

Practical-1 Create a first app on Android

MainActivity.java:

```
package com.task.task1;

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);
    }
}
```

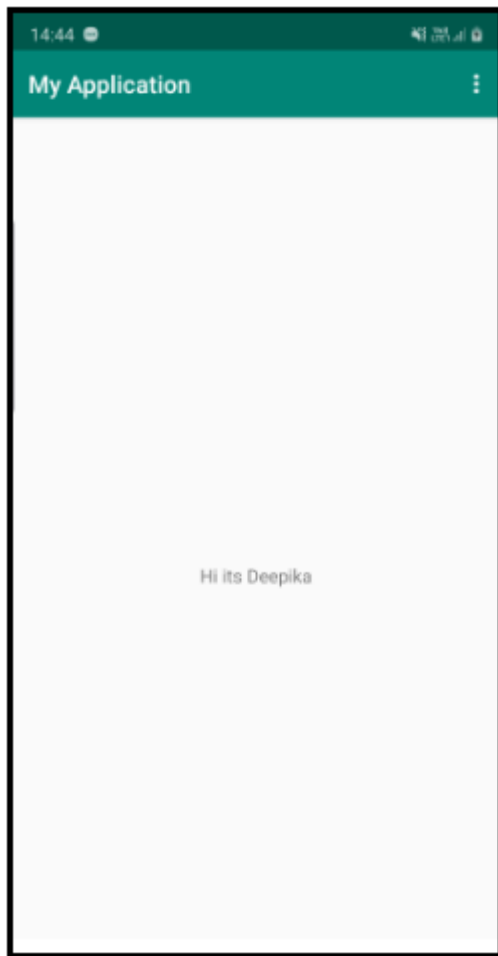
Activity_main.xml:

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

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hi its Deepika"
        android:textSize="25dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

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

OUTPUT:



Practical-2: Create icon of app, change the label Background

MainActivity.java:

```
package com.task.task2;

import androidx.appcompat.app.ActionBar;
import androidx.appcompat.app.AppCompatActivity;

import android.graphics.Color;
import android.graphics.drawable.ColorDrawable;
import android.os.Bundle;
import android.text.Html;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        ActionBar actionBar;
        actionBar = getSupportActionBar();

        ColorDrawable colorDrawable
            = new ColorDrawable(Color.parseColor("#0F9D58"));

        actionBar.setBackgroundDrawable(colorDrawable);
        actionBar.setTitle(Html.fromHtml("<font color='#000000'>TASK2 </font>"));
        actionBar.setIcon(R.drawable.icon1);
    }
}
```

Activity_main.xml:

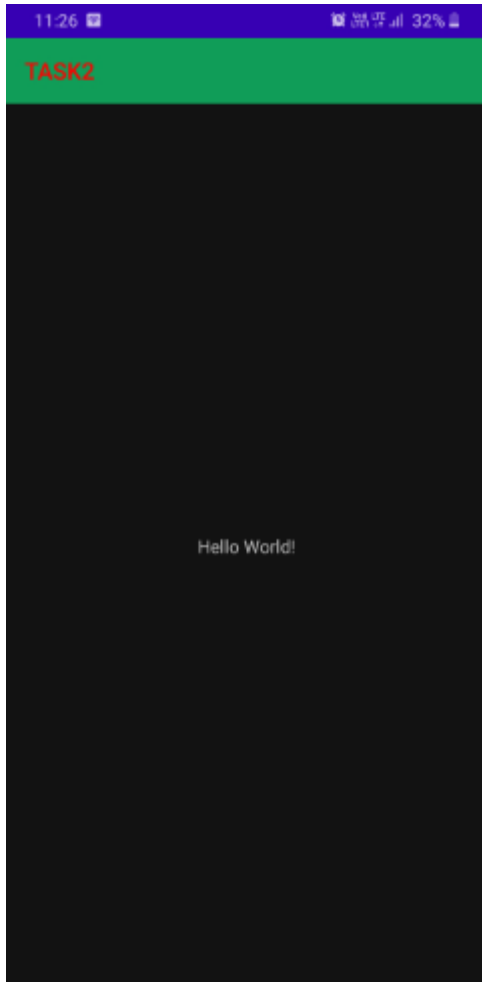
```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"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

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent">
```

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

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

OUTPUT:



Practical-3: Create the menu, Buttons and ScrollView in an Application

MainActivity.java:

```
package com.task.task3;

import android.os.Bundle;

import com.google.android.material.floatingactionbutton.FloatingActionButton;
import com.google.android.material.snackbar.Snackbar;

import androidx.appcompat.app.AppCompatActivity;
import androidx.appcompat.widget.Toolbar;

import android.view.View;

import android.view.Menu;
import android.view.MenuItem;
import android.widget.Button;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    Button b1,b2,b3,b4,b5,b6,b7,b8,b9,b10,b11,b12,b13,b14,b15,b16,b17;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        b1=(Button)findViewById(R.id.button1);
        b2=(Button)findViewById(R.id.button2);
        b3=(Button)findViewById(R.id.button3);
        b4=(Button)findViewById(R.id.button4);
        b5=(Button)findViewById(R.id.button5);
        b6=(Button)findViewById(R.id.button6);
        b7=(Button)findViewById(R.id.button7);
        b8=(Button)findViewById(R.id.button8);
        b9=(Button)findViewById(R.id.button9);
        b10=(Button)findViewById(R.id.button10);
        b11=(Button)findViewById(R.id.button11);
        b12=(Button)findViewById(R.id.button12);
        b13=(Button)findViewById(R.id.button13);
        b14=(Button)findViewById(R.id.button14);
        b15=(Button)findViewById(R.id.button15);
        b16=(Button)findViewById(R.id.button16);
        b17=(Button)findViewById(R.id.button17);

        Toolbar toolbar = findViewById(R.id.toolbar);
        setSupportActionBar(toolbar);

    }
```

@Override

```
public boolean onCreateOptionsMenu(Menu menu) {  
    getMenuInflater().inflate(R.menu.menu_main, menu);  
    return true;  
}
```

@Override

```
public boolean onOptionsItemSelected(MenuItem item) {  
    int id = item.getItemId();  
  
    if (id == R.id.menu1) {  
        Toast.makeText(getApplicationContext(), "Menu's Item 1  
Selected", Toast.LENGTH_LONG).show();  
        return true;  
    }  
    if (id == R.id.menu2) {  
        Toast.makeText(getApplicationContext(), "Menu's Item 2  
Selected", Toast.LENGTH_LONG).show();  
        return true;  
    }  
    if (id == R.id.menu3) {  
        Toast.makeText(getApplicationContext(), "Menu's Item 3  
Selected", Toast.LENGTH_LONG).show();  
        return true;  
    }  
  
    return super.onOptionsItemSelected(item);  
}  
public void buttonclicked(View view) {  
    Toast.makeText(getApplicationContext(), "Button  
Clicked", Toast.LENGTH_LONG).show();  
}  
}
```

Activity main.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">  
  
    <com.google.android.material.appbar.AppBarLayout  
        android:layout_width="match_parent"  
        android:layout_height="wrap_content"
```

