

UNIVERSITY OF DELHI
COLLEGE OF VOCATIONAL STUDIES
BSC (HONS) COMPUTER SCIENCE
SEMESTER - 4

ANDROID DEVELOPMENT

ANUJ KUMAR SEN

2K21/CS/15

Question 1 :

Create a “Hello World” application. That will display “Hello World” in the middle of the screen in the emulator. Also display “Hello World” in the middle of the screen in the Android Phone.

Solution 1 :

activity_main.xml

```
<!--Created by - ANUJ KUMAR SEN 2K21/CS/15 -->
<?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

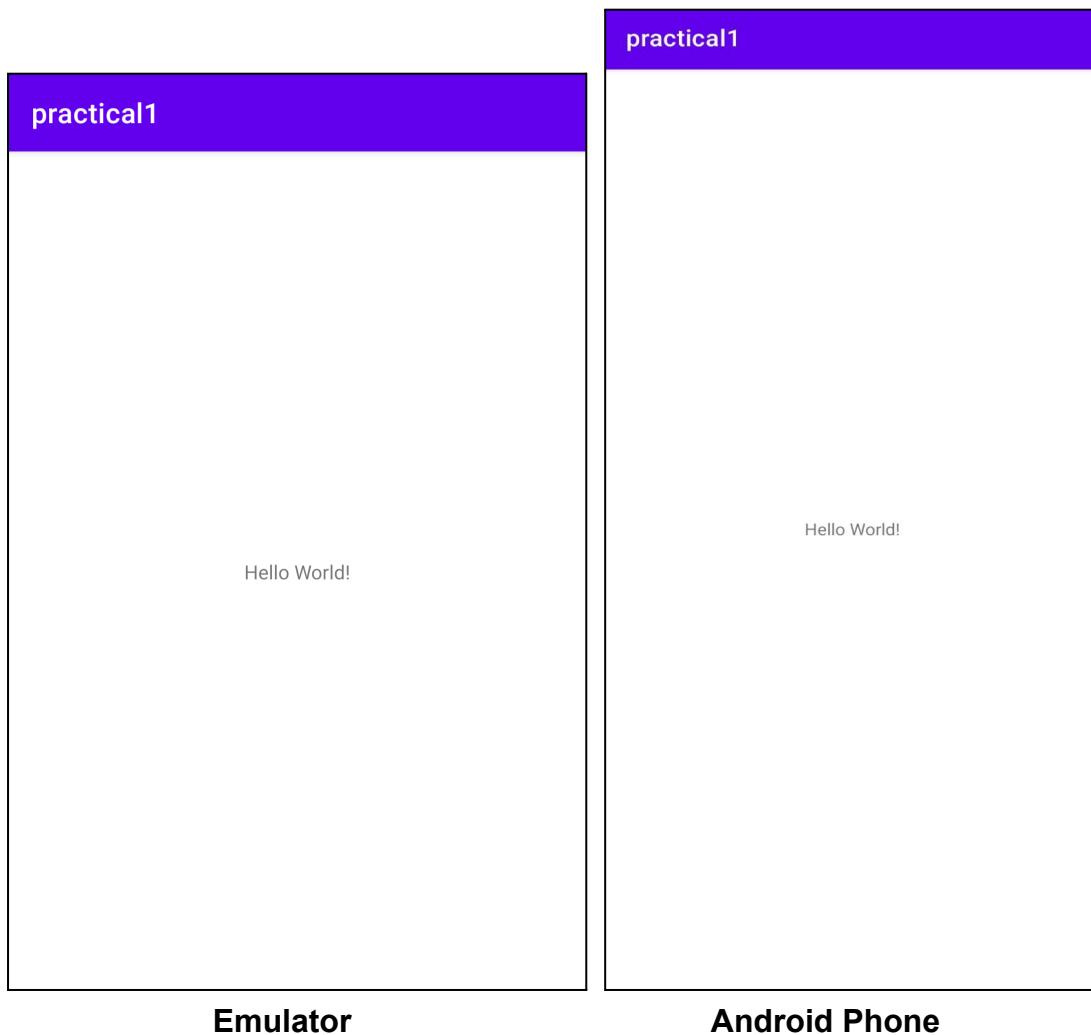
```
//Created by - ANUJ KUMAR SEN 2K21/CS/15
package com.example.practical1;
import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

public class MainActivity extends AppCompatActivity {

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

Output 1 :



Question 2 :

Create an application with three buttons (increment, decrement and reset) and a textView aligned vertically. On clicking, increment/decrement button, the value of the textView should increment/decrement by 1 while selecting the reset button, the value of textView should become zero.

Solution 2 :

activity_main.xml :

```
<!--Created by - ANUJ KUMAR SEN 2K21/CS/15 -->
<?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="#9C27B0"
    android:backgroundTintMode="screen"
    tools:context=".MainActivity">

    <LinearLayout

        android:id="@+id/linearLayout"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.497"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.157">

        <Button
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginLeft="8dp"
            android:onClick="decrement"
            android:padding="16dp"
            android:text="-"
            android:textSize="24sp"
            android:textStyle="bold"

        />

        <TextView
            android:id="@+id/quantity_text_view"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginLeft="8dp"
            android:layout_marginRight="8dp"
            android:fontFamily="sans-serif-condensed-medium"
            android:padding="16dp"
            android:text="0"
            android:textColor="@color/black"
            android:textSize="16sp"
            android:textStyle="italic" />

        <Button
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:onClick="increment"
            android:padding="16dp"
```

```
        android:text="+"
        android:textSize="24sp"

    />

</LinearLayout>

<Button
    android:id="@+id/reset"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="108dp"
    android:onClick="reset"
    android:text="Reset"
    android:textSize="24sp"
    android:textStyle="bold|italic"
    app:layout_constraintEnd_toEndOf="@+id/linearLayout"
    app:layout_constraintHorizontal_bias="0.503"
    app:layout_constraintStart_toStartOf="@+id/linearLayout"
    app:layout_constraintTop_toBottomOf="@+id/linearLayout" />

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

MainActivity.java

```
//Created by - ANUJ KUMAR SEN 2K21/CS/15
package com.example.Practical_2;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {

    private TextView mytext;
    private int number =0;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        mytext = findViewById(R.id.quantity_text_view);
    }

    public void decrement(View view) {
```

```
if (number !=0)
{
    number-=1;
}
DisplayOnText(number);

}

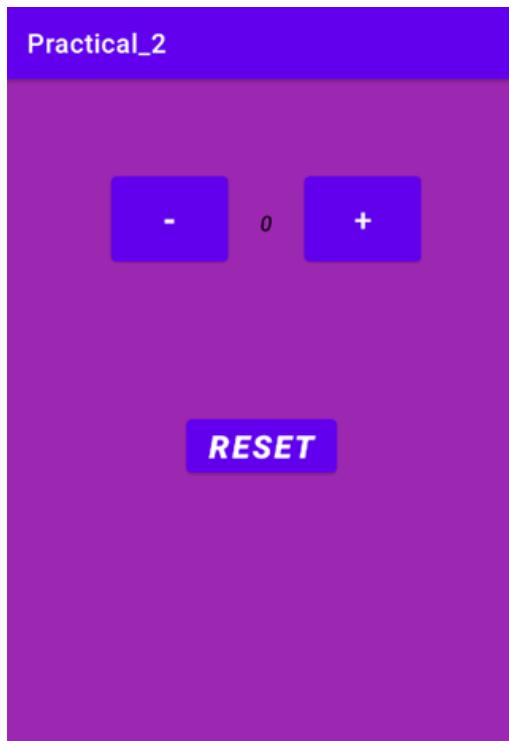
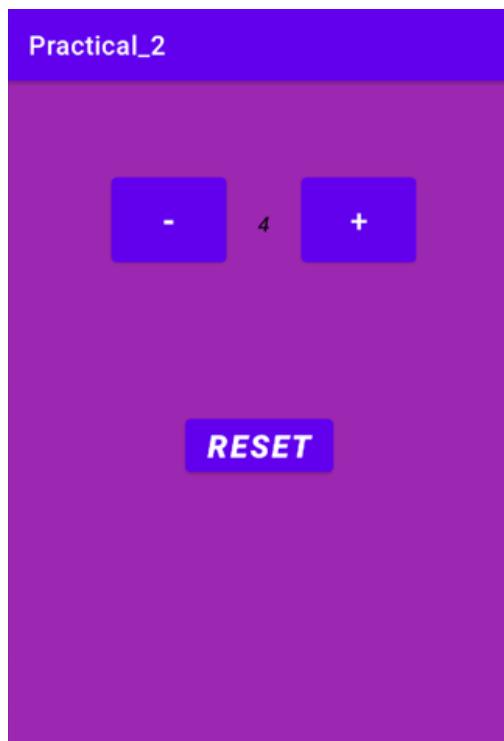
public void increment(View view) {

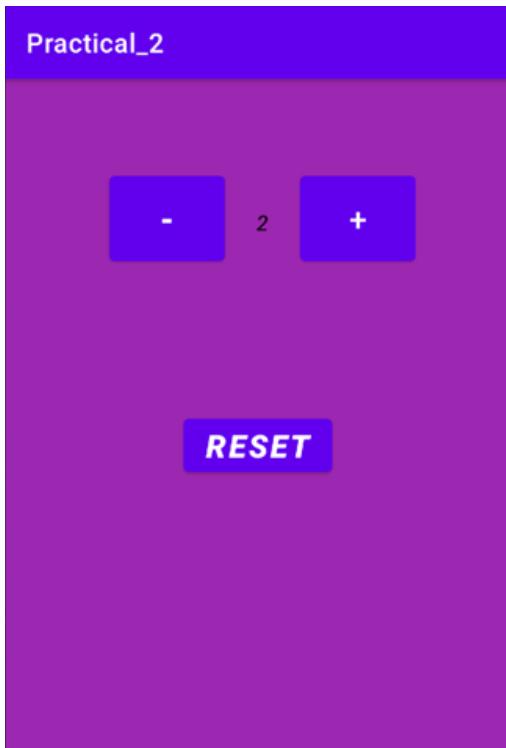
    number+=1;
    DisplayOnText(number);
}

public void reset(View view) {
    number =0;
    DisplayOnText(number);
}

public void DisplayOnText(int num)
{
    mytext.setText(""+num);
}
}
```

Output 2 :





Question 3 :

Create an application with a login module. (Check username and password).

Solution 3 :

activity_main.xml

```
<!--Created by - ANUJ KUMAR SEN 2K21/CS/15 -->
<?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="match_parent"
    >
    <TextView
        android:id="@+id/tvName"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="21dp"
        android:layout_marginTop="49dp"
        android:text="User Name"
        android:textSize="18sp" />

    <EditText
        android:id="@+id/etUsername"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="21dp"
        android:layout_marginTop="10dp"
        android:hint="Enter User Name" />

    <EditText
        android:id="@+id/etPassword"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="21dp"
        android:layout_marginTop="10dp"
        android:hint="Enter Password" />

```

```
    android:layout_alignBaseline="@+id/tvName"
    android:layout_alignBottom="@+id/tvName"
    android:layout_alignParentEnd="true"
    android:layout_marginEnd="23dp"
    android:ems="10"
    android:inputType="textPersonName" />

<TextView
    android:id="@+id/tvPass"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignEnd="@+id/tvName"
    android:layout_below="@+id/etUsername"
    android:layout_marginTop="32dp"
    android:text="Password"
    android:textSize="18sp" />

<EditText
    android:id="@+id/etPassword"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignBaseline="@+id/tvPass"
    android:layout_alignBottom="@+id/tvPass"
    android:layout_alignStart="@+id/etUsername"
    android:ems="10"
    android:inputType="textPassword" />

<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/etPassword"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="38dp"
    android:text="LOGIN"
/>
<TextView
    android:id="@+id/tvLoginStatus"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/button"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="100sp"
/>
</RelativeLayout>
```

Main_activity.java

