

VISVESVARAYA TECHNOLOGICAL UNIVERSITY
“Jnana Sangama”, Belagavi, Karnataka, India.



A Mini Project Report On

CAR EMI CALCULATOR

Submitted in partial fulfillment of the requirement for VI Semester

Mobile Application Development Laboratory[18CSMP68]

in

Computer Science and Engineering

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ABSTRACT

The Equated Monthly Instalment (EMI) consists of the principal portion of the loan amount and the Interest. Therefore, EMI = principal amount + interest paid on the Car Loan. The formula to calculate EMI is

$$E = P * (r (1 + r)^n) / ((1 + r)^n - 1)$$

where,

E = The EMI payable on the car loan amount

P = The Car loan Principal Amount

r = The interest rate value computed on a monthly basis

n = The loan tenure in the form of months

The down payment amount has to be deducted from the principal amount paid towards buying the Car.

Car EMI calculator is a great tool that provides you with the answer in a split second and enables you to understand how much will be your EMI outgo.

IMPLEMENTATION

Program 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:id="@+id/lblpayment"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#371228EF"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/textView"
        android:layout_width="198dp"
        android:layout_height="70dp"
        android:fontFamily="sans-serif-black"
        android:text="EMI CALCULATOR"
        android:textSize="26sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="@+id/textView3"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.896"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.591" />

    <TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="16dp"
        android:layout_marginTop="92dp"
        android:text="Principal Amount"
        android:textStyle="bold"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/textView" />
```

```
<EditText
    android:id="@+id/txt_principal"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="52dp"
    android:layout_marginTop="92dp"
    android:ems="10"
    android:inputType="textPersonName"
    app:layout_constraintStart_toEndOf="@+id/textView2"
    app:layout_constraintTop_toBottomOf="@+id/textView" />

<TextView
    android:id="@+id/textView3"
    android:layout_width="373dp"
    android:layout_height="143dp"
    android:layout_marginTop="20dp"
    android:background="#371228EF"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.421"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />

<TextView
    android:id="@+id/downpayment"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Down Payment"
    android:textStyle="bold"
    app:layout_constraintStart_toStartOf="@+id/textView2"
    app:layout_constraintTop_toTopOf="@+id/txt_downnpayment" />

<EditText
    android:id="@+id/txt_downnpayment"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="40dp" android:ems="10"
    android:inputType="textPersonName"
    app:layout_constraintStart_toStartOf="@+id/txt_principal"
    app:layout_constraintTop_toBottomOf="@+id/txt_principal"/>

<TextView
    android:id="@+id/textView4"
```

```
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Interest Rate"
        android:textStyle="bold"
        app:layout_constraintStart_toStartOf="@+id/downpayment"
        app:layout_constraintTop_toTopOf="@+id/txt_interestrate" />

<EditText
    android:id="@+id/txt_interestrate"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="40dp"
    android:ems="10"
    android:inputType="textPersonName"
    app:layout_constraintStart_toStartOf="@+id/txt_downnpayment"
    app:layout_constraintTop_toBottomOf="@+id/txt_downnpayment"/>

<TextView
    android:id="@+id/textView5"
    android:layout_width="130dp"
    android:layout_height="33dp"
    android:layout_marginTop="8dp"
    android:text="Loan Term(Months)"
    android:textStyle="bold"
    app:layout_constraintStart_toStartOf="@+id/textView4"
    app:layout_constraintTop_toTopOf="@+id/txt_termmonths" />

<EditText
    android:id="@+id/txt_termmonths"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="4dp"
    android:layout_marginTop="64dp"
    android:ems="10"
    android:inputType="textPersonName"
    app:layout_constraintStart_toStartOf="@+id/txt_interestrate"
    app:layout_constraintTop_toBottomOf="@+id/txt_interestrate" />

<Button
    android:id="@+id/btn_calculate"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="40dp"
```

```
        android:text="Calculate EMI"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/txt_termmonths" />

<TextView
    android:id="@+id/lbl_emiamount"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="12dp"
    android:text="EmiAmount"
    android:textColor="@color/black"
    android:textSize="16sp"
    android:textStyle="bold"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.498"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/btn_calculate" />

