

### **Program 3. Create an android application to find the factorial of a given number.**

#### **XML**

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

<LinearLayout

    xmlns:android="http://schemas.android.com/apk/res/android"

    android:orientation="vertical"

    android:layout_width="fill_parent"

    android:layout_height="fill_parent"

    android:weightSum="1">

    <LinearLayout

        android:layout_width="match_parent"

        android:layout_height="wrap_content"

        android:id="@+id/linearLayout1"

        android:layout_marginLeft="10pt"

        android:layout_marginRight="10pt"

        android:layout_marginTop="3pt">

        <EditText

            android:layout_weight="1"

            android:layout_height="wrap_content"

            android:layout_marginRight="5pt"

            android:id="@+id/etNum1"

            android:layout_width="wrap_content"

            android:inputType="numberDecimal">

            </EditText>

        </LinearLayout>

    <LinearLayout

        android:layout_width="match_parent"

        android:layout_height="wrap_content"

        android:id="@+id/linearLayout2"

        android:layout_marginTop="3pt"
```

```

        android:layout_marginLeft="5pt"
        android:layout_marginRight="5pt">
        <Button
            android:layout_height="wrap_content"
            android:layout_width="match_parent"
            android:layout_weight="1"
            android:text="Calculate Factorial"
            android:textSize="8pt"
            android:id="@+id/btnAdd">
        </Button>
    </LinearLayout>
    <TextView
        android:layout_height="wrap_content"
        android:layout_width="match_parent"
        android:layout_marginLeft="5pt"
        android:layout_marginRight="5pt"
        android:textSize="12pt"
        android:layout_marginTop="3pt"
        android:id="@+id/tvResult"
        android:gravity="center_horizontal"
        android:layout_weight="0.07">
    </TextView>
</LinearLayout>

```

## **Java**

```

package com.example.factorial1;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

```

```
import android.text.TextUtils;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity implements View.OnClickListener{

    EditText etNum1;

    Button btnAdd;

    TextView tvResult;

    String oper = "";

    /** Called when the activity is first created. */
    @Override
    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        // find the elements
        etNum1 = (EditText) findViewById(R.id.etNum1);

        btnAdd = (Button) findViewById(R.id.btnAdd);
        tvResult = (TextView) findViewById(R.id.tvResult);

        // set a listener
        btnAdd.setOnClickListener(this);
```

```
}
```

```
@Override
```

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

```
    // TODO Auto-generated method stud
```

```
    float num1=0;
```

```
    float fact=1;
```

```
    float result = 0;
```

```
    // check if the fields are empty
```

```
    num1=Float.parseFloat(etNum1.getText().toString());
```

```
    // read EditText and fill variables with numbers
```

```
    // defines the button that has been clicked and performs the corresponding operation
```

```
    // write operation into oper, we will use it later for output
```

```
    switch (v.getId()) {
```

```
        case R.id.btnAdd:
```

```
            oper = "+";
```

```
            for(int i=1;i<=num1;i++)
```

```
            {
```

```
                fact=fact*i;
```

```
            }
```

```
            result=fact;
```

```
            break;
```

```
        default:
```

```
            break;
```

```
    }
```

```
    // form the output line
```

```
tvResult.setText("Factorial of" + " " + num1 + " = " + result);  
}  
}
```

### Output