```
//Created by - ANUJ KUMAR SEN 2K21/CS/15
package com.example.practical_3;
import androidx.appcompat.app.AppCompatActivity;

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

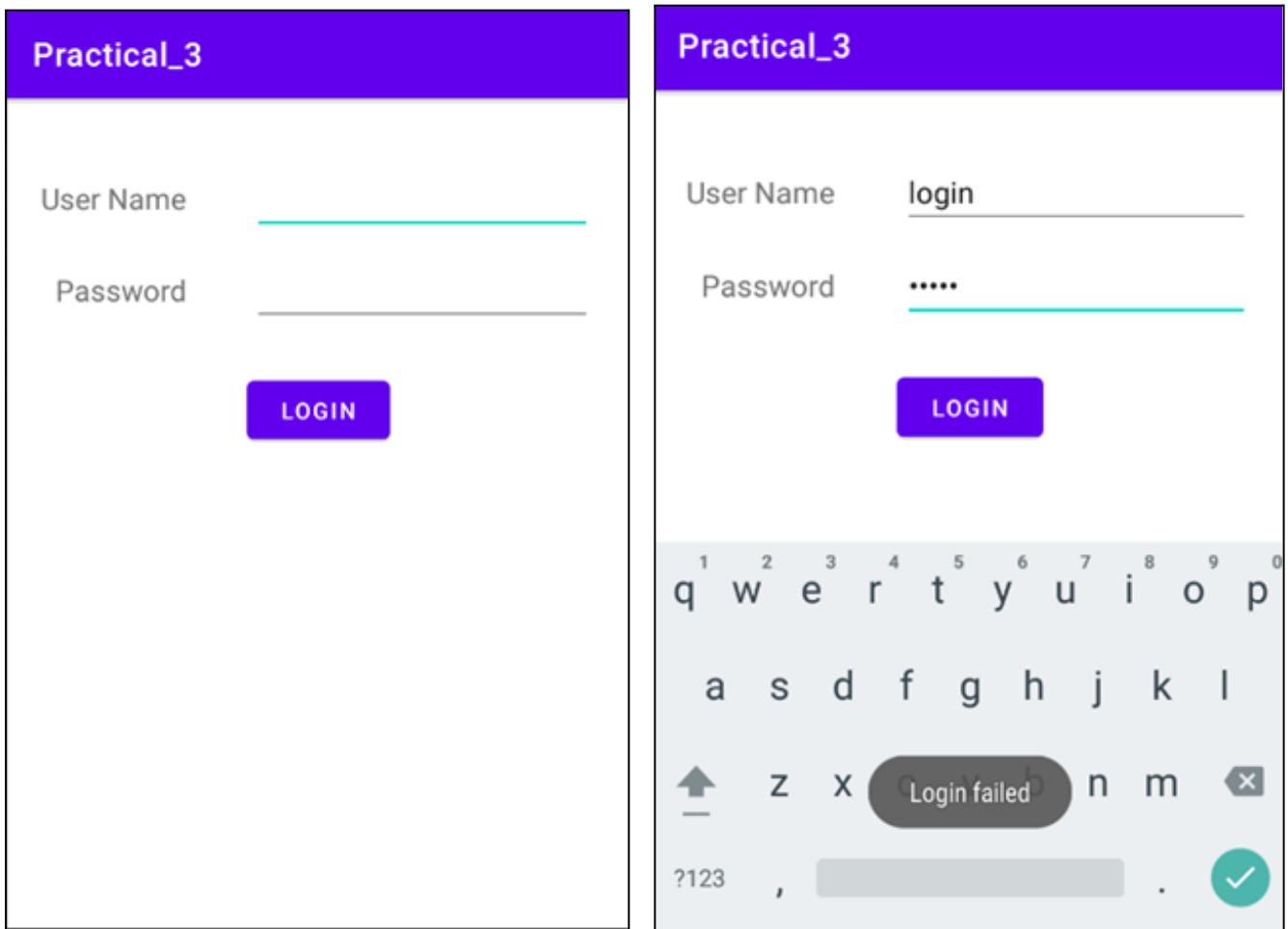
public class MainActivity extends AppCompatActivity {
    EditText etUsername, etPassword;
    Button btnStatus;
    TextView tvLoginStatus;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        etUsername = (EditText) findViewById(R.id.etUsername);
        etPassword = (EditText) findViewById(R.id.etPassword);
        btnStatus = (Button) findViewById(R.id.button);
        tvLoginStatus = (TextView) findViewById(R.id.tvLoginStatus);

        btnStatus.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                check();
            }
        });
    }

    public void check(){
        if(etUsername.getText().toString().equals("login") &&
etPassword.getText().toString().equals("password")){
            tvLoginStatus.setText("Login successful");
        }else{
            Toast.makeText(this, "Login failed", Toast.LENGTH_LONG).show();
        }
    }
}
```

Output 3 :



Question 4 :

Create spinner with strings taken from resource folder (res >> value folder) and on changing the spinner value, Image will change.

Solution 4 :

activity_main.xml

```
<!--Created by - ANUJ KUMAR SEN 2K21/CS/15 -->
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:visibility="visible"
    android:orientation="vertical">

    <TextView
        android:id="@+id/text1"
        android:layout_width="wrap_content"
        android:layout_height="116dp"
        android:text="Hello World!">

```

```

        android:layout_weight="1"
        android:text="TextView" />

    <ImageView
        android:id="@+id/img1"
        android:layout_width="wrap_content"
        android:layout_height="116dp"
        android:layout_weight="1"
        android:text="TextView" />

    <Spinner
        android:id="@+id/spinner1"
        android:layout_width="wrap_content"
        android:layout_height="116dp"
        android:layout_weight="1"
        android:text="TextView" />

</LinearLayout>

```

MainActivity.java

```

//Created by - ANUJ KUMAR SEN 2K21/CS/15
package com.example.practical4;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.widget.TextView;
import android.widget.Spinner;
import android.widget.ImageView;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.view.View;
import android.widget.AdapterView.OnItemSelectedListener;
public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        TextView text1 = (TextView) findViewById(R.id.text1);
        ImageView img1 = (ImageView) findViewById(R.id.img1);
        String[] city = {"delhi", "mumbai", "chennai", "kolkata"};
        Spinner spin = (Spinner) findViewById(R.id.spinner1);
        ArrayAdapter<String> arrayadpt = new
        ArrayAdapter<String>(this, android.R.layout.simple_spinner_item, city);
        spin.setAdapter(arrayadpt);
        spin.setOnItemSelectedListener(new OnItemSelectedListener() {
            public void onItemSelected(AdapterView<?> parent, View v, int
                position, long id){

```

```
text1.setText("Your selected city : "+ city[position]);
if(position==0) {img1.setImageResource(R.drawable.img2); }
else if(position==1) {img1.setImageResource(R.drawable.img2); }
else if(position==2) {img1.setImageResource(R.drawable.img3); }
else if(position==3) {img1.setImageResource(R.drawable.img4); }
}
public void onNothingSelected(AdapterView<?> parent){
    text1.setText("");
}
);
}
}
```

Output 4 :

Practical 4	
Your selected city : delhi	Your selected city : mumbai
	
delhi ▾	mumbai ▾

Practical 4

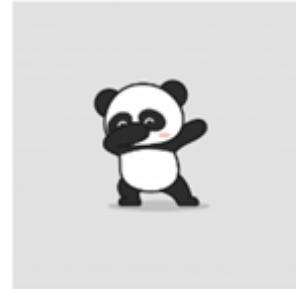
Your selected city : chennai



chennai ▾

Practical 4

Your selected city : kolkata



kolkata ▾

Question 5 :

Create a menu with some options and selected options should appear in the text box.

Solution 5 :

activity_main.xml

```
<!--Created by - ANUJ KUMAR SEN 2K21/CS/15 -->
<?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="#4593B5"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/mytv"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Welcome!">
```

```
        android:textSize="32sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

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

Menus.xml

```
<!--Created by - ANUJ KUMAR SEN 2K21/CS/15 -->
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:app="http://schemas.android.com/apk/res-auto"
      xmlns:android="http://schemas.android.com/apk/res/android">

    <item
        android:id="@+id/id1"
        android:title="Option1" />
    <item
        android:id="@+id/id2"
        android:title="Option2" />
    <item
        android:id="@+id/id3"
        android:title="Option3" />
    <item
        android:id="@+id/id4"
        android:title="Option4" />
    <item
        android:id="@+id/id5"
        android:title="Option5" />
</menu>
```

MainActivity.java

```
//Created by - ANUJ KUMAR SEN 2K21/CS/15
package com.example.practical_5;
import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.Menu;
import android.view.MenuInflater;
import android.view.MenuItem;
import android.widget.TextView;
import android.widget.Toast;
```

```
public class MainActivity extends AppCompatActivity {
    TextView tv;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        tv = findViewById(R.id.mytv);
    }
    @Override
    public boolean onCreateOptionsMenu(Menu menu) {

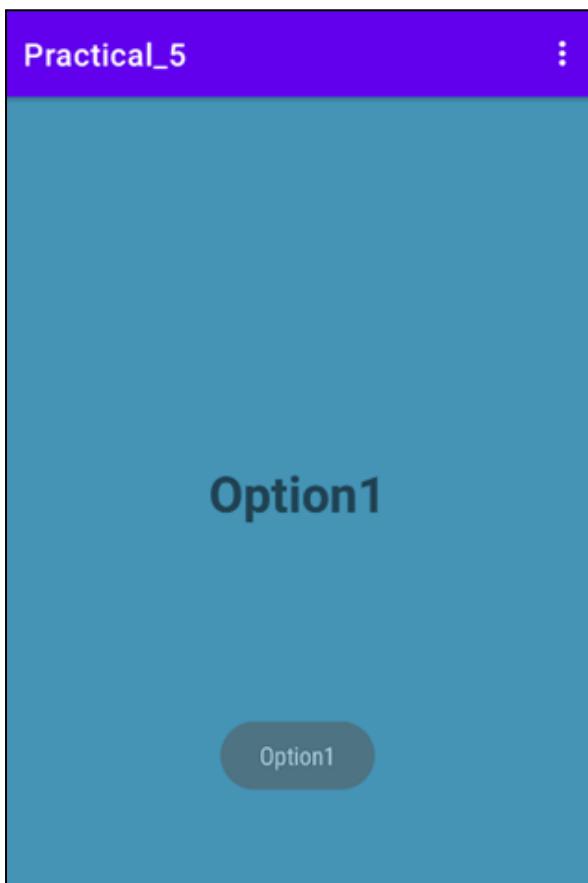
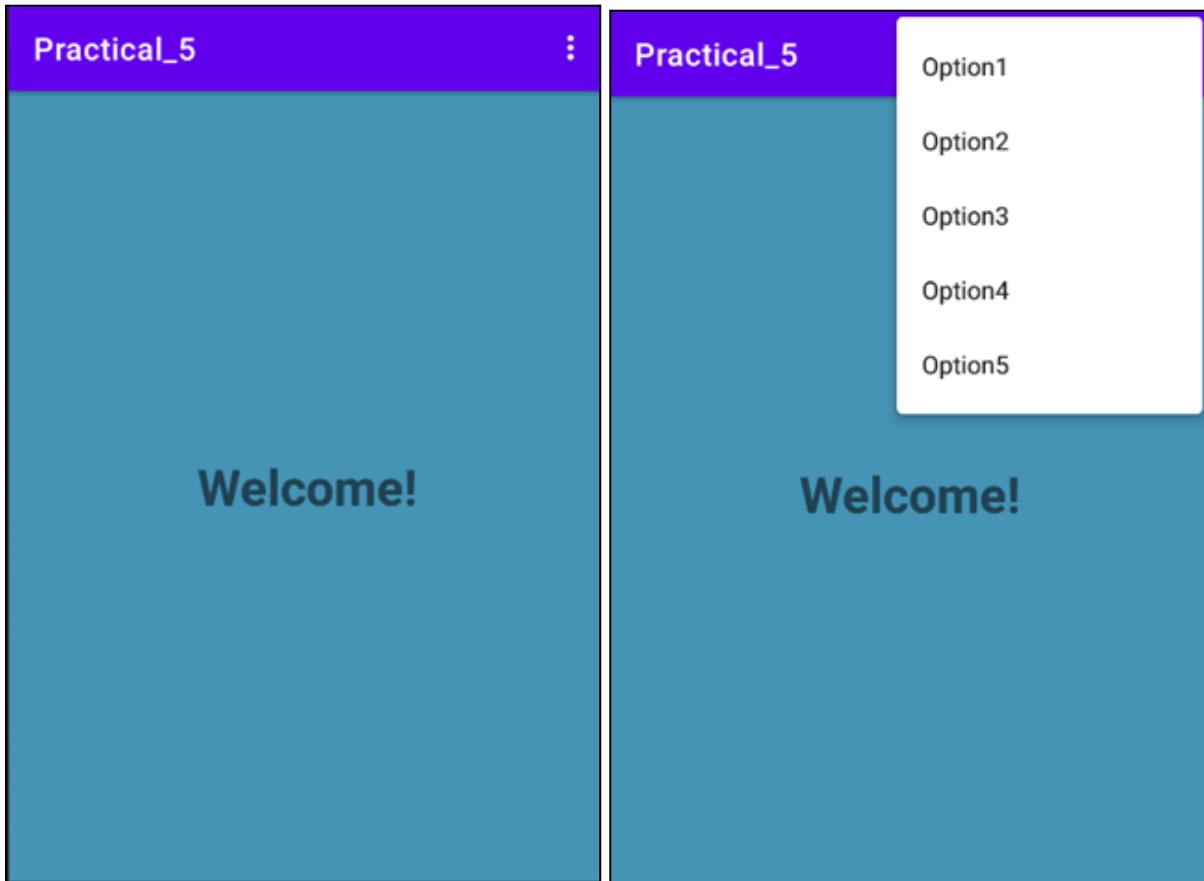
        MenuInflater m = getMenuInflater();
        m.inflate(R.menu.menus, menu);
        return true;
    }
    @Override
    public boolean onOptionsItemSelected( MenuItem item) {

        switch (item.getItemId())
        {
            case R.id.id1:
                Toast.makeText(this, "Option1", Toast.LENGTH_SHORT).show();
                tv.setText("Option1");
                break;
            case R.id.id2:
                Toast.makeText(this, "Option2", Toast.LENGTH_SHORT).show();
                tv.setText("Option2");
                break;
            case R.id.id3:
                Toast.makeText(this, "Option3", Toast.LENGTH_SHORT).show();
                tv.setText("Option3");

                break;
            case R.id.id4:
                Toast.makeText(this, "Option4", Toast.LENGTH_SHORT).show();

                tv.setText("Option4");
            case R.id.id5:
                Toast.makeText(this, "Option5", Toast.LENGTH_SHORT).show();
                tv.setText("Option5");
                break;
        }
        return true;
    }
}
```

