

2) Create an application that allows the user to enter a number in the textbox. Check whether the number in the textbox is perfect number or not. Print the message using Toast 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">

    <EditText
        android:id="@+id/editTextNumber"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter a number"
        android:inputType="number" />

    <Button
        android:id="@+id/buttonCheck"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/editTextNumber"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="16dp"
        android:text="Check" />

</RelativeLayout>
```

MainActivity.java

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

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

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

        EditText editTextNumber = findViewById(R.id.editTextNumber);
        Button buttonCheck = findViewById(R.id.buttonCheck);

        buttonCheck.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String input = editTextNumber.getText().toString();
                if (!input.isEmpty()) {
                    int number = Integer.parseInt(input);
                    if (isPerfectNumber(number)) {
                        showToast("The number is a perfect number.");
                    } else {
```

```
        showToast("The number is not a perfect number.");
    }
    } else {
        showToast("Please enter a number.");
    }
}
});
}
```

```
private boolean isPerfectNumber(int number) {
    int sum = 0;
    for (int i = 1; i <= number / 2; i++) {
        if (number % i == 0) {
            sum += i;
        }
    }
    return sum == number;
}
```

```
private void showToast(String message) {
    Toast.makeText(this, message, Toast.LENGTH_SHORT).show();
}
}
```