="@id/btnAdd"
            android:text="-">
        </Button>
    </LinearLayout>
    <LinearLayout
        android:id="@+id/l2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/l1"
        android:layout_centerHorizontal="true"
        android:orientation="horizontal">

        <Button
            android:id="@+id/btnMul"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_centerHorizontal="true"
            android:layout_marginTop="15dp"
            android:text="*">
        </Button>
        <Button
            android:id="@+id/btnDiv"
            android:layout_width="wrap_content"
```

```
        android:layout_height="wrap_content"
        android:layout_marginLeft="10dp"
        android:layout_marginTop="15dp"
        android:layout_toRightOf="@id/btnAdd"
        android:text="/">
    </Button>
  </LinearLayout>
  <TextView
      android:id="@+id/txtAns"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_below="@id/l2"
      android:layout_marginTop="15dp"
      android:text="Answer "
      android:textColor="@color/black"
      android:textSize="24sp" />
</RelativeLayout>
```

SCREENSHOTS OF APP:
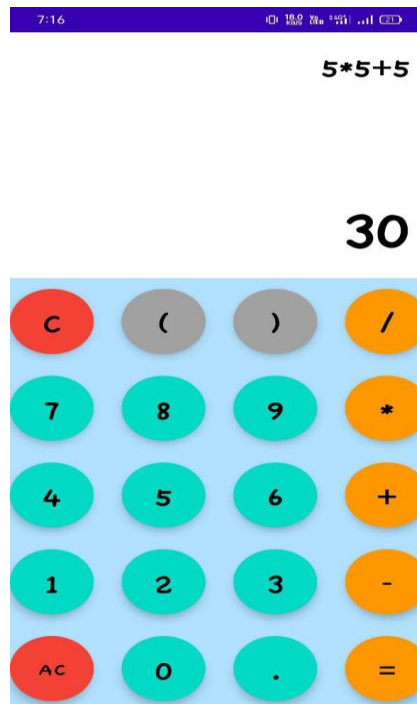
EXPERIMENT-15

Title: Develop one App. Which Contains Specific User Interface and design Interface.

CODE:
activity_main.xml

```xml
<?xml version = "1.0" encoding = "utf-8"?>
<RelativeLayout xmlns:android = "http://schemas.android.com/apk/res/android"
    xmlns:tools = "http://schemas.android.com/tools" android:layout_width="match_parent"
    android:layout_height = "match_parent"
    android:paddingLeft= "50dp"
    android:background="@drawable/download"
    android:paddingRight = "50dp"
    android:paddingTop = "50dp"
    android:paddingBottom = "200dp"
    tools:context = ".MainActivity">

    <TextView
        android:id="@+id/textview"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentTop="true"
        android:layout_centerHorizontal="true"
        android:text="Login"
        android:textColor="#0910f8"
        android:textSize="35dp"
        android:textStyle="italic|bold"  />
    <TextView
        android:id="@+id/t"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:paddingTop="80dp"
        android:layout_below="@+id/textview"
        android:layout_centerHorizontal="true"
        android:text="Welcome to MyNotes!"
        android:textColor="#00000f"
        android:textSize="20dp"
        android:textStyle="italic|bold" />
    <TextView
        android:id="@+id/t1"
        android:layout_below="@+id/t"
        android:layout_centerHorizontal="true"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
```

```
android:text="Log In to Continue..."
android:textStyle="italic|bold"
android:textSize="20sp"/>


<EditText
    android:id="@+id/editText"
    android:layout_width="wrap_content"
    android:layout_below="@+id/t1"
    android:layout_height="wrap_content"
    android:layout_alignParentStart="true"
    android:layout_alignParentLeft="true"
    android:layout_alignParentEnd="true"
    android:layout_alignParentRight="true"
    android:layout_marginTop="46dp"
    android:focusable="true"
    android:hint="Enter Name" />

  <EditText
    android:id="@+id/editText2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/editText"
    android:layout_alignEnd="@+id/editText"
    android:layout_alignRight="@+id/editText"
    android:layout_alignParentStart="true"
    android:layout_alignParentLeft="true"
    android:ems="10"
    android:hint="Password"
    android:inputType="textPassword" />

<Button
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="login"
    android:id="@+id/button"
    android:layout_alignParentBottom="true"
    android:layout_toLeftOf="@+id/textview"
    android:layout_toStartOf="@+id/textview" />

<Button
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Cancel"
    android:id="@+id/button2"
```