Output 5 :



Question 6 :

Create a list of all courses in your college and on selecting a particular course teacher-in- charge of that course should appear at the bottom of the screen.

Solution 6 :

activity_main.xml

```
<!--Created by - ANUJ KUMAR SEN 2K21/CS/15 -->
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:orientation="vertical"
    android:layout_width="match_parent"
    android:layout_height="wrap_content">
    <ListView
        android:id="@+id/listView"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        />
    <TextView
        android:id="@+id/txtView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        />
</LinearLayout>
```

MainActivity.java

```
//Created by - ANUJ KUMAR SEN 2K21/CS/15
package com.example.practical6;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.ListView;
import android.widget.TextView;
import android.widget.Toast;
import android.util.Log;
public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        ListView listView=(ListView)findViewById(R.id.listView);
        listView.setAdapter(new ArrayAdapter(this,R.layout.list_item,new String[]{"CSE","ECE","EEE","Mech"}));
        listView.setOnItemClickListener(new AdapterView.OnItemClickListener() {
            @Override
            public void onItemClick(AdapterView parent, View view, int position, long id) {
                TextView txtView=(TextView)parent.findViewById(R.id.txtView);
                txtView.setText("Teacher in Charge of "+parent.getItemAtPosition(position));
            }
        });
    }
}
```

```
TextView textView=(TextView) findViewById(R.id.txtView) ;  
String[] listItem = {"BSc","BCom","BA"};  
final ArrayAdapter<String> adapter = new  
    ArrayAdapter<String>(this, android.R.layout.simple_list_item_1,  
listItem);  
listView.setAdapter(adapter);  
listView.setOnItemClickListener(new AdapterView.OnItemClickListener() {  
    @Override  
    public void onItemClick(AdapterView<?> adapterView, View view, int  
        position, long l) {  
        // TODO Auto-generated method stub  
        String value=adapter.getItem(position);  
        Log.v("value",value);  
        String teacher="";  
        if(value.equals("BSc")) { teacher="abc"; }  
        else if(value.equals("BCom")){ teacher="pqr"; }  
        else if(value.equals("BA")) teacher="ghj";  
  
        Toast.makeText(getApplicationContext(),teacher,Toast.LENGTH_SHORT).show();  
    }  
});  
}  
}
```

Output 6 :

practical6
BSc
BCom
BA

practical6
BSc
BCom
BA

practical6
BSc
BCom
BA

Question 7 :

Create an application with three option buttons, on selecting a button color of the screen will change.

Solution 7 :

activity_main.xml

```
<!--Created by - ANUJ KUMAR SEN 2K21/CS/15 -->
<?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:id="@+id/rlVar1"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="@color/colorAccent"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/tvVar1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="240dp"
        android:text="What would you like?"
        android:textSize="25dp"
        android:textStyle="bold" />

    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@+id/tvVar1"
        android:layout_centerInParent="true"
        android:layout_marginTop="60dp"
        android:orientation="horizontal"
        android:padding="10dp">

        <Button
            android:id="@+id/btVar1"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:background="#0EA1E3"
            android:padding="20dp"
            android:text="Cool"
            android:textColor="#303F9F"
            android:textSize="20dp" />
    
```

```
<Button
    android:id="@+id/btVar2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:background="#F6F6F6"
    android:padding="20dp"
    android:text="neutral"
    android:textColor="#1A237E"
    android:textSize="20dp" />

<Button
    android:id="@+id/btVar3"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:background="#FD0505"
    android:padding="20dp"
    android:text="Hot"
    android:textColor="#311B92"
    android:textSize="20dp" />

</LinearLayout>

</RelativeLayout>
```

Main_Activity.java

```
//Created by - ANUJ KUMAR SEN 2K21/CS/15
package com.example.practical_7;

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

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

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

        Button button1, button2 , button3;
        final RelativeLayout relativeLayout;
```

```
// set button 1 with its id
button1 = findViewById(R.id.btVar1);

// set button 2 with its id
button2 = findViewById(R.id.btVar2);

// set button 3 with its id
button3 = findViewById(R.id.btVar3);

// set relative layout with its id
relativeLayout = findViewById(R.id.rlVar1);

// onClick function for button 1
button1.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        // set the color to relative layout
        relativeLayout.setBackgroundResource(R.color.cool);
    }
});

// onClick function for button 2
button2.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        // set the color to relative layout
        relativeLayout.setBackgroundResource(R.color.neutral);
    }
});

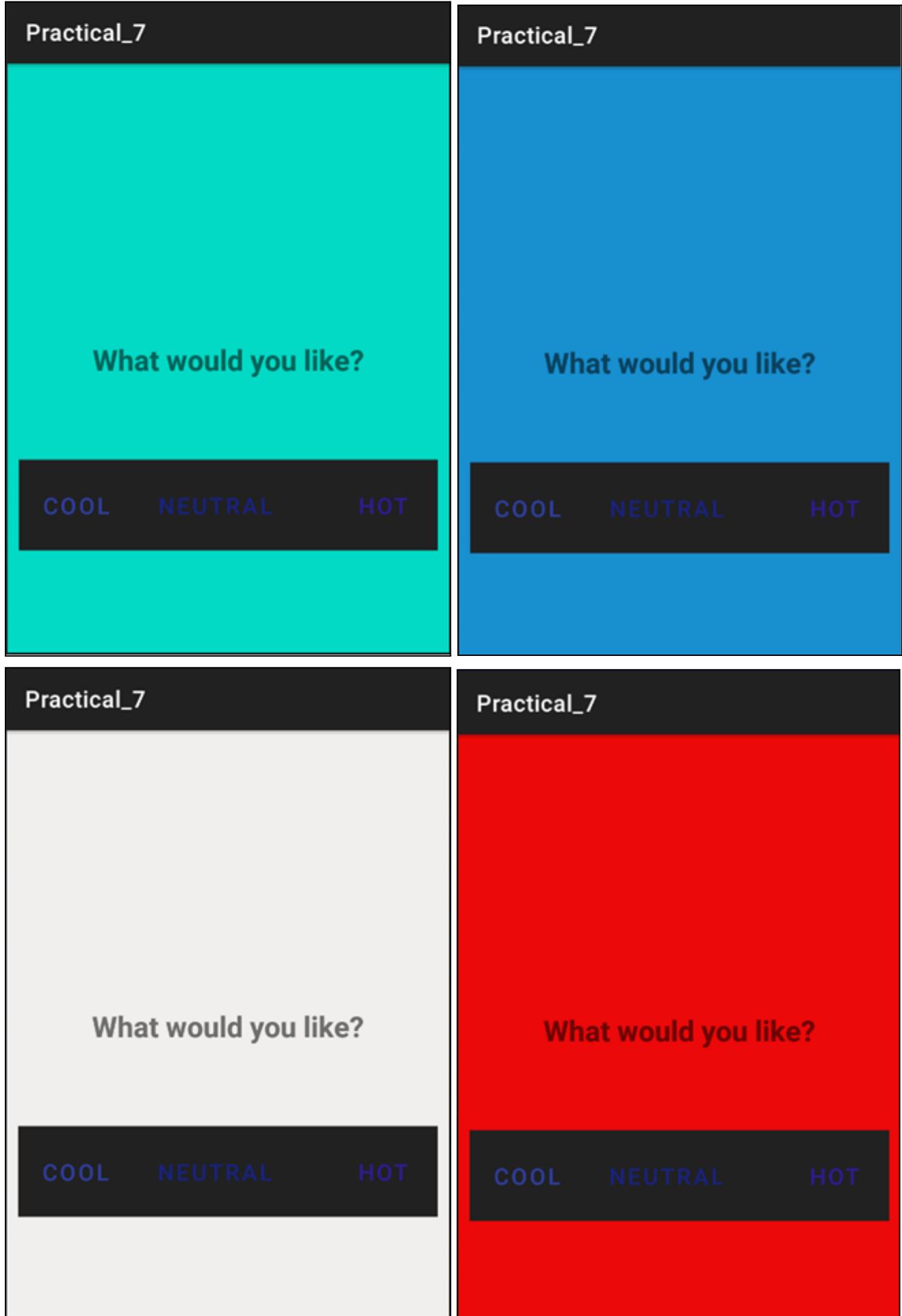
button3.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view){
        // set the color to relative layout
        relativeLayout.setBackgroundResource(R.color.hot);
    }
});

});
```

colors.xml

```
<!--Created by - ANUJ KUMAR SEN 2K21/CS/15 -->
<?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="teal_200">#FF03DAC5</color>
    <color name="teal_700">#FF018786</color>
    <color name="black">#FF000000</color>
    <color name="white">#FFFFFF</color>
    <color name="colorPrimary">#6200EE</color>
    <color name="colorPrimaryDark">#3700B3</color>
    <color name="colorAccent">#03DAC5</color>
    <color name="blue">#2196F3</color>
    <color name="cool">#188FCF</color>
    <color name="neutral">#F0EFD</color>
    <color name="hot">#EC0909</color>
</resources>
```

Output 7 :



Question 8 :

Create an application to display various activity life cycle and fragment lifecycle methods.

