EXPERIMENT 14

Title : Loan Calculator using Python

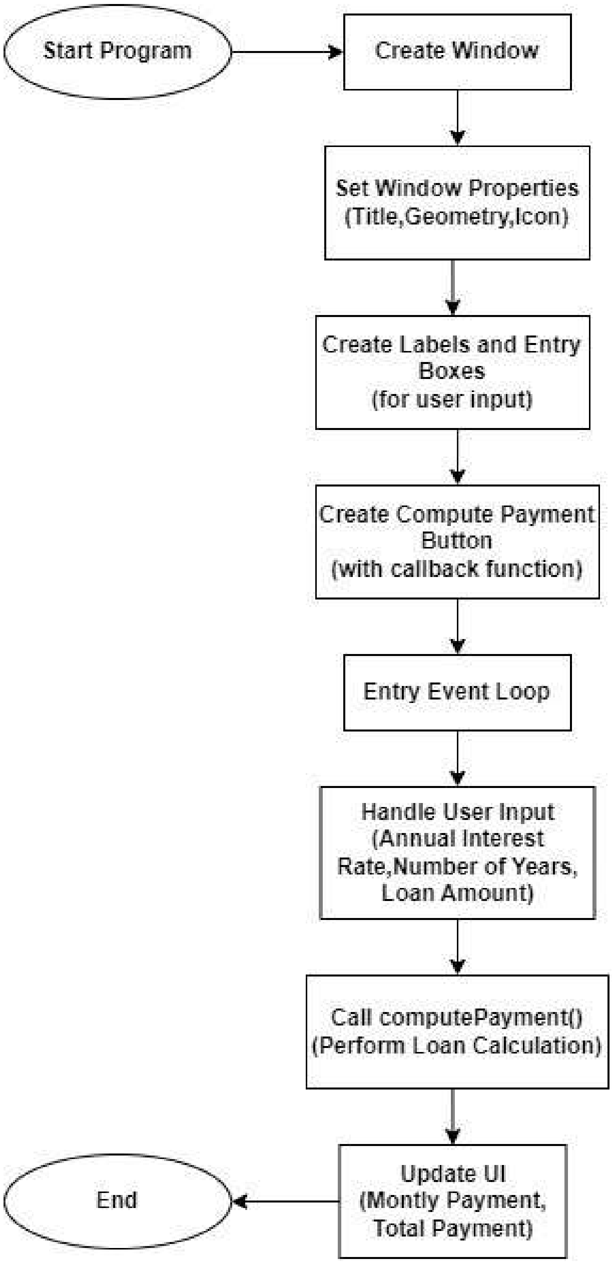
Description :

The Loan Calculator In Python is a simple project developed using Python. The project is for the user convenience, to help them find out about the monthly payments on a specific loan. This project is for financial calculation to figure out the loan's regular monthly payment, with total payment and the total interest. And the user has to pay those payments over the duration of the loan.

Program Flow :

- This code creates a GUI (Graphical User Interface) Loan Calculator using the Python tkinter library. The GUI consists of several labels, input boxes, and a button that allows the user to input the necessary values to calculate monthly payments and total payments.
- The code starts by importing the required libraries, including tkinter for the GUI, and PIL for image manipulation. It then creates a class called LoanCalculator that initializes the window with a title, dimensions, and background color. It also creates labels and input boxes for the user to enter the annual interest rate, number of years, and loan amount.
- The class then defines a computePayment() function to calculate the monthly payment and total payment based on the inputs provided by the user. It also defines a getMonthlyPayment() function to calculate the monthly payment based on the loan amount, monthly interest rate, and number of years.
- Finally, the code calls the LoanCalculator class to run the program, which creates an event loop and displays the Loan Calculator GUI.

Flowchart :

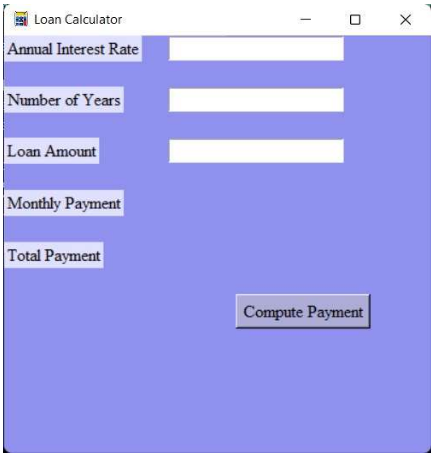


Start Program
Create Window
Set Window Properties (Title,Geometry,Icon)
Create Labels and Entry Boxes (for user input)
Create Compute Payment Button (with callback function)
Entry Event Loop
Handle User Input (Annual Interest Rate,Number of Years, Loan Amount)
Call computePayment() (Perform Loan Calculation)
Update UI (Montly Payment, Total Payment)
End

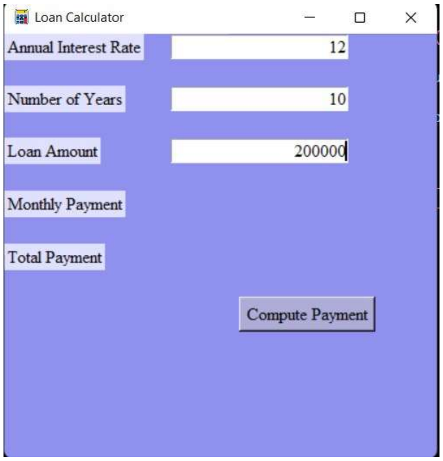
Project Link : https://github.com/PriyankaAmrute/PythonMP

Output :

1. GUI



2. Taking Inputs



Annual Interest Rate 12

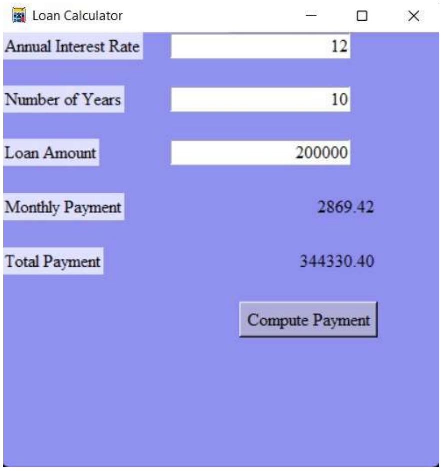
Number of Years 10

Loan Amount 200000

Monthly Payment

Total Payment

3. Computing payment



Annual Interest Rate 12

Number of Years 10

Loan Amount 200000

Monthly Payment 2869.42

Total Payment 344330.40

Conclusion :

In conclusion, the code creates a Loan Calculator GUI using the tkinter library in Python. It allows the user to input values such as the annual interest rate, number of years, and loan amount, and calculates the monthly payment and total payment based on these inputs. The program provides a user-friendly interface for calculating loan payments and could be useful for financial planning or other similar purposes.

Applications:

- Personal Finance: The loan calculator can be used by individuals to calculate and plan their monthly payments for loans such as home loans, car loans, personal loans, etc. It helps users to make informed financial decisions and manage their loan repayments effectively.
- Banking and Financial Institutions: Loan calculators are widely used in banks and financial institutions to provide quick and accurate loan calculations to their customers. It simplifies the loan application process and helps in assessing loan affordability.
- Real Estate and Mortgage Industry: Loan calculators are commonly used in the real estate and mortgage industry to estimate monthly mortgage payments for potential homebuyers. It helps in comparing different loan options and determining the best loan for a particular budget.

Future Scope:

- Enhanced User Interface: The loan calculator can be further improved by enhancing the user interface with more interactive elements such as sliders, drop-down menus, and charts for better visualization of loan repayment details.
- Additional Features: The program can be extended to include additional features such as support for different types of loans (e.g. fixed-rate loans, adjustable-rate loans), displaying an amortization schedule, and allowing users to save and retrieve loan calculations.
- Integration with APIs: The loan calculator can be integrated with external APIs to fetch real-time interest rates, loan terms, and other relevant financial data to provide more accurate and up-to-date loan calculations.
- Mobile App Development: The loan calculator can be developed as a mobile app for easy accessibility and convenience for users who prefer using mobile devices for financial planning and loan calculations.