<ImageView
    android:id="@+id/imageView3"
    android:layout_width="147dp"
    android:layout_height="113dp"
    android:layout_marginStart="20dp"
    app:layout_constraintBottom_toTopOf="@+id/textView2"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.307"
    app:srcCompat="@drawable/car_loan_calculator" />

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

MainActivity.java

```
package com.example.emi;

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;
```

```
import java.text.DecimalFormat;
import java.util.logging.SimpleFormatter;

public class MainActivity extends AppCompatActivity implements
View.OnClickListener {

    EditText txtPrinicple,txtDownPayment,txtInterestRate,txtLoanTerm;
    Button btnCalculate; TextView lblResult;

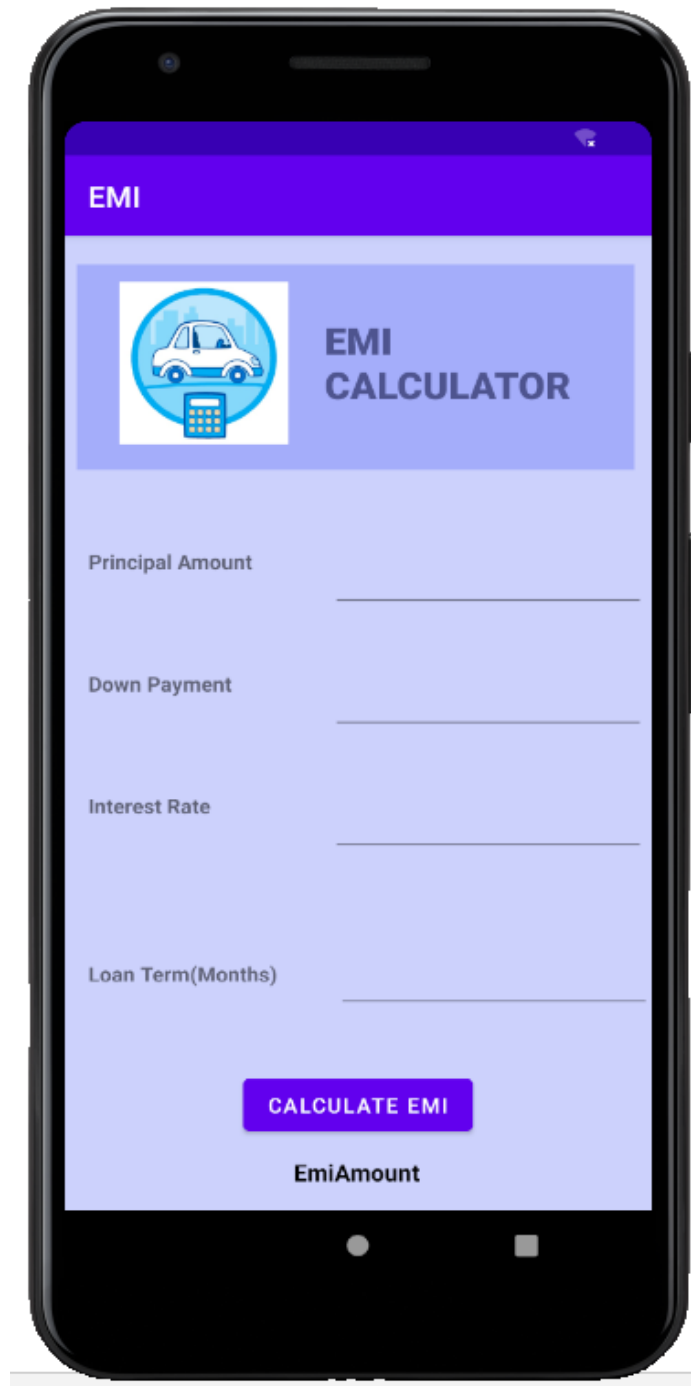
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        txtPrinicple=(EditText)findViewById(R.id.txt_principal);
        txtDownPayment=(EditText)findViewById(R.id.txt_downnpayment);
        txtInterestRate=(EditText)findViewById(R.id.txt_interestrates);
        txtLoanTerm=(EditText)findViewById(R.id.txt_termmonths);