Solution 8 :

activity_main.xml

```
<!--Created by - ANUJ KUMAR SEN 2K21/CS/15 -->
<?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/tv1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="10dp"
        android:layout_marginTop="30dp"
        android:text="@string/activity_lifecycle"
        android:textSize="20sp"
        android:textStyle="bold" />

    <TextView
        android:id="@+id/result1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="30dp"
        android:layout_marginTop="60dp"
        android:text=" "
        android:textSize="20sp"
        android:textStyle="bold" />

    <fragment
        android:id="@+id/frag"
        android:name="com.example.practical8.BlankFragment"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="10dp"
        android:layout_marginTop="30dp"
        android:layout_toEndOf="@+id/tv1" />

</RelativeLayout>
```

fragment_blank.xml

```
<!--Created by - ANUJ KUMAR SEN 2K21/CS/15 -->
<?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"
    tools:context=".BlankFragment">

    <!-- TODO: Update blank fragment layout -->
    <TextView
        android:id="@+id/tv"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="0dp"
        android:text="@string/fragment.lifecycle"
        android:textSize="20sp"
        android:textStyle="bold" />

    <TextView
        android:id="@+id/result1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@+id/tv"
        android:layout_marginTop="0dp"
        android:text=" "
        android:textSize="20sp"
        android:textStyle="bold" />

</RelativeLayout>
```

MainActivity.java

```
//Created by - ANUJ KUMAR SEN 2K21/CS/15
package com.example.practical8;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {
    TextView result;

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

```
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
result = findViewById(R.id.result1);
result.setText("onCreate");
}

@Override
protected void onStop() {
    super.onStop();
    String res = result.getText().toString();
    result.setText(res + "\n" + "onStart");
}

@Override
protected void onStart() {
    super.onStart();
    String res = result.getText().toString();
    result.setText(res + "\n" + "onStart");
}

@Override
protected void onPause() {
    super.onPause();
    String res = result.getText().toString();
    result.setText(res + "\n" + "onPause");
}

protected void onResume() {
    super.onResume();
    String res = result.getText().toString();
    result.setText(res + "\n" + "onResume");
}

@Override
protected void onDestroy() {
    super.onDestroy();
    String res = result.getText().toString();
    result.setText(res + "\n" + "onDestroy");
}

}
```

BlankFragment.java

```
//Created by - ANUJ KUMAR SEN 2K21/CS/15
package com.example.practical8;
import android.os.Bundle;
import androidx.fragment.app.Fragment;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.TextView;
public class BlankFragment extends Fragment {
    TextView result;

    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
                            Bundle savedInstanceState) {
        // Inflate the layout for this fragment
        View view = inflater.inflate(R.layout.fragment_blank, container,
                                    false);
        result = (TextView) view.findViewById(R.id.result1);
        return view;
    }

    @Override
    public void onStop() {
        super.onStop();
        String res = result.getText().toString();
        result.setText(res + "\n" + "onStop");
    }

    @Override
    public void onResume() {
        super.onResume();
        String res = result.getText().toString();
        result.setText(res + "\n" + "onResume");
    }

    @Override
    public void onPause() {
        super.onPause();
        String res = result.getText().toString();
        result.setText(res + "\n" + "onPause");
    }

    @Override
    public void onStart() {
        super.onStart();
```

```

        String res = result.getText().toString();
        result.setText(res + "\n" + "onStart");
    }
}

```

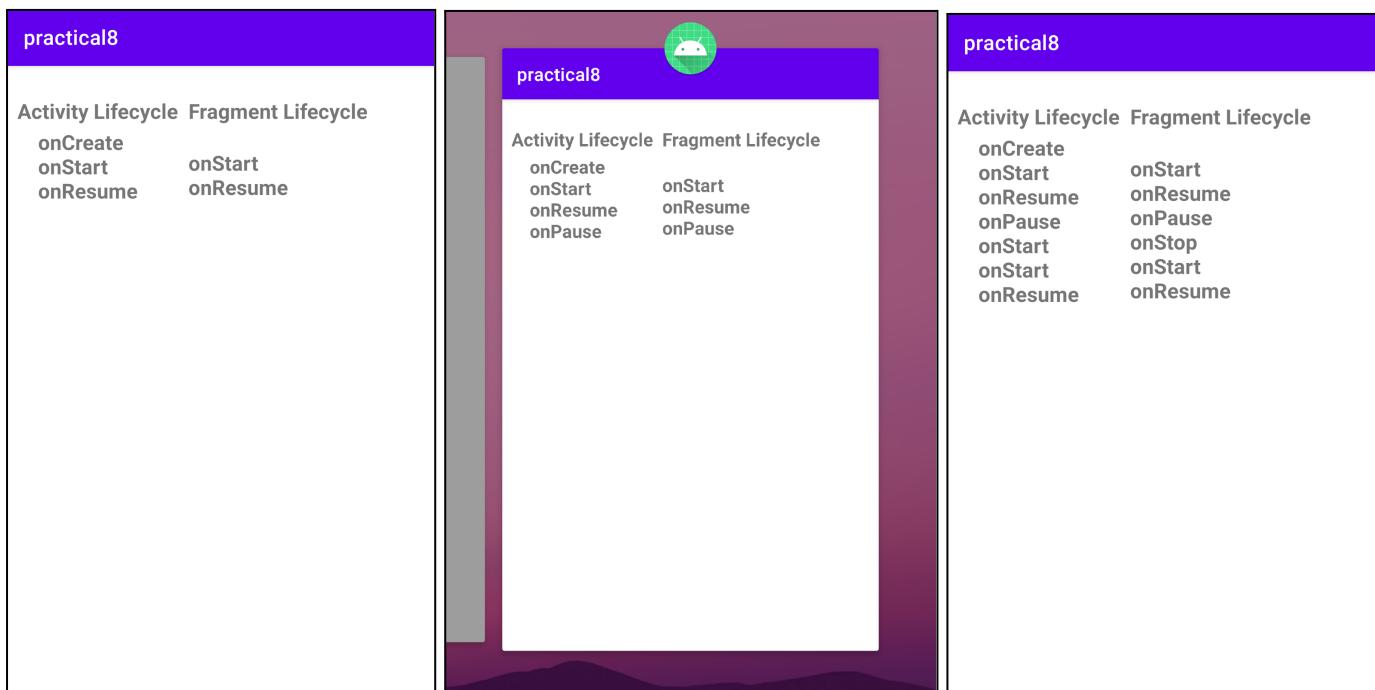
strings.xml

```

<!--Created by - ANUJ KUMAR SEN 2K21/CS/15 -->
<resources>
    <string name="app_name">practical8</string>
    <string name="activity_lifecycle">"Activity Lifecycle</string>
    <string name="fragment_lifecycle">"Fragment Lifecycle</string>
</resources>

```

Output 8 :



Question 9 :

Create an application with 2 fragments, one to set the background and other to set the fore-color of the text.

Solution 9 :

activity_main.xml

```
<!--Created by - ANUJ KUMAR SEN 2K21/CS/15 -->
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:id="@+id/main_layout"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical">

    <TextView
        android:id="@+id/textview"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerHorizontal="true"
        android:layout_marginLeft="100dp"
        android:layout_marginTop="10dp"
        android:text="FRAGMENT EXAMPLE APP"
        android:textColor="@color/black" />

    <fragment
        android:id="@+id/frag1"
        android:name="com.example.practical9.BGColor"
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="2" />

    <fragment
        android:id="@+id/frag2"
        android:name="com.example.practical9.FGColor"
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="2" />

</LinearLayout>
```

MainActivity.java

```
//Created by - ANUJ KUMAR SEN 2K21/CS/15
package com.example.practical9;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.widget.LinearLayout;
import android.widget.RadioButton;
import android.widget.RadioGroup;
import android.widget.TextView;
public class MainActivity extends AppCompatActivity {

    TextView tv1;
    TextView tv2;
    TextView tv3;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        tv1 = (TextView) findViewById(R.id.textview);
        tv2 = (TextView) findViewById(R.id.textview2);
        tv3 = (TextView) findViewById(R.id.textview3);
        LinearLayout ll = (LinearLayout) findViewById(R.id.main_layout);
        RadioGroup rg = (RadioGroup) findViewById(R.id.bg_radiogroup);
        rg.setOnCheckedChangeListener(new RadioGroup.OnCheckedChangeListener() {
            @Override
            public void onCheckedChanged(RadioGroup radioGroup, int checkedId) {
                RadioButton checkedRadioButton = (RadioButton)
radioGroup.findViewById(checkedId);
                boolean isChecked = checkedRadioButton.isChecked();
                if (isChecked) {
                    switch (checkedRadioButton.getId()) {
                        case R.id.radioButton1:

ll.setBackgroundColor(getResources().getColor(R.color.purple_500));
                        break;
                        case R.id.radioButton2:

ll.setBackgroundColor(getResources().getColor(R.color.teal_200));
                        break;
                        case R.id.radioButton3:

ll.setBackgroundColor(getResources().getColor(R.color.yellow));
                    }
                }
            }
        });
    }
}
```

```
        break;
    case R.id.radioButton4:

ll.setBackgroundColor(getResources().getColor(R.color.green));
        break;
    case R.id.radioButton5:

ll.setBackgroundColor(getResources().getColor(R.color.Red));
        break;
    }

}

}

}

rg2 = (RadioGroup) findViewById(R.id.fg_radiogroup);
rg2.setOnCheckedChangeListener(new RadioGroup.OnCheckedChangeListener() {
    @Override
    public void onCheckedChanged(RadioGroup radioGroup, int checkedId) {
        RadioButton checkedRadioButton = (RadioButton)
radioGroup.findViewById(checkedId);
        boolean isChecked = checkedRadioButton.isChecked();
        if (isChecked) {
            switch (checkedRadioButton.getId()) {
                case R.id.rb1:

tv1.setTextColor(getResources().getColor(R.color.green));

tv2.setTextColor(getResources().getColor(R.color.green));

tv3.setTextColor(getResources().getColor(R.color.green));
                break;
            case R.id.rb2:

tv1.setTextColor(getResources().getColor(R.color.purple_700));
            tv2.setTextColor(getResources().getColor(R.color.purple_700));
            tv3.setTextColor(getResources().getColor(R.color.purple_700));
                break;
            case R.id.rb3:

tv1.setTextColor(getResources().getColor(R.color.yellow));
        }
    }
}
```

```
tv2.setTextColor(getResources().getColor(R.color.yellow)) ;  
  
tv3.setTextColor(getResources().getColor(R.color.yellow)) ;  
        break;  
    case R.id.rb4:  
  
  
tv1.setTextColor(getResources().getColor(R.color.white)) ;  
  
tv2.setTextColor(getResources().getColor(R.color.white)) ;  
  
tv3.setTextColor(getResources().getColor(R.color.white)) ;  
        break;  
    case R.id.rb5:  
  
        tv1.setTextColor(getResources().getColor(R.color.Red)) ;  
        tv2.setTextColor(getResources().getColor(R.color.Red)) ;  
        tv3.setTextColor(getResources().getColor(R.color.Red)) ;  
        break;  
    }  
}  
}  
});  
}  
}
```

fragment_bg_color.xml

```
<!--Created by - ANUJ KUMAR SEN 2K21/CS/15 -->
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical">

    <TextView
        android:id="@+id/textview2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerHorizontal="true"
        android:layout_gravity="center_horizontal"
        android:layout_marginTop="15dp"
        android:text="SELECT BACKGROUND COLOUR"
        android:textAlignment="center"
        android:textColor="@color/black"
        android:textSize="15sp">

```

```
    android:textStyle="bold" />

<RadioGroup
    android:id="@+id/bg_radiogroup"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:orientation="vertical">

    <RadioButton
        android:id="@+id/radioButton1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Purple" />

    <RadioButton
        android:id="@+id/radioButton2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="0"
        android:text="Teal" />