```

android:theme="@style/Theme.Task3.AppBarOverlay">

<androidx.appcompat.widget.Toolbar
android:id="@+id/toolbar"
android:layout_width="match_parent"
android:layout_height="?attr/actionBarSize"
android:background="?attr/colorPrimary"
app:popupTheme="@style/Theme.Task3.PopupOverlay" />

</com.google.android.material.appbar.AppBarLayout>
<ScrollView
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginTop="70dp"
>
<LinearLayout
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_below="@+id/toolbar"
android:orientation="vertical">

<Button
android:id="@+id/button1"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_weight="1"
android:onClick="buttonclicked"
android:text="Button1" />
<Button
android:id="@+id/button2"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_weight="1"
android:onClick="buttonclicked"
android:text="Button2" />
<Button
android:id="@+id/button3"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_weight="1"
android:onClick="buttonclicked"
android:text="Button3" />
<Button
android:id="@+id/button4"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_weight="1"
android:onClick="buttonclicked"
android:text="Button4" />
<Button

```

```
android:id="@+id/button5"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_weight="1"
android:onClick="buttonclicked"
android:text="Button5" />
<Button
android:id="@+id/button6"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_weight="1"
android:onClick="buttonclicked"
android:text="Button6" />
<Button
android:id="@+id/button7"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_weight="1"
android:onClick="buttonclicked"
android:text="Button7" />
<Button
android:id="@+id/button8"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_weight="1"
android:onClick="buttonclicked"
android:text="Button8" />
<Button
android:id="@+id/button9"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_weight="1"
android:onClick="buttonclicked"
android:text="Button9" />
<Button
android:id="@+id/button10"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_weight="1"
android:onClick="buttonclicked"
android:text="Button10" />
<Button
android:id="@+id/button11"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_weight="1"
android:onClick="buttonclicked"
android:text="Button11" />
<Button
android:id="@+id/button12"
```



```

    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:onClick="buttonclicked"
    android:text="Button12" />
    <Button
    android:id="@+id/button13"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:onClick="buttonclicked"
    android:text="Button13" />
    <Button
    android:id="@+id/button14"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:onClick="buttonclicked"
    android:text="Button14" />
    <Button
    android:id="@+id/button15"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:onClick="buttonclicked"
    android:text="Button15" />
    <Button
    android:id="@+id/button16"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:onClick="buttonclicked"
    android:text="Button16" />
    <Button
    android:id="@+id/button17"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:onClick="buttonclicked"
    android:layout_weight="1"
    android:text="Button17" />
</LinearLayout>
</ScrollView>

```

```

</RelativeLayout>

```

```

MENU_MAIN.XML

```

```

<menu 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"
    tools:context="com.task.task3.MainActivity">

```

```
<item
android:id="@+id/menu1"
android:orderInCategory="100"
android:title="Menu 1" />
```

```
<item
android:id="@+id/menu2"
android:orderInCategory="100"
android:title="Menu 2"
/>
```

```
<item
android:id="@+id/menu3"
android:orderInCategory="100"
android:title="Menu 3" />
</menu>
```

OUTPUT:



Practical-4: Create the form using all the UI i.e Check Button, Radio Button, TextView etc

MainActivity.java:

```
package com.task.task4;

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;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        b1= (Button)findViewById(R.id.button);
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Toast.makeText(getApplicationContext(),"Form
submitted",Toast.LENGTH_LONG).show();
            }
        });
    }
}
```

Activity_main.xml:

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

        <TextView
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="FORM"
            android:layout_marginTop="10dp">
```

```
android:textColor="@color/purple_500"  
android:gravity="center"  
android:textSize="20dp"/>
```

```
<EditText  
android:id="@+id/editTextTextPersonName2"  
android:layout_width="match_parent"  
android:layout_height="wrap_content"  
android:ems="10"  
android:inputType="textPersonName"  
android:hint="Enter your Name" />
```

```
<EditText  
android:id="@+id/editTextTextPassword2"  
android:layout_width="match_parent"  
android:layout_height="wrap_content"  
android:hint="Enter Password"  
android:ems="10"  
android:inputType="textPassword" />  
<TextView  
android:layout_width="match_parent"  
android:layout_height="wrap_content"  
android:text="Select Gender"  
android:textColor="@color/black"  
android:layout_marginTop="10dp" />
```

```
<RadioGroup  
android:layout_width="match_parent"  
android:layout_height="wrap_content"  
android:orientation="horizontal"  
android:weightSum="2">
```

```
<RadioButton  
android:id="@+id/radioButton"  
android:layout_width="match_parent"  
android:layout_height="wrap_content"  
android:layout_weight="1"  
android:checked="true"  
android:text="Male" />
```

```
<RadioButton  
android:id="@+id/radioButton2"  
android:layout_width="match_parent"  
android:layout_height="wrap_content"  
android:layout_weight="1"  
android:text="Female" />  
</RadioGroup>
```

```
<Switch  
android:id="@+id/switch1"
```

```
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginTop="10dp"
android:text="Are you a Student?" />
```

```
<TextView
```

```
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="Languages Known"
android:textColor="@color/black"
android:layout_marginTop="10dp" />
```

```
<CheckBox
```

```
android:id="@+id/checkBox2"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="English" />
```

```
<CheckBox
```

```
android:id="@+id/checkBox3"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="Hindi" />
```

```
<CheckBox
```

```
android:id="@+id/checkBox4"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="Punjabi" />
```

```
<TextView
```

```
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="Rate our College"
android:textColor="@color/black"
android:textSize="15dp"
android:layout_marginTop="10dp" />
```

```
<RatingBar
```

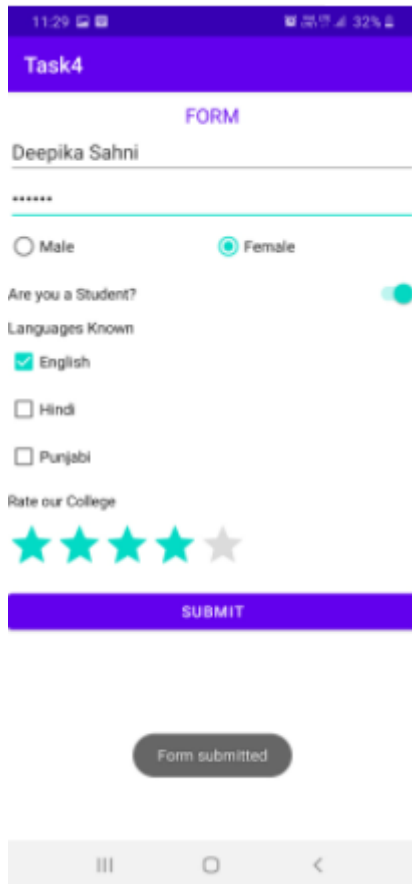
```
android:id="@+id/ratingBar"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginTop="10dp"
android:numStars="5" />
```

```
<Button
```

```
android:id="@+id/button"
android:layout_marginTop="10dp"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="Submit" />
```

</LinearLayout>
</ScrollView>

OUTPUT:



The screenshot shows a mobile application interface with a purple header bar containing the text "Task4". Below the header, the word "FORM" is displayed in purple. The form contains the following elements:

- A text input field with the name "Deepika Sahni".
- A password input field represented by six asterisks "*****".
- Gender selection: Two radio buttons, "Male" (unselected) and "Female" (selected).
- A toggle switch for "Are you a Student?" which is currently turned on.
- Languages Known: Three checkboxes, "English" (checked), "Hindi" (unchecked), and "Punjabi" (unchecked).
- Rating: A section titled "Rate our College" with five star icons. The first four stars are blue, and the fifth is grey.
- A purple "SUBMIT" button.
- A grey button labeled "Form submitted" that appears after submission.