        btnCalculate=(Button)findViewById(R.id.btn_calculate);
        btnCalculate.setOnClickListener(this);
        lblResult=(TextView)findViewById(R.id.lbl_emiamount);
    }
    public void onClick(View v) {

        try {
            DecimalFormat formatter=new DecimalFormat("#0.00");
            double prinicipleAmount= Double.parseDouble(txtPrinicple.
getText().toString());
            double
downPayment=Double.parseDouble(txtDownPayment.getText().toString());

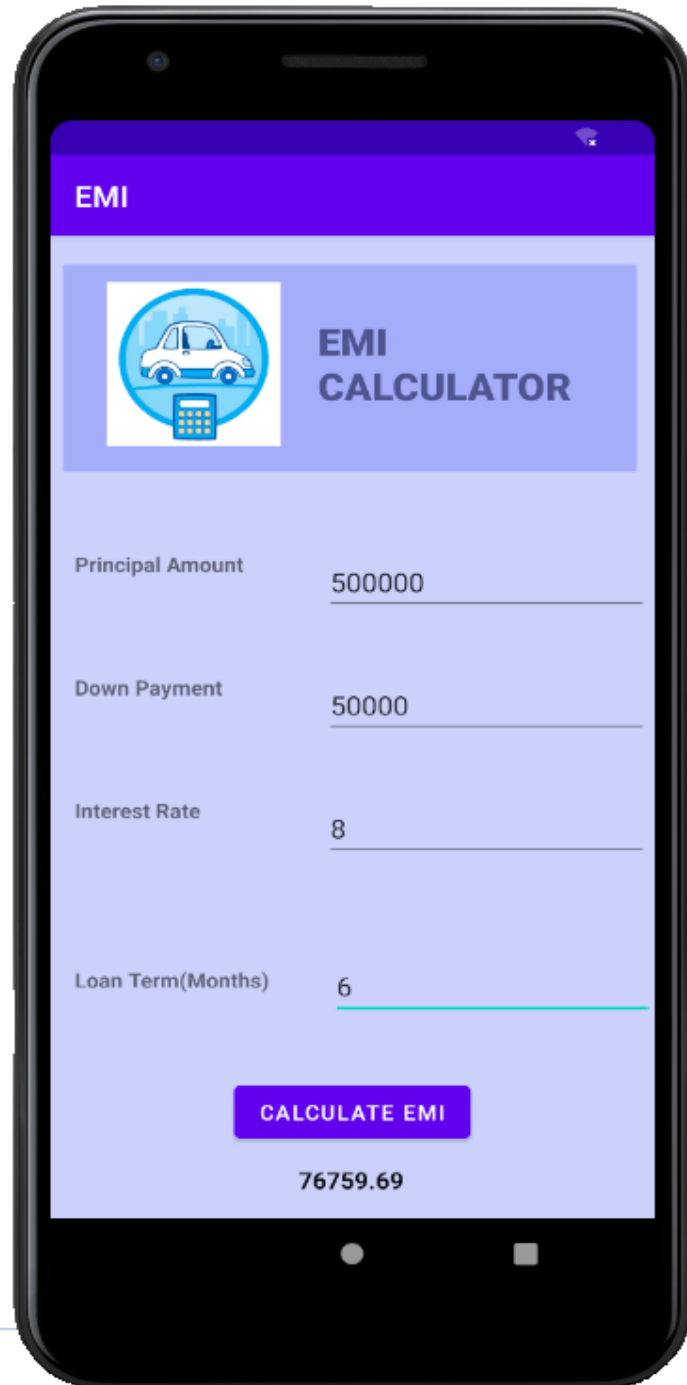
            prinicipleAmount=prinicipleAmount-downPayment;
            double
interestRate=Double.parseDouble(txtInterestRate.getText().toString());
            interestRate=interestRate/(12*100);
            double
loanTerm=Double.parseDouble(txtLoanTerm.getText().toString());
            double emi=prinicipleAmount*
(interestRate*Math.pow((1+interestRate),loanTerm))
/(Math.pow((1+interestRate),loanTerm)-1);
            lblResult.setText(String.valueOf(formatter.format(emi)));
        }
        catch(Exception e) {
            Toast.makeText(getApplicationContext(), "InvalidInput",
```

```
Toast.LENGTH_LONG).show();  
    }  
}  
}
```



