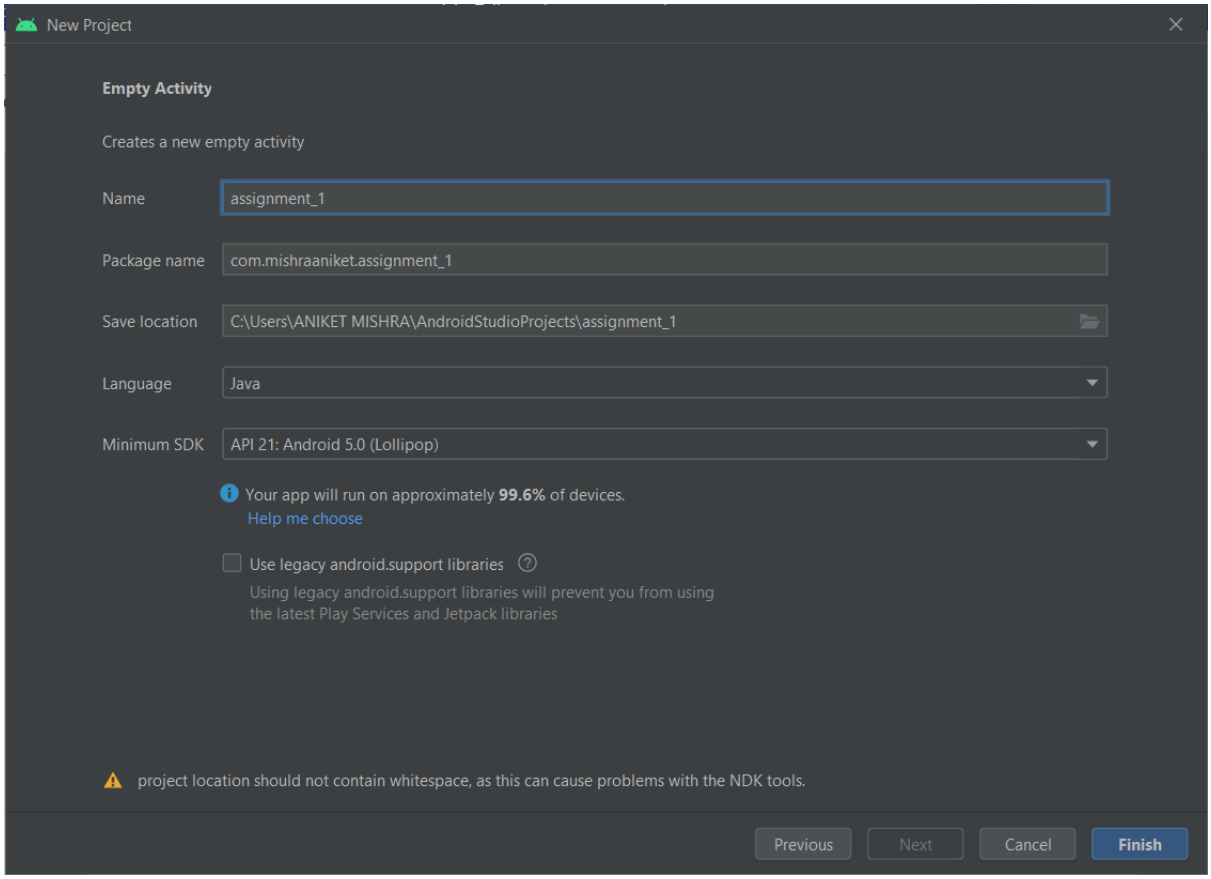
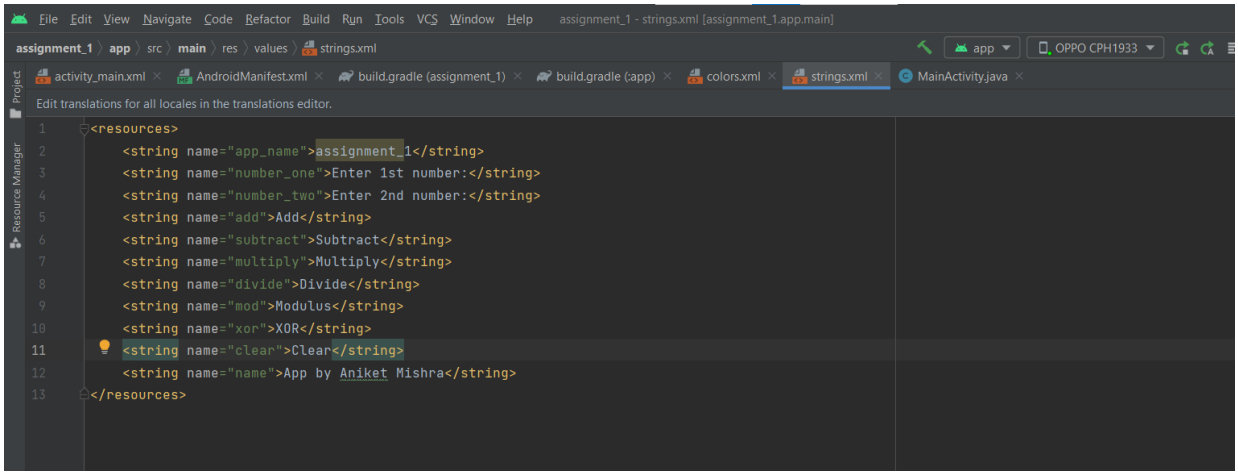
Application: An android application to showcase +, -, *, /, %, ^ and clear operation.