The bottom of the screen shows a standard Android navigation bar with three icons: a square, a circle, and a triangle.

Practical-5: By using all Layouts design the form

Frame.java:

```
package com.task.task5;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

public class Frame extends AppCompatActivity {

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

Linear.java:

```
package com.task.task5;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.Toast;

public class Linear extends AppCompatActivity {
    Button b1;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_linear);
        b1=(Button)findViewById(R.id.linearbutton);
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Toast.makeText(getApplicationContext(),"Form
submitted",Toast.LENGTH_LONG).show();
            }
        });
    }
}
```

MainActivity.java:

package com.task.task5;

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 {
 Button **b1,b2,b3,b4**;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

 setContentView(R.layout.*activity_main*);

b1=(Button)findViewById(R.id.*linear1*);

b2=(Button)findViewById(R.id.*relative2*);

b3=(Button)findViewById(R.id.*table3*);

b4=(Button)findViewById(R.id.*frame4*);

b1.setOnClickListener(**new** View.OnClickListener() {

@Override

public void onClick(View v) {

 Intent i= **new** Intent(MainActivity.*this*,Linear.*class*);

 startActivity(i);

 }

 });

b2.setOnClickListener(**new** View.OnClickListener() {

@Override

public void onClick(View v) {

 Intent i= **new** Intent(MainActivity.*this*,Relative.*class*);

 startActivity(i);

 }

 });

b3.setOnClickListener(**new** View.OnClickListener() {

@Override

public void onClick(View v) {

 Intent i= **new** Intent(MainActivity.*this*,Table.*class*);

 startActivity(i);

 }

 });

b4.setOnClickListener(**new** View.OnClickListener() {

@Override

public void onClick(View v) {

 Intent i= **new** Intent(MainActivity.*this*,Frame.*class*);

 startActivity(i);

 }

 });


```
}  
}
```

Relative.java:

```
package com.task.task5;
```

```
import androidx.appcompat.app.AppCompatActivity;
```

```
import android.os.Bundle;
```

```
import android.view.View;
```

```
import android.widget.Button;
```

```
import android.widget.Toast;
```

```
public class Relative extends AppCompatActivity {
```

```
    Button b1;
```

```
    @Override
```

```
    protected void onCreate(Bundle savedInstanceState) {
```

```
        super.onCreate(savedInstanceState);
```

```
        setContentView(R.layout.activity_relative);
```

```
        b1=(Button)findViewById(R.id.rbbutton);
```

```
        b1.setOnClickListener(new View.OnClickListener() {
```

```
            @Override
```

```
            public void onClick(View v) {
```

```
                Toast.makeText(getApplicationContext(),"Form
```

```
Submitted",Toast.LENGTH_LONG).show();
```

```
            }
```

```
        });
```

```
    }
```

```
}
```

Table.java:

```
package com.task.task5;
```

```
import androidx.appcompat.app.AppCompatActivity;
```

```
import android.os.Bundle;
```

```
import android.view.View;
```

```
import android.widget.Button;
```

```
import android.widget.Toast;
```

```
public class Table extends AppCompatActivity {
```

```
    Button b1;
```

```
    @Override
```

```
    protected void onCreate(Bundle savedInstanceState) {
```

```
        super.onCreate(savedInstanceState);
```

```
        setContentView(R.layout.activity_table);
```

```
        b1=(Button)findViewById(R.id.tbbutton);
```

```
        b1.setOnClickListener(new View.OnClickListener() {
```

@Override

```
public void onClick(View v) {  
    Toast.makeText(getApplicationContext(),"Form  
Submitted",Toast.LENGTH_LONG).show();  
}  
});  
}
```

Activity frame.xml:

```
<?xml version="1.0" encoding="utf-8"?>  
<FrameLayout 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:padding="10dp"  
tools:context=".Frame">
```

```
<TextView  
android:layout_width="match_parent"  
android:layout_height="wrap_content"  
android:text="FRAME LAYOUT"  
android:textSize="30dp"  
android:layout_marginTop="20dp"  
android:gravity="center"  
android:textColor="@color/purple_200"  
android:textStyle="bold"/>
```

```
<ImageView  
android:src="@drawable/logo"  
android:scaleType="fitCenter"  
android:layout_height="fill_parent"  
android:layout_width="fill_parent"/>
```

```
</FrameLayout>
```

Activity linear.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:padding="10dp"  
tools:context=".Linear">
```

```
<TextView
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="FORM LINEAR"
    android:textSize="30dp"
    android:layout_marginTop="20dp"
    android:gravity="center"
    android:textColor="@color/purple_200"
    android:textStyle="bold"/>
```

```
<TextView
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Name"
    android:textSize="20dp"
    android:textColor="@color/black"
    android:layout_marginTop="10dp"/>
```

```
<EditText
    android:id="@+id/Linearname"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:textSize="15dp"
    android:padding="10dp"
    android:textColor="@color/black"
    android:background="@drawable/editt"
    android:inputType="textPersonName"
/>
```

```
<TextView
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Department"
    android:textSize="20dp"
    android:textColor="@color/black"
    android:layout_marginTop="10dp" />
```

```
<EditText
    android:id="@+id/linerdepartment"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:textSize="15dp"
    android:padding="10dp"
    android:textColor="@color/black"
    android:background="@drawable/editt"
    android:inputType="textPersonName" />
```

```
<Button
android:id="@+id/linearbutton"
android:layout_marginTop="10dp"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="SUBMIT" />
</LinearLayout>
```

Activity main.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:layout_marginTop="40dp"
tools:context=".MainActivity">
```

```
<TextView
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:textColor="@color/purple_200"
android:textSize="30dp"
android:gravity="center"
android:textStyle="bold"
android:layout_marginBottom="20dp"
android:text="CLICK ON BUTTON TO CHECK DIFFERENT LAYOUT
USAGE"></TextView>
```

```
<Button
android:id="@+id/linear1"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:textSize="20dp"
android:layout_marginTop="10dp"
android:text="LINEAR LAYOUT"
/>
```

```
<Button
android:id="@+id/relative2"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:textSize="20dp"
android:layout_marginTop="10dp"
android:text="RELATIVE LAYOUT" />
```

```
<Button
android:id="@+id/table3"
```

```
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:textSize="20dp"
android:layout_marginTop="10dp"
android:text="TABLE LAYOUT" />
```