    <RadioButton
        android:id="@+id/radioButton3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="0"
        android:text="Yellow" />

    <RadioButton
        android:id="@+id/radioButton4"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="0"
        android:text="Green" />

    <RadioButton
        android:id="@+id/radioButton5"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="0"
        android:text="Red" />
</RadioGroup>
</LinearLayout>
```

BGColor.java

```
//Created by - ANUJ KUMAR SEN 2K21/CS/15
package com.example.practical9;
import android.os.Bundle;
import androidx.fragment.app.Fragment;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
public class BGColor extends Fragment {
    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
                           Bundle savedInstanceState) {
        return inflater.inflate(R.layout.fragment_bg_color,
                           container, false);
    }
}
```

fragment_fg_color.xml

```
<!--Created by - ANUJ KUMAR SEN 2K21/CS/15 -->
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical">

    <TextView
        android:id="@+id/textview3"
        android:layout_width="397dp"
        android:layout_height="50dp"
        android:layout_gravity="center_horizontal"
        android:text="CHANGE TEXT COLOUR"
        android:textAlignment="center"
        android:textColor="@color/black"
        android:textStyle="bold" />

    <RadioGroup
        android:id="@+id/fg_radiogroup"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:orientation="vertical">

        <RadioButton
            android:id="@+id/rb1"
```

```
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="0"
        android:text="Green" />

    <RadioButton
        android:id="@+id/rb2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Purple" />

    <RadioButton
        android:id="@+id/rb3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="0"
        android:text="Yellow" />

    <RadioButton
        android:id="@+id/rb4"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="0"
        android:text="White" />

    <RadioButton
        android:id="@+id/rb5"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="0"
        android:text="Red" />
    </RadioGroup>
</LinearLayout>
```

FGColor.java

```
//Created by - ANUJ KUMAR SEN 2K21/CS/15
package com.example.practical9;
import android.os.Bundle;
import androidx.fragment.app.Fragment;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
public class FGColor extends Fragment {
    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
        Bundle savedInstanceState) {
```

```
        return inflater.inflate(R.layout.fragment_fg_color,
                               container, false);

    }

}
```

colors.xml

```
<!--Created by - ANUJ KUMAR SEN 2K21/CS/15 -->
<?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="teal_200">#FF03DAC5</color>
    <color name="teal_700">#FF018786</color>
    <color name="black">#FF000000</color>
    <color name="white">#FFFFFFFF</color>
    <color name="yellow">#FFFFFFF00</color>
    <color name="magenta">#FFFF00FF</color>
    <color name="Red"> #ff0000</color>
    <color name="green">#7fff00 </color>
    <color name="blue">#ADD8E6</color>
</resources>
```

strings.xml

```
<!--Created by - ANUJ KUMAR SEN 2K21/CS/15 -->
<resources>
    <string name="app_name">Question_9</string>
    <!-- TODO: Remove or change this placeholder text -->
    <string name="hello_blank_fragment">Hello blank fragment</string>
</resources>
```

Output 9 :

Question_9

FRAGMENT EXAMPLE APP

SELECT BACKGROUND COLOUR

Purple
 Teal
 Yellow
 Green
 Red

CHANGE TEXT COLOUR

Green
 Purple
 Yellow
 White
 Red

Question_9

FRAGMENT EXAMPLE APP

SELECT BACKGROUND COLOUR

Purple
 Teal
 Yellow
 Green
 Red

CHANGE TEXT COLOUR

Green
 Purple
 Yellow
 White
 Red

Question_9

FRAGMENT EXAMPLE APP

SELECT BACKGROUND COLOUR

Purple
Teal
 Yellow
 Green
 Red

CHANGE TEXT COLOUR

Green
 Purple
 Yellow
 White
 Red

Question_9

FRAGMENT EXAMPLE APP

SELECT BACKGROUND COLOUR

Purple
 Teal
 Yellow
 Green
 Red

CHANGE TEXT COLOUR

Green
 Purple
 Yellow
 White
 Red

Question_9

FRAGMENT EXAMPLE APP

SELECT BACKGROUND COLOUR

- Purple
- Teal
- Yellow
- Green
- Red

CHANGE TEXT COLOUR

- Green
- Purple
- Yellow
- White
- Red

Question_9

FRAGMENT EXAMPLE APP

SELECT BACKGROUND COLOUR

- Purple
- Teal
- Yellow
- Green
- Red

CHANGE TEXT COLOUR

- Green
- Purple
- Yellow
- White
- Red

Question 10 :

Create an application with an activity having EditText and a button (with name “Send”). On clicking the Send button, make use of implicit intent that uses a Send Action and let the user select the app from app chooser and navigate to that application.

Solution 10 :

activity_main.xml

```
<!--Created by - ANUJ KUMAR SEN 2K21/CS/15 -->
<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="@dimen/activity_horizontal_margin"
    android:paddingTop="@dimen/activity_vertical_margin"
    android:paddingRight="@dimen/activity_horizontal_margin"
    android:paddingBottom="@dimen/activity_vertical_margin"
    tools:context=".MainActivity">

    <EditText
        android:id="@+id/editText1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentTop="true"
        android:layout_alignParentRight="true"
        android:layout_marginTop="80dp"
```

```
    android:layout_marginRight="80dp"
    android:layout_marginLeft="25dp"
    android:ems="10">
    <requestFocus />
</EditText>

<EditText
    android:id="@+id/editText2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/editText1"
    android:layout_alignLeft="@+id/editText1"
    android:layout_marginLeft="0dp"
    android:layout_marginTop="20dp"
    android:ems="10">

    <requestFocus />
</EditText>

<EditText
    android:id="@+id/editText3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/editText2"
    android:layout_alignLeft="@+id/editText2"
    android:layout_marginTop="20dp"
    android:ems="10"
    android:inputType="textMultiLine" />

<TextView
    android:id="@+id/textView1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignBaseline="@+id/editText1"
    android:layout_alignBottom="@+id/editText1"
    android:layout_marginHorizontal="30dp"
    android:layout_marginBottom="15dp"
    android:text="To : " />

<TextView
    android:id="@+id/textView2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignBaseline="@+id/editText2"
    android:layout_alignBottom="@+id/editText2"
    android:layout_marginHorizontal="30dp"
    android:layout_marginBottom="15dp"
```

```

        android:text="Subject : " />

<TextView
    android:id="@+id/textView3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignBaseline="@+id/editText3"
    android:layout_alignBottom="@+id/editText3"
    android:layout_alignParentLeft="true"
    android:layout_marginHorizontal="30dp"
    android:layout_marginBottom="15dp"
    android:text="Message : " />

<Button
    android:id="@+id/button1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/editText3"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="20dp"
    android:layout_marginHorizontal="30dp"
    android:layout_marginBottom="15dp"
    android:text="Send" />
</RelativeLayout>

```

MainActivity.java

```

//Created by - ANUJ KUMAR SEN 2K21/CS/15
package com.example.practical10;
import android.app.Activity;
import android.content.Intent;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuItem;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;

public class MainActivity extends Activity {

    EditText editTextTo,editTextSubject,editTextMessage;
    Button send;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

```

```

editTextTo=(EditText)findViewById(R.id.editText1);
editTextSubject=(EditText)findViewById(R.id.editText2);
editTextMessage=(EditText)findViewById(R.id.editText3);

send=(Button)findViewById(R.id.button1);

send.setOnClickListener(new View.OnClickListener() {

    @Override
    public void onClick(View arg0) {
        String to=editTextTo.getText().toString();
        String subject=editTextSubject.getText().toString();
        String message=editTextMessage.getText().toString();
        Intent email = new Intent(Intent.ACTION_SEND);
        email.putExtra(Intent.EXTRA_EMAIL, new String[]{ to});
        email.putExtra(Intent.EXTRA_SUBJECT, subject);
        email.putExtra(Intent.EXTRA_TEXT, message);
        email.setType("message/rfc822");
        startActivity(Intent.createChooser(email, "Choose an Email client : "));
    }
});

@Override
public boolean onCreateOptionsMenu(Menu menu) {
    getMenuInflater().inflate(R.menu.menus_main, menu);
    return true;
}

@Override
public boolean onOptionsItemSelected(MenuItem item) {
    int id = item.getItemId();
    if (id == R.id.action_settings) {
        return true;
    }
    return super.onOptionsItemSelected(item);
}
}

```

dimens.xml

```

<!--Created by - ANUJ KUMAR SEN 2K21/CS/15 -->
<?xml version="1.0" encoding="utf-8"?>
<resources>
    <dimen name="activity_horizontal_margin">10dp</dimen>
    <dimen name="activity_vertical_margin">10dp</dimen>
</resources>

```

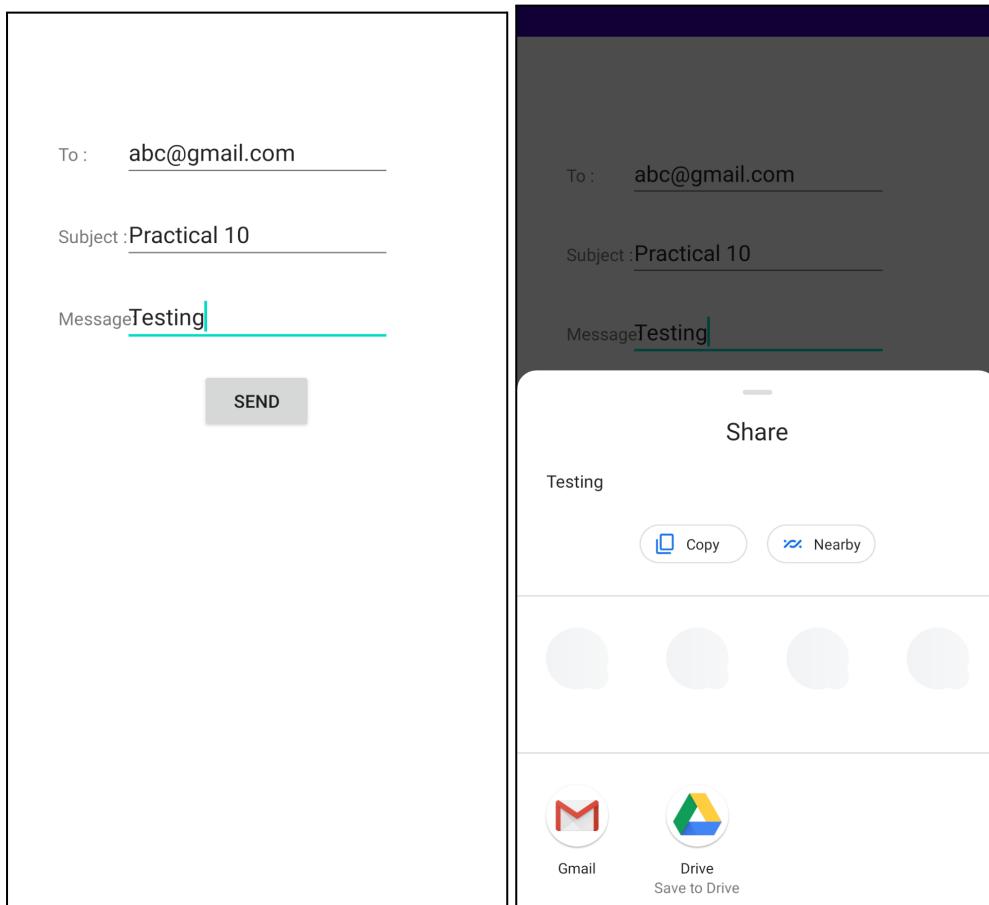
menus_main.xml

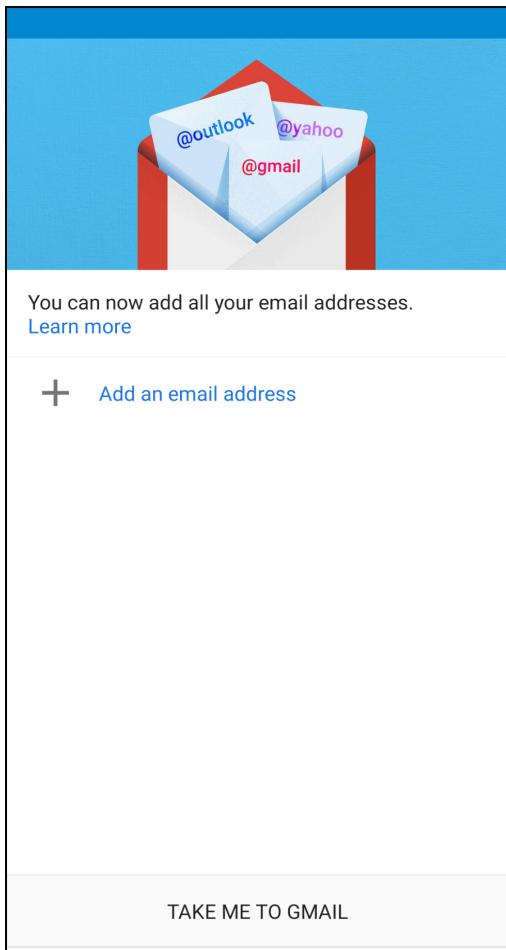
```
<!--Created by - ANUJ KUMAR SEN 2K21/CS/15 -->
<menu xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    tools:context="net.XXX.YYY.ZZZZ">
    <item
        android:id="@+id/action_settings"
        android:orderInCategory="100"
        android:title="@string/action_settings"
        app:showAsAction="never" />
</menu>
```

strings.xml

