

Practical-3

User Interface Layout

1. creating a new layout resource file called rainbow.xml. Within this XML file, add a vertically-oriented linear layout control that fills the entire screen. Next, add seven TextView controls as child controls within the linear layout: one for each color in the spectrum. Set the text of each TextView control to the appropriate color string in the spectrum and the background color to the appropriate color value. Also, set each control's layout_width attribute to fill_parent and its layout_height attribute to wrap_content.

- Using Linear Layout

- Code:- 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">
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical">

<TextView
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:background="#F44336"
    android:gravity="center"
    android:text="RED"
    android:textAlignment="center"
    android:textColor="@color/white"
    android:textSize="48sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
```

Practical-3

User Interface Layout

```
<TextView
    android:id="@+id/textView1"

    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:background="#FF9800"
    android:gravity="center"
    android:text="ORANGE"
    android:textAlignment="center"
    android:textColor="@color/white"
    android:textSize="48sp"
/>
```

```
<TextView
    android:id="@+id/textView2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:background="#FFEB3B"
    android:gravity="center"
    android:text="YELLOW"
    android:textAlignment="center"
    android:textColor="@color/white"
    android:textSize="48sp"
/>
```

```
<TextView
    android:id="@+id/textView3"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:background="#4CAF50"
    android:gravity="center"
    android:text="GREEN"
    android:textAlignment="center"
    android:textColor="@color/white"
    android:textSize="48sp"
/>
```

Practical-3

User Interface Layout

```
<TextView
    android:id="@+id/textView4"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:background="#3C36F4"
    android:gravity="center"

    android:text="BLUE"
    android:textAlignment="center"
    android:textColor="@color/white"
    android:textSize="48sp"/>
```

```
<TextView
    android:id="@+id/textView5"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:background="#FF673AB7"
    android:gravity="center"
    android:text="INDIGO"
    android:textAlignment="center"
    android:textColor="@color/white"
    android:textSize="48sp"/>
```

```
<TextView
    android:id="@+id/textView6"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:background="#9C27B0"
    android:gravity="center"
    android:text="VIOLATE"
    android:textAlignment="center"
    android:textColor="@color/white"
    android:textSize="48sp" />
```

```
</LinearLayout>
```

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

Practical-3

User Interface Layout

- Using Relative Layout
 - Code :- activity_main2.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=".MainActivity2">
```

```
<RelativeLayout
    android:layout_width="match_parent"
    android:layout_height="match_parent">
```

```
<TextView
    android:id="@+id/textview"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:background="#F44336"
    android:gravity="center"
    android:paddingTop="20dp"
    android:paddingBottom="20dp"
    android:text="RED"
    android:textAlignment="center"
    android:textColor="@color/white"
    android:textSize="48sp" />
```

```
<TextView
    android:id="@+id/textView1"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@id/textview"
    android:background="#FF9800"
    android:gravity="center"
    android:paddingTop="20dp"
    android:paddingBottom="20dp"
```

Practical-3

User Interface Layout

```
android:text="ORANGE"  
android:textAlignment="center"  
android:textColor="@color/white"  
android:textSize="48sp" />
```

```
<TextView  
    android:id="@+id/textView2"  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:layout_below="@id/textView1"  
    android:background="#FFEB3B"  
    android:gravity="center"  
    android:paddingTop="20dp"  
    android:paddingBottom="20dp"  
    android:text="YELLOW"  
    android:textAlignment="center"  
    android:textColor="@color/white"  
    android:textSize="48sp" />
```

```
<TextView  
    android:id="@+id/textView3"  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:layout_below="@id/textView2"  
    android:background="#4CAF50"  
    android:gravity="center"  
    android:paddingTop="20dp"  
    android:paddingBottom="20dp"  
    android:text="GREEN"  
    android:textAlignment="center"  
    android:textColor="@color/white"  
    android:textSize="48sp" />
```

```
<TextView  
    android:id="@+id/textView4"  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:layout_below="@id/textView3"  
    android:background="#3C36F4"  
    android:gravity="center"
```