```
<Button
android:id="@+id/frame4"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:textSize="20dp"
android:layout_marginTop="10dp"
android:text="FRAME LAYOUT" />
</LinearLayout>
```

Activity_relative.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:orientation="vertical"
android:padding="10dp"
tools:context=".Linear">
```

```
<TextView
android:id="@+id/r1"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="FORM RELATIVE"
android:textSize="30dp"
android:layout_marginTop="20dp"
android:gravity="center"
android:textColor="@color/purple_200"
android:textStyle="bold"/>
```

```
<TextView
android:id="@+id/r2"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="Name"
android:textSize="20dp"
android:layout_below="@+id/r1"
android:textColor="@color/black"
android:layout_marginTop="10dp"/>
```

```
<EditText
```

```

android:id="@+id/rname"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:ems="10"
android:textSize="15dp"
android:padding="10dp"
android:textColor="@color/black"
android:layout_below="@+id/r2"
android:background="@drawable/editt"
android:inputType="textPersonName"
/>

```

```

<TextView
android:id="@+id/r3"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="Department"
android:textSize="20dp"
android:layout_below="@+id/rname"
android:textColor="@color/black"
android:layout_marginTop="10dp" />

```

```

<EditText
android:id="@+id/rdepartment"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:ems="10"
android:textSize="15dp"
android:layout_below="@+id/r3"
android:padding="10dp"
android:textColor="@color/black"
android:background="@drawable/editt"
android:inputType="textPersonName" />

```

```

<Button
android:id="@+id/rbutton"
android:layout_marginTop="10dp"
android:layout_below="@id/rdepartment"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="SUBMIT" />
</RelativeLayout>

```

Activity table.xml:

```

<?xml version="1.0" encoding="utf-8"?>
<TableLayout 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:padding="10dp"
tools:context=".Table">
```

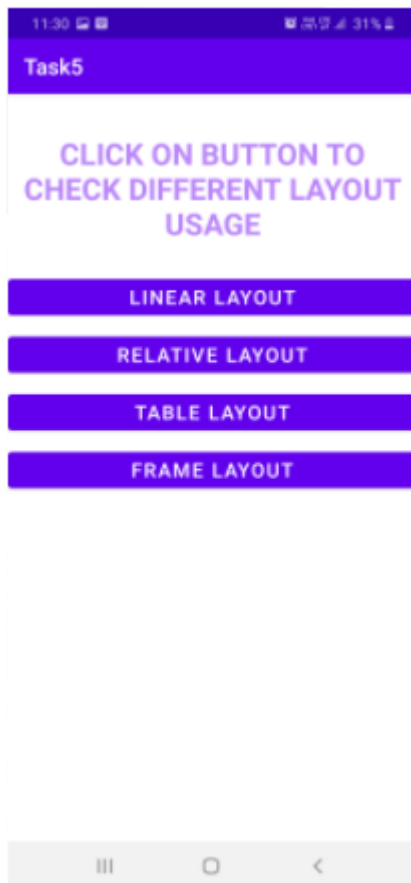
```
<TableRow
android:weightSum="1"
android:layout_width="match_parent"
android:layout_height="wrap_content">
<TextView
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="FORM TABLE"
android:textSize="30dp"
android:layout_marginTop="20dp"
android:gravity="center"
android:layout_weight="1"
android:textColor="@color/purple_200"
android:textStyle="bold"/>
</TableRow>
<TableRow
android:weightSum="1"
android:layout_width="match_parent"
android:layout_height="wrap_content">
<TextView
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="Name"
android:textSize="20dp"
android:layout_weight="1"
android:textColor="@color/black"
android:layout_marginTop="10dp"/>
</TableRow>
<TableRow
android:weightSum="1"
android:layout_width="match_parent"
android:layout_height="wrap_content">
<EditText
android:id="@+id/tname"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:ems="10"
android:layout_weight="1"
android:textSize="15dp"
android:padding="10dp"
android:textColor="@color/black"
android:background="@drawable/editt"
android:inputType="textPersonName"
/>
</TableRow>
```

```

<TableRow
android:weightSum="1"
android:layout_width="match_parent"
android:layout_height="wrap_content">
<TextView
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="Department"
android:layout_weight="1"
android:textSize="20dp"
android:textColor="@color/black"
android:layout_marginTop="10dp" />
</TableRow>
<TableRow
android:weightSum="1"
android:layout_width="match_parent"
android:layout_height="wrap_content">
<EditText
android:id="@+id/tdepartment"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:ems="10"
android:textSize="15dp"
android:layout_weight="1"
android:padding="10dp"
android:textColor="@color/black"
android:background="@drawable/editt"
android:inputType="textPersonName" />
</TableRow>
<TableRow
android:weightSum="1"
android:layout_width="match_parent"
android:layout_height="wrap_content">
<Button
android:id="@+id/tbutton"
android:layout_marginTop="10dp"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_weight="1"
android:text="SUBMIT" />
</TableRow>
</TableLayout>

```

OUTPUT:



12:12

100%

Task5

FRAME LAYOUT



Practical 6: Create a Fragment

MainActivity.java:

```
package com.task.task6;
```

```
import android.app.Fragment;
```

```
import android.app.FragmentManager;
```

```
import android.app.FragmentTransaction;
```

```
import android.os.Bundle;
```

```
import android.view.View;
```

```
import android.widget.Button;
```

```
import androidx.appcompat.app.AppCompatActivity;
```

```
public class MainActivity extends AppCompatActivity {
```

```
    Button firstFragment, secondFragment;
```

```
@Override
```

```
protected void onCreate(Bundle savedInstanceState) {
```

```
    super.onCreate(savedInstanceState);
```

```
    setContentView(R.layout.activity_main);
```

```
// get the reference of Button's
```

```
firstFragment = (Button) findViewById(R.id.firstFragment);
```

```
secondFragment = (Button) findViewById(R.id.secondFragment);
```

```
// perform setOnClickListener event on First Button
```

```
firstFragment.setOnClickListener(new View.OnClickListener() {
```

```
    @Override
```

```
    public void onClick(View v) {
```

```
// load First Fragment
```

```
    loadFragment(new FirstFragment());
```

```
    }
```

```
    });
```

```
// perform setOnClickListener event on Second Button
```

```
secondFragment.setOnClickListener(new View.OnClickListener() {
```

```
    @Override
```

```
    public void onClick(View v) {
```

```
// load Second Fragment
```

```
    loadFragment(new SecondFragment());
```

```
    }
```

```
    });
```

```
}
```

```
private void loadFragment(Fragment fragment) {
```

```
// create a FragmentManager
```

```
FragmentManager fm = getFragmentManager();
```

```
// create a FragmentTransaction to begin the transaction and replace the Fragment
```

```

FragmentTransaction fragmentTransaction = fm.beginTransaction();
// replace the FrameLayout with new Fragment
fragmentTransaction.replace(R.id.frameLayout, fragment);
    fragmentTransaction.commit(); // save the changes
}
}

```

FirstFragment.java:

```

package com.task.task6;

```

```

import android.app.Fragment;
import android.os.Bundle;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.Button;
import android.widget.Toast;

```

```

public class FirstFragment extends Fragment {

```

```

    View view;
    Button firstButton;

```

```

    @Override

```

```

    public View onCreateView(LayoutInflater inflater, ViewGroup container,
        Bundle savedInstanceState) {

```

```

        // Inflate the layout for this fragment

```

```

        view = inflater.inflate(R.layout.activity_first_fragment, container, false);

```

```

        // get the reference of Button

```

```

        firstButton = (Button) view.findViewById(R.id.firstButton);