RESULTS



Snapshot 1: Car EMI Calculator



EMI

 **EMI CALCULATOR**

Principal Amount

Down Payment

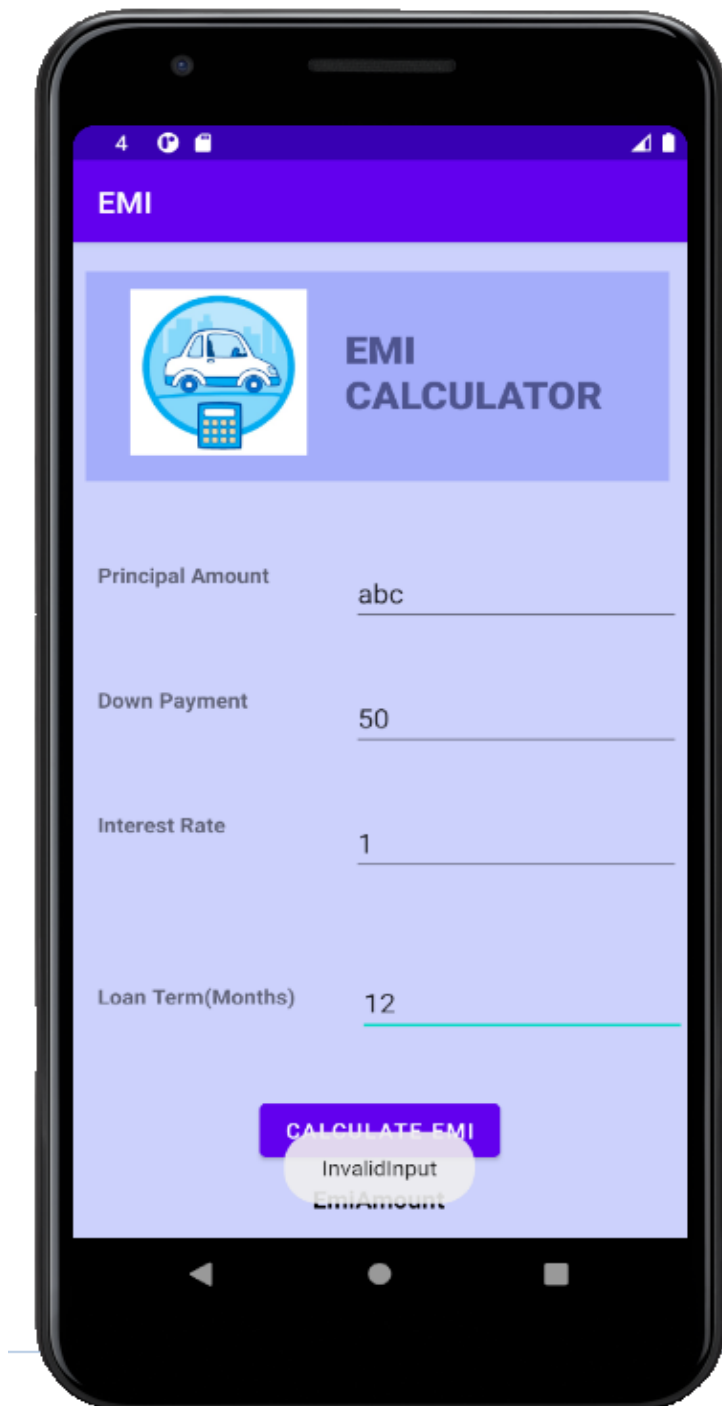
Interest Rate

Loan Term(Months)

CALCULATE EMI

76759.69

Snapshot 2: Valid Input



Snapshot 3: Invalid Input