Practical-3

User Interface Layout

```
android:paddingTop="20dp"  
android:paddingBottom="20dp"  
android:text="BLUE"  
android:textAlignment="center"  
android:textColor="@color/white"  
android:textSize="48sp" />
```

```
<TextView  
    android:id="@+id/textView5"  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:layout_below="@id/textView4"  
    android:background="#FF673AB7"  
    android:gravity="center"  
    android:paddingTop="20dp"  
    android:paddingBottom="20dp"  
    android:text="INDIGO"  
    android:textAlignment="center"  
    android:textColor="@color/white"  
    android:textSize="48sp" />
```

```
<TextView  
    android:id="@+id/textView6"  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:layout_below="@id/textView5"  
    android:background="#9C27B0"  
    android:gravity="center"  
    android:paddingTop="20dp"  
    android:paddingBottom="20dp"  
    android:text="VIOLATE"  
    android:textAlignment="center"  
    android:textColor="@color/white"  
    android:textSize="48sp" />
```

```
</RelativeLayout>
```

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

Practical-3

User Interface Layout

- Output:-



Practical-3

User Interface Layout

2. Create application to view the fruits images in GridView in android application.
When you click on image it should display that image in fullscreen.

- **Code:- 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">

    <GridView
        android:id="@+id/gvDetails"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:columnWidth="110dp"
        android:numColumns="auto_fit"
        android:verticalSpacing="10dp"
        android:horizontalSpacing="10dp"
        android:stretchMode="columnWidth"
        android:gravity="center" />

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

- **Code:-MainActivity.java**

```
package com.example.gridgallery;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.AdapterView;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    @Override
```


Practical-3

User Interface Layout

```
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    GridView gv = (GridView) findViewById(R.id.gvDetails);
    gv.setAdapter(new ImageAdapter(this));
    gv.setOnItemClickListener(new AdapterView.OnItemClickListener() {
        public void onItemClick(AdapterView<?> parent, View v, int position,
                                long id) {
// Sending image id to FullScreenActivity
            Intent i = new Intent(getApplicationContext(), FullImageActivity.class);
// passing array index
            i.putExtra("id", position);
            startActivity(i);
        }
    });
}
```

- **Code:-ImageAdapter.java**

```
package com.example.gridgallery;

import android.content.Context;
import android.view.View;
import android.view.ViewGroup;
import android.widget.BaseAdapter;
import android.widget.GridView;
import android.widget.ImageView;

public class ImageAdapter extends BaseAdapter {
    //Context provides the connection to the Android system and the resources of
    //the project.
    private Context mContext;
    public ImageAdapter(Context c) {
        mContext = c;
    }
    //he getCount() function returns the total number of items to be displayed in
    //list.
    public int getCount() {
        return thumbImages.length;
    }
}
```

Practical-3

User Interface Layout

```
public Object getItem(int position) {
    return null;
}

public long getItemId(int position) {
    return 0;
}

public View getView(int position, View convertView, ViewGroup parent) {
    ImageView imageView = new ImageView(mContext);
    imageView.setLayoutParams(new GridView.LayoutParams(200, 200));
    imageView.setScaleType(ImageView.ScaleType.CENTER_CROP);
    imageView.setPadding(8, 8, 8, 8);
    imageView.setImageResource(thumbImages[position]);
    return imageView;
}

public Integer[] thumbImages = {
    R.drawable.img1, R.drawable.img2,
    R.drawable.img3, R.drawable.img4,
    R.drawable.img5, R.drawable.img6,
    R.drawable.img7, R.drawable.img8,
    R.drawable.img1, R.drawable.img2,
    R.drawable.img3, R.drawable.img4,
    R.drawable.img5, R.drawable.img6,
    R.drawable.img7, R.drawable.img8,
    R.drawable.img1, R.drawable.img2,
    R.drawable.img3, R.drawable.img4,
    R.drawable.img5
};
}
```

Practical-3

User Interface Layout

- **Code:-image_details.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=".FullImageActivity">

<LinearLayout
    android:orientation="vertical" android:layout_width="match_parent"
    android:layout_height="match_parent">
    <ImageView
        android:id="@+id/full_image_view"
        android:layout_width="match_parent"
        android:layout_height="match_parent" />
    </LinearLayout>

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

- **Code:-FullImageActivity.java**

```
package com.example.gridgallery;

import androidx.appcompat.app.AppCompatActivity;

import android.app.Activity;
import android.content.Intent;
import android.os.Bundle;
import android.widget.ImageView;
public class FullImageActivity extends Activity {
    @Override
    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.image_details);
// Get intent data
        Intent i = getIntent();
```

Practical-3

User Interface Layout

```
// Get Selected Image Id
int position = i.getExtras().getInt("id");
ImageAdapter imageAdapter = new ImageAdapter(this);
ImageView imageView = (ImageView) findViewById(R.id.full_image_view);
imageView.setImageResource(imageAdapter.thumbImages[position]);
}
}
```

• Output:-