```

```

        // perform setOnClickListener on first Button

```

```

        firstButton.setOnClickListener(new View.OnClickListener() {

```

```

            @Override

```

```

            public void onClick(View v) {

```

```

                // display a message by using a Toast

```

```

                Toast.makeText(getActivity(), "First Fragment", Toast.LENGTH_LONG).show();

```

```

            }

```

```

        });

```

```

        return view;

```

```

    }

```

```

}

```

SecondFragment.java:

```

package com.task.task6;

```

```
import android.app.Fragment;
import android.os.Bundle;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.Button;
import android.widget.Toast;
```

```
public class SecondFragment extends Fragment {
```

```
    View view;
    Button secondButton;
```

```
    @Override
```

```
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
                             Bundle savedInstanceState) {
```

```
        // Inflate the layout for this fragment
```

```
        view = inflater.inflate(R.layout.activity_second_fragment, container, false);
```

```
        // get the reference of Button
```

```
        secondButton = (Button) view.findViewById(R.id.secondButton);
```

```
        // perform setOnClickListener on second Button
```

```
        secondButton.setOnClickListener(new View.OnClickListener() {
```

```
            @Override
```

```
            public void onClick(View v) {
```

```
                // display a message by using a Toast
```

```
                Toast.makeText(getActivity(), "Second Fragment", Toast.LENGTH_LONG).show();
            }
```

```
        });
```

```
        return view;
```

```
    }
```

```
}
```

Activity main.xml:

```
<LinearLayout 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:orientation="vertical"
```

```
    android:padding="5dp"
```

```
    tools:context=".MainActivity">
```

```
    <!-- display two Button's and a FrameLayout to replace the Fragment's -->
```

```
    <LinearLayout
```

```
        android:layout_width="match_parent"
```

```
        android:layout_height="wrap_content"
```

```
        android:orientation="horizontal"
```

```
        android:weightSum="2">
```

```
        <Button
```

```
            android:id="@+id/firstFragment"
```

```
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_weight="1"
android:background="@color/button_background_color"
android:text="First Fragment"
android:textColor="@color/white"
android:textSize="20sp" />
```

```
<Button
android:id="@+id/secondFragment"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_weight="1"
android:background="@color/button_background_color"
android:text="Second Fragment"
android:textColor="@color/white"
android:textSize="20sp" />
</LinearLayout>
```

```
<FrameLayout
android:id="@+id/frameLayout"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:layout_marginTop="10dp" />
</LinearLayout>
```

Activity first_fragment.xml:

```
<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"
tools:context=".FirstFragment">
```

<!--TextView and Button displayed in First Fragment -->

```
<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_centerHorizontal="true"
android:layout_marginTop="100dp"
android:text="This is First Fragment"
android:textColor="@color/black"
android:textSize="25sp" />
```

```
<Button
android:id="@+id/firstButton"
android:layout_width="fill_parent"
android:layout_height="wrap_content"
android:layout_centerInParent="true"
```

```
android:layout_marginLeft="20dp"
android:layout_marginRight="20dp"
android:background="@color/purple_200"
android:text="First Fragment"
android:textColor="@color/white"
android:textSize="20sp"
android:textStyle="bold" />
</RelativeLayout>
```

Activity_second_fragment.xml:

```
<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"
tools:context=".SecondFragment">
```

<!--TextView and Button displayed in Second Fragment -->

```
<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_centerHorizontal="true"
android:layout_marginTop="100dp"
android:text="This is Second Fragment"
android:textColor="@color/black"
android:textSize="25sp" />
```

```
<Button
android:id="@+id/secondButton"
android:layout_width="fill_parent"
android:layout_height="wrap_content"
android:layout_centerInParent="true"
android:layout_marginLeft="20dp"
android:layout_marginRight="20dp"
android:background="@color/purple_200"
android:text="Second Fragment"
android:textColor="@color/white"
android:textSize="20sp"
android:textStyle="bold" />
```

```
</RelativeLayout>
```

OUTPUT:



Practical 7: Activities and Intents

MainActivity.java:

```
package com.task.task7;

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 MainActivity extends AppCompatActivity {
    Button b1;
    EditText e1;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        b1=(Button)findViewById(R.id.next);
        e1=(EditText)findViewById(R.id.edit);
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent i= new Intent(MainActivity.this,SecondActivity.class);
                i.putExtra("text",e1.getText().toString());
                startActivity(i);
            }
        });
    }
}
```

SecondActivity.java:

```
package com.task.task7;

import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.widget.TextView;

public class SecondActivity extends AppCompatActivity {
    TextView t1;
    String a;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
```

```

        setContentView(R.layout.activity_second);
        t1=(TextView)findViewById(R.id.result);
        Intent i=getIntent();
        a=i.getStringExtra("text");
        t1.setText(a);

    }
}

```

Activity main.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">
    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:textSize="30dp"
        android:textStyle="bold"
        android:textColor="@color/purple_200"
        android:layout_marginTop="40dp"
        android:text="INTENT USAGE"
        android:gravity="center"/>
    <EditText
        android:id="@+id/edit"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:ems="10"
        android:layout_marginTop="30dp"
        android:inputType="textPersonName"
        android:hint="Enter any text" />
    <Button
        android:id="@+id/next"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_marginTop="30dp"
        android:text="NEXT" />
</LinearLayout>

```

Activity second.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"

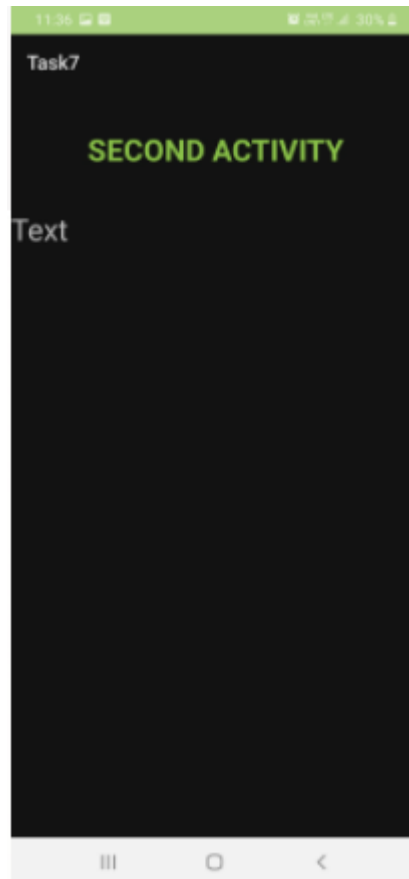
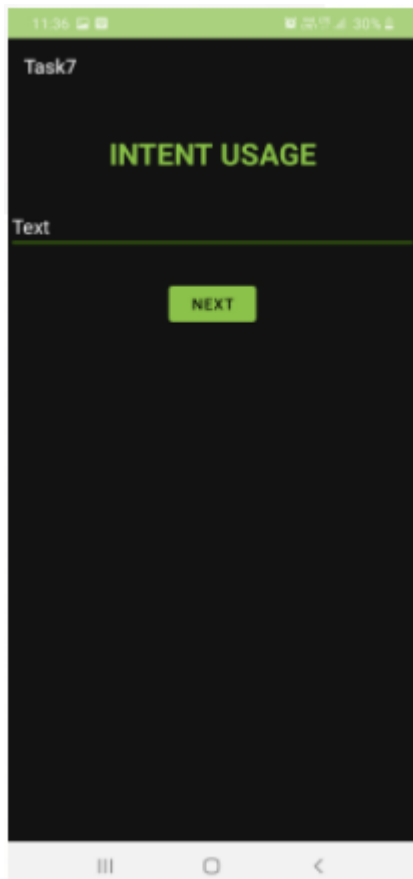
```

```

xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:orientation="vertical"
tools:context=".SecondActivity">
<TextView
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="SECOND ACTIVITY"
android:textColor="@color/purple_200"
android:textStyle="bold"
android:textSize="30dp"
android:gravity="center"
android:layout_marginTop="40dp"/>
<TextView
android:id="@+id/result"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginTop="40dp"
android:textSize="30dp"
android:inputType="textMultiLine"
android:text="text" />
</LinearLayout>