Strings.xml:

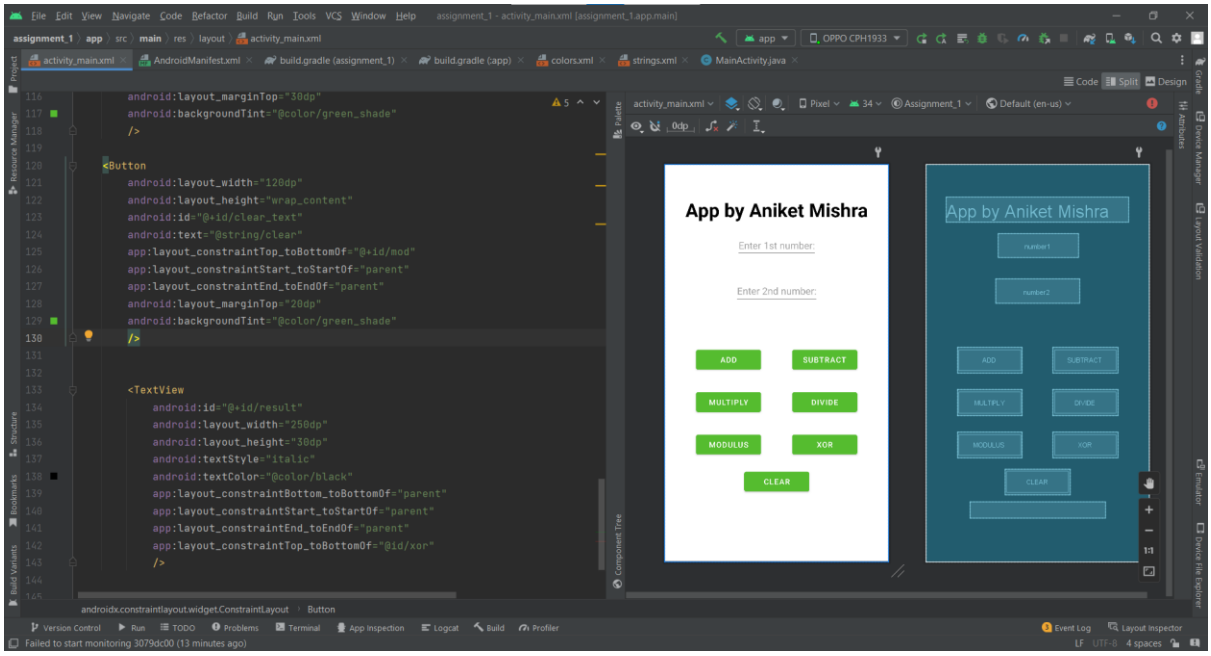


XML code:

```
<?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">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/name"
        android:id="@+id/name"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintBottom_toTopOf="@+id/number1"
        />

    <EditText
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:hint="@string/number_one"
        android:id="@+id/number1"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/name"
        app:layout_constraintBottom_toTopOf="@+id/number2"
        app:layout_constraintEnd_toEndOf="parent"
        android:layout_marginTop="20dp"
        />

    <EditText
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        app:layout_constraintTop_toBottomOf="@+id/number1"
        android:hint="@string/number_two"
        android:id="@+id/number2"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        android:layout_marginTop="39dp"
        />

    <Button
        android:layout_width="120dp"
        android:layout_height="wrap_content"
```

```
    android:id="@+id/add"
    android:text="@string/add"
    app:layout_constraintTop_toBottomOf="@+id/number2"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintEnd_toStartOf="@+id/subtract"
    android:layout_marginTop="80dp"
    android:backgroundTint="@color/green_shade"
    />

<Button
    android:layout_width="120dp"
    android:layout_height="wrap_content"
    android:text="@string/subtract"
    android:id="@+id/subtract"
    app:layout_constraintTop_toBottomOf="@+id/number2"
    app:layout_constraintStart_toEndOf="@+id/add"
    app:layout_constraintEnd_toEndOf="parent"
    android:layout_marginTop="80dp"
    android:backgroundTint="@color/green_shade"
    />

<Button
    android:layout_width="120dp"
    android:layout_height="wrap_content"
    android:id="@+id/multiply"
    android:text="@string/multiply"
    app:layout_constraintTop_toBottomOf="@+id/add"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintEnd_toStartOf="@+id/divide"
    android:backgroundTint="@color/green_shade"
    />

<Button
    android:layout_width="120dp"
    android:layout_height="wrap_content"
    android:text="@string/divide"
    android:id="@+id/divide"
    app:layout_constraintTop_toBottomOf="@+id/subtract"
    app:layout_constraintStart_toEndOf="@+id/multiply"
    app:layout_constraintEnd_toEndOf="parent"
    android:backgroundTint="@color/green_shade"
    />

<Button
    android:layout_width="120dp"
    android:layout_height="wrap_content"
    android:id="@+id/mod"
    android:text="@string/mod"
```

```
    app:layout_constraintTop_toBottomOf="@+id/multiply"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintEnd_toStartOf="@+id/xor"
    android:backgroundTint="@color/green_shade"
    />

  <Button
    android:layout_width="120dp"
    android:layout_height="wrap_content"
    android:text="@string/xor"
    android:id="@+id/xor"
    app:layout_constraintTop_toBottomOf="@+id/divide"
    app:layout_constraintStart_toEndOf="@+id/mod"
    app:layout_constraintEnd_toEndOf="parent"
    android:backgroundTint="@color/green_shade"
    />


    <TextView
      android:id="@+id/result"
      android:layout_width="250dp"
      android:layout_height="54dp"
      app:layout_constraintBottom_toBottomOf="parent"
      app:layout_constraintStart_toStartOf="parent"
      app:layout_constraintEnd_toEndOf="parent"
      app:layout_constraintTop_toBottomOf="@id/xor"
      />
</androidx.constraintlayout.widget.ConstraintLayout>
```



MainActivity.java:

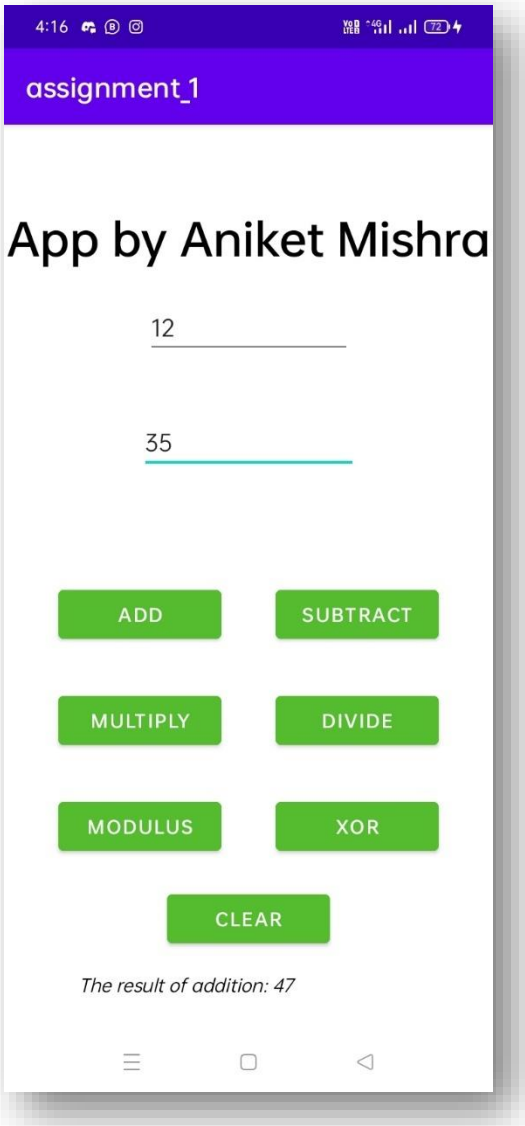
```
package com.mishraaniket.assignment_1;

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;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    EditText num1, num2;
    Button add, subtract, multiply, divide, xor, mod, clear;
    TextView result;
    int firstNumber, secondNumber;

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

        num1=(EditText)findViewById(R.id.number1);
        num2=(EditText)findViewById(R.id.number2);
        add=(Button) findViewById(R.id.add);
        multiply=(Button)findViewById(R.id.multiply);
        subtract=(Button) findViewById(R.id.subtract);
        divide=(Button) findViewById(R.id.divide);
        xor=(Button) findViewById(R.id.xor);
        mod=(Button) findViewById(R.id.mod);
        clear=(Button) findViewById(R.id.clear_text);
        result=(TextView) findViewById(R.id.result);

        try{
            add.setOnClickListener(new View.OnClickListener() {
                @Override
                public void onClick(View view) {
                    try{
                        firstNumber = Integer.parseInt(num1.getText().toString());
                        secondNumber = Integer.parseInt(num2.getText().toString());
                    }catch (Exception e){
                        Toast.makeText(MainActivity.this, "Please enter a valid number",
Toast.LENGTH_SHORT).show();
                    }
                    try{
                        result.setText("The result of addition: "+(firstNumber+secondNumber));
```

```
            }catch (Exception e){
                Toast.makeText(MainActivity.this, "Please enter a valid number",
Toast.LENGTH_SHORT).show();
            }
        }
    });

    subtract.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            try{
                firstNumber = Integer.parseInt(num1.getText().toString());
                secondNumber = Integer.parseInt(num2.getText().toString());
            }catch (Exception e){
                Toast.makeText(MainActivity.this, "Please enter a valid number",
Toast.LENGTH_SHORT).show();
            }

            try{
                result.setText("The result of subtraction: "+(firstNumber-secondNumber));
            }catch (Exception e){
                Toast.makeText(MainActivity.this, "Please enter a valid number",
Toast.LENGTH_SHORT).show();
            }

        }
    });

    multiply.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            try{
                firstNumber = Integer.parseInt(num1.getText().toString());
                secondNumber = Integer.parseInt(num2.getText().toString());
            }catch (Exception e){
                Toast.makeText(MainActivity.this, "Please enter a valid number",
Toast.LENGTH_SHORT).show();
            }


            try{
                result.setText("The result of multiplication: "+(firstNumber*secondNumber));
            }catch (Exception e){
                Toast.makeText(MainActivity.this, "Please enter a valid number",
Toast.LENGTH_SHORT).show();
            }
        }
    });
```

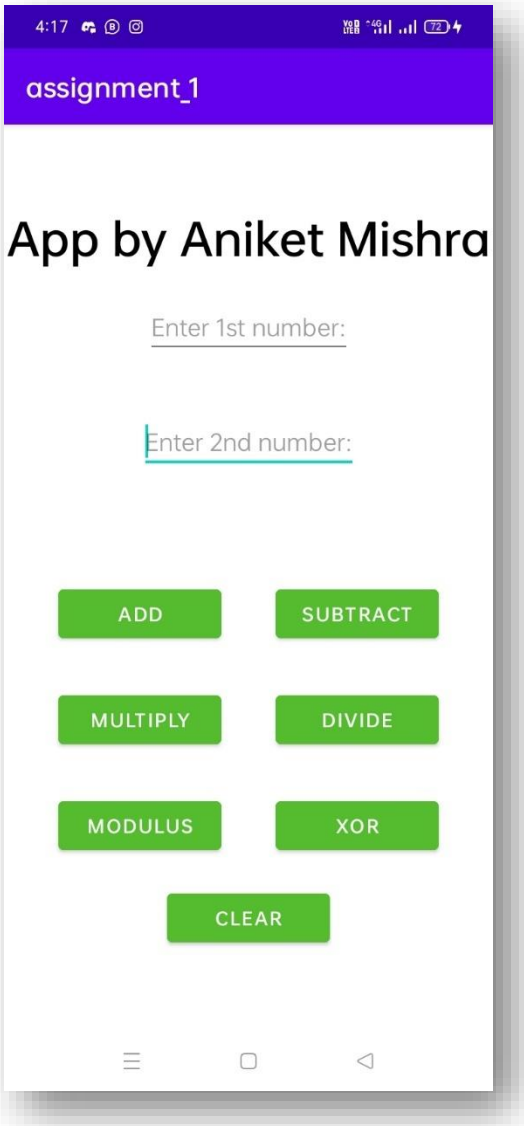
```
        divide.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                try{
                    firstNumber = Integer.parseInt(num1.getText().toString());
                    secondNumber = Integer.parseInt(num2.getText().toString());
                }catch (Exception e){
                    Toast.makeText(MainActivity.this, "Please enter a valid number",
Toast.LENGTH_SHORT).show();
                }


                try{
                    result.setText("The result of division: "+(firstNumber/secondNumber));
                }
                catch (NullPointerException e){
                    Toast.makeText(MainActivity.this, "Please enter a valid number",
Toast.LENGTH_SHORT).show();
                }
                catch (ArithmeticException e){
                    Toast.makeText(MainActivity.this, "Divisor cannot be zero",
Toast.LENGTH_SHORT).show();
                }
                catch (Exception e){
                    Toast.makeText(MainActivity.this, e.toString(), Toast.LENGTH_SHORT).show();
                }
            }
        });

        mod.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                try{
                    firstNumber = Integer.parseInt(num1.getText().toString());
                    secondNumber = Integer.parseInt(num2.getText().toString());
                }catch (Exception e){
                    Toast.makeText(MainActivity.this, "Please enter a valid number",
Toast.LENGTH_SHORT).show();
                }

                try{
                    result.setText("The result of modulus: "+(firstNumber%secondNumber));
                }
                catch (NullPointerException e){
                    Toast.makeText(MainActivity.this, "Please enter a valid number",
Toast.LENGTH_SHORT).show();
                }
```

```
            catch (ArithmeticException e){
                Toast.makeText(MainActivity.this, "Divisor cannot be zero",
Toast.LENGTH_SHORT).show();
            }
            catch (Exception e){
                Toast.makeText(MainActivity.this, e.toString(), Toast.LENGTH_SHORT).show();
            }
          }
        });

        xor.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View view) {
            try{
              firstNumber = Integer.parseInt(num1.getText().toString());
              secondNumber = Integer.parseInt(num2.getText().toString());
            }catch (Exception e){
              Toast.makeText(MainActivity.this, "Please enter a valid number",
Toast.LENGTH_SHORT).show();
            }

            try{
              result.setText("The result of XOR operation: "+(firstNumber^secondNumber));
            }catch (Exception e){
              Toast.makeText(MainActivity.this, "Please enter a valid number",
Toast.LENGTH_SHORT).show();
            }
          }
        });

        clear.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View view) {
            result.setText("");
            num1.setText("");
            num2.setText("");
          }
        });


      }catch(Exception e){
        Toast.makeText(MainActivity.this, e.toString(), Toast.LENGTH_SHORT).show();
      }

    }
}
```

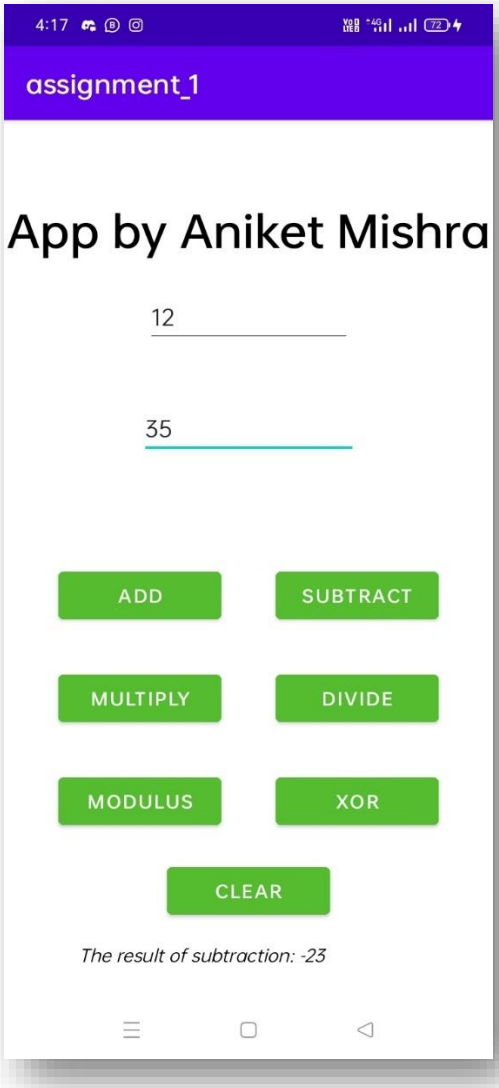
OUTPUT:



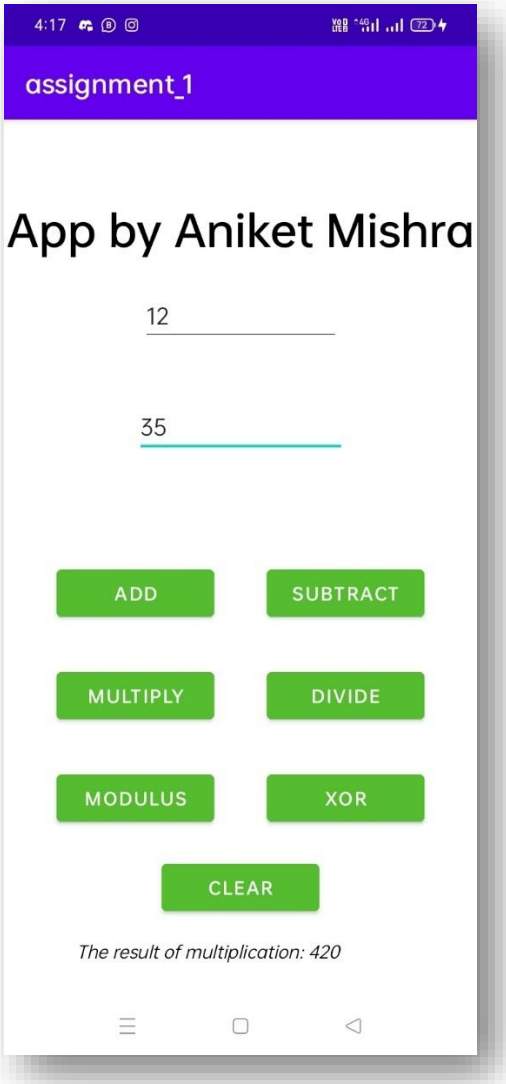
Addition



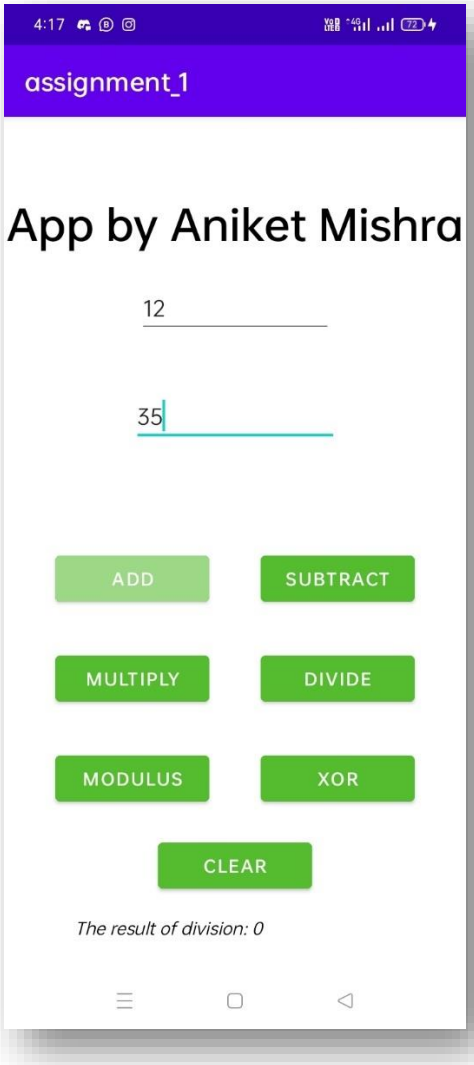
Clear



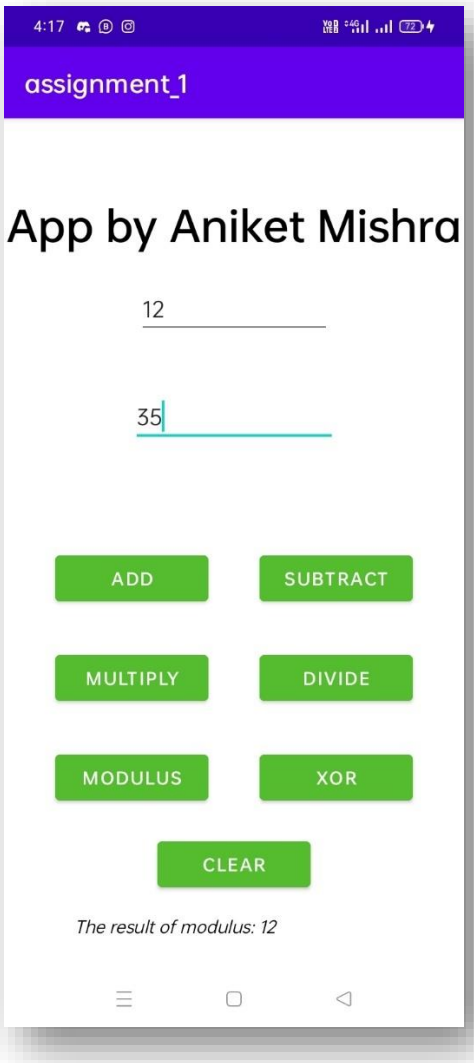
Subtraction



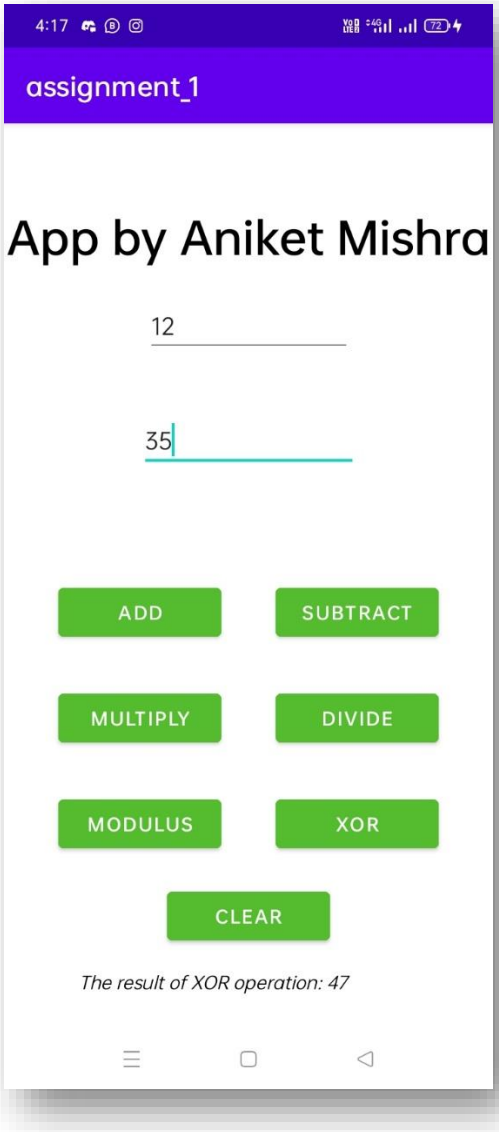
Multiplication



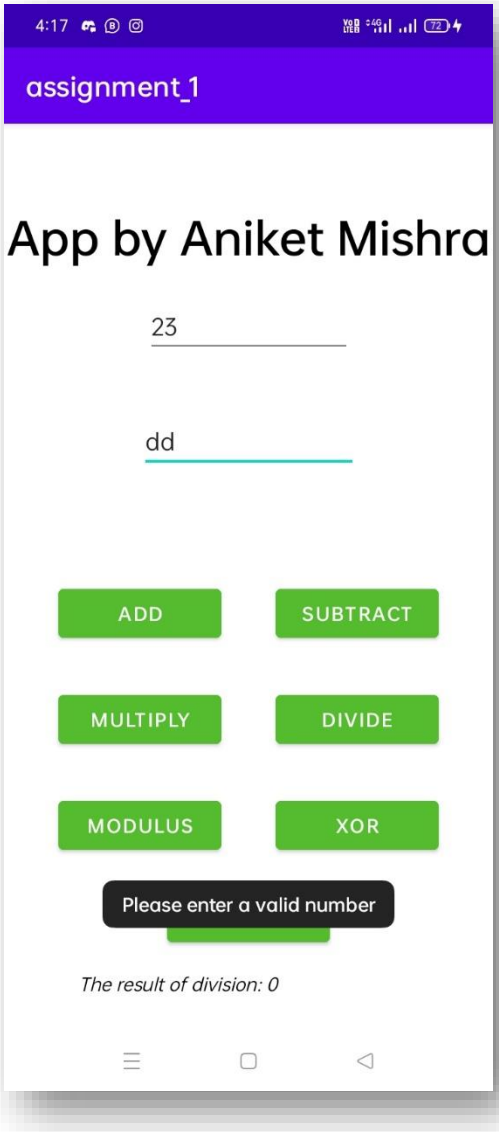
Division



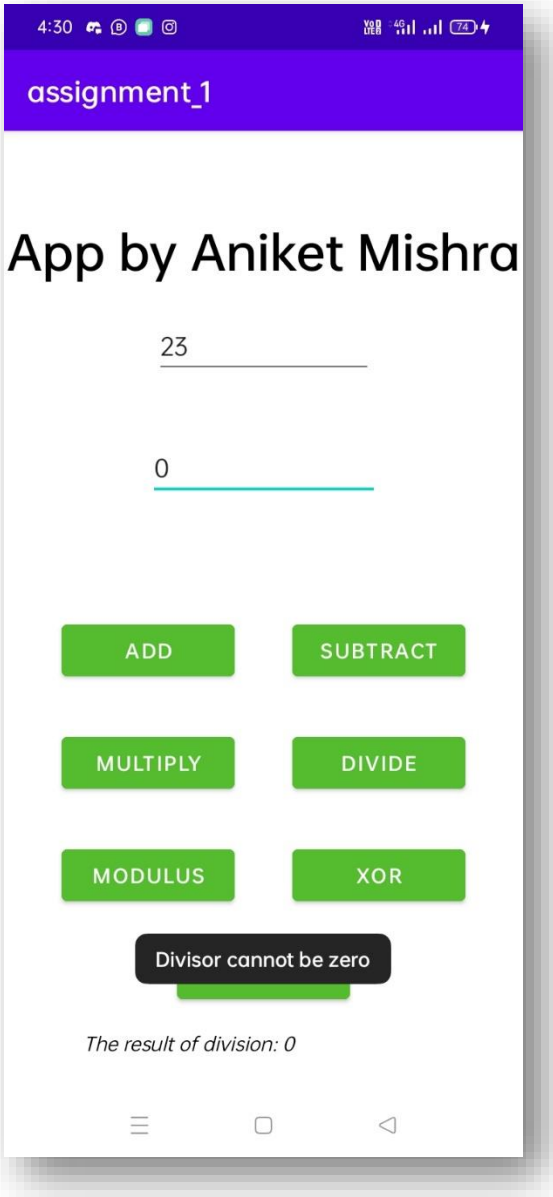
Modulus



^ operation



Edge case: Not a valid number



Edge case: Division by 0.