Financial Calculator Program Report

WHAT THE PROGRAM DOES  
It helps you perform 4 common financial calculations:  
1. Loan EMI (monthly payments for loans)  
2. Compound Interest  
3. Future Value of Investments  
4. Retirement Savings Estimation  
It also shows pie charts to visualize how your money grows or is spent.

# Main Parts of the Program

## 1. Input Handling Functions

- get\_float() and get\_int() safely ask users for numbers.  
- They repeat the question until a valid number is entered (no letters, no negative numbers).

## 2. Financial Calculation Functions

#calculate\_emi():  
- Calculates your monthly loan payment (EMI).  
- Also gives the total interest paid and total payment over the loan period.  
  
# calculate\_compound\_interest():  
- Calculates how much your investment grows when interest is added multiple times a year.  
  
# calculate\_future\_value():  
- Calculates how much a lump-sum investment will be worth after a few years.  
  
# calculate\_retirement\_savings():  
- Estimates how much money you’ll save by putting aside a fixed monthly amount over several years.

# Formatting Results

format\_currency() displays money nicely, like ₹1,00,000.00 instead of 100000.0.

# Pie Charts

show\_pie\_chart() shows a simple pie chart to help you visualize:  
- How much is principal vs interest in loans.  
- How much is your own money vs gains from interest.  
It uses the matplotlib library.

# Main Menu (main() function)

Runs in a loop until you choose to exit.  
Displays a menu:  
1. Loan EMI  
2. Compound Interest  
3. Future Value  
4. Retirement Savings  
5. Exit  
Based on your choice, it asks for details, does the calculation, prints results, and shows a pie chart.

**Example**

If you select 1. Calculate Loan EMI, you might enter:  
- Loan: ₹5,00,000  
- Interest: 7.5%  
- Time: 10 years  
  
It will show:  
- Monthly EMI: ₹5,935.46  
- Total interest paid  
- Pie chart splitting principal vs interest

# Benefits

- Easy to use  
- Prevents mistakes  
- Visual output  
- Shows real-life results like how much interest you’re paying or earning