```

OUTPUT:



Practical 8: Storing data using SQLite database

sqlite.java:

```
package com.mad.mad;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.Toast;

import com.google.android.material.textfield.TextInputLayout;

public class SQLITE extends AppCompatActivity {
    Button b1,b2;
    TextInputLayout t1,t2;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_s_q_l_i_t_e);
        b1=(Button)findViewById(R.id.button);
        b2=(Button)findViewById(R.id.button2);
        t1=(TextInputLayout)findViewById(R.id.name);
        t2=(TextInputLayout)findViewById(R.id.college);
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Toast.makeText(getApplicationContext(),"Student Name:
"+t1.getText().getText().toString().trim()+"\n College Name:
"+t2.getText().getText().toString().trim(),Toast.LENGTH_LONG).show();
            }
        });
        b2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Toast.makeText(getApplicationContext(),"Data Saved
Successfully",Toast.LENGTH_LONG).show();
            }
        });
    }
}
```

Activity_s_q_l_i_t_e.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=".SQLITE">
```

```
<TextView
android:id="@+id/top"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:textStyle="bold"
android:textSize="30dp"
android:textColor="@color/purple_200"
android:layout_marginTop="20dp"
android:layout_gravity="center"
android:gravity="center"
android:text="SQLite Database" />
```

```
<com.google.android.material.textfield.TextInputLayout
android:id="@+id/name"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:hint="Student Name"
style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox"
app:hintTextColor="@color/purple_200"
app:boxStrokeWidthFocused="2dp"
app:boxStrokeColor="#1B7169"
android:layout_marginTop="10dp">
```

```
<com.google.android.material.textfield.TextInputEditText
android:layout_width="match_parent"
android:layout_height="match_parent"
android:inputType="text"/>
</com.google.android.material.textfield.TextInputLayout>
```

```
<com.google.android.material.textfield.TextInputLayout
android:id="@+id/college"
android:layout_width="match_parent"
android:layout_height="wrap_content"      android:hint="College Name"
style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox"
app:hintTextColor="@color/purple_200"
app:boxStrokeWidthFocused="2dp"
app:boxStrokeColor="#1B7169"
android:layout_marginTop="10dp">
```

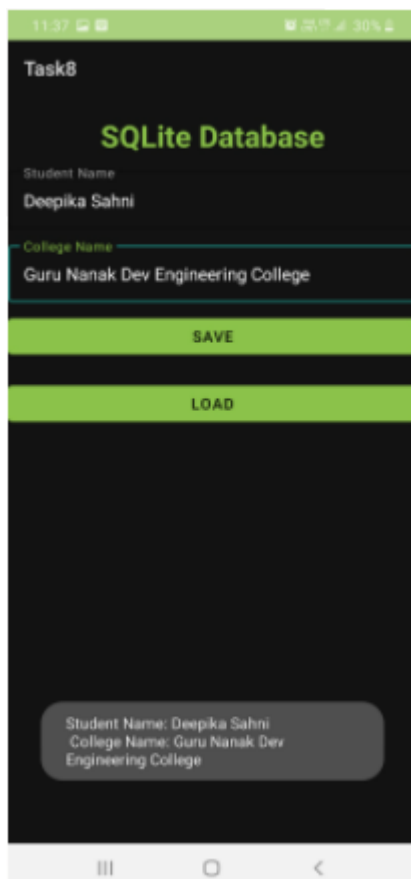
```
<com.google.android.material.textfield.TextInputEditText
android:layout_width="match_parent"
android:layout_height="match_parent"
android:inputType="text"/>
</com.google.android.material.textfield.TextInputLayout>
```

```
<Button
android:id="@+id/button"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginTop="10dp"
android:text="Save" />
```

```
<Button
android:id="@+id/button2"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginTop="20dp"
android:text="Load" />
```

```
</LinearLayout>
```

OUTPUT:



Practical 9: Demonstration of Content Provider

MainActivity.java:

```
package com.task.task9;

import androidx.appcompat.app.AppCompatActivity;
import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.net.Uri;
import android.os.Bundle;
import android.view.MotionEvent;
import android.view.View;
import android.view.inputmethod.InputMethodManager;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

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

    @Override
    public boolean onTouchEvent(MotionEvent event) {
        InputMethodManager imm =
        (InputMethodManager) getSystemService(Context.INPUT_METHOD_SERVICE);
        imm.hideSoftInputFromWindow(getCurrentFocus().getWindowToken(), 0);
        return true;
    }

    public void onClickAddDetails(View view) {
        ContentValues values = new ContentValues();
        values.put(MyContentProvider.name, ((EditText)
        findViewById(R.id.txtName)).getText().toString());
        getContentResolver().insert(MyContentProvider.CONTENT_URI, values);
        Toast.makeText(getBaseContext(), "New Record Inserted",
        Toast.LENGTH_LONG).show();
    }

    public void onClickShowDetails(View view) {

        TextView resultView= (TextView) findViewById(R.id.res);
        Cursor cursor =
        getContentResolver().query(Uri.parse("content://com.task.task9.UserProvider/users"),
        null, null, null, null);
        if(cursor.moveToFirst()) {
            StringBuilder strBuild=new StringBuilder();
```

```

while (!cursor.isAfterLast()) {
    strBuild.append("\n"+cursor.getString(cursor.getColumnIndex("id"))+ "-" +
cursor.getString(cursor.getColumnIndex("name")));
    cursor.moveToNext();
}
resultView.setText(strBuild);
}
else {
    resultView.setText("No Records Found");
}
}
}

```

MyContentProvider.java:

```

package com.task.task9;

```

```

import android.content.ContentProvider;
import android.content.ContentUris;
import android.content.ContentValues;
import android.content.Context;
import android.content.UriMatcher;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteException;
import android.database.sqlite.SQLiteOpenHelper;
import android.database.sqlite.SQLiteQueryBuilder;
import android.net.Uri;
import java.util.HashMap;

```

```

public class MyContentProvider extends ContentProvider {
    static final String PROVIDER_NAME = "com.task.task9.UserProvider";
    static final String URL = "content://" + PROVIDER_NAME + "/users";
    static final Uri CONTENT_URI = Uri.parse(URL);

```

