

## 6.Imageview and TextView

Imageview and TextView MainActivity.java:

```
package com.example.imageviewandtextview;

import androidx.appcompat.app.AppCompatActivity;

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

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Button b1;
        ImageView iv;
        ImageView iv2;
        boolean flag;
        int images[]={R.drawable.img1,R.drawable.img2,R.drawable.img3};
        final int[] i = {0};

        iv=(ImageView) findViewById(R.id.imageView1);
        iv2=(ImageView) findViewById(R.id.imageView2);
        b1=(Button) findViewById(R.id.button);
        flag=true;
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Toast.makeText(getApplicationContext(), "Value of i" + i[0],
                Toast.LENGTH_SHORT).show();
                if(i[0] ==2) {
                    i[0] =0;}
                else {
                    iv.setImageResource(images[i[0]]);
                    iv2.setImageResource(images[i[0] + 1]);
                    i[0]++;
                }
            }
        });
    }
}
```

**XML code:**

```
<?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">

    <ImageView
        android:id="@+id/imageView1"
        android:layout_width="203dp"
        android:layout_height="230dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.055"
        app:srcCompat="@drawable/img1"
        android:contentDescription="TODO"
        tools:ignore="HardcodedText" />

    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:text="click_me"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.754" />

    <ImageView
        android:id="@+id/imageView2"
        android:layout_width="200dp"
        android:layout_height="200dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="@+id/imageView1"
        app:layout_constraintVertical_bias="0.517"
        app:srcCompat="@drawable/img2"
```

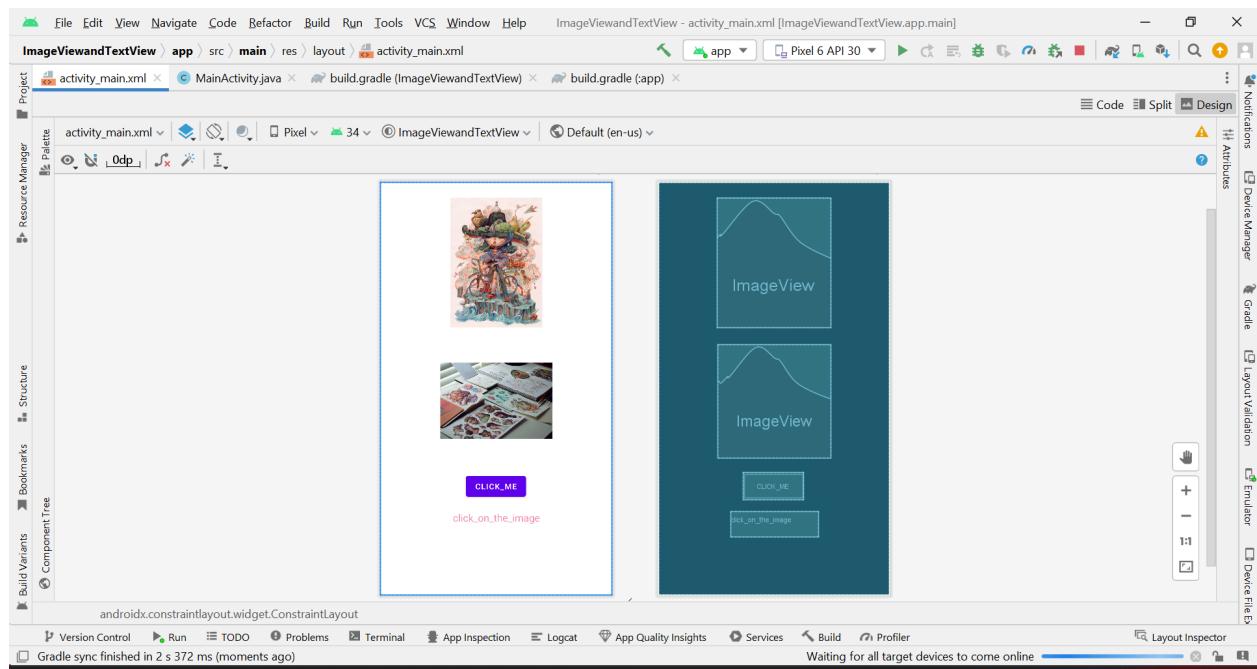
```

        android:contentDescription="@string/todo" />

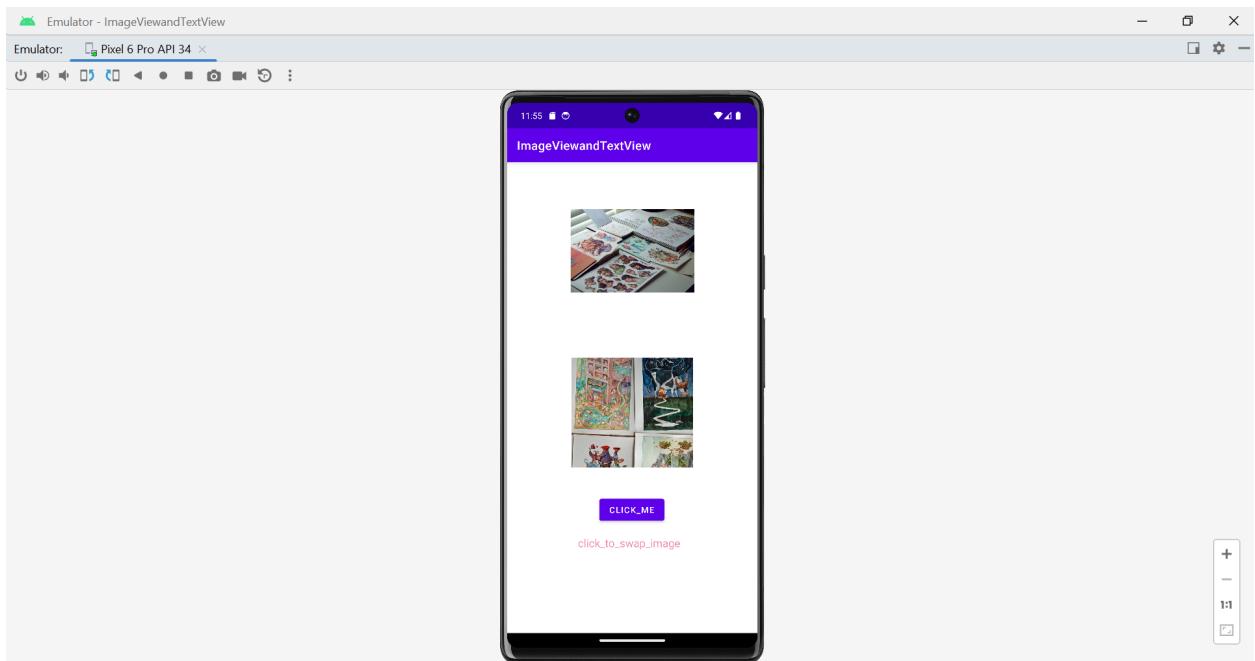
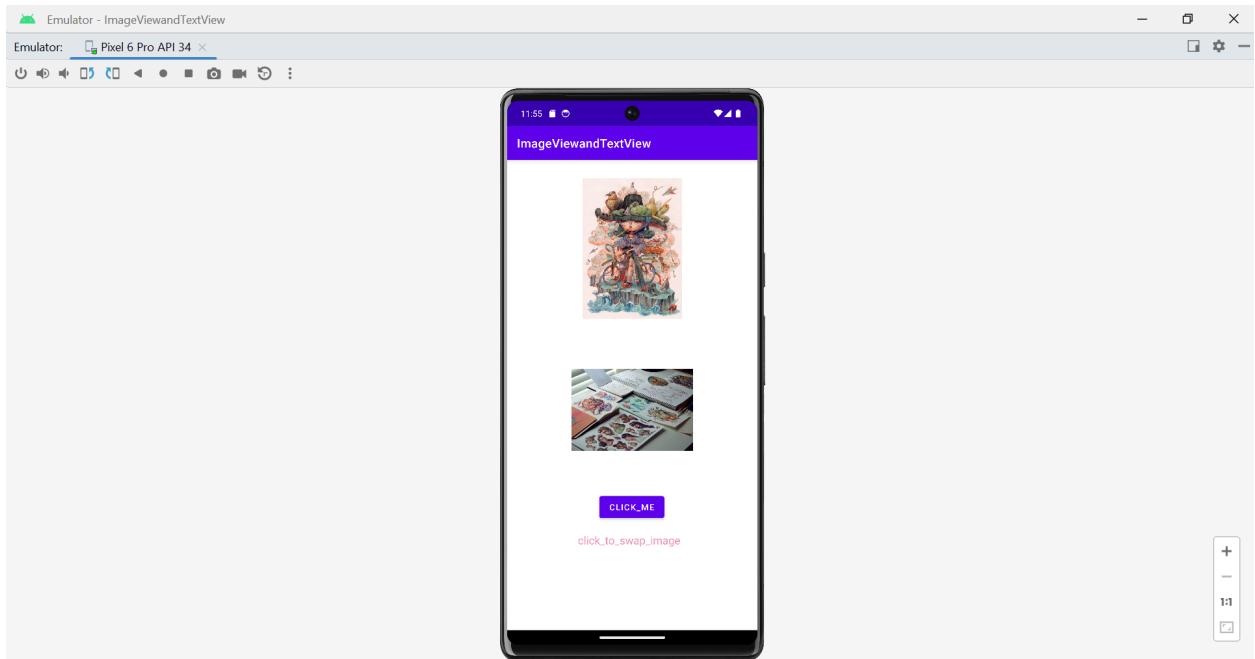
<TextView
    android:id="@+id/textView"
    android:layout_width="155dp"
    android:layout_height="45dp"
    android:text="click_on_the_image"
    android:textAppearance="?android:attr/textAppearanceMedium"
    android:textColor="#F392B3"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.849"
    tools:ignore="TextSizeCheck" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

## Input Screen

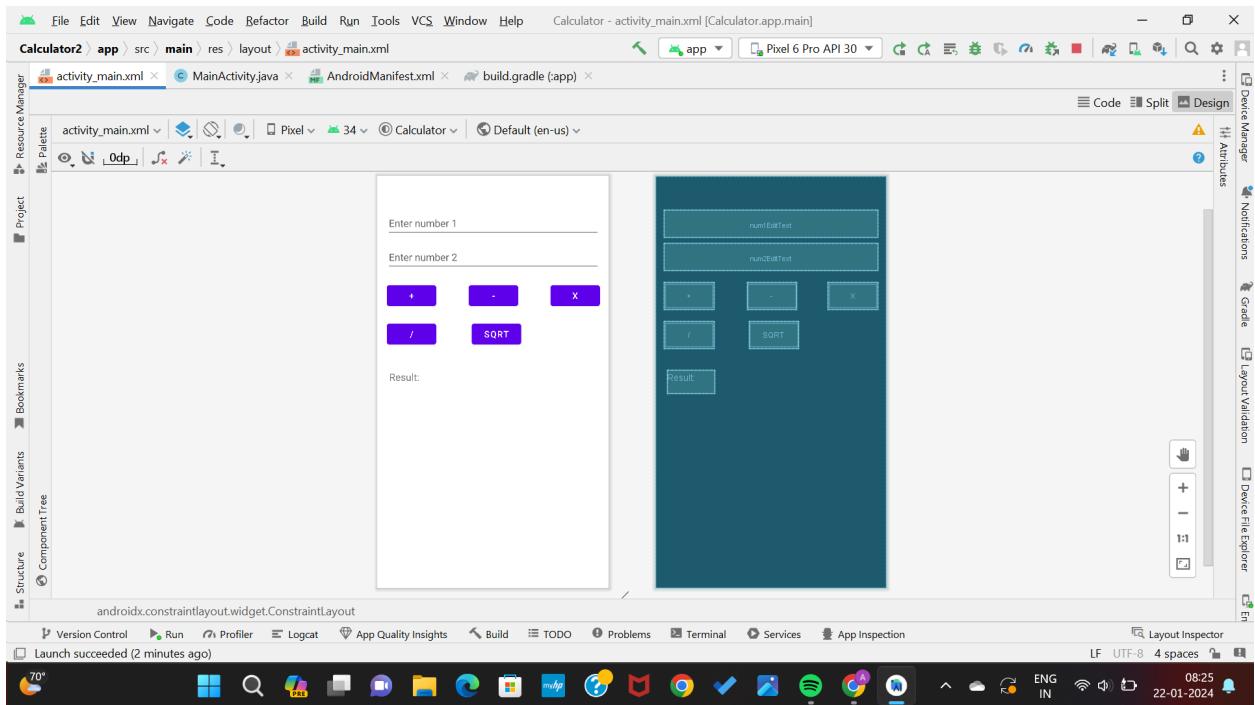


## Output screens:

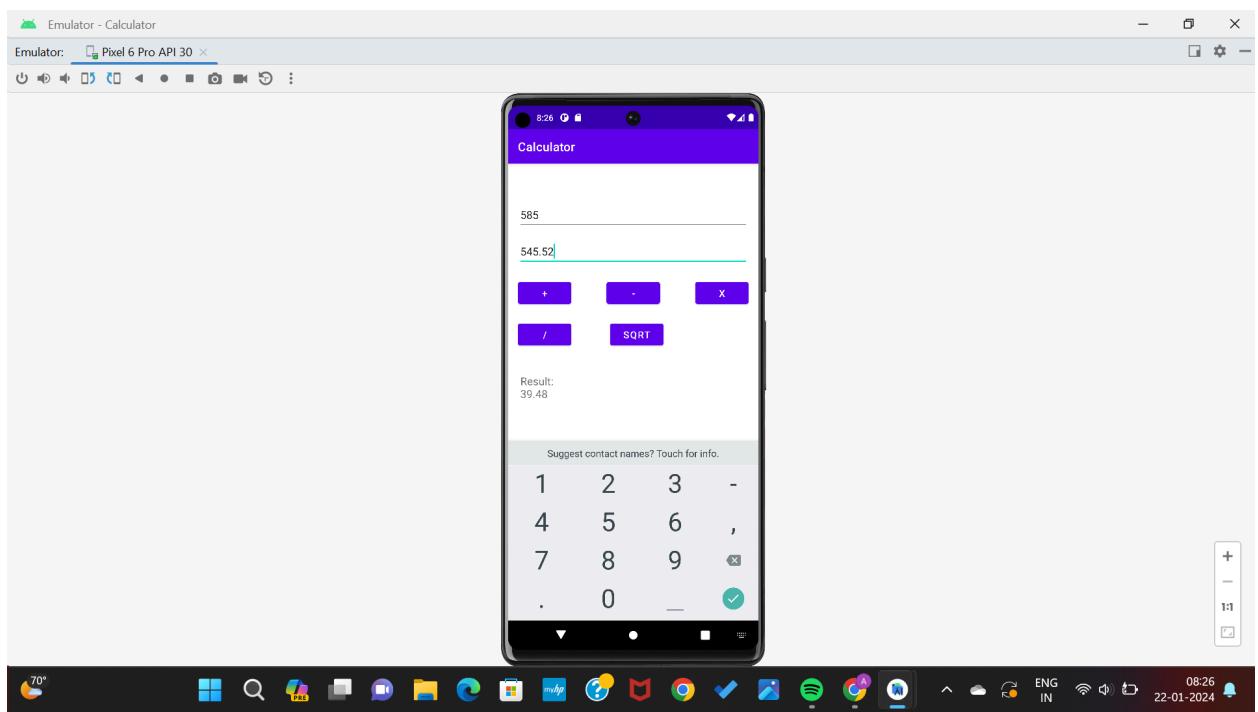
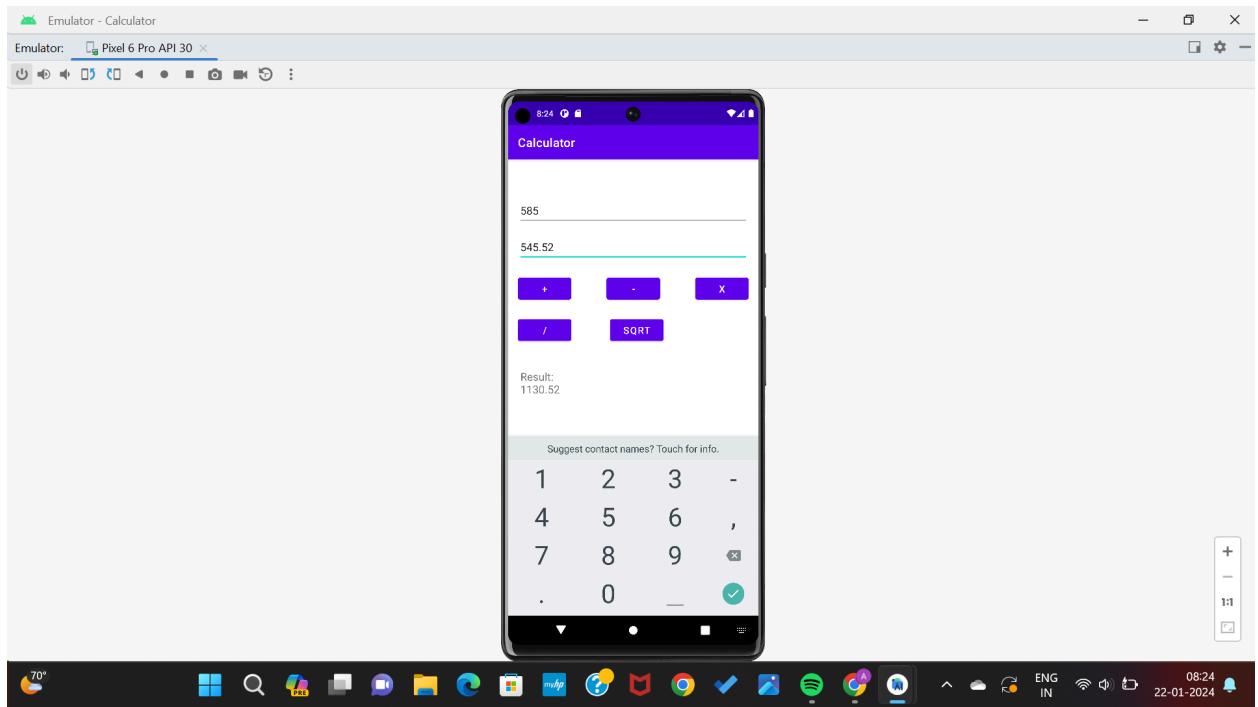


## Calculator

### Input screen:



Output screen:



**Java Code:**