```
<!--Created by - ANUJ KUMAR SEN 2K21/CS/15 -->
<resources>
    <string name="app_name">practical10</string>
    <string name="action_settings">"Action settings</string>
</resources>
```

Output 10 :





Question 11 :

Create a Login application. On successful login, use explicit intent to second activity displaying welcome message (Welcome Username) to the user and a logout button. When user presses the logout button, a dialog box with a message ("Are you sure you want to exit?") and two buttons ("Yes" and "No") should appear to confirm logout. On "Yes" button click, go to login activity and on "No", stay on the same activity

Solution 11 :

activity_main.xml

```
<!--Created by - ANUJ KUMAR SEN 2K21/CS/15 -->
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="251dp"
    android:layout_height="567dp"
    android:orientation="vertical"
    >
    <TextView
        android:id="@+id/textViewCounter"
        android:layout_width="match_parent"
        android:layout_height="55dp"
        >
```

```
        android:text="@string/login" />
<EditText
    android:id="@+id/editLogin"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
/>
<TextView
    android:id="@+id/textViewCounter2"
    android:layout_width="match_parent"
    android:layout_height="55dp"
    android:text="@string/password"
/>
<EditText
    android:id="@+id/editPassword"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
/>
<Button
    android:id="@+id/buttonSubmit"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="@string/submit" />
</LinearLayout>
```

Main_activity.java

```
//Created by - ANUJ KUMAR SEN 2K21/CS/15
package com.example.practical11;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;

import androidx.appcompat.app.AppCompatActivity;

import android.util.Log;
import android.widget.Toast;
import android.content.Intent;

public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Button b1 = (Button) this.findViewById(R.id.buttonSubmit);
```

```

EditText e1 = (EditText) findViewById(R.id.editLogin);
EditText e2 = (EditText) findViewById(R.id.editPassword);
Intent i = new Intent(this, Second_activity.class);
b1.setOnClickListener(new Button.OnClickListener() {
    public void onClick(View v) {
        String text1 = e1.getText().toString();
        String text2 = e2.getText().toString();
        Log.v(text1, "login");
        Log.v(text2, "password");
        if (text1.equals("login") && text2.equals("password")) {
            Toast.makeText(MainActivity.this, "Successful",
Toast.LENGTH_SHORT).show();
            startActivity(i);
        } else {
            Toast.makeText(MainActivity.this, "Unsuccessful",
Toast.LENGTH_SHORT).show();
        }
    }
});
}

```

activity_second.xml

```

<!--Created by - ANUJ KUMAR SEN 2K21/CS/15 -->
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="251dp"
    android:layout_height="567dp"
    android:orientation="vertical"
>
<TextView
    android:id="@+id/textViewCounter"
    android:layout_width="match_parent"
    android:layout_height="55dp"
    android:text="@string/WELCOMEUSER" />
<Button
    android:id="@+id/button2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="@string/logout" />
</LinearLayout>

```

AndroidManifest.xml

```
<!--Created by - ANUJ KUMAR SEN 2K21/CS/15 -->
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.practical11">

    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Practical11">
        <activity
            android:name=".AndroidManifest"
            android:exported="false" />
        <activity
            android:name=".Second_activity"
            android:exported="false" />
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>

</manifest>
```

Second_activity.java

```
//Created by - ANUJ KUMAR SEN 2K21/CS/15
package com.example.practical11;
import android.os.Bundle;
import android.widget.Button;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.app.AlertDialog;
import android.content.DialogInterface;

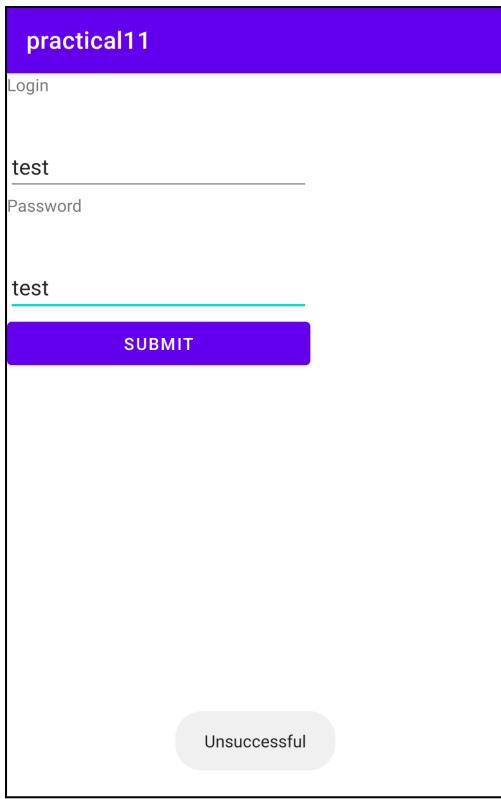
public class Second_activity extends AppCompatActivity {
```

```
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_second);
    Button b11 = (Button) this.findViewById(R.id.button2);
    Intent k = new Intent(this, MainActivity.class);
    AlertDialog.Builder ad = new AlertDialog.Builder(this);
    b11.setOnClickListener(v -> {
        ad.setTitle("Login App");
        ad.setMessage("Do you want to logout");
        ad.setNegativeButton("Yes", new DialogInterface.OnClickListener() {
            public void onClick(DialogInterface Dialog, int buttonID) {
                startActivity(k);
                return;
            }
        });
        ad.setPositiveButton("No", new
            DialogInterface.OnClickListener() {
                public void onClick(DialogInterface Dialog, int buttonID) {
                    return;
                }
            });
        ad.show();
    });
}
```

Output 11 :

<p>practical11</p> <p>Login</p> <p><input type="text"/></p> <p>Password</p> <hr/> <p>SUBMIT</p>	<p>practical11</p> <p>Login</p> <p><input type="text" value="login"/></p> <p>Password</p> <p><input type="text" value="password"/></p> <hr/> <p>SUBMIT</p> <p>Successful</p>
---	--

<p>practical11</p> <p>Welcome</p> <p>LOG OUT</p>	<p>practical11</p> <p>Welcome</p> <p>LOG OUT</p> <div style="border: 1px solid black; padding: 10px; text-align: center;"><p>Login App</p><p>Do you want to logout</p><p style="margin-top: 20px;">YES NO</p></div>
---	--



Question 12 :

Create an application for Broadcast sender and receivers.

Solution 12 :

BroadcastSender activity_main.xml

```
<!--Created by - ANUJ KUMAR SEN 2K21/CS/15 -->
<?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/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Send Broadcast Message"
        android:onClick="onBroadcastSendBtnClicked"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"/>
</androidx.constraintlayout.widget.ConstraintLayout>
```

BroadcastSender MainActivity.java

```
//Created by - ANUJ KUMAR SEN 2K21/CS/15
package com.example.practical12;
import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
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 onBroadcastSendBtnClicked(View v) {
        Intent intent = new Intent();
        intent.setAction("com.practical12.myBroadcastMessage");
        intent.setFlags(Intent.FLAG_INCLUDE_STOPPED_PACKAGES);
        sendBroadcast(intent);
    }
}
```

BroadcastReceiver activity_main.xml

```
<!--Created by - ANUJ KUMAR SEN 2K21/CS/15 -->
<?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="Broadcasting custom intents"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

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

BroadcastReceiver MyBroadcastReceiver.java

```
//Created by - ANUJ KUMAR SEN 2K21/CS/15
package com.example.practical12_broadcastreceiver;
import android.content.BroadcastReceiver;
import android.content.Context;
import android.content.Intent;
import android.util.Log;
import android.widget.Toast;

public class MyBroadcastReceiver extends BroadcastReceiver {

    @Override
    public void onReceive(Context context, Intent intent) {
        Log.i("BroadcastReceiver", "Broadcast message is received");
        Toast.makeText(context,"Broadcast message is received",
        Toast.LENGTH_LONG).show();
    }
}
```

BroadcastReceiver AndroidManifest.xml

```
<!--Created by - ANUJ KUMAR SEN 2K21/CS/15 -->
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">

    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:supportsRtl="true"
        android:theme="@style/Theme.Practical12_BroadcastReceiver"
        tools:targetApi="31">
        <receiver
            android:name=".MyBroadcastReceiver"
            android:enabled="true"
            android:exported="true">
            <intent-filter>
                <action android:name = "com.practical12.myBroadcastMessage"></action>
            </intent-filter>
        </receiver>
        <activity>
```

```
        android:name=".MainActivity"
        android:exported="true">
        <intent-filter>
            <action android:name="android.intent.action.MAIN" />

            <category android:name="android.intent.category.LAUNCHER" />
        </intent-filter>
    </activity>
</application>

</manifest>
```