```

    static final String id = "id";
    static final String name = "name";
    static final int uriCode = 1;
    static final UriMatcher uriMatcher;
    private static HashMap<String, String> values;
    static {
        uriMatcher = new UriMatcher(UriMatcher.NO_MATCH);
        uriMatcher.addURI(PROVIDER_NAME, "users", uriCode);
        uriMatcher.addURI(PROVIDER_NAME, "users/*", uriCode);
    }

```

@Override

```

public String getType(Uri uri) {
    switch (uriMatcher.match(uri)) {
        case uriCode:

```



```

return "vnd.android.cursor.dir/users";
default:
throw new IllegalArgumentException("Unsupported URI: " + uri);
    }
}

@Override
public boolean onCreate() {
    Context context = getContext();
    DatabaseHelper dbHelper = new DatabaseHelper(context);
    db = dbHelper.getWritableDatabase();
    if (db != null) {
        return true;
    }
    return false;
}

@Override
public Cursor query(Uri uri, String[] projection, String selection,
                    String[] selectionArgs, String sortOrder) {
    SQLiteQueryBuilder qb = new SQLiteQueryBuilder();
    qb.setTables(TABLE_NAME);

    switch (uriMatcher.match(uri)) {
        case uriCode:
            qb.setProjectionMap(values);
            break;
        default:
            throw new IllegalArgumentException("Unknown URI " + uri);
    }
    if (sortOrder == null || sortOrder == "") {
        sortOrder = id;
    }
    Cursor c = qb.query(db, projection, selection, selectionArgs, null,
        null, sortOrder);
    c.setNotificationUri(getContext().getContentResolver(), uri);
    return c;
}

@Override
public Uri insert(Uri uri, ContentValues values) {
    long rowID = db.insert(TABLE_NAME, "", values);
    if (rowID > 0) {
        Uri _uri = ContentUris.withAppendedId(CONTENT_URI, rowID);
        getContext().getContentResolver().notifyChange(_uri, null);
        return _uri;
    }
    throw new SQLiteException("Failed to add a record into " + uri);
}

@Override
public int update(Uri uri, ContentValues values, String selection,

```

```

        String[] selectionArgs) {
    int count = 0;
    switch (uriMatcher.match(uri)) {
    case uriCode:
        count = db.update(TABLE_NAME, values, selection, selectionArgs);
    break;
    default:
    throw new IllegalArgumentException("Unknown URI " + uri);
    }
    getContext().getContentResolver().notifyChange(uri, null);
    return count;
}

@Override
public int delete(Uri uri, String selection, String[] selectionArgs) {
    int count = 0;
    switch (uriMatcher.match(uri)) {
    case uriCode:
        count = db.delete(TABLE_NAME, selection, selectionArgs);
    break;
    default:
    throw new IllegalArgumentException("Unknown URI " + uri);
    }
    getContext().getContentResolver().notifyChange(uri, null);
    return count;
}

private SQLiteDatabase db;
static final String DATABASE_NAME = "EmpDB";
static final String TABLE_NAME = "Employees";
static final int DATABASE_VERSION = 1;
static final String CREATE_DB_TABLE = "CREATE TABLE " + TABLE_NAME
+ " (id INTEGER PRIMARY KEY AUTOINCREMENT, "
+ " name TEXT NOT NULL);";

private static class DatabaseHelper extends SQLiteOpenHelper {
    DatabaseHelper(Context context) {
    super(context, DATABASE_NAME, null, DATABASE_VERSION);
    }

    @Override
    public void onCreate(SQLiteDatabase db) {
        db.execSQL(CREATE_DB_TABLE);
    }

    @Override
    public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {
        db.execSQL("DROP TABLE IF EXISTS " + TABLE_NAME);
        onCreate(db);
    }
}
}

```

Activity_main.xml:

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

    <TextView
        android:id="@+id/textView2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Content Provider "
        android:textColor="@color/purple_200"
        android:textStyle="bold"
        android:textSize="30dp"
        android:gravity="center"
        android:layout_marginTop="50dp"
        android:layout_centerHorizontal="true" />

    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="50dp"
        android:text="Name"
        android:textSize="20dp" />

    <EditText
        android:id="@+id/txtName"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:gravity="center"
        android:ems="10" />

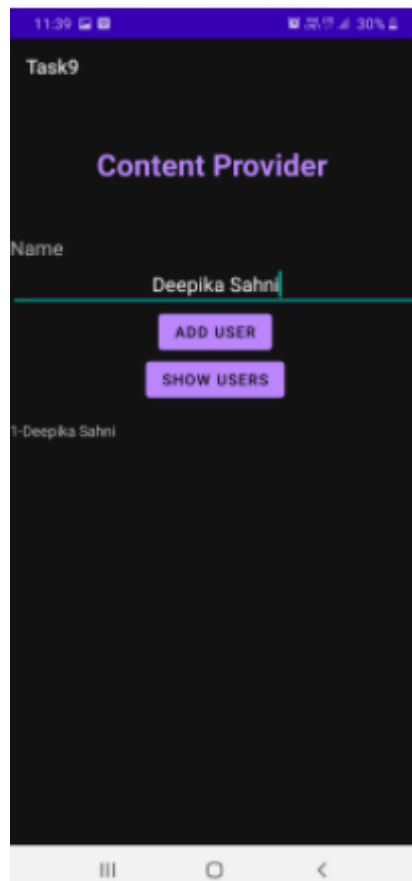
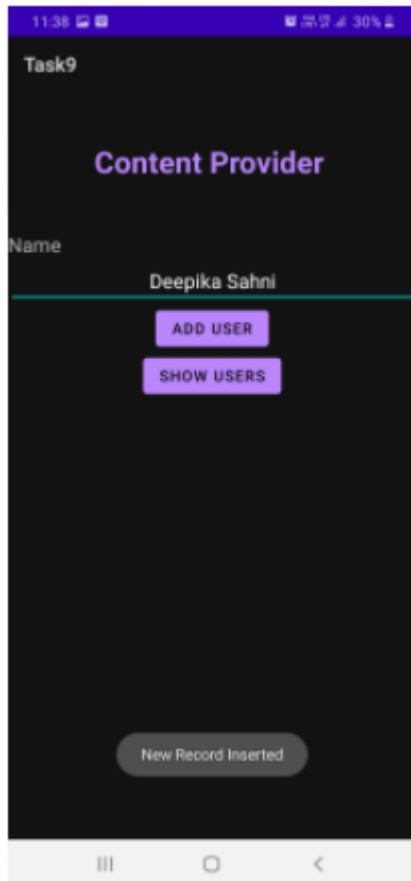
    <Button
        android:id="@+id/btnAdd"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:onClick="onClickAddDetails"
        android:text="Add User" />

    <Button
        android:id="@+id/btnRetrieve"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:onClick="onClickShowDetails"
        android:text="Show Users" />

    <TextView
```

```
android:id="@+id/res"  
android:layout_width="match_parent"  
android:layout_height="wrap_content"  
android:clickable="false"  
android:textSize="15dp"  
android:ems="10" />  
</LinearLayout>
```

OUTPUT:



Practical 10: Demonstrating Services

MainActivity.java:

```
package com.task.task10;

import android.content.Intent;

import android.os.Bundle;
import android.view.View;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
    // Start the service
    public void startService(View view) {
        startService(new Intent(this, MyService.class));
    }
    // Stop the service
    public void stopService(View view) {
        stopService(new Intent(this, MyService.class));
    }
}
```

MyService.java:

```
package com.task.task10;

import android.app.Service;
import android.content.Intent;
import android.media.MediaPlayer;
import android.os.IBinder;
import android.provider.Settings;
import android.widget.Toast;
public class MyService extends Service {
    private MediaPlayer player;
    @Override
    public IBinder onBind(Intent intent) {
        return null;
    }
    @Override
    public void onCreate() {
        Toast.makeText(this, "Service was Created", Toast.LENGTH_LONG).show();
    }
}
```

```

@Override
public int onStartCommand(Intent intent, int flags, int startId) {
    player = MediaPlayer.create(this, Settings.System.DEFAULT_RINGTONE_URI);
    // This will play the ringtone continuously until we stop the service.
    player.setLooping(true);
    // It will start the player
    player.start();
    Toast.makeText(this, "Service Started", Toast.LENGTH_LONG).show();
    return START_STICKY;
}
@Override
public void onDestroy() {
    super.onDestroy();
    // Stopping the player when service is destroyed
    player.stop();
    Toast.makeText(this, "Service Stopped", Toast.LENGTH_LONG).show();
}
}

```

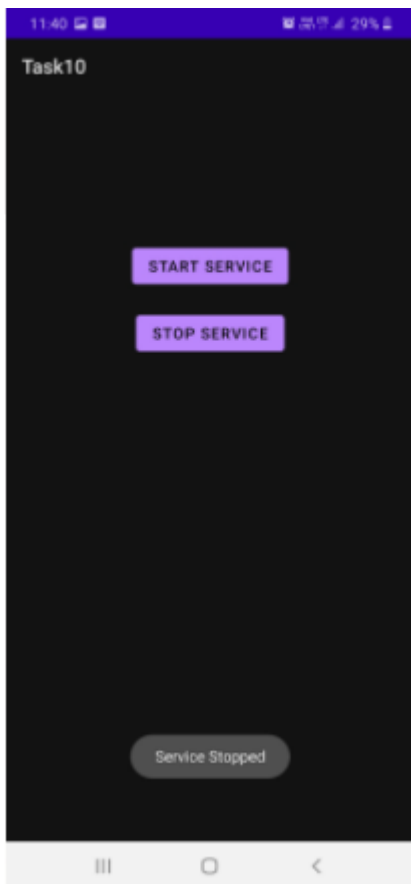
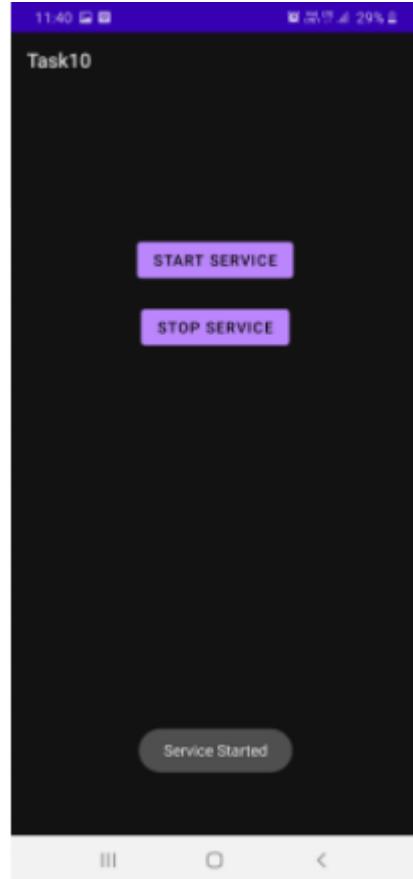
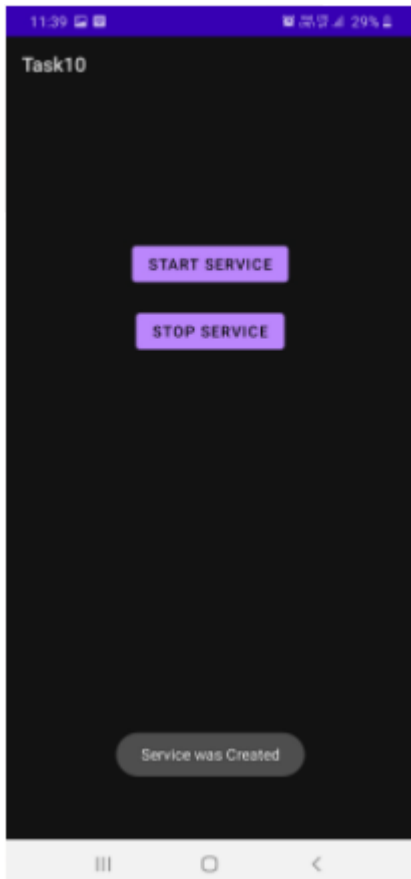
Activity_main.xml:

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical" android:layout_width="match_parent"
    android:layout_height="match_parent">
    <Button
        android:id="@+id/btnStart"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:onClick="startService"
        android:layout_gravity="center"
        android:layout_marginTop="150dp"
        android:text="Start Service"/>
    <Button
        android:id="@+id/btnstop"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:onClick="stopService"
        android:layout_marginTop="20dp"
        android:text="Stop Service"/>
</LinearLayout>

```

OUTPUT:



Practical 11: Android Security and Debugging

MainActivity.java:

```
package com.example.task11;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.util.Log;
import android.view.View;
import android.widget.EditText;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {
    EditText e1,e2;
    TextView t;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        e1 = findViewById(R.id.t1);
        e2 = findViewById(R.id.editText);
        t = findViewById(R.id.re);

    }
    public void add(View view){
        Log.i("Mainactivity","Executed 1");
        int a1 = Integer.parseInt(e1.getText().toString());
        Log.i("Mainactivity","Executed 2");
        int a2 = Integer.parseInt(e2.getText().toString());
        Log.i("Mainactivity","Executed 3");
        int res = a1 + a2;
        Log.i("Mainactivity","Executed 4");
        t.setText(""+res);
        Log.i("Mainactivity","Executed 5");
    }
}
```

Activity_main.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">
```

```
<EditText
android:id="@+id/t1"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:hint="Enter number 1"
app:layout_constraintBottom_toTopOf="@+id/editText"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.73"
tools:ignore="MissingConstraints"
tools:layout_editor_absoluteX="0dp" />
```

```
<EditText
android:id="@+id/editText"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:hint="Enter number 2"
tools:ignore="MissingConstraints"
tools:layout_editor_absoluteX="0dp"
tools:layout_editor_absoluteY="253dp" />
```

```
<Button
android:id="@+id/button"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Add two numbers"
android:gravity="center"
android:layout_marginTop="30dp"
android:layout_marginLeft="85dp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.497"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/editText"
app:layout_constraintVertical_bias="0.217"
tools:ignore="MissingConstraints"
android:onClick="add"/>
```

```
<TextView
android:id="@+id/re"
android:layout_width="98dp"

android:layout_height="25dp"
android:layout_marginTop="50dp"
android:gravity="center"
```

```
android:layout_marginLeft="100dp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.498"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/button"
app:layout_constraintVertical_bias="0.258"
```

```
tools:ignore="MissingConstraints" />
```

```
</LinearLayout>
```

OUTPUT:

