

Application Overview

Application Platform: Desktop

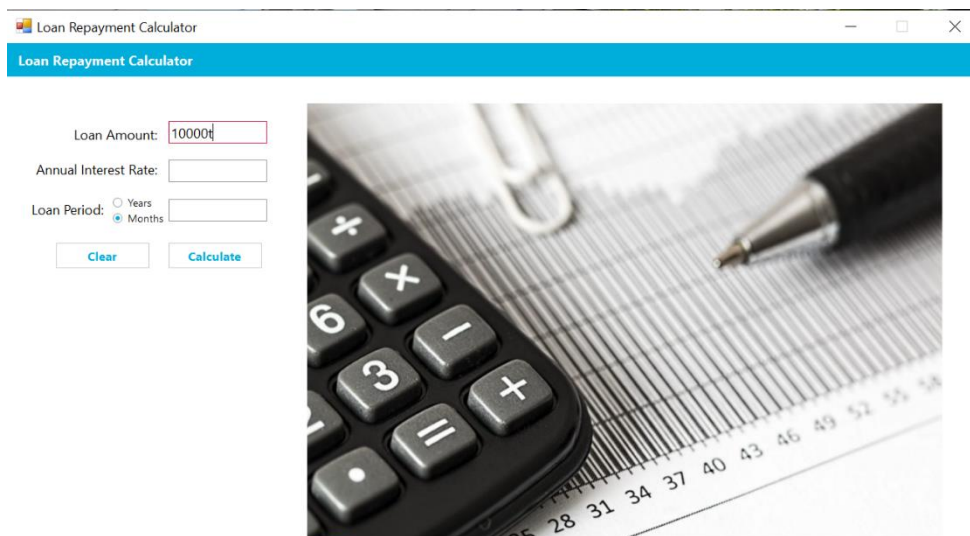
Language Used: Visual Basic

UI Framework: Metro UI Framework

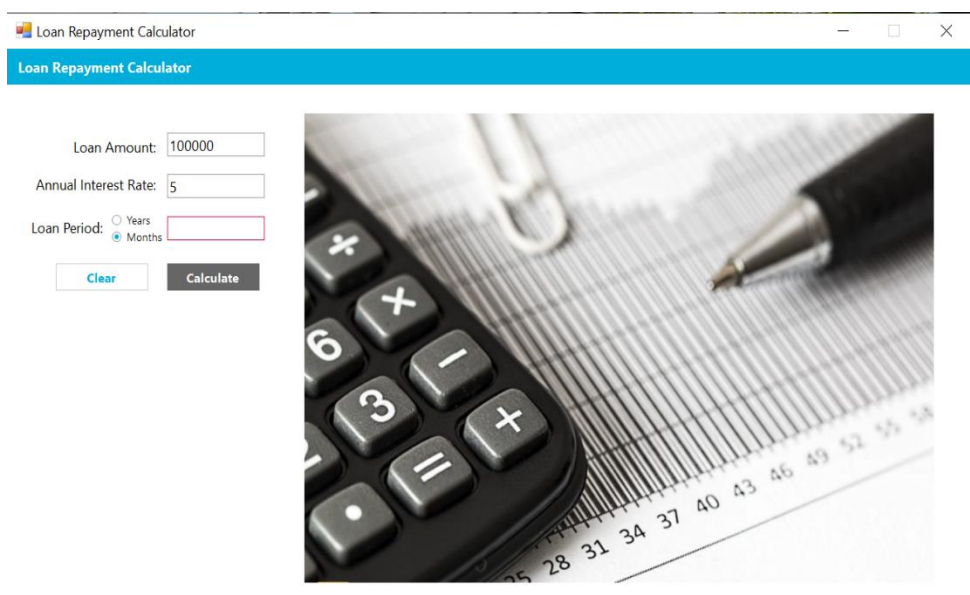
Application Design and Details

Input Validation

Loan Repayment Calculator has the input validation, which validates the inputs (Loan Amount, Annual Interest Rate and Loan Period (either Years or Months)) given by the users.



Input Validation validates the **format** of the input data (ex: All the values should be numbers) and also validates if the user has provided the given value (Ex: All Fields are Mandatory) throws the error on the particular error field.



Source Code Details

Algorithm:

1. Interest rate for each period is calculated from Annual Interest Rate.
2. Payment Amount is calculated using the Equal Payments method Formulae.
3. Considering the For Loop to get Payment Amount, Principal Amount, Interest Amount and Outstanding Balance for given number of periods.
4. Principal Amount is calculated from the Payment Amount (Equal Value)
5. Interest Amount is calculated by subtracting the Principal Amount from Payment Amount
6. Outstanding Balance is calculated by subtracting previous loan balance with the principal Amount.
7. Roundoff each value to the nearest two-digit value
8. Adding each payment detail to the data table which in further is represented in the UI.

```
'InterestRate for each period
InterestRate = InterestRate / 1200
```

```
'Calculate Equal Payment Value
PaymentAmount = (LoanAmount * InterestRate) / (1 - ((1 + InterestRate) ^ -LoanPeriod))
```

```
For i As Integer = 1 To LoanPeriod
```

```
    PrincipalAmount = PaymentAmount * ((1 + InterestRate) ^ -(1 + LoanPeriod - i))
```

```
    InterestAmount = PaymentAmount - PrincipalAmount
```

```
    LoanAmount = LoanAmount - PrincipalAmount
```

```
    'Round to nearest two digits
    RoundedPaymentAmount = Math.Round(PaymentAmount, 2)
    'Round to nearest two digits
    RoundedInterestAmount = Math.Round(InterestAmount, 2)
    'Round to nearest two digits
    RoundedPrincipalAmount = Math.Round(PrincipalAmount, 2)
    'Round to nearest two digits
    OutstandingAmount = Math.Round(LoanAmount, 2)
```

```
    'Add Each Payment to the loanScheduleData Table
```

```
    LoanScheduleData.Rows.Add(i, RoundedPaymentAmount, RoundedPrincipalAmount, RoundedInterestAmount, OutstandingAmount)
```

```
Next
```