```
package com.example.calculator;
```

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

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

import org.xml.sax.InputSource;

import java.text.DecimalFormat;

import javax.xml.namespace.QName;
import javax.xml.xpath.XPathExpression;
import javax.xml.xpath.XPathExpressionException;

public class MainActivity extends AppCompatActivity {
    // Declare variables to hold references to UI elements
    private EditText num1EditText, num2EditText;
    private TextView resultTextView;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        // Initialize UI elements from the layout
        num1EditText = findViewById(R.id.num1EditText);
        num2EditText = findViewById(R.id.num2EditText);
        resultTextView = findViewById(R.id.resultTextView);

        // Set click listeners for arithmetic operation buttons

        Button addButton = findViewById(R.id.addButton);
        addButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                performCalculation('+');
            }
        });

        Button subtractButton = findViewById(R.id.subtractButton);
        subtractButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                performCalculation('-');
            }
        });
    }

    private void performCalculation(char operator) {
        String num1Str = num1EditText.getText().toString();
        String num2Str = num2EditText.getText().toString();
        if (!num1Str.isEmpty() & !num2Str.isEmpty()) {
            try {
                double num1 = Double.parseDouble(num1Str);
                double num2 = Double.parseDouble(num2Str);
                double result = 0;
                switch (operator) {
                    case '+':
                        result = num1 + num2;
                        break;
                    case '-':
                        result = num1 - num2;
                        break;
                    case '*':
                        result = num1 * num2;
                        break;
                    case '/':
                        result = num1 / num2;
                        break;
                }
                DecimalFormat df = new DecimalFormat("0.00");
                resultTextView.setText(df.format(result));
            } catch (NumberFormatException e) {
                resultTextView.setText("Error: Invalid input");
            }
        }
    }
}
```

```

        Button multiplyButton = findViewById(R.id.multiplyButton);
        multiplyButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                performCalculation('*');
            }
        });

        Button divideButton = findViewById(R.id.divideButton);
        divideButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                performCalculation('/');
            }
        });

        Button sqrtButton = findViewById(R.id.sqrtButton);
        sqrtButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                calculateSquareRoot();
            }
        });
    }

    private void performCalculation(char operator) {
        // Get the values entered in the input fields
        String num1Str = num1EditText.getText().toString();
        String num2Str = num2EditText.getText().toString();

        // Check if either input field is empty
        if (num1Str.isEmpty() || num2Str.isEmpty()) {
            Toast.makeText(this, "Please enter both numbers",
                    Toast.LENGTH_SHORT).show();
            return; // Exit the method to prevent calculations with empty
        inputs
    }

        // Convert the input values to numeric format
        double num1 = Double.parseDouble(num1Str);
        double num2 = Double.parseDouble(num2Str);
        double result = 0;

        // Perform the selected calculation based on the operator
        switch (operator) {
            case '+':
                result = num1 + num2;

```

```

        break;
    case '-':
        result = num1 - num2;
        break;
    case '*':
        result = num1 * num2;
        break;
    case '/':
        if (num2 != 0) {
            result = num1 / num2;
        } else {
            Toast.makeText(this, "Cannot divide by zero",
Toast.LENGTH_SHORT).show();
            return; // Exit the method if division by zero is attempted
        }
        break;
    }

    // Format and display the calculation result
    DecimalFormat df = new DecimalFormat("#.##");
    resultTextView.setText("Result: " + df.format(result));
}

private void calculateSquareRoot() {
    String num1Str = num1EditText.getText().toString();
    // Check if the input field is empty
    if (num1Str.isEmpty()) {
        Toast.makeText(this, "Please enter a number",
Toast.LENGTH_SHORT).show();
        return; // Exit the method to prevent calculations with empty
inputs
    }

    double num = Double.parseDouble(num1Str);
    double sqrtResult = Math.sqrt(num);
    DecimalFormat df = new DecimalFormat("#.##");
    resultTextView.setText("Square Root: " + df.format(sqrtResult));
}
}

```

XML code:

```

<?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:padding="16dp"
    tools:context=".MainActivity">

    <EditText
        android:id="@+id/num1EditText"
        android:layout_width="0dp"
        android:layout_height="48dp"
        android:layout_marginTop="44dp"
        android:hint="Enter number 1"
        android:inputType="numberDecimal"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <EditText
        android:id="@+id/num2EditText"
        android:layout_width="0dp"
        android:layout_height="48dp"
        android:layout_marginTop="12dp"
        android:hint="Enter number 2"
        android:inputType="numberDecimal"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.47"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/num1EditText" />

    <Button
        android:id="@+id/addButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="20dp"
        android:text="+"
        android:textSize="16sp"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/num2EditText" />

    <Button
        android:id="@+id/subtractButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="20dp"
        android:text="-"
        android:textSize="16sp"
        app:layout_constraintEnd_toStartOf="@+id/multiplyButton"
        app:layout_constraintStart_toEndOf="@+id/addButton"
        app:layout_constraintTop_toBottomOf="@+id/num2EditText" />

    <Button
```

```
        android:id="@+id/multiplyButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="20dp"
        android:text="x"
        android:textSize="16sp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/num2EditText" />

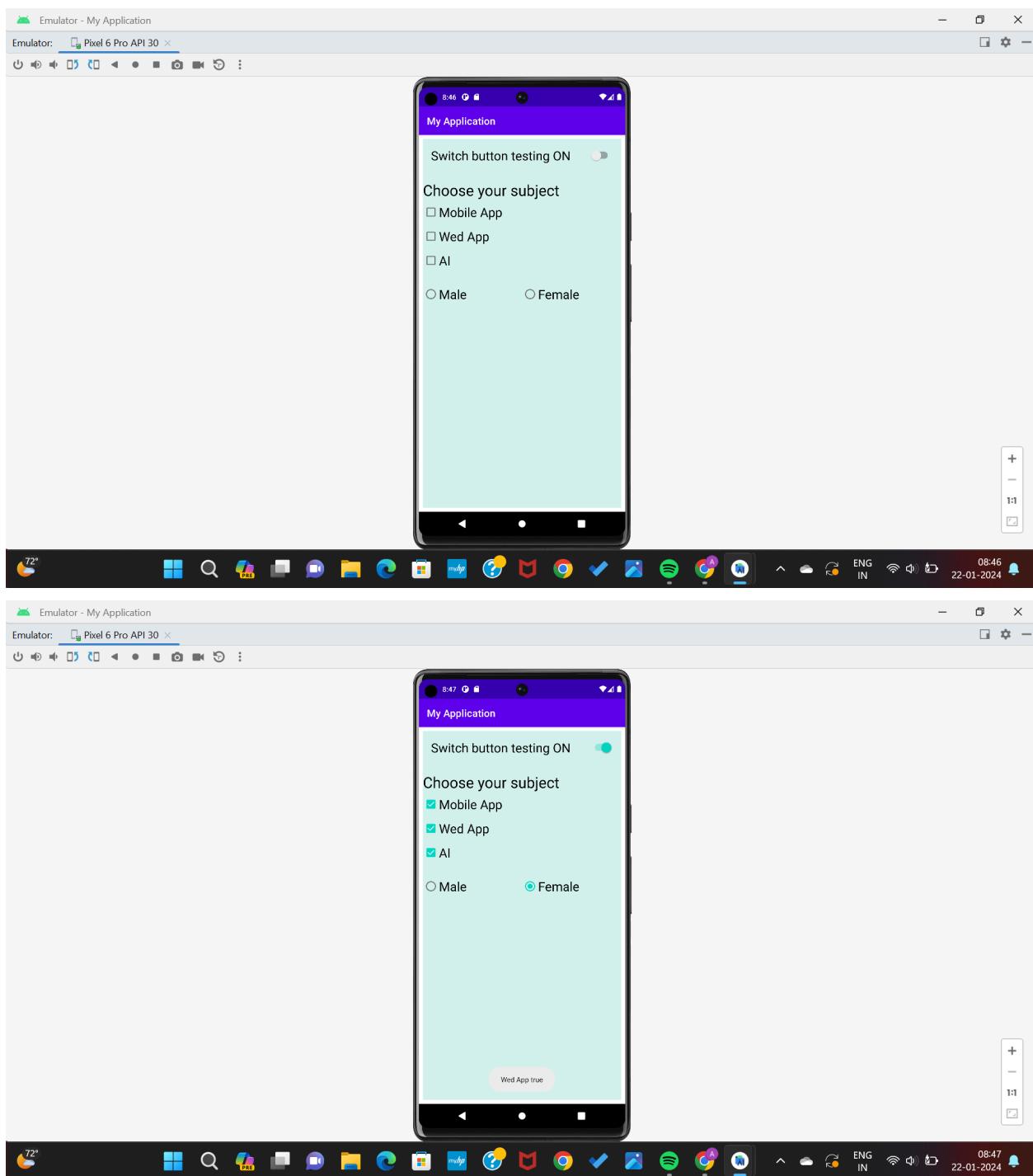
    <Button
        android:id="@+id/divideButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="20dp"
        android:text="/"
        android:textSize="16sp"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/addButton" />

    <Button
        android:id="@+id/sqrtButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="20dp"
        android:layout_marginEnd="140dp"
        android:text="Sqrt"
        android:textSize="16sp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/subtractButton" />

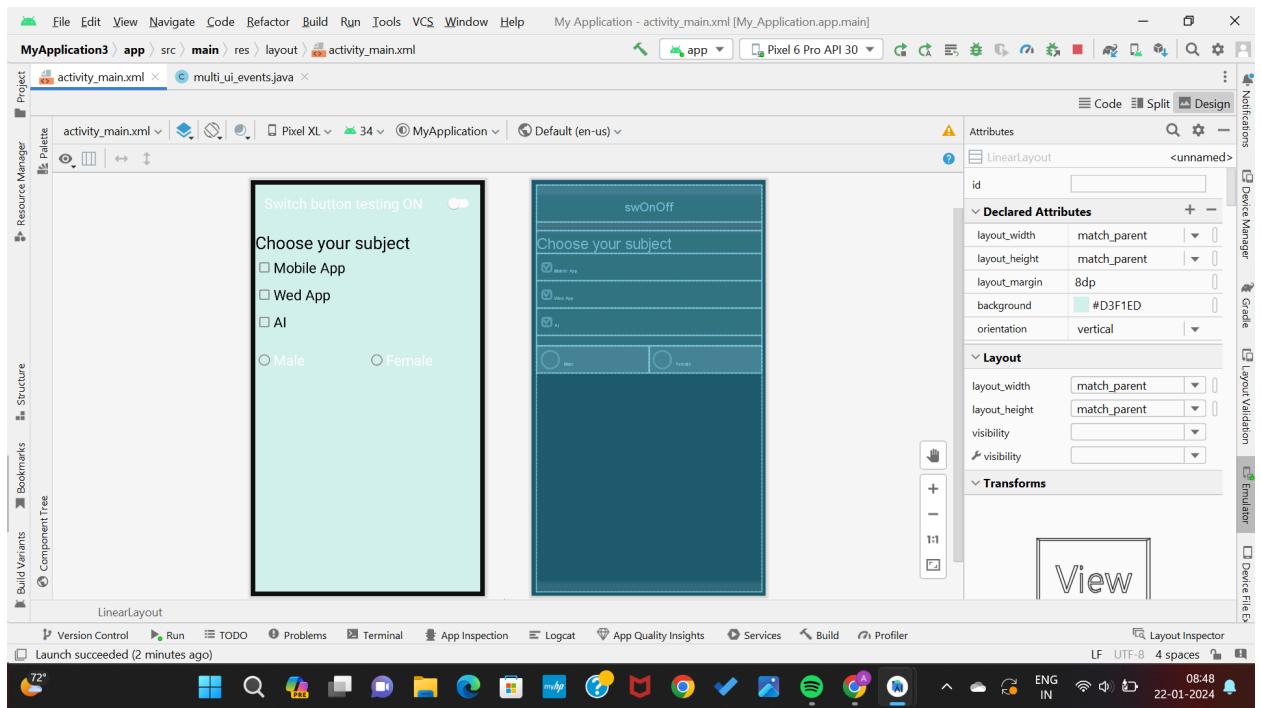
    <TextView
        android:id="@+id/resultTextView"
        android:layout_width="84dp"
        android:layout_height="41dp"
        android:layout_marginStart="4dp"
        android:layout_marginTop="40dp"
        android:text="Result: "
        android:textSize="18sp"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/divideButton" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

## 5. Radiobutton, checkbox, Switch buttons

Output screens:



Input screens:



Java code:

```
package com.example.myapplication;

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

import android.os.Bundle;
import android.util.Log;
import android.widget.CheckBox;
import android.widget.CompoundButton;
import android.widget.RadioButton;
import android.widget.RadioGroup;
import android.widget.Toast;

public class multi_ui_events extends AppCompatActivity {
    String TAG = multi_ui_events.class.getName();

    private SwitchCompat swOnOff;
```

```

private CheckBox chMobileApp,chWebApp,chAI ;
private RadioGroup rgGender;

@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    swOnOff= findViewById(R.id.swOnOff);
    chMobileApp=findViewById(R.id.chMobileApp);
    chWebApp=findViewById(R.id.chWebApp);
    chAI=findViewById(R.id.chAI);
    rgGender=findViewById(R.id.rgGender);

    rgGender.setOnCheckedChangeListener(new
RadioGroup.OnCheckedChangeListener() {
        @Override
        public void onCheckedChanged(RadioGroup radioGroup, int i) {
            RadioButton radioButton=rgGender.findViewById(i);
            String selectedString=radioButton.getText().toString();
            Toast.makeText(multi_ui_events.this,"Your selection
is:"+selectedString,Toast.LENGTH_SHORT).show();
        }
    });
}

swOnOff.setOnCheckedChangeListener(new
CompoundButton.OnCheckedChangeListener() {
    @Override
    public void onCheckedChanged(CompoundButton compoundButton, boolean
b) {
        Log.d(TAG, "b"+b);
    }
});
chMobileApp.setOnCheckedChangeListener(new
CompoundButton.OnCheckedChangeListener() {
    @Override
    public void onCheckedChanged(CompoundButton compoundButton, boolean
b) {
        Log.d(TAG, chMobileApp.getText().toString() + "status" + b);
        Toast.makeText(getApplicationContext(),
chMobileApp.getText().toString() + " " + b, Toast.LENGTH_LONG).show();
    }
});
}

```

```

        chWebApp.setOnCheckedChangeListener(new
CompoundButton.OnCheckedChangeListener() {
    @Override
    public void onCheckedChanged(CompoundButton compoundButton, boolean
b) {
        Log.d(TAG, chWebApp.getText().toString()+"status"+b);
        Toast.makeText(getApplicationContext(),
chWebApp.getText().toString() + " " + b, Toast.LENGTH_LONG).show();
    }
});
chAI.setOnCheckedChangeListener(new
CompoundButton.OnCheckedChangeListener() {
    @Override
    public void onCheckedChanged(CompoundButton compoundButton, boolean
b) {
        Log.d(TAG, chAI.getText().toString()+"status"+b);
        Toast.makeText(getApplicationContext(),
chAI.getText().toString() + " " + b, Toast.LENGTH_LONG).show();
    }
});
}

```

#### XML code:

```

<?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:layout_width="match_parent"
    android:layout_height="match_parent"
    android:layout_margin="8dp"
    android:orientation="vertical"
    android:background="#D3F1ED">
    <androidx.appcompat.widget.SwitchCompat
        android:id="@+id/swOnOff"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:padding="16dp"
        android:text="Switch button testing ON"
        android:textSize="25dp"
        tools:ignore="VisualLintButtonSize" />
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:padding="8dp"
        android:orientation="vertical"/>

```

```
<TextView
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Choose your subject"
    android:textColor="@color/black"
    android:textSize="30dp"/>

<CheckBox
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Mobile App"
    android:textSize="25dp"
    android:textColor="@color/black"
    android:id="@+id/chMobileApp"
    tools:ignore="VisualLintButtonSize" />

<CheckBox
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Web App"
    android:textSize="25dp"
    android:textColor="@color/black"
    android:id="@+id/chWebApp"
    tools:ignore="VisualLintButtonSize" />

<CheckBox
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="AI"
    android:textSize="25dp"
    android:textColor="@color/black"
    android:id="@+id/chAI"
    tools:ignore="VisualLintButtonSize" />

<TextView
    android:layout_width="match_parent"
    android:layout_height="wrap_content"

    />
<RadioGroup
    android:id="@+id/rgGender"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal">
```

```
<RadioButton
    android:id="@+id/rbMale"
    android:text="Male"
    android:layout_height="wrap_content"
    android:layout_width="match_parent"
    android:layout_weight="1"
    android:textSize="25dp"/>

<RadioButton
    android:id="@+id/rbFemale"
    android:text="Female"
    android:layout_height="wrap_content"
    android:layout_width="match_parent"
    android:layout_weight="1"
    android:textSize="25dp"
/>
</RadioGroup>

</LinearLayout>
```

## 2.random wallpaper

Java code:

```
package com.example.activity.wallpaper;

import androidx.appcompat.app.AppCompatActivity;

import android.app.WallpaperManager;
import android.content.Intent;
import android.graphics.Bitmap;
import android.graphics.BitmapFactory;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.ImageView;
import android.widget.Toast;

import java.io.IOException;
import java.util.Random;

public class MainActivity extends AppCompatActivity {
    // Array of wallpaper resource IDs
    private static final int[] wallpaperResources = {
        R.drawable.wallpaper1,
        R.drawable.wallpaper2,
        R.drawable.wallpaper3,
        // Add more wallpaper resource IDs as needed
    };
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        Button btnChangeWallpaper = findViewById(R.id.btnChangeWallpaper);
        btnChangeWallpaper.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                changeWallpaper();
            }
        });
    }
    public void changeWallpaper() {
        // Get a random wallpaper resource ID
        int randomIndex = new Random().nextInt(wallpaperResources.length);
        int randomWallpaperId = wallpaperResources[randomIndex];

        try {
```

```

        // Set the wallpaper
        getWindow().getDecorView().setBackgroundResource(randomWallpaperId);
        Toast.makeText(this, "Wallpaper changed",
        Toast.LENGTH_SHORT).show();
    } catch (Exception e) {
        Toast.makeText(this, "Failed to set wallpaper",
        Toast.LENGTH_SHORT).show();
        e.printStackTrace();
    }
}
}
}

```

**XML code:**

```

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

    <ImageView
        android:id="@+id/imagePreview"
        android:layout_width="100dp"
        android:layout_height="100dp"
        android:src="@drawable/wallpaper2"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        />

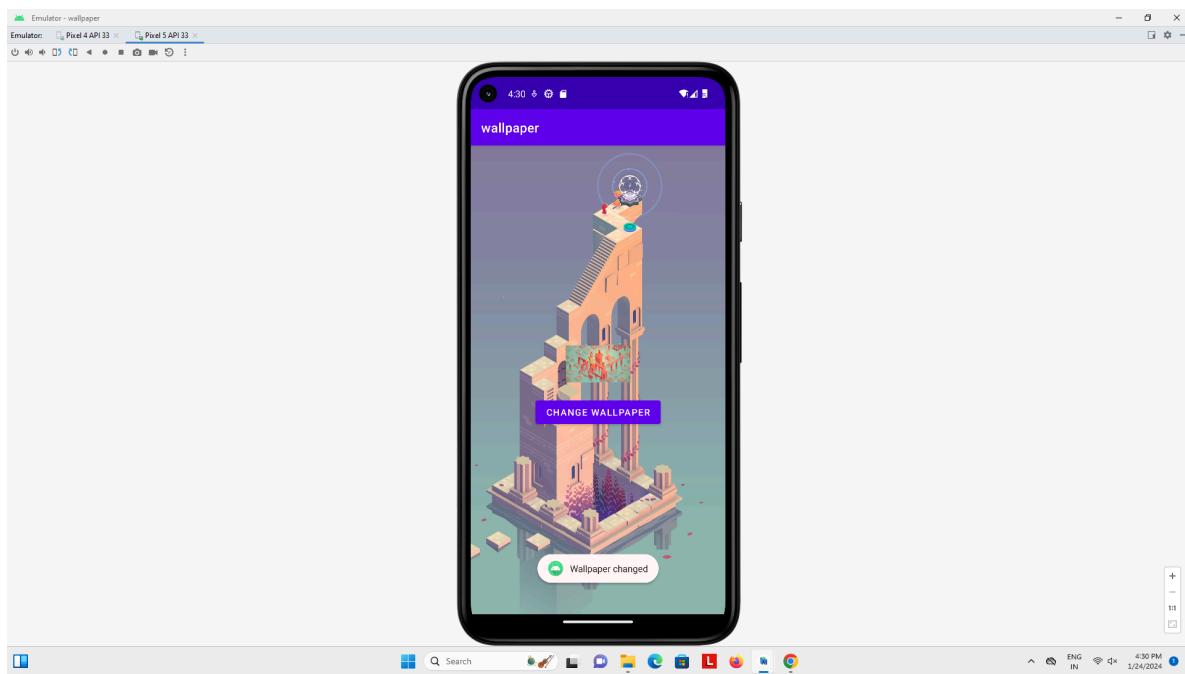
    <Button
        android:id="@+id	btnChangeWallpaper"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Change Wallpaper"
        android:onClick="changeWallpaper" />

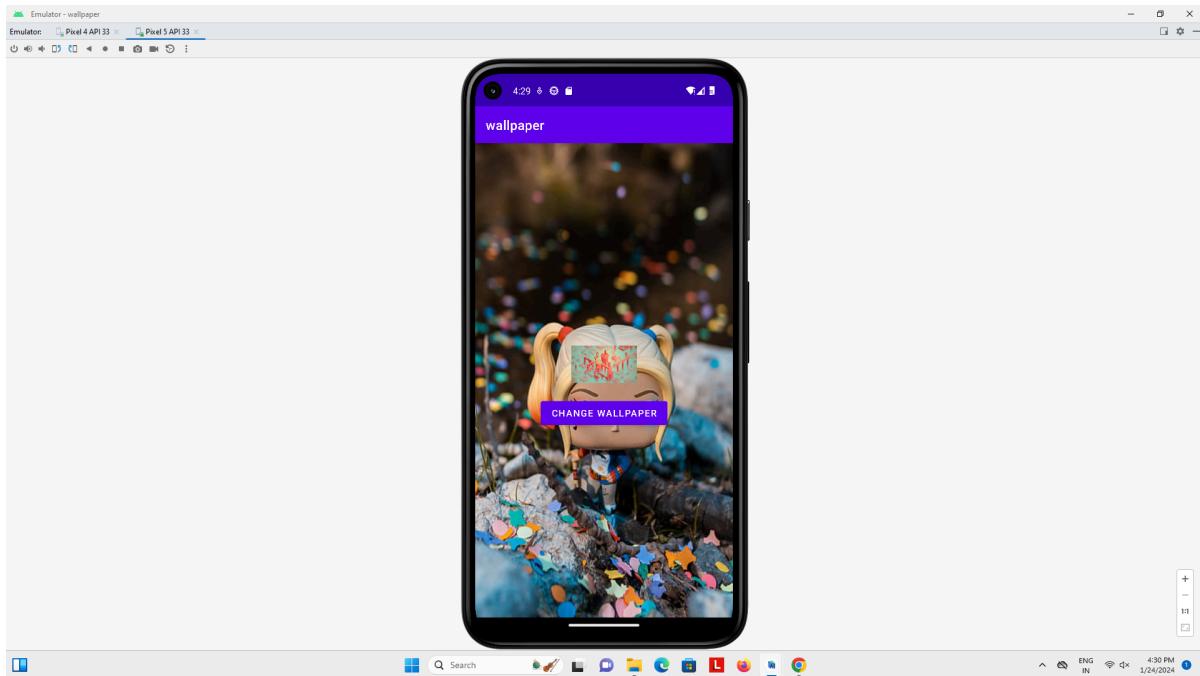
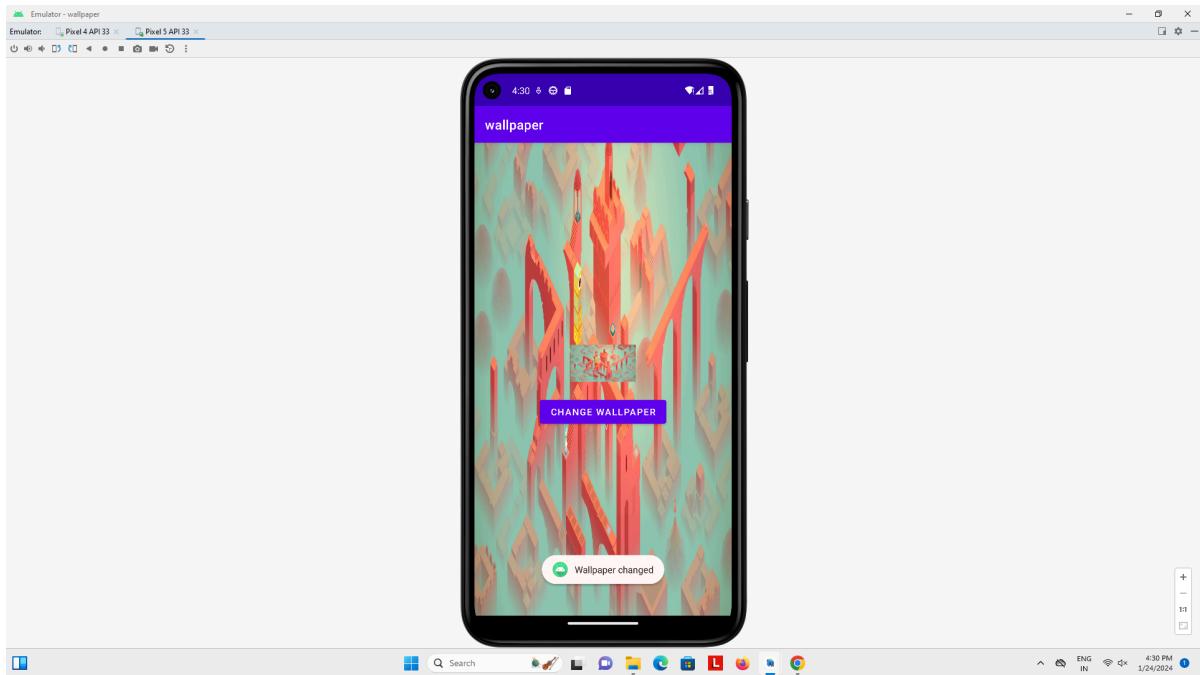
</LinearLayout>

```

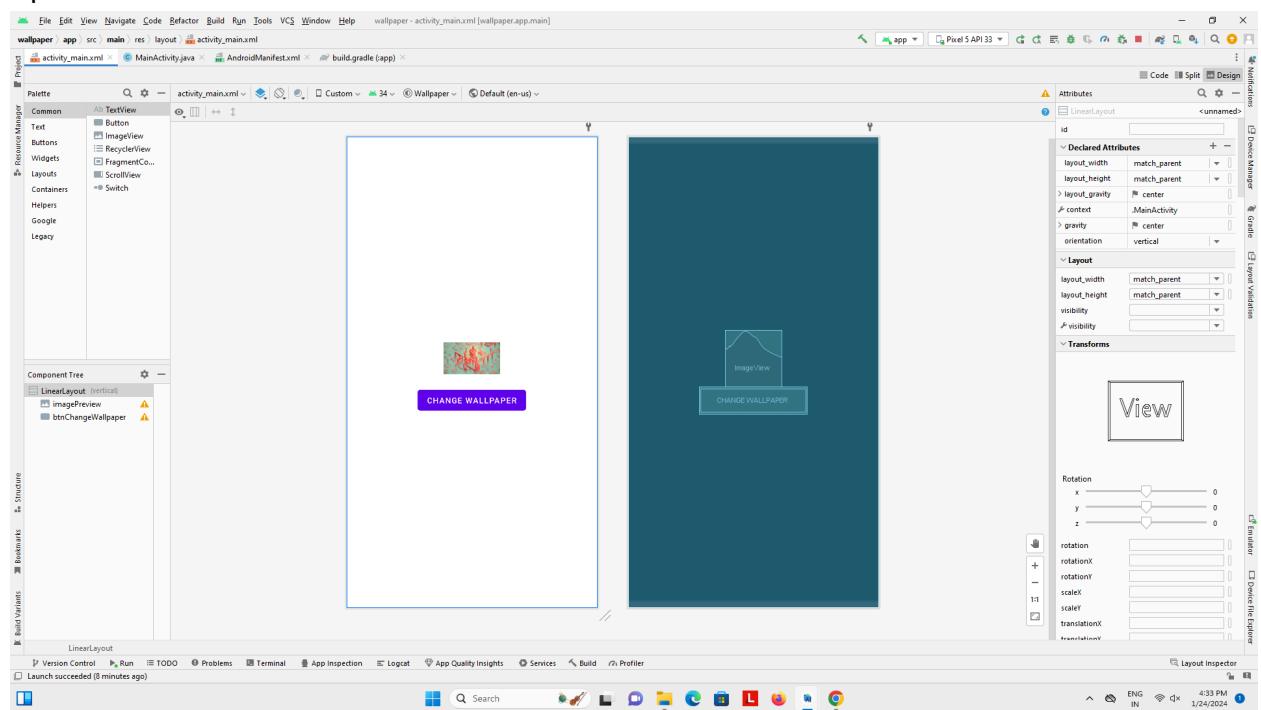


Output screen:

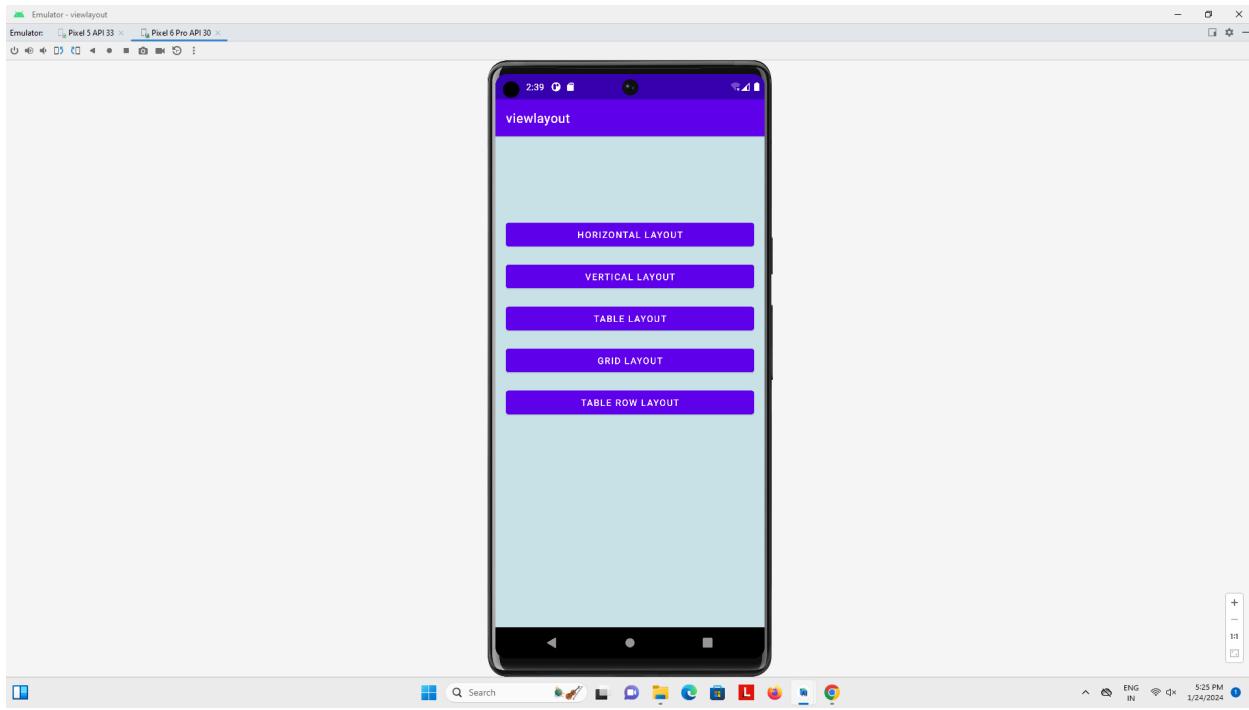




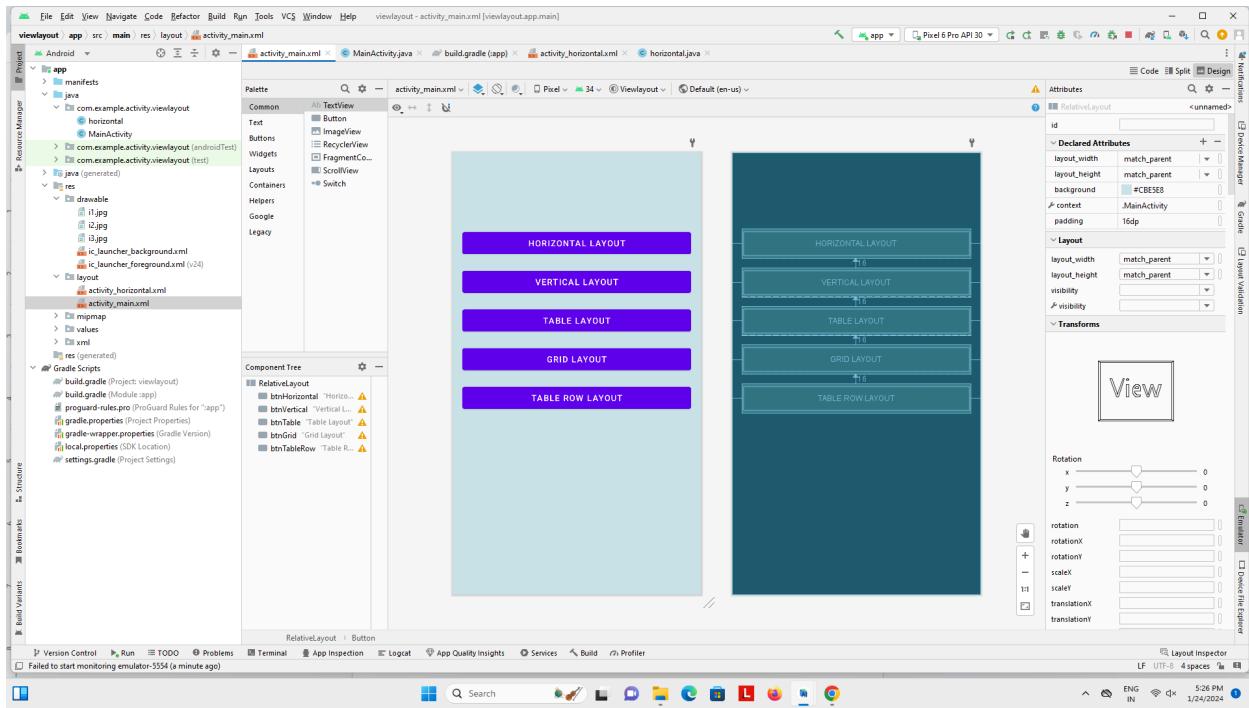
## Input screen



## View layout output screen:



## View layout- input screen:



## Main xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:padding="16dp"
    tools:context=".MainActivity"
    android:background="#CBE5E8">

    <Button
        android:id="@+id	btnHorizontal"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Horizontal Layout"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="110dp"/>

    <Button
        android:id="@+id	btnVertical"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Vertical Layout"
        android:layout_below="@+id	btnHorizontal"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="16dp"/>

    <Button
        android:id="@+id	btnTable"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Table Layout"
        android:layout_below="@+id	btnVertical"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="16dp"/>

    <Button
        android:id="@+id	btnGrid"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Grid Layout"
        android:layout_below="@+id	btnTable"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="16dp"/>

    <Button
```

```
        android:id="@+id(btnScroll"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Scroll Layout"
        android:layout_below="@+id(btnGrid"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="16dp"/>
</RelativeLayout>
```

## Main.java

```
package com.example.viewlayout;

import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;

public class MainActivity extends AppCompatActivity {

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

        Button btnHorizontal = findViewById(R.id.btnHorizontal);
        Button btnVertical = findViewById(R.id.btnVertical);
        Button btnTable = findViewById(R.id.btnTable);
        Button btnGrid = findViewById(R.id.btnGrid);
        Button btnScroll = findViewById(R.id.btnScroll);

        btnHorizontal.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent=new Intent(MainActivity.this,horizontal.class);
                startActivity(intent);
            }
        });

        btnVertical.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent=new Intent(MainActivity.this,vertical.class);
                startActivity(intent);
            }
        });
    }
}
```

```

});;

btnTable.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        Intent intent=new Intent(MainActivity.this,tables.class);
        startActivity(intent);
    }
});;

btnGrid.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        Intent intent=new Intent(MainActivity.this,grid.class);
        startActivity(intent);
    }
});;

btnScroll.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        Intent intent=new Intent(MainActivity.this,scroll.class);
        startActivity(intent);
    }
});;
}
}

```

### Horizontal xml

```

<?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:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="horizontal"
    android:padding="16dp"
    tools:context=".horizontal"
    android:background="#FFF3F8"
    tools:ignore="ExtraText">

<ImageView
    android:id="@+id/imageView1"
    android:layout_width="128dp"
    android:layout_height="256dp"
    android:src="@drawable/i1"/>

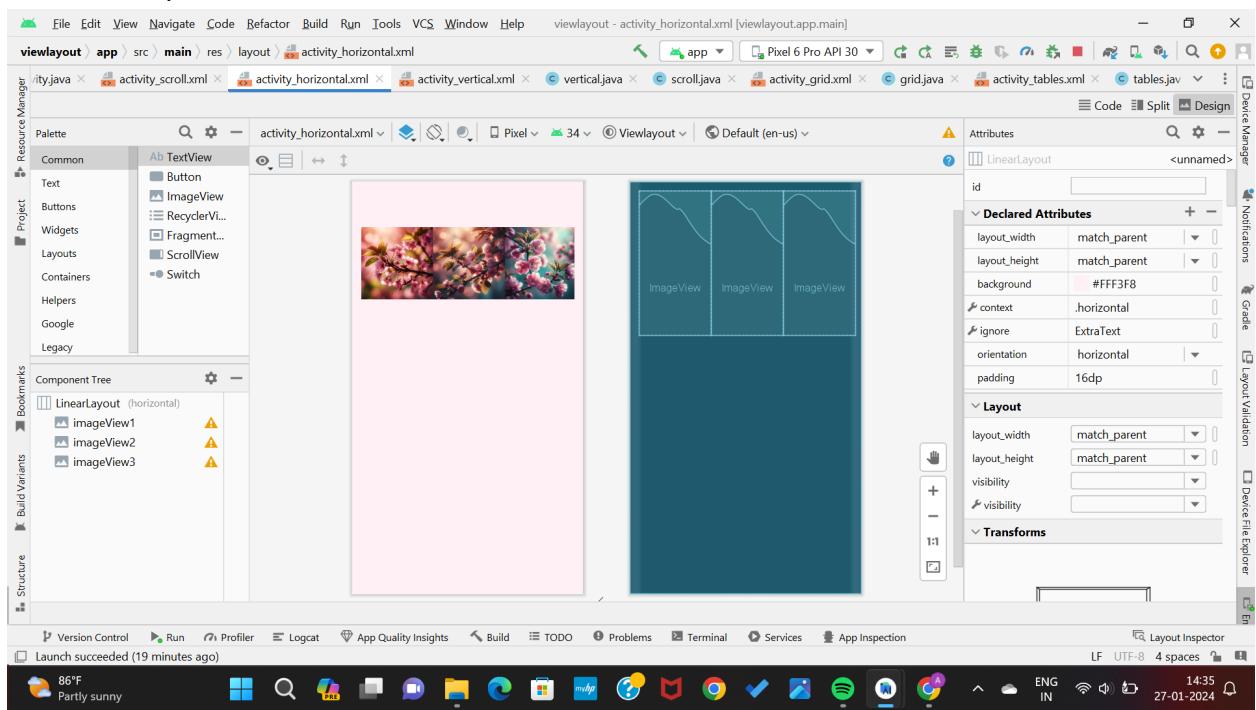
```

```
<ImageView  
    android:id="@+id/imageView2"  
    android:layout_width="128dp"  
    android:layout_height="256dp"  
    android:src="@drawable/i2"/>  
  
<ImageView  
    android:id="@+id/imageView3"  
    android:layout_width="128dp"  
    android:layout_height="256dp"  
    android:src="@drawable/i3" />  
  
</LinearLayout>
```

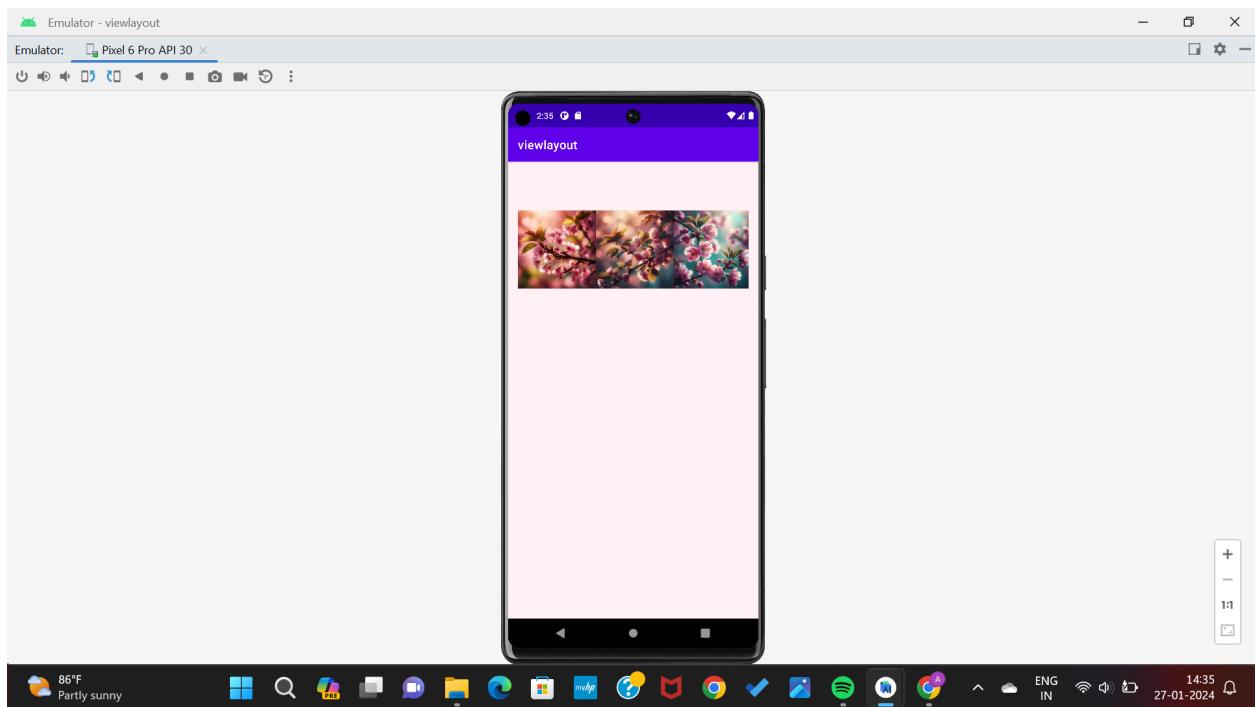
### Horizontal.java

```
package com.example.activity.viewlayout;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.os.Bundle;  
import android.widget.ImageView;  
  
public class horizontal extends AppCompatActivity {  
  
    @Override  
    protected void onCreate(Bundle savedInstanceState) {  
        super.onCreate(savedInstanceState);  
        setContentView(R.layout.activity_horizontal);  
        ImageView imageView1 = findViewById(R.id.imageView1);  
        ImageView imageView2 = findViewById(R.id.imageView2);  
        ImageView imageView3 = findViewById(R.id.imageView3);  
  
        imageView1.setImageResource(R.drawable.i1);  
        imageView2.setImageResource(R.drawable.i2);  
        imageView3.setImageResource(R.drawable.i3);  
    }  
}
```

## Horizontal input screen:



## Horizontal output screen:



### Vertical xml:

```
<?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:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:padding="16dp"
    android:background="#4B2D1E"
    tools:context=".MainActivity">

    <ImageView
        android:id="@+id/imageView1"
        android:layout_width="match_parent"
        android:layout_height="224dp"
        android:scaleType="centerCrop"
        android:src="@drawable/ig1" />

    <ImageView
        android:id="@+id/imageView2"
        android:layout_width="match_parent"
        android:layout_height="224dp"
        android:layout_marginTop="8dp"
        android:scaleType="centerCrop"
        android:src="@drawable/ig2" />

    <ImageView
        android:id="@+id/imageView3"
        android:layout_width="match_parent"
        android:layout_height="224dp"
        android:src="@drawable/ig3"
        android:scaleType="centerCrop"
        android:layout_marginTop="8dp"/>

</LinearLayout>
```

### Vertical java:

```
package com.example.viewlayout;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.widget.ImageView;

public class vertical extends AppCompatActivity {
```

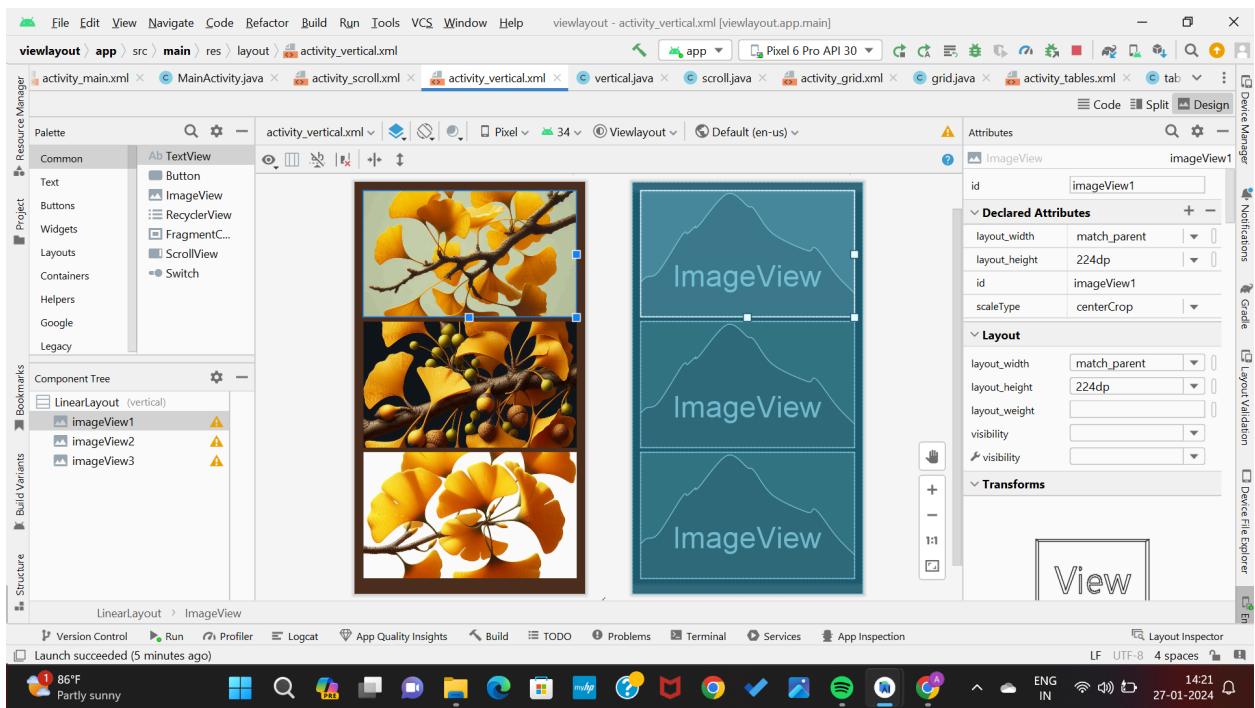
```

@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_vertical);
    ImageView imageView1 = findViewById(R.id.imageView1);
    ImageView imageView2 = findViewById(R.id.imageView2);
    ImageView imageView3 = findViewById(R.id.imageView3);

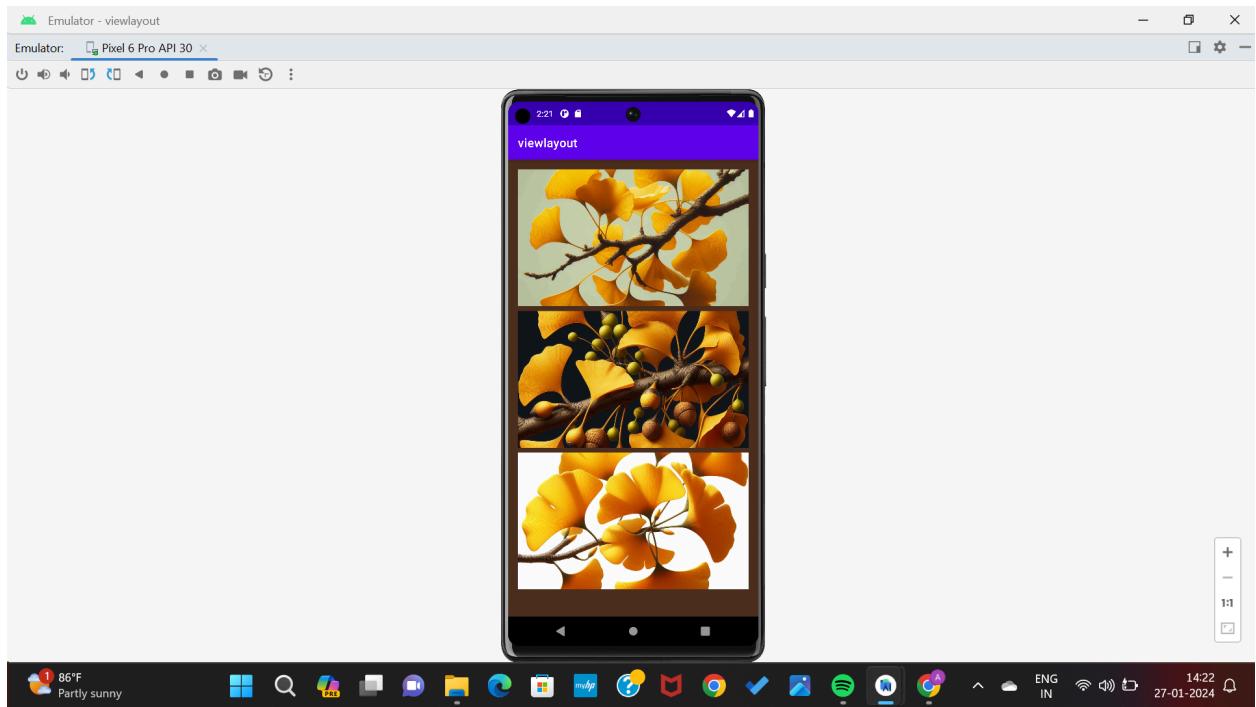
    // Load images into ImageViews
    imageView1.setImageResource(R.drawable.ig1);
    imageView2.setImageResource(R.drawable.ig2);
    imageView3.setImageResource(R.drawable.ig3);
}
}

```

## Vertical input screen:



## Vertical output screen:



## Table xml:

```
<?xml version="1.0" encoding="utf-8"?>
<TableLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    android:padding="15dp"
    app:layout_constraintHeight="match_parent"
    app:layout_constraintWidth="match_parent"
    android:background="#D7DCA8" >

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

        <ImageView
            android:id="@+id/imageView1"
            android:layout_width="200dp"
            android:layout_height="200dp"
            android:layout_column="1"
            android:scaleType="fitCenter"
            android:src="@drawable/t1"

        />
    
```

```
<ImageView
    android:id="@+id/imageView2"
    android:layout_width="200dp"
    android:layout_height="200dp"
    android:src="@drawable/t2"
    android:scaleType="fitCenter"
    android:layout_column="2"
/>
</TableRow>

<TableRow
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:gravity="center">

    <ImageView
        android:id="@+id/imageView3"
        android:layout_width="200dp"
        android:layout_height="200dp"
        android:src="@drawable/t3"
        android:scaleType="fitCenter"
        android:layout_column="1"/>

    <ImageView
        android:id="@+id/imageView4"
        android:layout_width="200dp"
        android:layout_height="200dp"
        android:src="@drawable/t4"
        android:scaleType="fitCenter"
        android:layout_column="2"/>
</TableRow>
<TableRow
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:gravity="center">

    <ImageView
        android:id="@+id/imageView5"
        android:layout_width="200dp"
        android:layout_height="200dp"
        android:src="@drawable/t5"
        android:scaleType="fitCenter"
        android:layout_column="1"/>

    <ImageView
        android:id="@+id/imageView6"
        android:layout_width="200dp"
```

```

        android:layout_height="200dp"
        android:src="@drawable/t6"
        android:scaleType="fitCenter"
        android:layout_column="2"/>
    </TableRow>

</TableLayout>

```

**Table.java:**

```

package com.example.viewlayout;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.widget.ImageView;

public class tables extends AppCompatActivity {

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

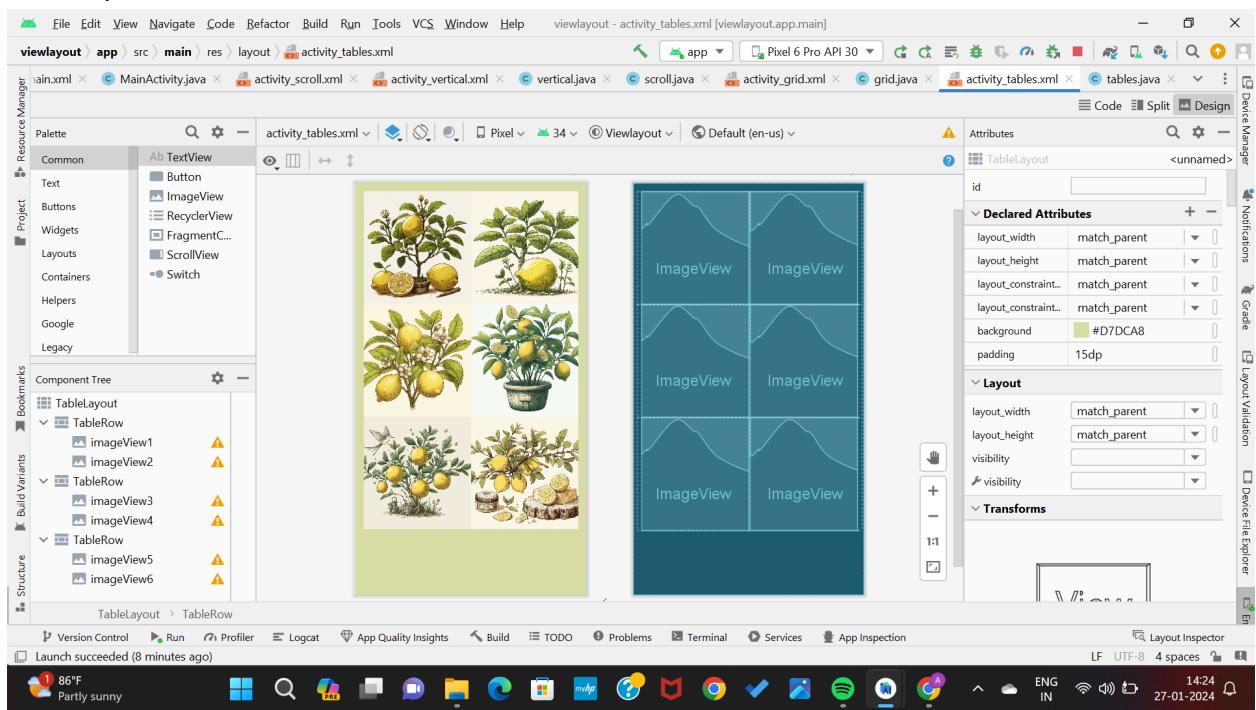
        ImageView imageView1 = findViewById(R.id.imageView1);
        ImageView imageView2 = findViewById(R.id.imageView2);
        ImageView imageView3 = findViewById(R.id.imageView3);
        ImageView imageView4 = findViewById(R.id.imageView4);
        ImageView imageView5 = findViewById(R.id.imageView5);
        ImageView imageView6 = findViewById(R.id.imageView6);

        // Load images into ImageViews
        imageView1.setImageResource(R.drawable.t1);
        imageView2.setImageResource(R.drawable.t2);
        imageView3.setImageResource(R.drawable.t3);
        imageView4.setImageResource(R.drawable.t4);
        imageView5.setImageResource(R.drawable.t5);
        imageView6.setImageResource(R.drawable.t6);

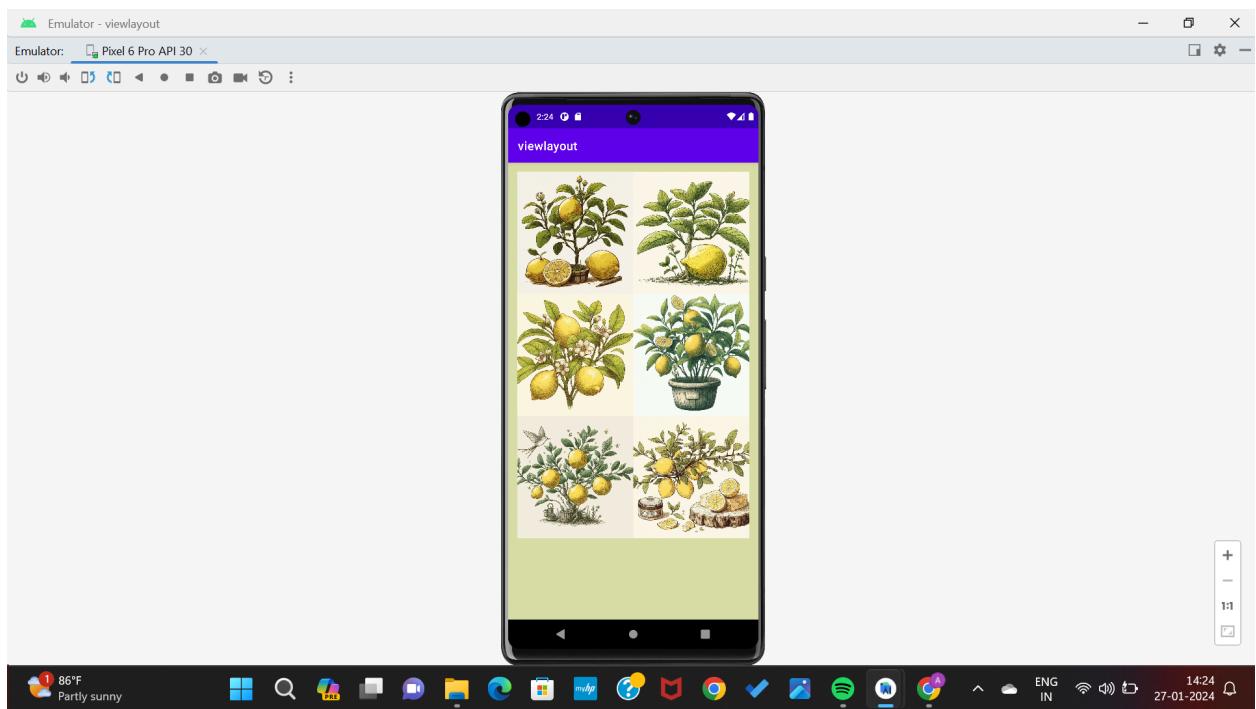
    }
}

```

## Table input screen:



## Table output screen:



**Grid xml:**

```
<?xml version="1.0" encoding="utf-8"?>
<GridLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="410dp"
    android:layout_height="700dp"
    android:columnCount="2"
    android:rowCount="2"
    android:padding="10dp">

    <ImageView
        android:id="@+id/imageView1"
        android:layout_width="199dp"
        android:layout_height="276dp"
        android:layout_row="0"
        android:layout_column="0"
        android:padding="4dp"
        android:scaleType="fitCenter"
        android:src="@drawable/g1" />

    <ImageView
        android:id="@+id/imageView2"
        android:layout_width="199dp"
        android:layout_height="276dp"
        android:layout_row="0"
        android:padding="4dp"
        android:layout_column="1"
        android:scaleType="fitCenter"
        android:src="@drawable/g2" />

    <ImageView
        android:id="@+id/imageView3"
        android:layout_width="199dp"
        android:layout_height="276dp"
        android:layout_row="1"
        android:padding="4dp"
        android:layout_column="0"
        android:scaleType="fitCenter"
        android:src="@drawable/g3" />

    <ImageView
        android:id="@+id/imageView4"
        android:layout_width="204dp"
        android:layout_height="276dp"
        android:layout_row="1"
        android:padding="4dp"
        android:layout_column="1"
        android:scaleType="fitCenter"
```

```
        android:src="@drawable/g4" />

    </GridLayout>

Grid java:
package com.example.viewlayout;

import androidx.appcompat.app.AppCompatActivity;

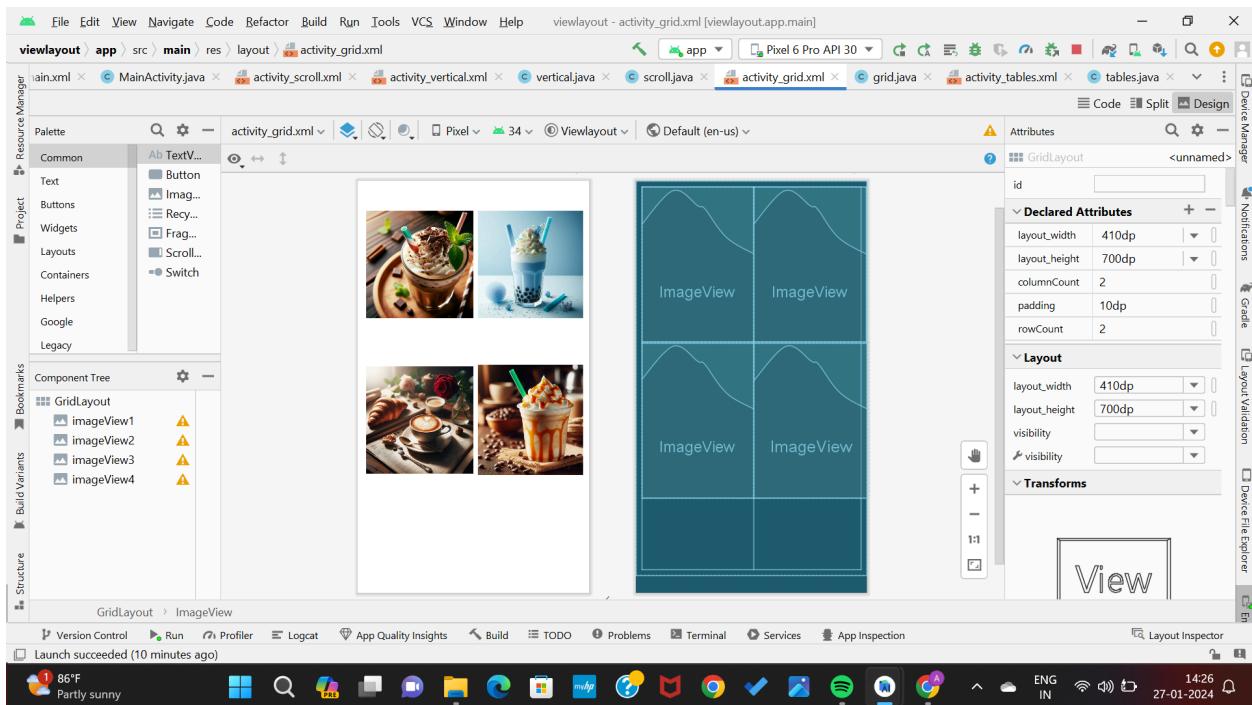
import android.os.Bundle;
import android.widget.ImageView;

public class grid extends AppCompatActivity {

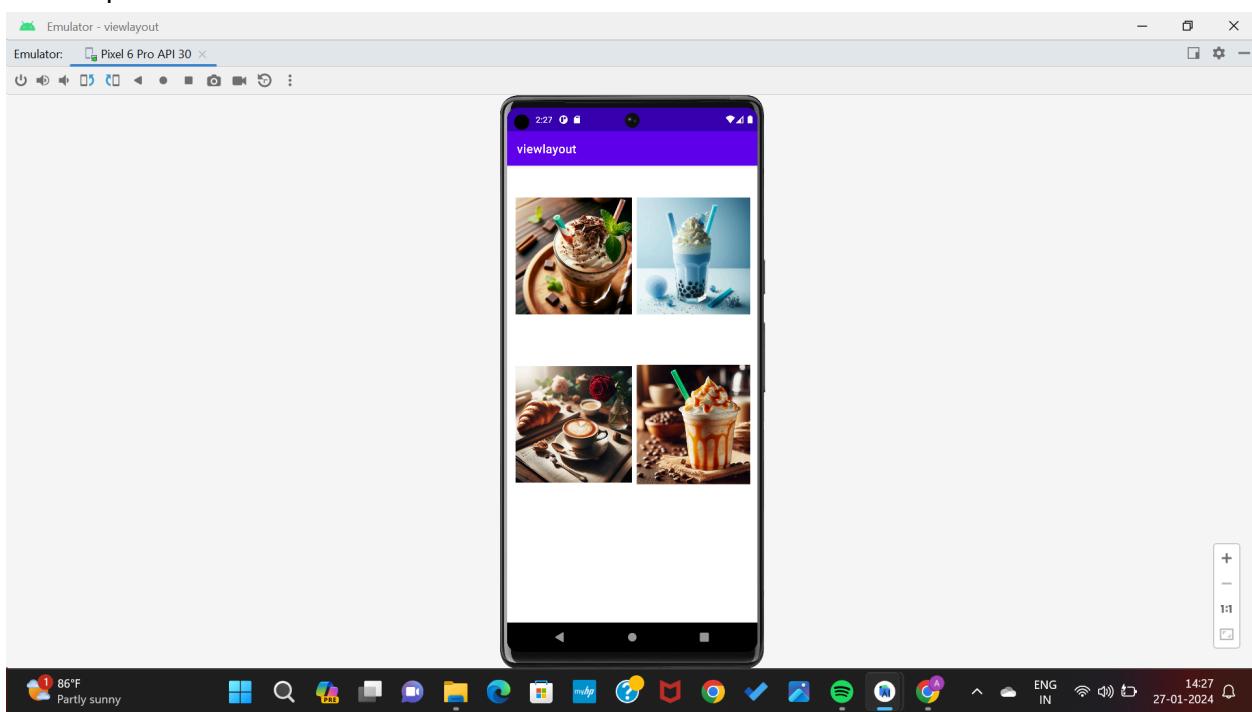
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_grid);
        ImageView imageView1 = findViewById(R.id.imageView1);
        ImageView imageView2 = findViewById(R.id.imageView2);
        ImageView imageView3 = findViewById(R.id.imageView3);
        ImageView imageView4 = findViewById(R.id.imageView4);

        // Load images into ImageViews
        imageView1.setImageResource(R.drawable.g1);
        imageView2.setImageResource(R.drawable.g2);
        imageView3.setImageResource(R.drawable.g3);
        imageView4.setImageResource(R.drawable.g4);
    }
}
```

## Grid input screen:



## Grid output screen:



## Scroll XML:

```
<?xml version="1.0" encoding="utf-8"?>
```

```
<ScrollView
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent">

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

        <ImageView
            android:id="@+id/imageView1"
            android:layout_width="match_parent"
            android:layout_height="433dp"
            android:scaleType="fitCenter"
            android:src="@drawable/s1" />

        <ImageView
            android:id="@+id/imageView2"
            android:layout_width="match_parent"
            android:layout_height="433dp"
            android:scaleType="fitCenter"
            android:src="@drawable/s2" />

        <ImageView
            android:id="@+id/imageView3"
            android:layout_width="match_parent"
            android:layout_height="433dp"
            android:src="@drawable/s3"
            android:scaleType="fitCenter"/>

    </LinearLayout>
</ScrollView>
```