MainActivity.java

```
//Created by - ANUJ KUMAR SEN 2K21/CS/15
package com.example.practical12_broadcastreceiver;
import androidx.appcompat.app.AppCompatActivity;

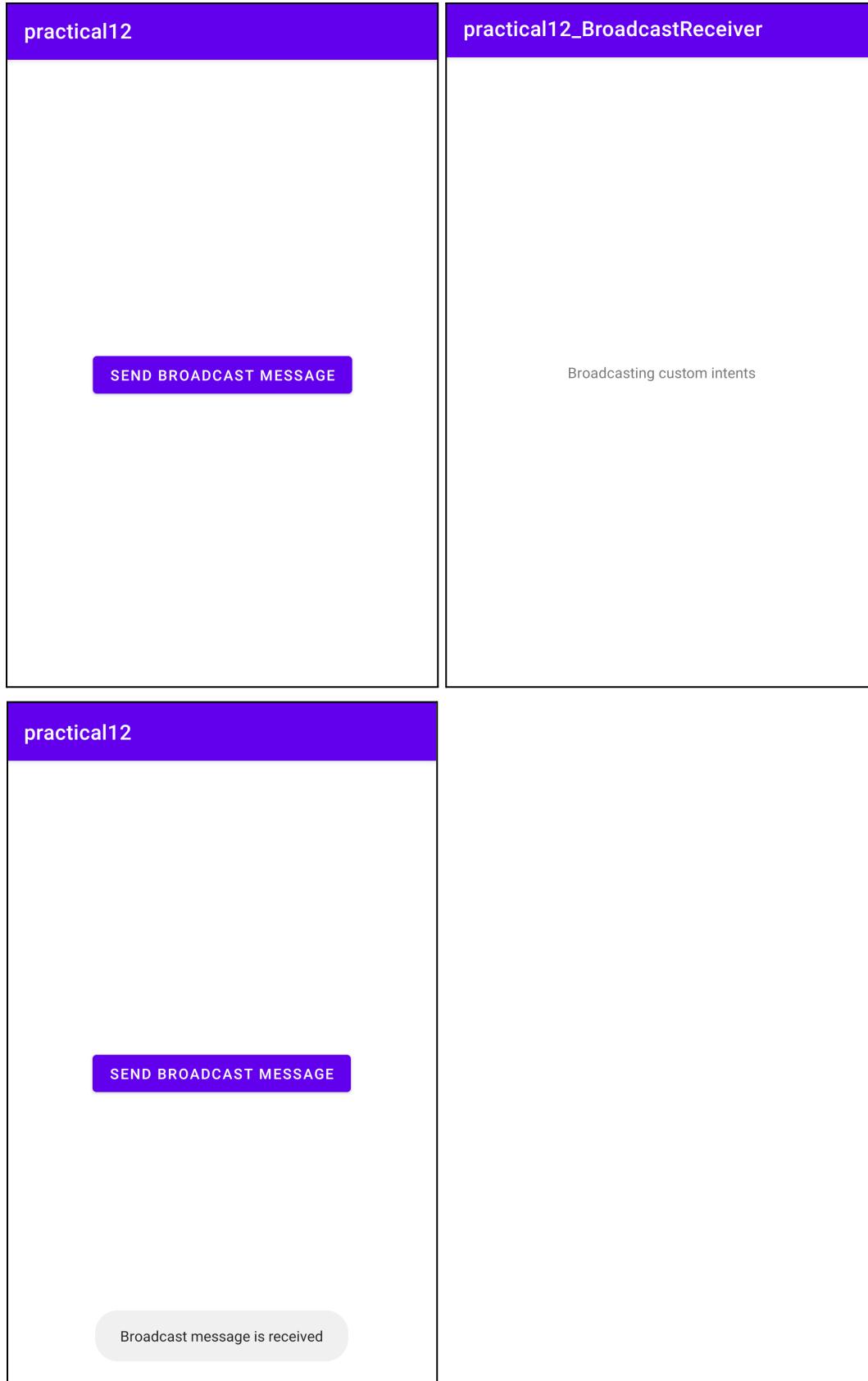
import android.content.IntentFilter;
import android.os.Bundle;

public class MainActivity extends AppCompatActivity {

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

        IntentFilter intentFilter = new
IntentFilter("com.practical12.myBroadcastMessage");
        MyBroadcastReceiver objReceiver = new MyBroadcastReceiver();
        registerReceiver(objReceiver,intentFilter);
    }
}
```

Output 12 :



Question 13 :

Create an application to create a notification having icon, text and title.

Solution 13 :

activity_main.xml

```
<!--Created by - ANUJ KUMAR SEN 2K21/CS/15 -->
<?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/notifyBtn"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Get notification"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>1.
```

MainActivity.java

```
//Created by - ANUJ KUMAR SEN 2K21/CS/15
package com.example.practical13;
import androidx.appcompat.app.AppCompatActivity;
import android.core.app.ActivityCompat;
import android.core.app.NotificationCompat;
import android.core.app.NotificationManagerCompat;

import android.app.NotificationChannel;
import android.app.NotificationManager;
import android.content.pm.PackageManager;
import android.os.Build;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;

public class MainActivity extends AppCompatActivity {
```

```
Button notifyBtn;

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

    notifyBtn = findViewById(R.id.notifyBtn);

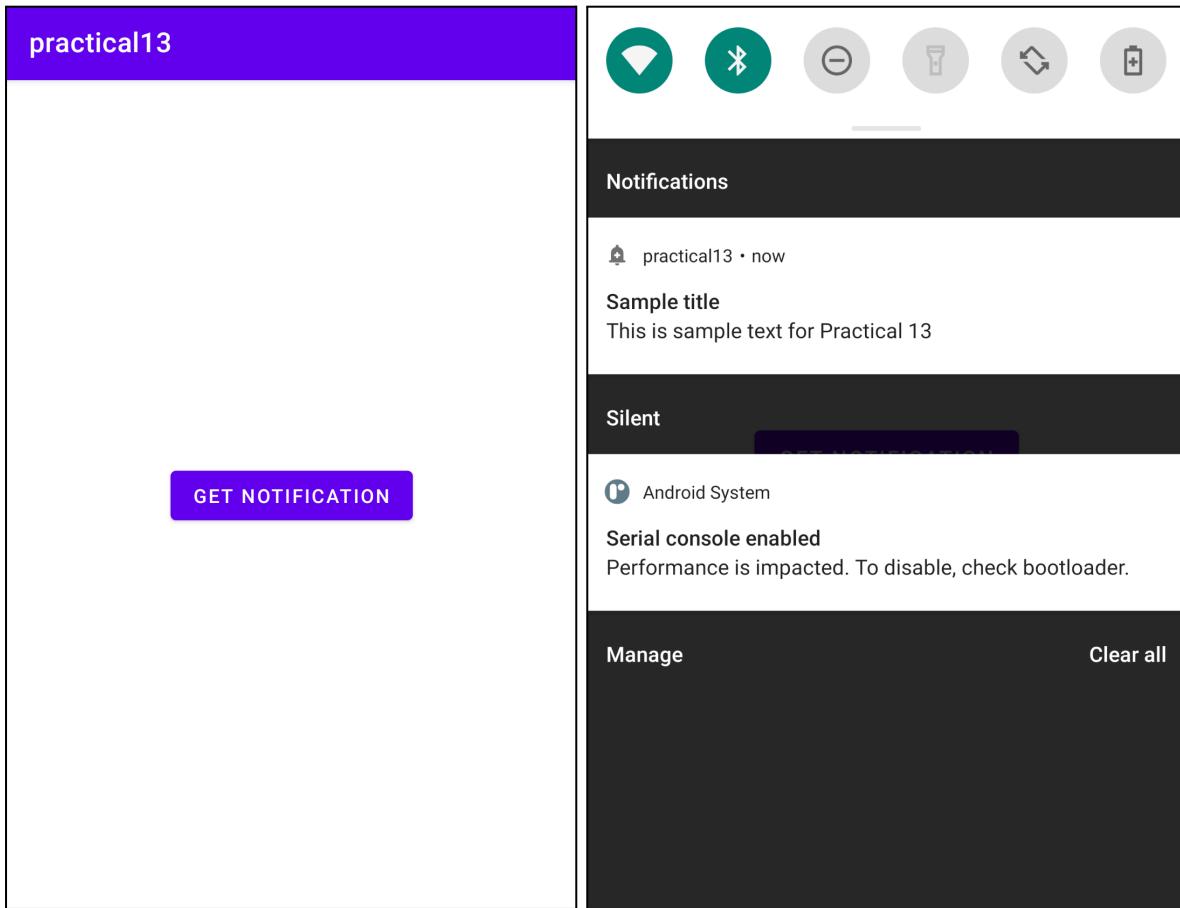
    if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.O) {
        NotificationChannel channel = new NotificationChannel("NyNotification",
"NyNotification", NotificationManager.IMPORTANCE_DEFAULT);
        NotificationManager manager =
getSystemService(NotificationManager.class);
        manager.createNotificationChannel(channel);
    }

    notifyBtn.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {

            NotificationCompat.Builder builder = new
NotificationCompat.Builder(MainActivity.this, "NyNotification");
            builder.setContentTitle("Sample title");
            builder.setContentText("This is sample text for Practical 13");
            builder.setSmallIcon(R.drawable.notification_icon);
            builder.setAutoCancel(true);

            NotificationManagerCompat managerCompat =
NotificationManagerCompat.from(MainActivity.this);
            if (ActivityCompat.checkSelfPermission(MainActivity.this,
android.Manifest.permission.POST_NOTIFICATIONS) !=
PackageManager.PERMISSION_GRANTED) {
                return;
            }
            managerCompat.notify(1, builder.build());
        }
    });
}
}
```

Output 13 :



Question 14 :

Create an application to create services.

Solution 14 :

activity_main.xml

```
<!--Created by - ANUJ KUMAR SEN 2K21/CS/15 -->
<?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">

    <Button
        android:id="@+id/buttonStart"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Start Service" />
```

```
    android:layout_alignParentTop="true"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="74dp"
    android:text="Start Service" />

<Button
    android:id="@+id/buttonStop"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_centerHorizontal="true"
    android:layout_centerVertical="true"
    android:text="Stop Service" />

<Button
    android:id="@+id/buttonNext"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentBottom="true"
    android:layout_centerHorizontal="true"
    android:layout_marginBottom="63dp"
    android:text="Next Page" />
</RelativeLayout>
```

MainActivity.java

```
//Created by - ANUJ KUMAR SEN 2K21/CS/15
package com.example.practical14;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity implements
View.OnClickListener{
    Button buttonStart, buttonStop,buttonNext;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        buttonStart = findViewById(R.id.buttonStart);
        buttonStop = findViewById(R.id.buttonStop);
        buttonNext = findViewById(R.id.buttonNext);
```

```

        buttonStart.setOnClickListener(this);
        buttonStop.setOnClickListener(this);
        buttonNext.setOnClickListener(this);

    }

    public void onClick(View src) {
        switch (src.getId()) {
            case R.id.buttonStart:

                startService(new Intent(this, MyService.class));
                break;
            case R.id.buttonStop:
                stopService(new Intent(this, MyService.class));
                break;
            case R.id.buttonNext:
                Intent intent=new Intent(this,NextPage.class);
                startActivity(intent);
                break;
        }
    }
}

```

NextPage.java

```

//Created by - ANUJ KUMAR SEN 2K21/CS/15
package com.example.practical14;
import android.os.Bundle;

import androidx.appcompat.app.AppCompatActivity;

public class NextPage extends AppCompatActivity {

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

```

activity_next.xml

```

<!--Created by - ANUJ KUMAR SEN 2K21/CS/15 -->
<?xml version="1.0" encoding="utf-8"?>
<androidx.coordinatorlayout.widget.CoordinatorLayout
    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=".NextPage">

<TextView
    android:id="@+id/textView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginEnd="8dp"
    android:layout_marginStart="8dp"
    android:layout_marginTop="200dp"
    android:text="Next Page"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />

</androidx.coordinatorlayout.widget.CoordinatorLayout>

```

MyService.java

```

//Created by - ANUJ KUMAR SEN 2K21/CS/15
package com.example.practical14;

import android.app.Service;
import android.content.Intent;
import android.media.MediaPlayer;
import android.os.IBinder;
import android.widget.Toast;

import androidx.annotation.Nullable;

public class MyService extends Service {
    MediaPlayer myPlayer;

    @Nullable
    @Override
    public IBinder onBind(Intent intent) {
        return null;
    }

    @Override
    public void onCreate() {
        Toast.makeText(this, "Service Created", Toast.LENGTH_LONG).show();
        myPlayer = MediaPlayer.create(this, R.raw.earth);
    }
}

```

```

        myPlayer.setLooping(false); // Set looping
    }

    @Override
    public void onStart(Intent intent, int startid) {
        Toast.makeText(this, "Service Started", Toast.LENGTH_LONG).show();
        myPlayer.start();
    }

    @Override
    public void onDestroy() {
        Toast.makeText(this, "Service Stopped", Toast.LENGTH_LONG).show();
        myPlayer.stop();
    }
}