```
    android:layout_alignParentBottom="true"
    android:layout_toRightOf="@+id/textview"
    android:layout_toEndOf="@+id/textview" />
</RelativeLayout>
```
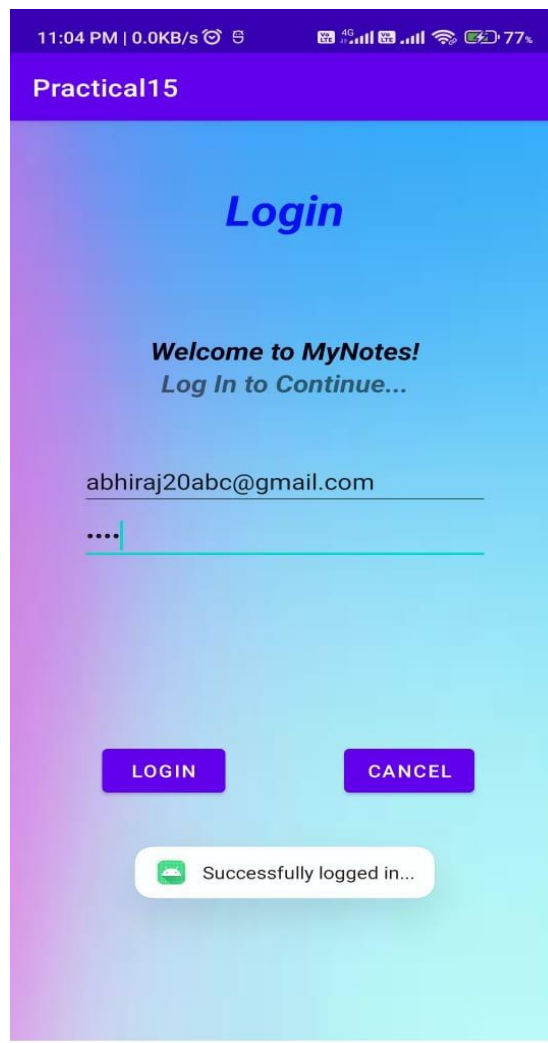
MainActivity.java

```java
package com.example.practical15;
import androidx.appcompat.app.AppCompatActivity;

import android.graphics.Color;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    Button b, c;
    EditText e, e1;
    TextView t1,t2,t3;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        b = (Button) findViewById(R.id.button);
        c = (Button) findViewById(R.id.button2);
        e = (EditText) findViewById(R.id.editText);
        e1 = (EditText) findViewById(R.id.editText2);
        t1 = (TextView) findViewById(R.id.textview);
        t2=(TextView)findViewById(R.id.t);
        t3=(TextView)findViewById(R.id.t1);
        b.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                if(e.getText().toString().equals("abhiraj20abc@gmail.com")&&
                        e1.getText().toString().equals("abhi")){
                    Toast.makeText(getApplicationContext(),"Successfully logged
in...",Toast.LENGTH_SHORT).show();
                }
                else {
                    Toast.makeText(getApplicationContext(),"Wrong
details",Toast.LENGTH_SHORT).show();
                    t1.setVisibility(View.VISIBLE);
                    t1.setBackgroundColor(Color.RED);
```

```
            }
        }
    });
    c.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            finish();
        }
    });
  }
}
```

SCREENSHOTS OF APP

EXPERIMENT-16

Title: Using experiment 4 and Save user data in a database.

CODE:
MainActivity.java

```java
package com.example.practical16;
import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;
import android.database.Cursor;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
    EditText name, pass, email, phone, country;
    Button insert, view;
    DBHelper DB;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        name = findViewById(R.id.username);
        pass = findViewById(R.id.password);
        email = findViewById(R.id.email);
        phone = findViewById(R.id.phone);
        country = findViewById(R.id.country);
        insert = findViewById(R.id.submit);
        view = findViewById(R.id.view);
        DB = new DBHelper(this);
        insert.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String nameTXT = name.getText().toString();
                String passTXT = pass.getText().toString();
                String emailTXT = email.getText().toString();
                String phoneTXT = phone.getText().toString();
                String countryTXT = country.getText().toString();
```

```java
        Boolean checkinsertdata = DB.insertuserdata(nameTXT, passTXT, emailTXT,
phoneTXT, countryTXT);
        if (checkinsertdata == true)
            Toast.makeText(MainActivity.this, "New Entry Inserted",
Toast.LENGTH_SHORT).show();
        else
            Toast.makeText(MainActivity.this, "New Entry Not Inserted",
Toast.LENGTH_SHORT).show();}});
    view.setOnClickListener(new View.OnClickListener() {
      @Override
      public void onClick(View view) {
        Cursor res = DB.getdata();
        if (res.getCount() == 0) {
          Toast.makeText(MainActivity.this, "No Entry Exists",
Toast.LENGTH_SHORT).show();
          return; }
        StringBuffer buffer = new StringBuffer();
        while (res.moveToNext()) {
          buffer.append("Name :" + res.getString(0) + "\n");
          buffer.append("Password :" + res.getString(1) + "\n");
          buffer.append("Email :" + res.getString(2) + "\n\n");
          buffer.append("Phone :" + res.getString(3) + "\n\n");
          buffer.append("Country :" + res.getString(4) + "\n\n");}
        AlertDialog.Builder builder = new AlertDialog.Builder(MainActivity.this);
        builder.setCancelable(true);
        builder.setTitle("User Entries");
        builder.setMessage(buffer.toString());
        builder.show();}
    });
  }
}
```

DBHelper.java

```java
package com.example.practical16;
import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
```

```java
public class DBHelper extends SQLiteOpenHelper {
    public DBHelper(Context context) {
        super(context, "Userdata.db", null, 1); }
    @Override
    public void onCreate(SQLiteDatabase DB) {
        DB.execSQL("create Table Userdetails(name TEXT primary key, pass TEXT, email TEXT,
phone TEXT, country TEXT)"); }
    @Override
    public void onUpgrade(SQLiteDatabase DB, int i, int ii) {
        DB.execSQL("drop Table if exists Userdetails");
    }
    public Boolean insertuserdata(String name, String pass, String email, String phone, String
country)
    {
        SQLiteDatabase DB = this.getWritableDatabase();
        ContentValues contentValues = new ContentValues();
        contentValues.put("name", name);
        contentValues.put("pass", pass);
        contentValues.put("email", email);
        contentValues.put("phone", phone);
        contentValues.put("country", country);
        long result=DB.insert("Userdetails", null, contentValues);
        if(result==-1){
            return false;
        }else{
            return true; }
    }
    public Cursor getdata ()
    {
        SQLiteDatabase DB = this.getWritableDatabase();
        Cursor cursor = DB.rawQuery("Select * from Userdetails", null);
        return cursor;
    }
}
```

activity_main.xml
```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
```

```xml
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="@drawable/background"
    tools:context=".MainActivity">
    <TextView
        android:id="@+id/form"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="35dp"
        android:gravity="center"
        android:text="@string/form"
        android:textColor="@color/white"
        android:textSize="35sp"
        android:textStyle="bold" />
    <EditText
        android:id="@+id/username"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/form"
        android:layout_marginStart="10dp"
        android:layout_marginTop="10dp"
        android:layout_marginEnd="10dp"
        android:layout_marginBottom="10dp"
        android:autofillHints="#"
        android:background="@drawable/rounded_corner_view"
        android:hint="@string/username"
        android:inputType="text"
        android:padding="15dp"
        android:textColor="@color/black"
        android:textColorHint="@color/black" />
    <EditText
        android:id="@+id/password"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/username"
        android:layout_marginStart="10dp"
        android:layout_marginTop="10dp"
        android:layout_marginEnd="10dp"
        android:layout_marginBottom="10dp"
```

```
        android:autofillHints="#"
        android:background="@drawable/rounded_corner_view"
        android:hint="@string/password"
        android:inputType="textPassword"
        android:padding="15dp"
        android:textColor="@color/black"
        android:textColorHint="@color/black" />
    <EditText
        android:id="@+id/email"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/password"
        android:layout_marginStart="10dp"
        android:layout_marginTop="10dp"
        android:layout_marginEnd="10dp"
        android:layout_marginBottom="10dp"
        android:background="@drawable/rounded_corner_view"
        android:hint="@string/email"
        android:textColorHint="@color/black"
        android:inputType="textEmailAddress"
        android:padding="15dp"
        android:textColor="@color/black" />
    <EditText
        android:id="@+id/phone"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/email"
        android:layout_marginStart="10dp"
        android:layout_marginTop="10dp"
        android:layout_marginEnd="10dp"
        android:layout_marginBottom="10dp"
        android:autofillHints="#"
        android:background="@drawable/rounded_corner_view"
        android:hint="@string/phone_number"
        android:textColorHint="@color/black"
        android:inputType="phone"
        android:padding="15dp"
        android:textColor="@color/black" />
    <EditText
```

```
    android:id="@+id/country"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@id/phone"
    android:layout_marginStart="10dp"
    android:layout_marginTop="10dp"
    android:layout_marginEnd="10dp"
    android:layout_marginBottom="10dp"
    android:autofillHints="#"
    android:background="@drawable/rounded_corner_view"
    android:hint="@string/country"
    android:textColorHint="@color/black"
    android:inputType="text"
    android:padding="15dp"
    android:textColor="@color/black" />
<com.google.android.material.button.MaterialButton
    android:id="@+id/submit"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@id/country"
    android:layout_centerHorizontal="true"
    android:layout_marginStart="10dp"
    android:layout_marginTop="10dp"
    android:layout_marginEnd="10dp"
    android:layout_marginBottom="10dp"
    android:backgroundTint="@color/design_default_color_on_secondary"
    android:text="@string/submit"
    android:textColor="@color/white" />
<com.google.android.material.button.MaterialButton
    android:id="@+id/view"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@id/submit"
    android:layout_centerHorizontal="true"
    android:layout_marginStart="10dp"
    android:layout_marginTop="10dp"
    android:layout_marginEnd="10dp"
    android:layout_marginBottom="10dp"
    android:backgroundTint="@color/design_default_color_on_secondary"
```

```
        android:text="@string/view"
        android:textColor="@color/white" />
</RelativeLayout>
```

SCREENSHOTS OF APP: