

### Program 3 : Factorial of a number

#### Xml file

```
<?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="409dp"
        android:layout_height="729dp"
        android:orientation="horizontal"
        tools:layout_editor_absoluteX="1dp"
        tools:layout_editor_absoluteY="1dp">

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

            <TextView
                android:id="@+id/textView"
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:text="Enter a number" />

            <EditText
                android:id="@+id/Number"
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:ems="10"
                android:inputType="numberDecimal" />

            <Button
                android:id="@+id/button"
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:text="Submit" />

            <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/answer"
                android:gravity="center_horizontal"
                android:layout_weight="0.07">
            </TextView>

        </LinearLayout>

    </LinearLayout>
```

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

```
Java filepackage com.example.factorial_45;

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;

public class MainActivity extends AppCompatActivity implements
View.OnClickListener {
    EditText Number;
    TextView textView;
    Button button;
    TextView answer;

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

        Number = (EditText) findViewById(R.id.Number);
        textView = (TextView) findViewById(R.id.textView);
        button = (Button) findViewById(R.id.button);
        answer = (TextView) findViewById(R.id.answer);
        button.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(Number.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.button:

                for(int i=1;i<=num1;i++)
                {
                    fact=fact*i;
                }
            }
        }
    }
}
```

```
        result=fact;
        break;
    default:
        break;
    }

    // form the output line
    answer.setText("Factorial of" + " " + num1 + " = " + result);
}
}
```

Output:

