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The Ledger Co

Problem statement   Sample I/O   Badges and score

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📌 **Quick tips:**

• All input commands are to be read from a file, and output is to be printed to the console.

• Build a command line application with the location to the text file as parameter.

• No server, DB, UI or in-memory data store required.

• Avoid using third party libraries/frameworks for implementing core logic.

Next step:

Write the solution offline in an IDE and language of your choice. Upload your code when ready.

⤓ **Starter Kit**

Submit Code

You work at a startup called The Ledger Co., a marketplace for banks to lend money to borrowers and receive payments for the loans.

The interest for the loan is calculated by $I = P*N*R$ where P is the principal amount, N is the number of years and R is the rate of interest. The total amount to repay will be $A = P + I$

The amount should be paid back monthly in the form of EMIs. The borrowers can also pay a lump sum (that is, an amount more than their monthly EMI). In such a case, the lump sum will be deducted from the total amount (A) which can reduce the number of EMIs. This doesn't affect the EMI amount unless the remaining total amount is less than the EMI. All transactions happen through The Ledger Co.

Your program should take as input:

1. The bank name, borrower name, principal, interest and term.

2. Lump sum payments if any.

3. Given the bank name, borrower name, and EMI number, the program should print the total amount paid by the user (including the EMI number mentioned) and the remaining number of EMIs.

The output should be

1. Amount paid so far, and number of EMIs remaining for the user with the bank

You need to design a system to find out how much amount a user has paid the bank and how many EMIs are remaining.

Input Commands

There are 3 input commands defined to separate out the actions. Your input format will start with either of these commands i.e LOAN, PAYMENT, BALANCE

LOAN

The LOAN command receives a Bank name, Borrower name, Principal Amount, No of Years of Loan period and the Rate of Interest along with it.

Format - LOAN BANK_NAME BORROWER_NAME PRINCIPAL NO_OF_YEARS RATE_OF_INTEREST

Example- LOAN IDIDI Dale 10000 5 4 means a loan amount of 10000 is paid to Dale by IDIDI for a tenure of 5 years at 4% rate of interest.

PAYMENT

The PAYMENT command receives a Bank name, Borrower name, Lump sum amount and EMI number along with it. The EMI number indicates that the lump sum payment is done after that EMI.

Format - PAYMENT BANK_NAME BORROWER_NAME LUMP_SUM_AMOUNT EMI_NO

Example - PAYMENT MBI Dale 1000 5 means a lump sum payment of 1000 was done by Dale to MBI after 5 EMI payments.

BALANCE

The BALANCE command receives a Bank name, Borrower name and a EMI number along with it. It prints the total amount paid by the borrower, including all the Lump Sum amounts paid including that EMI number, and the no of EMIs remaining.

Input format - BALANCE BANK_NAME BORROWER_NAME EMI_NO

Example - BALANCE MBI Harry 12 means - print the amount paid including 12th EMI, and EMIs remaining for user Harry against the lender MBI.

Output format - BANK_NAME BORROWER_NAME AMOUNT_PAID NO_OF_EMIS_LEFT

Example - MBI Harry 1250 43

Assumptions

1. Repayments will be paid every month as EMIs until the total amount is recovered.

2. Lump sum amounts can be paid at any point of time before the end of tenure.

3. The EMI amount will be always ceiled to the nearest integer. For example 86.676767 can be ceiled to 87 and 100.10 to 101.

4. The no of EMIs should be ceiled to the nearest whole number. For example 23.79 will be ceiled to 24 and 23.1 will also be ceiled to 24.

5. If the last EMI is more than the remaining amount to pay, then it should be adjusted to match the amount remaining to pay. E.g. if the remaining amount to pay is 150 and your EMI is 160, t[..] the last EMI amount paid should be 150.

6. The total amount remaining at any EMI number should always include the EMIs paid and lump[..]

6. The total amount remaining at any EMI number should always include the EMIs paid and lump sum payments until that number. For example if there was a lump sum payment after EMI number 10, then the balance command for EMI number 10 should include the lump sum payment as well.

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