```

AndroidManifest.xml

```

<!--Created by - ANUJ KUMAR SEN 2K21/CS/15 -->
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.practical14">

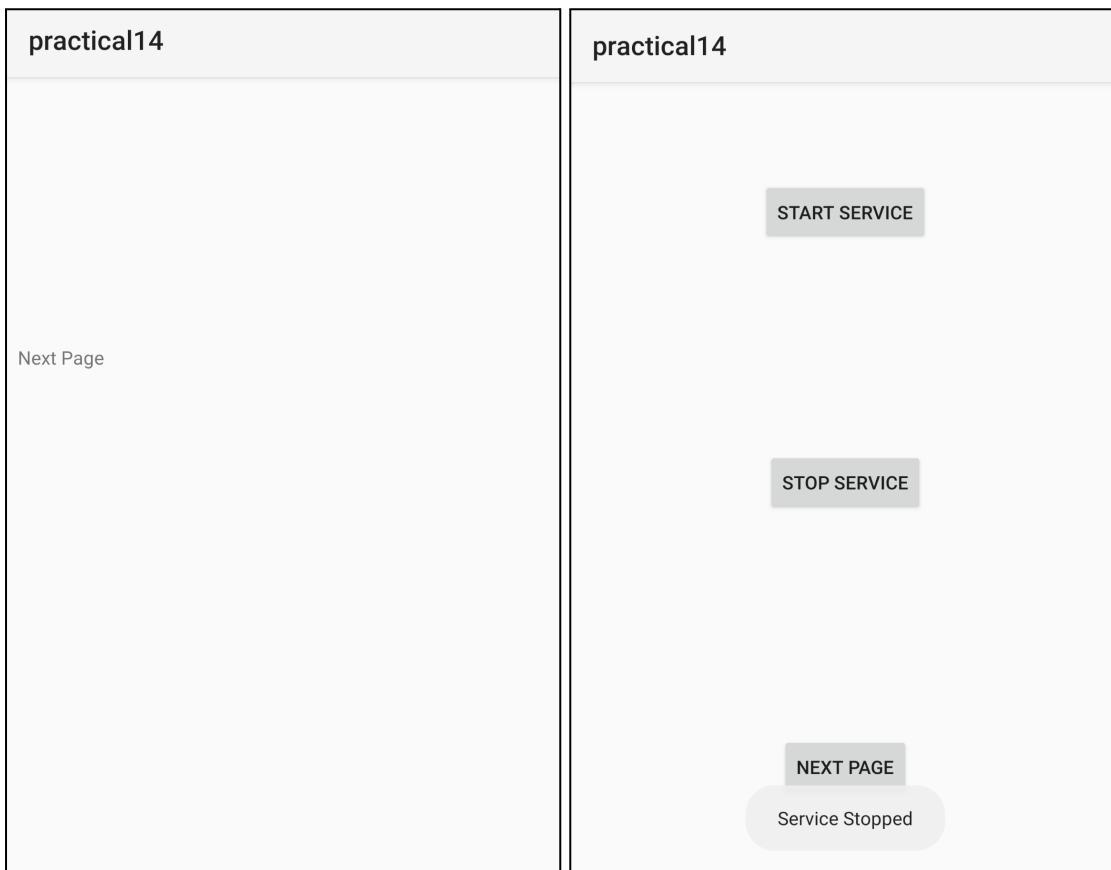
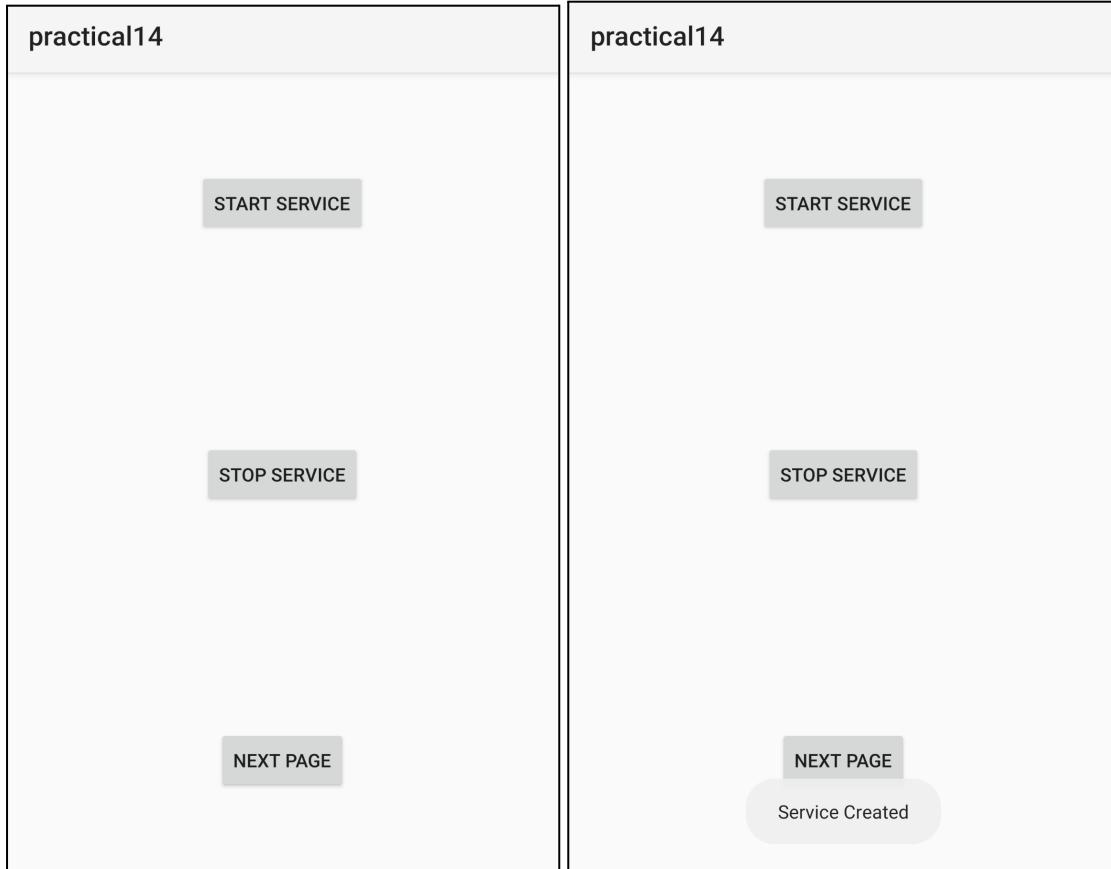
    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.AppCompat.Light">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
        <activity android:name=".NextPage"></activity>

        <service
            android:name=".MyService"
            android:enabled="true" />
    </application>
</manifest>

```

Output 14 :



Question 15 :

Create an application to Create, Insert, update, Delete and retrieve operations on the database.

Solution 15 :

activity_main.xml

```
<!--Created by - ANUJ KUMAR SEN 2K21/CS/15 -->
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="vertical" >
    <EditText
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter id to update or delete"
        android:id="@+id/id"
        android:onClick="buttonAction"/>
    <EditText
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter task to insert or update"
        android:id="@+id/task" />
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="vertical">
        <Button
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:id="@+id/insert"
            android:text="Insert"
            android:onClick="buttonAction"/>
        <Button
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:id="@+id/view"
            android:text="View"
            android:onClick="buttonAction" />
        <Button
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="Update"
            android:onClick="buttonAction"
            android:id="@+id/update" />
        <Button
```

```

        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Delete"
        android:onClick="buttonAction"
        android:id="@+id/delete" />
    </LinearLayout>
    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:id="@+id/text"/>
</LinearLayout>

```

MainActivity.java

```

//Created by - ANUJ KUMAR SEN 2K21/CS/15
package com.example.practical15;
import android.app.Activity;
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 Activity {
    EditText id,task;
    Button insert,view,update,delete;
    TextView text;
    DatabaseHelper db;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        id=(EditText)findViewById(R.id.id);
        task=(EditText)findViewById((R.id.task));
        insert=(Button)findViewById(R.id.insert);
        view=(Button)findViewById(R.id.view);
        update=(Button)findViewById(R.id.update);
        delete=(Button)findViewById(R.id.delete);
        text=(TextView)findViewById(R.id.text);
        db=new DatabaseHelper(getApplicationContext());
    }
    public void buttonAction(View view){
        switch (view.getId()){
            case R.id.insert:
                db.insertRecord(task.getText().toString());
                Toast.makeText(getApplicationContext(),"record
inserted",Toast.LENGTH_LONG).show();
        }
    }
}

```

```

        break;
    case R.id.view:
        text.setText(db.getRecords());
        break;
    case R.id.update:

        db.updateRecord(id.getText().toString(),task.getText().toString());
        Toast.makeText(getApplicationContext(),"record updated",Toast.LENGTH_LONG).show();
        break;
    case R.id.delete:
        db.deleteRecord(id.getText().toString());
        Toast.makeText(getApplicationContext(),"record deleted",Toast.LENGTH_LONG).show();
        break;
    }
}
}

```

DatabaseHelper.java

```

//Created by - ANUJ KUMAR SEN 2K21/CS/15
package com.example.practical15;
import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
public class DatabaseHelper extends SQLiteOpenHelper{
    private static final String DB_NAME="demodb";
    private static final int DB_VERSION=1;
    private static final String TABLE_NAME="record";
    private static final String ID_COL="id";
    private static final String TASK_COL="task";
    public DatabaseHelper(Context context) {
        super(context, DB_NAME, null, DB_VERSION);
    }
    @Override
    public void onCreate(SQLiteDatabase db) {
        String query="CREATE TABLE "+TABLE_NAME+" ("+ID_COL+" INTEGER PRIMARY KEY,"+
        "+TASK_COL+" TEXT)";
        db.execSQL(query);
    }
    @Override
    public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {
        // Drop older table if existed
        db.execSQL("DROP TABLE IF EXISTS " + TABLE_NAME);
    }
}

```

```
// Create table again
onCreate(db);

}

public void insertRecord(String name){
    SQLiteDatabase db=this.getWritableDatabase();
    ContentValues values=new ContentValues();
    values.put(TASK_COL,name);
    db.insert(TABLE_NAME,null,values);
    db.close();
}

public String getRecords(){
    String query="SELECT * FROM "+TABLE_NAME;
    String result="";
    SQLiteDatabase db=this.getReadableDatabase();
    Cursor cursor=db.rawQuery(query,null);
    cursor.moveToFirst();
    while(cursor.isAfterLast()==false){
        result+=cursor.getString(0)+" "+cursor.getString(1)+"\n";
        cursor.moveToNext();
    }
    db.close();
    return result;
}

public void updateRecord(String id,String task){
    SQLiteDatabase db=this.getWritableDatabase();
    ContentValues values=new ContentValues();
    values.put(TASK_COL,task);
    db.update(TABLE_NAME,values,"id=?",new String[]{id});
    db.close();
}

public void deleteRecord(String id){
    SQLiteDatabase db=this.getWritableDatabase();
    db.delete(TABLE_NAME,"id=?",new String[]{id});
    db.close();
}
}
```

Output 15 :

<p>Enter id to update or delete</p> <p>Android</p> <p>INSERT</p> <p>VIEW</p> <p>UPDATE</p> <p>DELETE</p> <p>record inserted</p>	<p>Enter id to update or delete</p> <p>Linux</p> <p>INSERT</p> <p>VIEW</p> <p>UPDATE</p> <p>DELETE</p> <p>record inserted</p>
<p>Enter id to update or delete</p> <p>Windows</p> <p>INSERT</p> <p>VIEW</p> <p>UPDATE</p> <p>DELETE</p> <p>record inserted</p>	<p>Enter task to insert or update</p> <p>INSERT</p> <p>VIEW</p> <p>UPDATE</p> <p>DELETE</p> <p>1 Android 2 Linux 3 Windows</p>

2	<input type="text" value="Kali Linux"/>
	<input type="button" value="INSERT"/>
	<input type="button" value="VIEW"/>
	<input type="button" value="UPDATE"/>
	<input type="button" value="DELETE"/>
1 Android 2 Linux 3 Windows	
record updated	

3	<input type="text" value=""/>
	<input type="text" value=""/>
	<input type="button" value="INSERT"/>
	<input type="button" value="VIEW"/>
	<input type="button" value="UPDATE"/>
	<input type="button" value="DELETE"/>
1 Android 2 Kali Linux 3 Windows	1 Android 2 Kali Linux
record deleted	

Name - ANUJ KUMAR SEN Roll No - 2K21/CS/15

END OF ASSIGNMENT