

Loan EMI Calculator

A modern, lightweight Android application that calculates the Equated Monthly Installment (EMI) for loans. This project was built entirely using **100% Kotlin** and **Jetpack Compose** for a declarative, reactive UI.

Features

- Instant Calculation:** Computes accurate monthly EMI based on Principal, Interest Rate, and Tenure.
- Modern UI:** Built from scratch using Jetpack Compose and Material Design 3 guidelines.
- Input Validation:** Safely handles empty or invalid inputs to prevent app crashes.
- Dynamic State Management:** Uses Compose `remember` and `mutableStateOf` to update the UI in real-time.

The Math Behind It

The application uses the standard mathematical formula to calculate the Equated Monthly Installment:

$$E = P \times r \times \frac{(1+r)^n}{(1+r)^n - 1}$$

Where:

- E** = EMI (Equated Monthly Installment)
- P** = Principal Loan Amount
- r** = Monthly Interest Rate (Annual Rate / 12 / 100)
- n** = Loan Tenure in Months (Years * 12)

🛠️ Tech Stack

- Language:** [Kotlin](<https://kotlinlang.org/>)
- UI Toolkit:** [Jetpack Compose](<https://developer.android.com/jetpack/compose>)

* **IDE:** Android Studio

* **Minimum SDK:** API 24 (Android 7.0)

🚀 Getting Started

To test this application on your local machine, follow these steps:

1. **Clone the repository:**

```
``bash
```

```
git clone [https://github.com/YOUR_GITHUB_USERNAME/emi-calculator-  
android.git](https://github.com/YOUR_GITHUB_USERNAME/emi-calculator-android.git)
```