Q.1) Create an application that allows the user to enter a number in the textbox. Check whether the number in the textbox is Armstrong or not. Print the message accordingly in the label control.

activity_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"
    tools:context=".MainActivity">

    <com.google.android.material.textfield.TextInputLayout
        android:id="@+id/textInputLayout"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="50dp"
        android:layout_marginStart="20dp"
        android:layout_marginEnd="20dp"
        android:hint="Enter a number">

        <com.google.android.material.textfield.TextInputEditText
            android:id="@+id/numberEditText"
            android:layout_width="match_parent"
            android:layout_height="wrap_content" />

    </com.google.android.material.textfield.TextInputLayout>

    <Button
```

```
    android:id="@+id/checkButton"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@id/textInputLayout"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="20dp"
    android:text="Check" />

  <TextView
    android:id="@+id/resultTextView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@id/checkButton"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="20dp"
    android:textColor="@android:color/black"
    android:textSize="18sp" />

</RelativeLayout>
```

MainActivity.java:

```
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {
```

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

    final TextView resultTextView = findViewById(R.id.resultTextView);
    Button checkButton = findViewById(R.id.checkButton);
    checkButton.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            String numberStr = ((TextInputEditText)findViewById(R.id.numberEditText)).getText().toString();
            int number = Integer.parseInt(numberStr);
            if (isArmstrong(number)) {
                resultTextView.setText(number + " is an Armstrong number.");
            } else {
                resultTextView.setText(number + " is not an Armstrong number.");
            }
        }
    });
}

// Function to check Armstrong number
private boolean isArmstrong(int number) {
    int originalNumber, remainder, result = 0, n = 0;
    originalNumber = number;
    while (originalNumber != 0) {
        originalNumber /= 10;
        ++n;
    }
    originalNumber = number;
    while (originalNumber != 0) {
```

```
            remainder = originalNumber % 10;
            result += Math.pow(remainder, n);
            originalNumber /= 10;
        }
        return result == number;
    }
}
```