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Homework 1

Question

Develop a C++ program that will determine whether a department-store customer has exceeded the credit limit on a charge account. For each customer, the following facts are available:

  a) Account number (an integer)
  b) Balance at the beginning of the month
  c) Total of all items charged by this customer this month
  d) Total of all credits applied to this customer's account this month
  e) Allowed credit limit

The program should use a while statement to input each of these facts, calculate the new balance (= beginning balance + charges – credits) and determine whether the new balance exceeds the customer's credit limit. For those customers whose credit limit is exceeded, the program should display the customer's account number, credit limit, new balance and the message "Credit Limit Exceeded."

Github link

https://github.com/NgocNguyenGit/cpp-programming.git

Internal logic of the program
- Function:
  - Determine whether input is positive or not ONCE:
    - If the input less than zero
      Print "Input should not be negative."
      Print text according to the current value
      Read the value
  - Determine whether input is positive and different from -1 or not ONCE:
    - If the input less than zero and different from the sentinel
      Print "Account should be positive."
      Print text "Enter account number or -1 to quit: "
      Read the value
- Initialisation phase:
  - Initialise account number (an integer)
  - Initialise balance at the beginning of the month
  - Initialise total of all items charged by this customer this month
  - Initialise total of all credits applied to this customer's account this month
  - Initialise allowed credit limit
- Processing phase:
  - Prompt for input and read account number from user
  - Input the first account number (possibly the sentinel)

  - While the user has not yet entered the sentinel
    - Determine whether input is positive and different from -1 or not ONCE

- Prompt for beginning input and read from user: balance, charges, credit, credit limit
- Determine whether each above input is positive or not ONCE
- Add total of all items charged to balance and minus total of all credits
- Determine whether the new balance exceeds the customer's credit limit:
    - If the balance less and equal to the credit limit
            Print new balance
            Print "Credit limit didn't exceed."
    - Else
            Print account number
            Print credit limit
            Print new balance
            Print "Credit Limit Exceeded.
- Reset balance for the next customer
- Prompt for input and read next account number from user
- Termination phase:
    - Print "Terminating…"