Q.1] Create an Android Application to accept two numbers to calculate its Power and Average. Create two buttons: Power and Average. Display the appropriate result on the next activity on Button click.

activity_main.xml:

```xml
<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=".MainActivity">

   <EditText
      android:id="@+id/editTextNumber1"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_marginTop="50dp"
      android:hint="Enter Number 1"
      android:inputType="numberDecimal" />

   <EditText
      android:id="@+id/editTextNumber2"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_below="@id/editTextNumber1"
      android:layout_marginTop="20dp"
      android:hint="Enter Number 2"
      android:inputType="numberDecimal" />

   <Button
```

```xml
        android:id="@+id/buttonPower"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:layout_below="@id/editTextNumber2"

        android:layout_marginTop="20dp"

        android:text="Calculate Power" />


    <Button

        android:id="@+id/buttonAverage"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:layout_below="@id/buttonPower"

        android:layout_marginTop="20dp"

        android:text="Calculate Average" />


</RelativeLayout>
```

MainActivity.java:

```java
import android.content.Intent;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;


import androidx.appcompat.app.AppCompatActivity;


public class MainActivity extends AppCompatActivity {
```

```java
EditText editTextNumber1, editTextNumber2;

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

    editTextNumber1 = findViewById(R.id.editTextNumber1);
    editTextNumber2 = findViewById(R.id.editTextNumber2);

    Button buttonPower = findViewById(R.id.buttonPower);
    Button buttonAverage = findViewById(R.id.buttonAverage);

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

    buttonAverage.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            calculateAverage();
        }
    });
```

```java
    }

    private void calculatePower() {
        double num1 = Double.parseDouble(editTextNumber1.getText().toString());
        double num2 = Double.parseDouble(editTextNumber2.getText().toString());
        double result = Math.pow(num1, num2);
        navigateToResultActivity("Power", result);
    }

    private void calculateAverage() {
        double num1 = Double.parseDouble(editTextNumber1.getText().toString());
        double num2 = Double.parseDouble(editTextNumber2.getText().toString());
        double result = (num1 + num2) / 2;
        navigateToResultActivity("Average", result);
    }

    private void navigateToResultActivity(String operation, double result) {
        Intent intent = new Intent(MainActivity.this, ResultActivity.class);
        intent.putExtra("OPERATION", operation);
        intent.putExtra("RESULT", result);
        startActivity(intent);
    }
}
```

activity_result.xml:

```xml
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
```

```xml
        android:gravity="center">

    <TextView
        android:id="@+id/textViewResult"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textSize="20sp"
        android:textStyle="bold"
        android:layout_marginBottom="20dp" />

    <Button
        android:id="@+id/buttonBack"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Back"
        android:onClick="goBack" />

</LinearLayout>
```

ResultActivity.java:

```java
import android.content.Intent;
import android.os.Bundle;
import android.widget.TextView;

import androidx.appcompat.app.AppCompatActivity;

public class ResultActivity extends AppCompatActivity {

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

```java
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_result);

        TextView textViewResult = findViewById(R.id.textViewResult);

        Intent intent = getIntent();
        String operation = intent.getStringExtra("OPERATION");
        double result = intent.getDoubleExtra("RESULT", 0);

        textViewResult.setText(operation + ": " + result);
    }


    public void goBack(android.view.View view) {
        finish();
    }
}
```