### Scroll java:

```
package com.example.viewlayout;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.widget.ImageView;

public class scroll extends AppCompatActivity {

    @Override
```

```

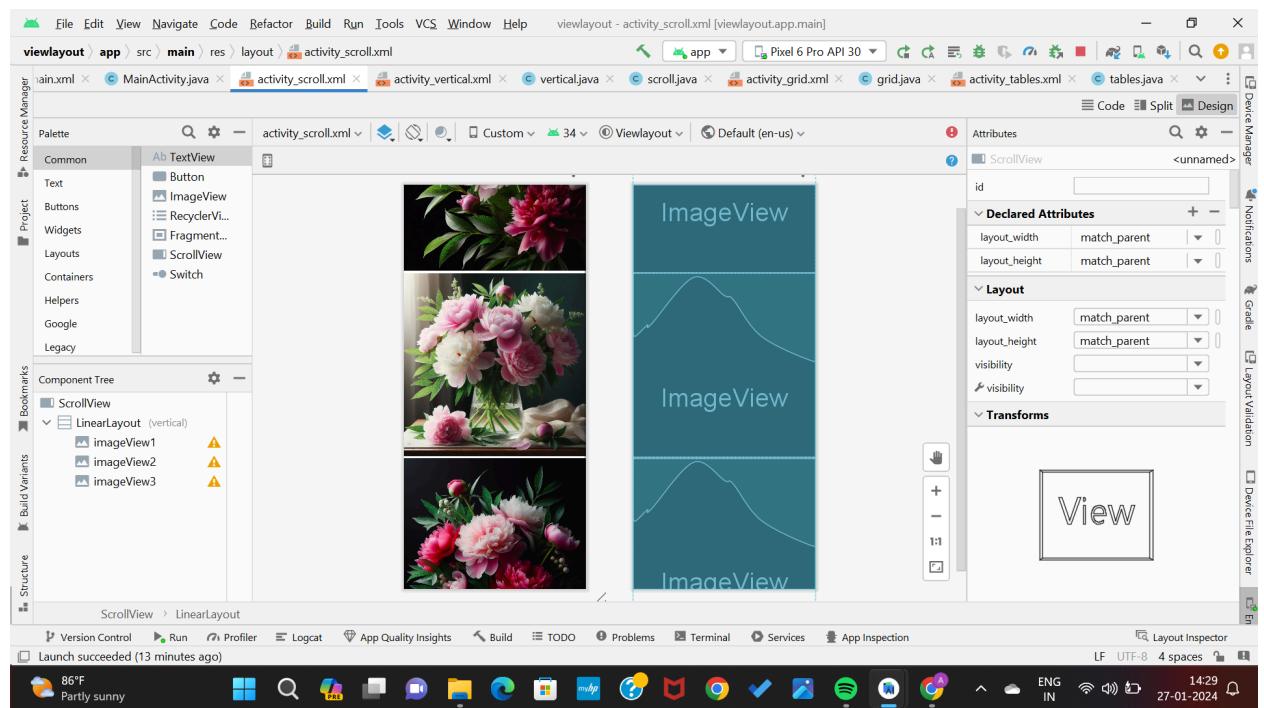
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_scroll);
    ImageView imageView1 = findViewById(R.id.imageView1);
    ImageView imageView2 = findViewById(R.id.imageView2);
    ImageView imageView3 = findViewById(R.id.imageView3);

    // Load images into ImageViews
    imageView1.setImageResource(R.drawable.s1);
    imageView2.setImageResource(R.drawable.s2);
    imageView3.setImageResource(R.drawable.s3);
}

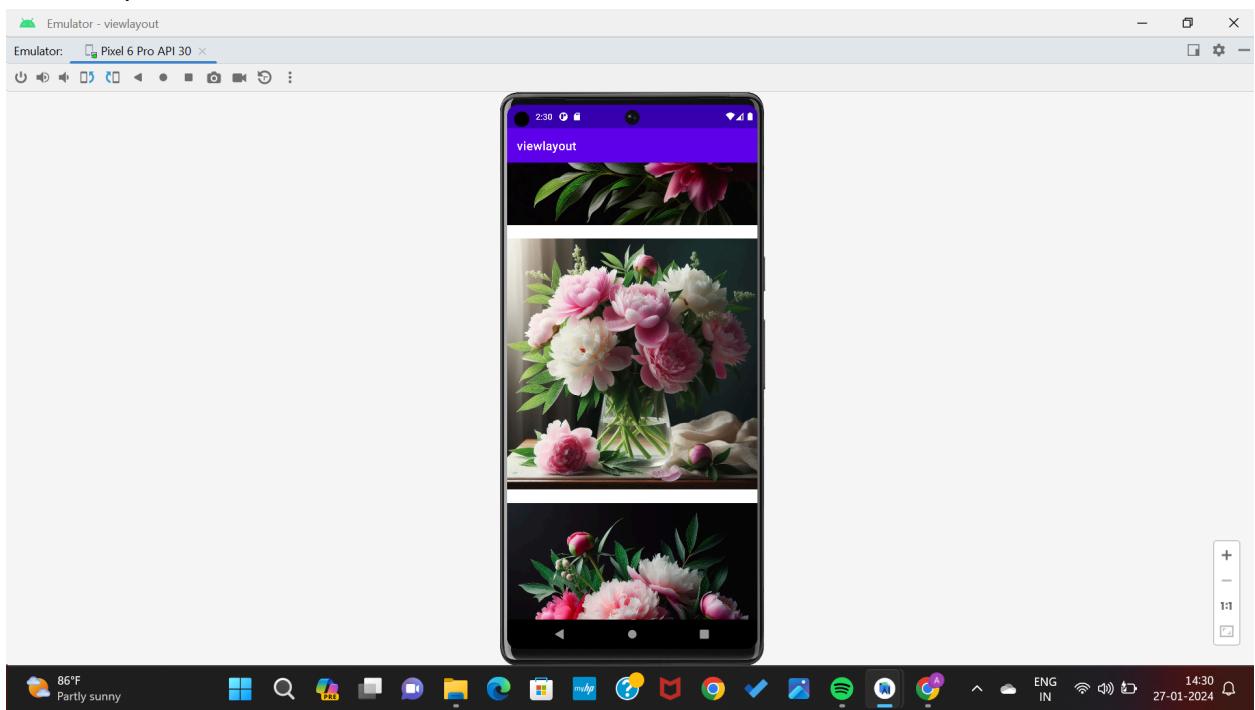
}

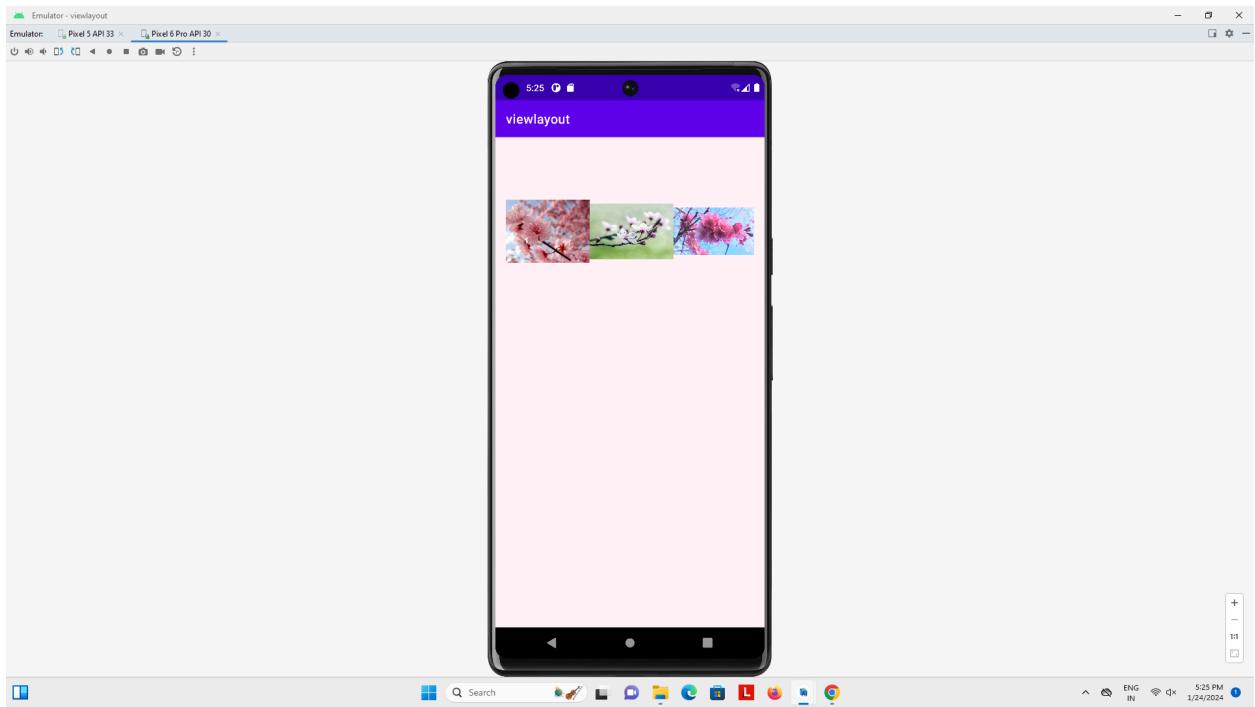
```

### Scroll input screen:



## Scroll output screen:





## Progress view and Spinner

### Progress view and Spinner XML:

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:backgroundTint="#00BCD4"
    android:orientation="vertical"
    android:padding="16dp">

    <Spinner
        android:id="@+id/studentSpinner"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:entries="@array/students"
        android:minHeight="48dp" />

    <EditText
        android:id="@+id/marksEditText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Marks"
        android:minHeight="48dp" />

    <Button
        android:id="@+id/submitBtn"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="8dp"
        android:background="@color/black"
        android:text="Submit" />

    <ProgressBar
        android:id="@+id/marksProgressBar"
        style="?android:attr/progressBarStyleHorizontal"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="16dp"
        android:max="100"
        android:progress="0" />

</LinearLayout>
```

### Progress view and Spinner Java:

```
package com.example.markapp;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.EditText;
import android.widget.ProgressBar;
import android.widget.Spinner;

public class MainActivity extends AppCompatActivity {
    private ProgressBar marksProgressBar;
    private EditText marksEditText;
    private Button submitBtn;
    private Spinner studentSpinner;
    private String[] students = {"Student A", "Student B", "Student C", "Student D"};

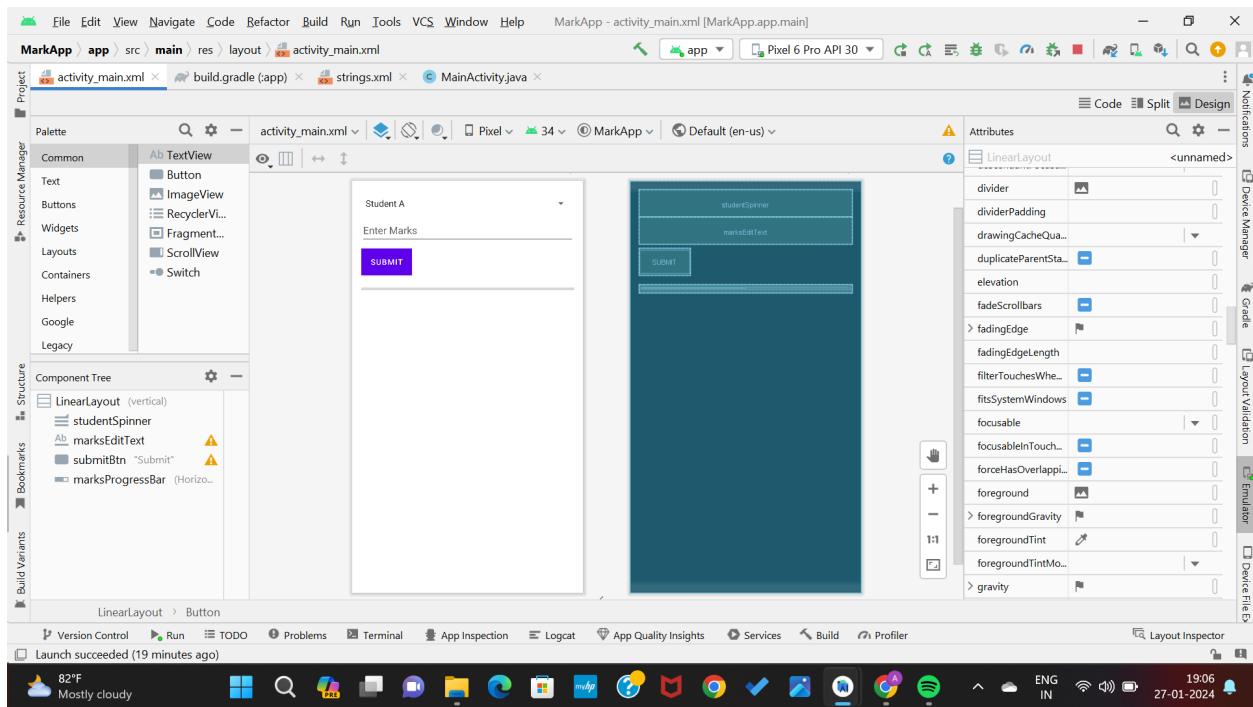
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        marksProgressBar = findViewById(R.id.marksProgressBar);
        marksEditText = findViewById(R.id.marksEditText);
        submitBtn = findViewById(R.id.submitBtn);
        studentSpinner = findViewById(R.id.studentSpinner);

        ArrayAdapter<String> adapter = new ArrayAdapter<>(this,
        android.R.layout.simple_spinner_item, students);

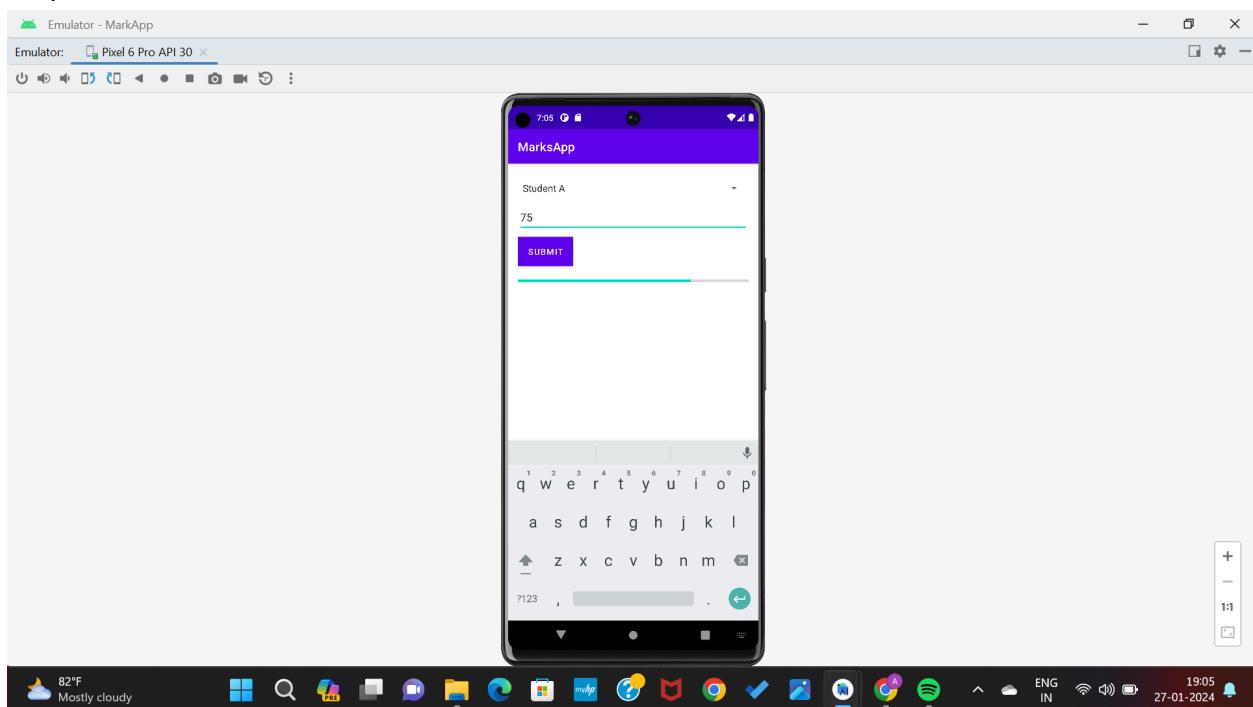
        adapter.setDropDownViewResource(android.R.layout.simple_spinner_dropdown_item);
        studentSpinner.setAdapter(adapter);

        submitBtn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String marksStr = marksEditText.getText().toString();
                if (!marksStr.isEmpty()) {
                    int marks = Integer.parseInt(marksStr);
                    marksProgressBar.setProgress(marks);
                }
            }
        });
    }
}
```

## Input screen:



## Output screen:



## 1 Intents:

## Activity1:

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

    <EditText
        android:id="@+id/eName"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="Enter name"
        android:inputType="textPersonName"
        android:minHeight="48dp"
        android:text="Username"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.492"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.206" />

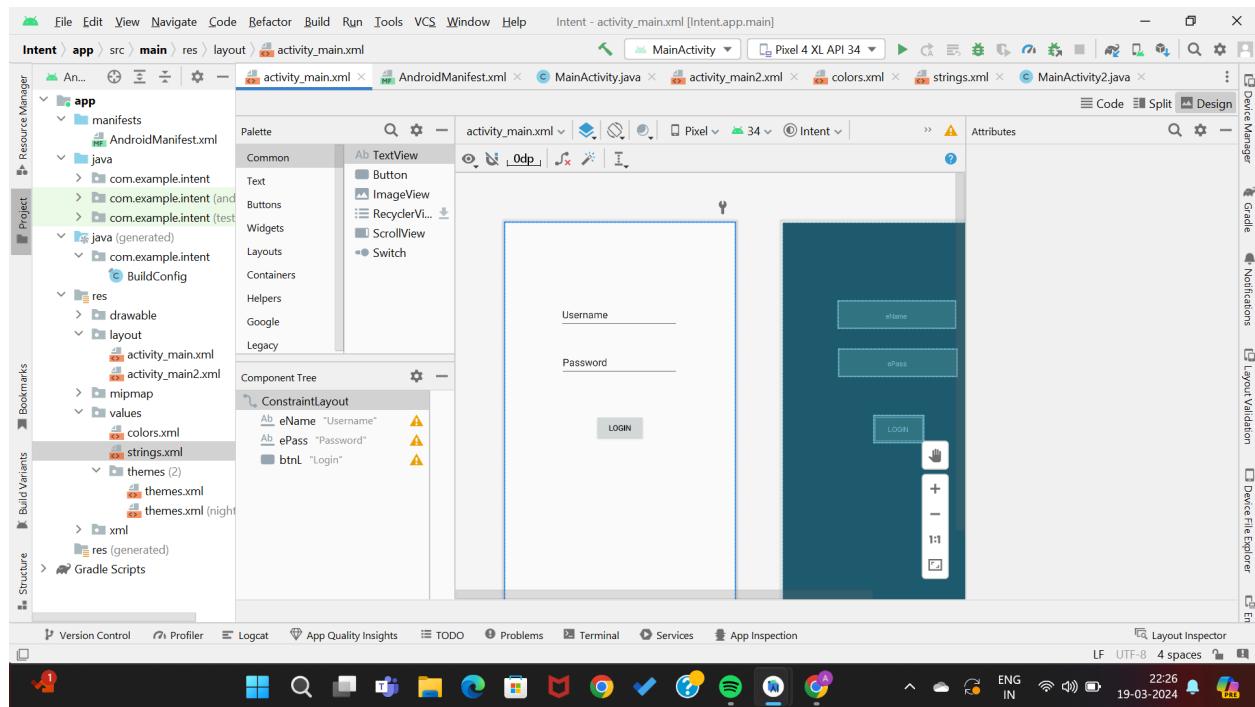
    <EditText
        android:id="@+id/ePass"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="Password"
        android:inputType="textPersonName"
        android:minHeight="48dp"
        android:text="Password"
        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="0.33" />

    <Button
        android:id="@+id/btnL"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
```

```

        android:text="Login"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
    </android.support.constraint.ConstraintLayout>

```



### mainActivity1:

```

package com.example.intent;

import android.content.Intent;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    private EditText eName;
    private EditText ePass;

    private String Username="Annapoorani";
    private String Password="21BCC002";

    boolean isValid=false;
    @Override
    protected void onCreate(Bundle savedInstanceState) {

```

```

        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
eName=findViewById(R.id.eName);
ePass=findViewById(R.id.ePass);
        Button btnL = findViewById(R.id.btnL);

btnL.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        String inputName=eName.getText().toString();
        String inputPassword=ePass.getText().toString();

        if (inputName.isEmpty() || inputPassword.isEmpty()){
            Toast.makeText(MainActivity.this, "Please enter all the details correctly!", Toast.LENGTH_SHORT).show();
        }else{
            isValid=validate(inputName, inputPassword);
            if(isValid){
                Toast.makeText(MainActivity.this, "Login successful!", Toast.LENGTH_SHORT).show();

                //add to code to go to new activity
                Intent intent=new Intent(MainActivity.this,MainActivity2.class);
                startActivity(intent);
            }
        }
    });
}

private boolean validate(String name, String password){
    if(name.equals(Username) && password.equals>Password)){
        return true;
    }
    return false;
}
}

```

## activity2:

```

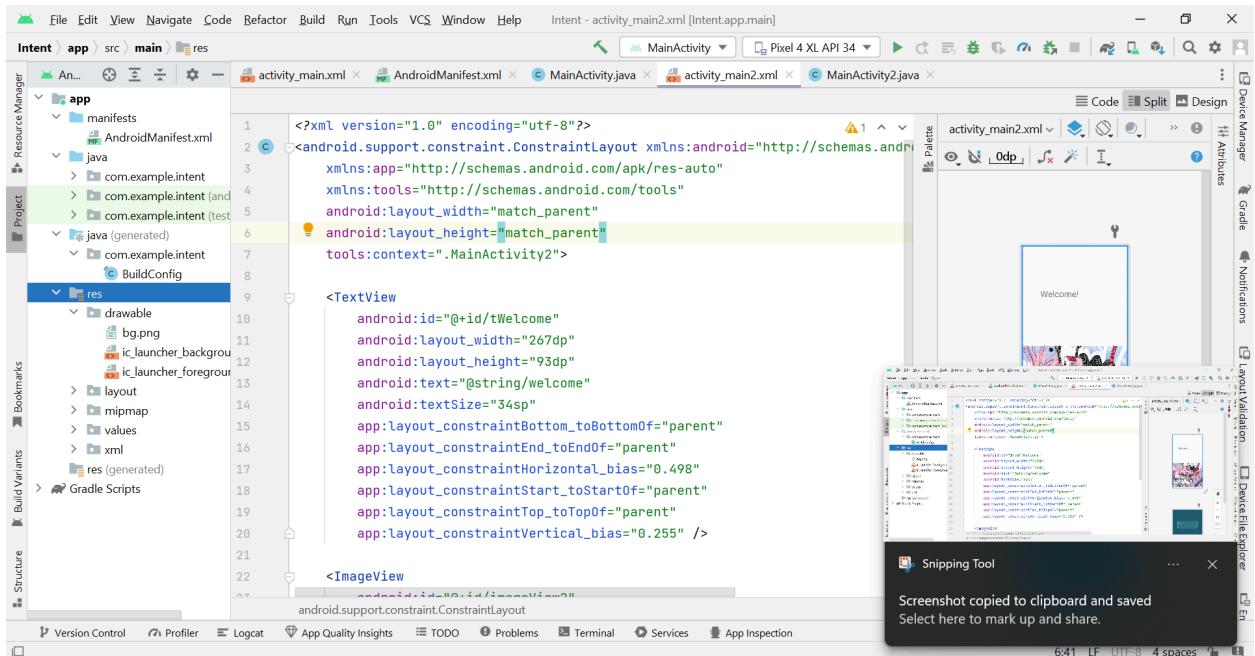
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"

```

```
    android:layout_height="match_parent"
    tools:context=".MainActivity2">

    <TextView
        android:id="@+id/tWelcome"
        android:layout_width="267dp"
        android:layout_height="93dp"
        android:text="@string/welcome"
        android:textSize="34sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.255" />

    <ImageView
        android:id="@+id/imageView2"
        android:layout_width="529dp"
        android:layout_height="357dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="1.0"
        app:srcCompat="@drawable/bg"
        android:contentDescription="@string/welcome_page_image" />
</android.support.constraint.ConstraintLayout>
```



## Main2:

```
package com.example.intent;

import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;

public class MainActivity2 extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main2);
    }
}
```

## Manifest:

```
<?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.Intent"
```

```

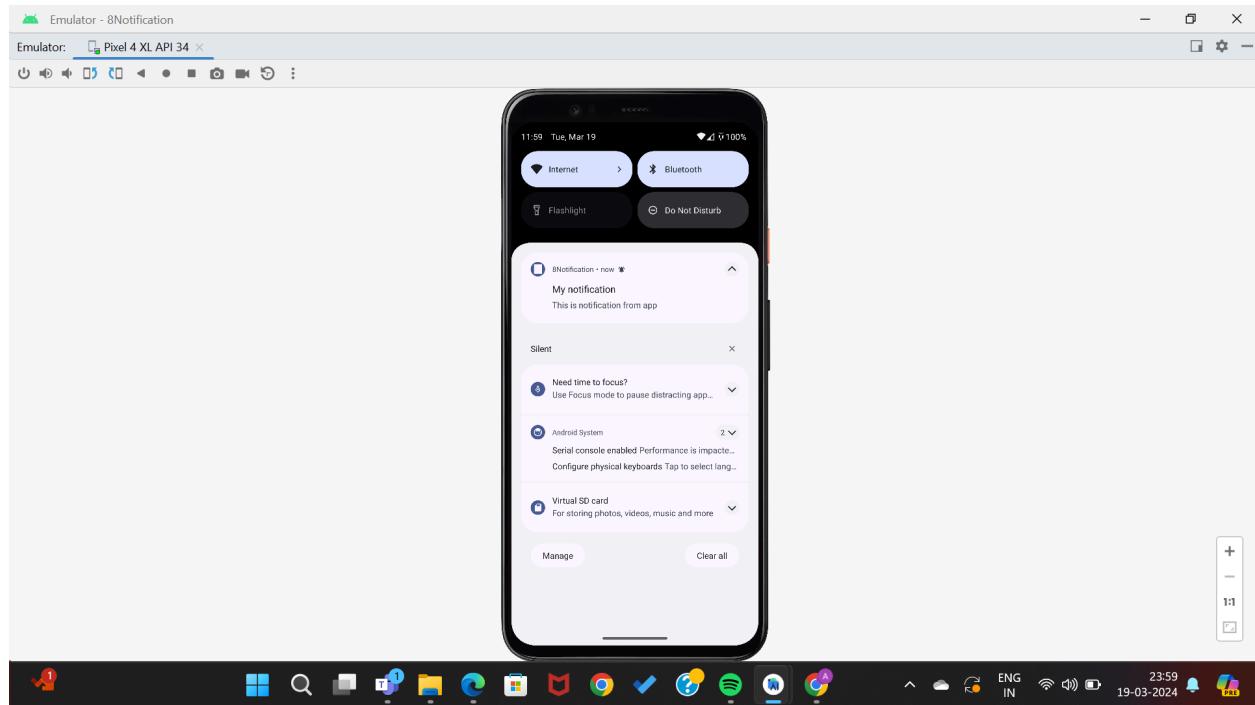
    tools:targetApi="31">
<activity
    android:name=".MainActivity2"
    android:exported="true" />
<activity
    android:name=".MainActivity"
    android:exported="true">
    <intent-filter>
        <action android:name="android.intent.action.MAIN" />

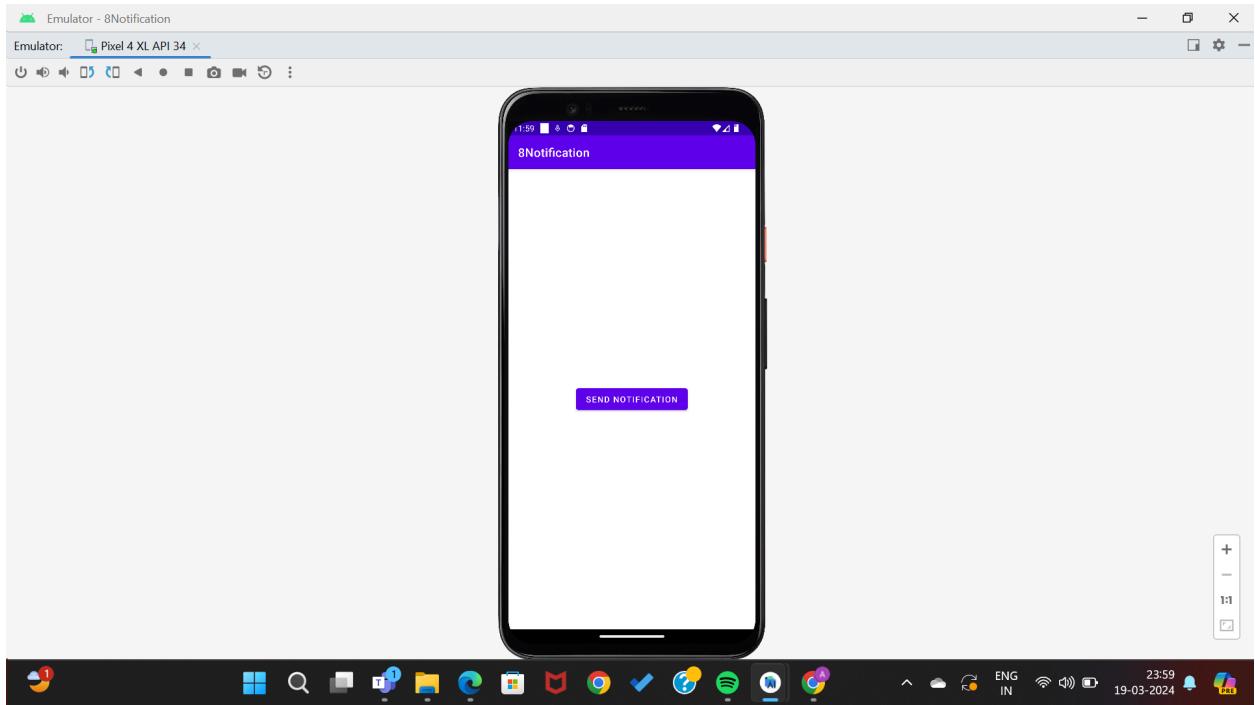
        <category android:name="android.intent.category.LAUNCHER" />
    </intent-filter>
</activity>
</application>

</manifest>

```

## 8 NOTIFICATION





```
package com.example.a8notification;

import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.NotificationCompat;
import android.app.NotificationChannel;
import android.app.NotificationManager;
import android.content.Context;
import android.os.Build;
import android.os.Bundle;
import android.view.View;
import com.example.a8notification.R;
public class MainActivity extends AppCompatActivity {

    private static final String CHANNEL_ID="my_channel";
    private static final String CHANNEL_DESCRIPTION="This is a notification
Channel";
    private static final CharSequence CHANNEL_NAME="My Channel";

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

        createNotificationChannel();
    }
    private void createNotificationChannel(){
        if(Build.VERSION.SDK_INT>=Build.VERSION_CODES.O){
```

```

NotificationChannel channel=new NotificationChannel(
        CHANNEL_ID,
        CHANNEL_NAME,
        NotificationManager.IMPORTANCE_DEFAULT
    );
    channel.setDescription(CHANNEL_DESCRIPTION);
    NotificationManager
notificationManager=getSystemService(NotificationManager.class);
    notificationManager.createNotificationChannel(channel);
}
}

public void sendNotification(View view){
    NotificationCompat.Builder builder=new NotificationCompat.Builder(this,
CHANNEL_ID)
        .setSmallIcon(R.drawable.ic_notification)
        .setContentTitle("My notification")
        .setContentText("This is notification from app")
        .setPriority(NotificationCompat.PRIORITY_DEFAULT);

    NotificationManager
notificationManager=(NotificationManager) getSystemService(Context.NOTIFICATION_
SERVICE);
    notificationManager.notify(1,builder.build());
}
}

<?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:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Send Notification"
        android:layout_centerInParent="true"
        android:onClick="sendNotification"
    />

</RelativeLayout>

```

Note: Enable Notification permissions in App Settings for the notification to get displayed

Download a PNG image and add it in Drawable named as 'ic\_notification'

