

Labo 01B – Bureau de change

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Description: Program to simulate an ATM that calculates the currency change (Euro to CHF) and the handling fees of a debit. In the end the ATM prints a virtual ticket.

Constants:

HANDLING_FEE = 5 CHF

EXCHANGE_RATE = 1.024

Variables:

accountNr = 0

userName = ""

withdrawAmountEUR = 0

withdrawAmountCHF = 0

accountBalance = 1000

User Inputs:

accountNr

userName

withdrawAmountEUR

Pseudo-code:

Declare and initialize constant double HANDLING_FEE = 5.0;

Declare and initialize constant double EXCHANGE_RATE = 1.024;

Declare and initialize the constants to format the ticket (WIDTH_LEFT, WIDTH_RIGHT, WIDTH_FULL):

WIDTH_LEFT = 17

WIDTH_RIGHT = 8

$WIDTH_FULL = WIDTH_LEFT + WIDTH_RIGHT + 3$ (because " : ")

Declare and initialize variable integer accountNr = 0

User Input accountNr

Declare and initialize variable string userName = ""

User Input userName

Declare and initialize variable string accountBalance = 1000

Display the account balance in CHF (accountBalance)

Display the exchange rate CHF > EUR (EXCHANGE_RATE)

Display the handling fee (HANDLING_FEE)

Declare and initialize variable double withdrawAmountEUR

User Input withdrawAmountEUR

Declare and initialize variable double withdrawAmountCHF

$withdrawAmountCHF = withdrawAmountEUR / EXCHANGE_RATE$

$accountBalance -= withdrawAmountCHF - HANDLING_FEE$

Print the ticket in the given format:

Print "+" + "+" with width $WIDTH_FULL + 1$ (aligned to the right, filling character '-')

Print "|" + "|" with the width $WIDTH_FULL$ (aligned to the right)

Print "|" + userName with the width $WIDTH_FULL$ (aligned to the left) + "|"

Print "|" + accountNr with the width $WIDTH_FULL$ (aligned to the left) + "|"

Print "|" + "|" with the width $WIDTH_FULL$ (aligned to the right)

Print "|" + "Somme Euro" with the width $WIDTH_LEFT$ (aligned to the left) + " : " +
withdrawAmountEUR with the width $WIDTH_RIGHT$ (aligned to the right) + " |"

Print "|" + "1 CHF en Euro" with the width $WIDTH_LEFT$ (aligned to the left) + " : " +
EXCHANGE_RATE with the width $WIDTH_RIGHT$ (aligned to the right, precision 3 digits after
the ",") + " |"

Print "|" + "|" with the width $WIDTH_FULL$ (aligned to the right)

Print "|" + "Somme CHF" with the width WIDTH_LEFT (aligned to the left) + " : " + withdrawAmountCHF with the width WIDTH_RIGHT (aligned to the right) + " |"

Print "|" + "Frais" with the width WIDTH_LEFT (aligned to the left) + " : " + HANDLING_FEE with the width WIDTH_RIGHT (aligned to the right) + " |"

Print "|" + "|" with the width WIDTH_FULL (aligned to the right)

Print "|" + "Solde Compte" with the width WIDTH_LEFT (aligned to the left) + " : " + accountBalance with the width WIDTH_RIGHT (aligned to the right) + " |"

Print "|" + "|" with the width WIDTH_FULL (aligned to the right)

Print "+" + "+" with the width WIDTH_FULL + 1 (aligned to the right, filling character '-')