

PRACTICAL: 2

AIM:

Create an android application to calculate sum of two numbers and gives result in Toast Message.

THEORY:

About elements used:

EditText: A user interface element for entering and modifying text. When you define an edit text widget, you must specify the `R.styleable.TextView_inputType` attribute. For example, for plain text input set `inputType` to "text". Choosing the input type configures the keyboard type that is shown, acceptable characters, and appearance of the edit text.

Button: A user interface element the user can tap or click to perform an action. To specify an action when the button is pressed, set a click listener on the button object in the corresponding activity code.

About method used:

setOnClickListener(): `setOnClickListener` is a method in Android basically used with buttons, image buttons etc. While invoking this method a callback function will run. One can also create a class for more than one listener, so this can lead you to code reusability. After making the class you can implement `android.view.View.OnClickListener{ }` method which gives you an override method inherited from super class called `onClick(View v){ }` in which you can easily implement your code.

Toast.makeText(): This method takes three parameters: the application Context, the text message, and the duration for the toast. It returns a properly initialized Toast object. You can display the toast notification with `show()`. You may, however, want to position the toast differently or even use your own layout instead of a simple text message.

CODE:

```
activity_main.xml
<?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">

    <EditText
        android:id="@+id/editText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="116dp"
```

```
        android:ems="10"
        android:hint="Enter Number 1"
        android:inputType="numberSigned"
        app:layout_constraintBottom_toTopOf="@+id/editText2"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toEndOf="@+id/textView"
        app:layout_constraintTop_toTopOf="parent" />

<EditText
    android:id="@+id/editText2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginBottom="452dp"
    android:ems="10"
    android:hint="Enter Number 2"
    android:inputType="numberSigned"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toEndOf="@+id/textView2" />

<TextView
    android:id="@+id/textView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="28dp"
    android:layout_marginLeft="28dp"
    android:text="Number 1"
    app:layout_constraintBottom_toTopOf="@+id/textView2"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.768" />

<TextView
    android:id="@+id/textView2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="28dp"
    android:layout_marginLeft="28dp"
    android:layout_marginBottom="452dp"
    android:text="Number 2"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintStart_toStartOf="parent" />

<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="ADD"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.526"
```

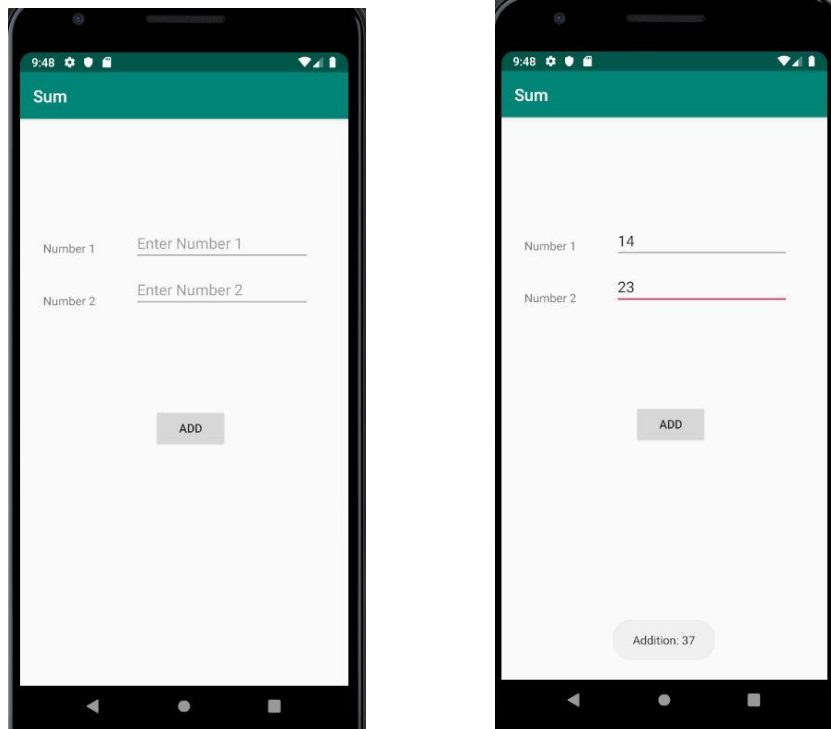
```
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/editText2"
app:layout_constraintVertical_bias="0.294" />
```

```
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```
package com.example.sum;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        final EditText editText1 = findViewById(R.id.editText);
        final EditText editText2 = findViewById(R.id.editText2);
        Button add = findViewById(R.id.button);
        add.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Toast.makeText(getApplicationContext(),"Addition: " +
                Integer.toString(Integer.parseInt(editText1.getText().toString())+Integer.parseInt(editText2.getText().toString()),Toast.LENGTH_SHORT).show();
            }
        });
    }
}
```

OUTPUT:

LATEST APPLICATIONS: Starring from basic calculators with just basic arithmetic application, to scientific calculators with all mathematical operations, calculators have now been used to calculate taxes according to latest amendments. That is how calculator android application has evolved.

LEARNING OUTCOME: Getting a toast message through `makeText()` method and deciding the time period of that toast. Also using `getApplicationContext()` to pass context to the method.