Q1. 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.

<?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:text=”Check” />

<TextViewAndroid:id=”@+id/textViewResult”

Android:layout\_width=”wrap\_content”

Android:layout\_height=”wrap\_content”

Android:layout\_below=”@id/buttonCheck”

Android:layout\_marginTop=”16dp”

Android:text=””

Android:textSize=”18sp” />

</RelativeLayout>

**Main.java**

Import android.os.Bundle;

Import android.view.View;

Import android.widget.Button;

Import android.widget.EditText;

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);

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

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

buttonCheck.setOnClickListener(new View.OnClickListener() {

@Override

Public void onClick(View v) {

String numberStr = editTextNumber.getText().toString();

If (!numberStr.isEmpty()) {

Int number = Integer.parseInt(numberStr);

If (isArmstrong(number)) {

textViewResult.setText(number + “ is an Armstrong number.”);

} else {

textViewResult.setText(number + “ is not an Armstrong number.”);

}

} else {

textViewResult.setText(“Please enter a number.”);

}

}

});

}

Private boolean isArmstrong(int number) {

Int originalNumber, remainder, result = 0, n = 0;

originalNumber = number;// store the number of digits of originalNumber in n For (originalNumber = number; originalNumber != 0; originalNumber /= 10, ++n);

For (originalNumber = number; originalNumber != 0; originalNumber /= 10) { Remainder = originalNumber % 10; Result += Math.pow(remainder, n);

} // if number is equal to the sum of its own digits raised to the power of n, then the

Number is an Armstrong number If (result == number) { Return true;

} Return false; } }

Q.2] Write a program to draw GUI by using Spinner, Buttons.

Ans.

<?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/editTextItem” android:layout\_width=”match\_parent” android:layout\_height=”wrap\_content” android:layout\_margin=”16dp” android:hint=”Enter Item:” />

<Button

Android:id=”@+id/buttonAdd” android:layout\_width=”wrap\_content” android:layout\_height=”wrap\_content” android:layout\_below=”@id/editTextItem” android:layout\_marginTop=”16dp” android:layout\_centerHorizontal=”true” android:text=”Add to Spinner” android:onClick=”addItemToSpinner” />

<Button android:id=”@+id/buttonRemove” android:layout\_width=”wrap\_content” android:layout\_height=”wrap\_content” android:layout\_below=”@id/buttonAdd” android:layout\_marginTop=”16dp” android:layout\_centerHorizontal=”true” android:text=”Remove from Spinner” android:onClick=”removeItemFromSpinner” />

<Spinner android:id=”@+id/spinnerItems” android:layout\_width=”match\_parent” android:layout\_height=”wrap\_content” android:layout\_below=”@id/buttonRemove” android:layout\_margin=”16dp” />

</RelativeLayout>

MainActivity.java- package com.example.myapplication;

Import android.os.Bundle; import android.view.View; import android.widget.ArrayAdapter; import android.widget.EditText; import android.widget.Spinner;

Import androidx.appcompat.app.AppCompatActivity;

Import java.util.ArrayList; import java.util.List;

Public class MainActivity extends AppCompatActivity { private EditText editTextItem; private Spinner spinnerItems; private List<String> itemsList; private ArrayAdapter<String> spinnerAdapter;

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

editTextItem = findViewById(R.id.editTextItem); spinnerItems = findViewById(R.id.spinnerItems);

// Initialize items list and spinner adapter itemsList = new ArrayList<>(); spinnerAdapter = new ArrayAdapter<>(this, android.R.layout.simple\_spinner\_item, itemsList);

spinnerAdapter.setDropDownViewResource(android.R.layout.sim ple\_spinner\_dropdown\_item); spinnerItems.setAdapter(spinnerAdapter);

}

Public void addItemToSpinner(View view) {

String item = editTextItem.getText().toString().trim();

If (!item.isEmpty()) { itemsList.add(item); spinnerAdapter.notifyDataSetChanged(); editTextItem.setText(“”);

}

}

Public void removeItemFromSpinner(View view) {

If (itemsList.isEmpty()) { return;

}

Int selectedItemPosition = spinnerItems.getSelectedItemPosition(); if (selectedItemPosition != Spinner.INVALID\_POSITION) { itemsList.remove(selectedItemPosition); spinnerAdapter.notifyDataSetChanged();

}

}

}