Banks are offering different kind of loan schemes such as home loan, vehicle loan, personal loan, and etc. The monthly payment changes with the scheme's period, interest rate, and the loan amount. Once those three factors are fixed, the monthly payment is calculated which is a combination of monthly interest and loan deduction. In general, the interest rate can be either fixed or varied during the loan period.

Monthly payment can be calculated as follows:
Number of periodic payments (n) - number of years times number of months per year.
Periodic interest rate (IR) - this can be calculated by dividing the annual interest rate by number of months per year.
Discount factor (D) = ([(1+IR)^n] - 1) / [IR ^ (1 + IR)^n]
Total monthly payment = Loan Amount / Discount Factor

Example:
Assume a LKR1,000,00.00 loan with fixed 12% annual interest rate is given for a period of 5 years. Then,
n - 12 ^ 5 - 60
IR = 0.12 / 12 = 0.01
D = ([(1+0.01)^60] - 1) / [0.01 ^ (1 + 0.01)^60] = **44.95**
Total monthly payment = 1,000,000/44.95 = **LKR 22,244.45** (this is fixed)
The customer has to pay LKR 22,244.45 each month. This includes monthly interest on remaining loan and loan deduction, which can be calculated for each month as follows.

Loan remains for first month - LKR1,000,000.00.
First month interest = LKR1,000,000«(12%/12) = LKR 10,000.00
Loan repaid in the first month = LKR 22,244.45 - 10,000 = LKR 12,244.45

Loan remains for second month = LKR (1,000,000 - 12,244.45)
Second month interest = LKR (1,000,000 - 12,244.45) x(12% / 12)
= LKR 9,877.55
Loan repaid in the second month- LKR 22,244.45 - 9,877.55 - LKR 12,366.89

Table 1 : Monthly repay calculation (currency in LKR)

Month	**Remaining Loan Amount**	**Interest**	Repaid loan amount
1	1,000,000.00	10,000.00	12,244.45
2	987,755.55	9,877.55	12,366.89
3	975,388.55	9,753.88	12,490.56
4			

Currency *values are* rounded to nearest 2"d decimal place.

An urban bank is offering loans with following features summarized in Table 2.

Table 2 : Loan details (currency in LKR)

Loan Name	**Customer's** Age (yrs)	**Monthly** income	**Max. Loan** Amount	**Max. Repay** period (in **months)**	**Annual** interest rate **(%) FIXED**
Vehicle	Between 18 to 55 years	Above 45,000	1,000,000.00	60	14
Housing	Between 25 to 55 years	Above 100,000	2,500,000.00	60	8
Education	Between 25 to 35 years	Above 45,000	1,500,000.00	284	6
Senior Citizen	Above 60	Above 35,000	500,000.00	60	4.5
Personal	Between 30 to 55 years	Above 100,000	2,000,000.00	60	14.5
			3,000,000.00	84	16.2

'Note:

Build a console C++* application for following *guidelines.

The application first request the banker to enter customer's details: Name, age, and monthly income.

- The name, maximum loan amount, maximum repay period allowed, and interest rate of each loan that the customer can apply should be displayed and asked to select one of them to proceed.
- Once a loan is selected, enter the amount of money that customer wishes to barrow and possible repay period. These values should not exceed the maximum values indicated in the above table.

  Then, display the monthly repay amount, total amount of money that customer pays and total amount of interest earned by the bank at the end of the loan period.
- Before go the next calculation or customer, print following details to a text file:
  - I. Name of the customer
  - II. Selected Loan
  - III. Maximum repay period allowed
  - IV. Annual Interest Rate
  - V. Requested loan amount and repay period.
  - VI. Table 1 with column headers
  - VII. Total amount of money paid by the customer at the end of the loan repay period.
  - VIII. The file should be saved with the customer's name (eg. If Mr. ABC Perera apply for a loan, then the text file should be saved as Mr_ABC_Perera.txt)