

## Exp No.5

**Rishab Mandal**

**Batch: C23**

**Code:**

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"
    android:padding="16dp"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerHorizontal="true"
        android:text="C23\nRishab Mandal\nRoll no: 2103110"
        android:textColor="@android:color/black"
        android:textSize="20sp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent" />

    <!-- Title -->
    <TextView
        android:id="@+id/textViewTitle"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="EMI Calculator"
        android:textSize="24sp"
        android:textStyle="bold"
        android:gravity="center"
        android:layout_marginBottom="180dp"/>

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/textViewTitle"
        android:orientation="vertical">

        <!-- Input fields -->
        <EditText
            android:id="@+id/editTextPrincipal"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:hint="Principal Amount"
            android:inputType="numberDecimal"
            android:padding="12dp"
            android:background="@drawable/edit_text_bg"
            android:textColor="@android:color/black"
            android:textSize="16sp"
```

```

        android:layout_marginBottom="16dp"/>

<EditText
    android:id="@+id/editTextInterestRate"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="Interest Rate (%)"
    android:inputType="numberDecimal"
    android:padding="12dp"
    android:background="@drawable/edit_text_bg"
    android:textColor="@android:color/black"
    android:textSize="16sp"
    android:layout_marginBottom="16dp"/>

<EditText
    android:id="@+id/editTextTenure"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="Loan Tenure (in months)"
    android:inputType="number"
    android:padding="12dp"
    android:background="@drawable/edit_text_bg"
    android:textColor="@android:color/black"
    android:textSize="16sp"
    android:layout_marginBottom="24dp"/>

<!-- Calculate button -->
<androidx.appcompat.widget.AppCompatButton
    android:id="@+id/buttonCalculate"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Calculate"
    android:textColor="@android:color/white"
    android:textSize="18sp"
    android:background="@drawable/button_bg"
    android:padding="16dp"
    android:layout_marginBottom="24dp"/>

<!-- Result -->
<TextView
    android:id="@+id/textViewResult"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:gravity="center"
    android:text="EMI: "
    android:textSize="20sp" />
</LinearLayout>

</RelativeLayout>

```

#### edit\_text\_bg.xml

```

<!-- edit_text_bg.xml -->
<shape xmlns:android="http://schemas.android.com/apk/res/android"
    android:shape="rectangle">
    <solid android:color="#F0F0F0"/> <!-- Background color -->
    <corners android:radius="8dp"/> <!-- Rounded corners -->
    <stroke
        android:width="1dp"

```

```

        android:color="#CCCCCC"/> <!-- Border color and width -->
</shape>

```

## button\_bg.xml

```

<!-- button_bg.xml -->
<shape xmlns:android="http://schemas.android.com/apk/res/android"
    android:shape="rectangle">
    <solid android:color="#007ACC"/> <!-- Button background color -->
    <corners android:radius="8dp"/> <!-- Rounded corners -->
</shape>

```

## MainActivity.java

```

package com.example.emicaluclator;

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);

        final EditText editTextPrincipal =
        findViewById(R.id.editTextPrincipal);
        final EditText editTextInterestRate =
        findViewById(R.id.editTextInterestRate);
        final EditText editTextTenure = findViewById(R.id.editTextTenure);
        Button buttonCalculate = findViewById(R.id.buttonCalculate);
        final TextView textViewResult = findViewById(R.id.textViewResult);

        buttonCalculate.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                double principal =
                Double.parseDouble(editTextPrincipal.getText().toString());
                double interestRate =
                Double.parseDouble(editTextInterestRate.getText().toString()) / 100 / 12;
                double tenure =
                Double.parseDouble(editTextTenure.getText().toString());

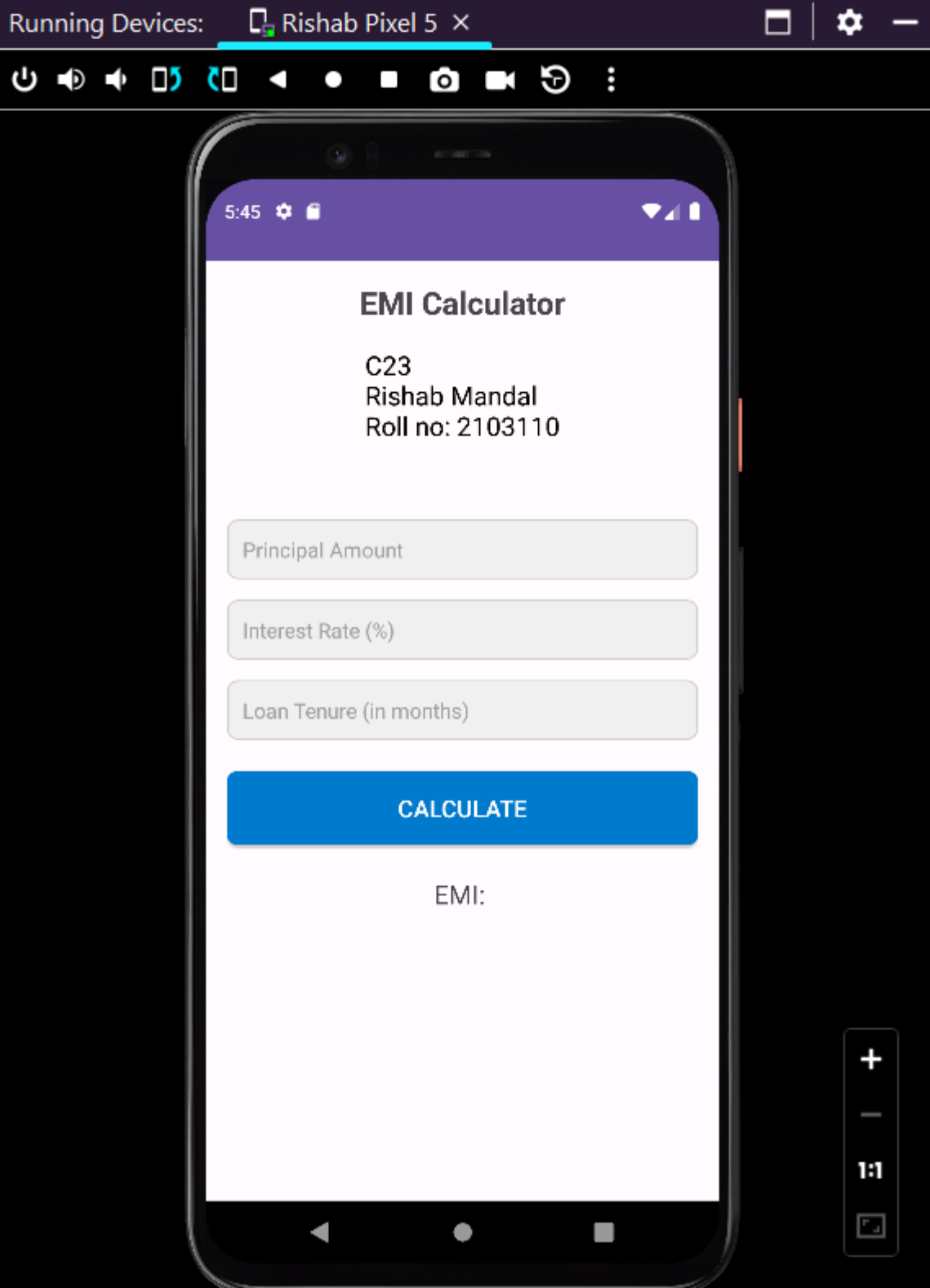
                double emi = calculateEMI(principal, interestRate, tenure);
                textViewResult.setText("EMI: " + emi);
            }
        });
    }

    private double calculateEMI(double principal, double interestRate,
    double tenure) {
        double base = 1 + interestRate;
        double power = (-tenure);
        double emi = principal * interestRate * (Math.pow(base, power)) /
        (1 - Math.pow(base, power));
    }
}

```

```
        return emi;  
    }  
}
```

**Output:**





5:45

EMI Calculator

C23  
Rishab Mandal  
Roll no: 2103110

100000

10

12

CALCULATE

EMI: ₹7958.255389667654

1	2	3	-
4	5	6	=
7	8	9	✕
,	0	.	→

