

Computer Programming

C20013

Programming Assignment #1 (Brief Version)

Brief:

You are to write a bank data-processing program.

Summary:

The First National Bank of Smitters-Lift has approximately 5,000 customers.

At the end of each day they batch-process the counter transactions that occurred during the business day.

Your assignment is to read the master data file of customers – which includes the opening balances – and apply the days transactions, writing out an updated master file with the new account balances.

Transactions which cannot be completed due to insufficient funds should be flagged.

The program should respond to parameters on the command line, specifically:

-b	Bad transaction file name	If omitted, print to STDOUT only, otherwise write transactions that cannot be carried out (insufficient funds) to this file
-f	Foreign exchange report file	If omitted, print to STDOUT only, otherwise output to this file.
-h	Help	Print a help message explaining usage syntax.
-i	Input file name	Required: Read the transaction data from this file.
-m	Master file name	Required: Name of master file to read from
-n	No print	No screen output
-o	Output to file name	If omitted, print to STDOUT only, otherwise output to this file.

Presentation:

Marks are awarded for attractive presentation both of the screen output and the source code.

Code indentation and commenting are **vital**. Programs without correct indentation and suitable commenting won't pass.

Sample Data

Account master file data looks like this:

Account Num, Balance, First, Family, Address..es, Phone, eMail

"64485564", "1193.1", "Marg", "Valido", "Logan Memorial Hospital", "7312 Solway St #737", "Yalding", "Kent",

"ME18 6EH", "01979-678356", "marg.valido@valido.co.uk"

"73208974", "3582.24", "Jamal", "Parrin", "Lighting Services Inc", "20 Jersey St", "Canal Ward", "Dunbartonshire",

"G22 6DT", "01230-796993", "jparrin@gmail.com"

"67944461", "4447.84", "Rodrigo", "Firenze", "Electron Beam Welding Inc", "47 Avondale Rd", "Forth Ward", "City of Edinburgh", "EH4 4QU", "01539-593585", "rfirenze@yahoo.com"

"89296322", "139058.07", "Louanne", "Bouthillette", "Air And Hydraulics Engrg Inc", "25 Liffey St", "Uttoxeter",

"Staffordshire", "ST14 8DB", "01270-921570", "lbouthillette@yahoo.com"

"79758118", "1852.68", "Laura", "Washburn", "Millis, Gregory B Md", "6 Dalkeith St #917", "Brick Kiln Ward",

"Derbyshire", "NG19 6RJ", "01968-426871", "loura_washburn@yahoo.com"
"88076812", "2851.83", "Davis", "Defreece", "Mincers", "56 Wilde St", "Heaton-with-Oxcliffe", "Lancashire", "LA3
3QL", "01700-698417", "davis@yahoo.com"
"59139539", "2575.22", "Dannette", "Mandrell", "Regional Glass Co", "7782 Sessions Rd", "Riverside Ward", "Tyne
and Wear", "NE28 0JJ", "01583-880803", "dmandrell@mandrell.co.uk"
"65184260", "4625.88", "Domenica", "Kutner", "Bilt Rite Steel Buck Corp", "1 Lambert St #288", "Colne",
"Lancashire", "BB8 8HN", "01330-985862", "domenica.kutner@yahoo.com"
"52705285", "4406.53", "Asha", "Deculus", "Sheehan, John A Esq", "1623 Mile End #1", "Warbreck Ward",
"Lancashire", "FY2 9RE", "01217-408185", "adeculus@hotmail.com"
"84254385", "3095.33", "Verla", "Vegerano", "Audio Visual Resource", "1 Wavertree Rd", "Wexham Lea Ward",
"Buckinghamshire", "SL2 5LG", "01251-504194", "verla@yahoo.com"

Transaction file data looks like this:

TRANS(56169822,49491688,1639.78)
WITHD(62077980,1974.43)
FEX(83821748,USD,1.62,430)
FEX(63493157,GBP,1.25,-120)
DD(89472274,VISA,277.29)
FEX(83999642,CAD,0.94,600)
DD(42383438,UPC,224.92)
DD(74388376,ESB,206.15)
DD(56235999,UPC,452.7)
TRANS(58866329,79275896,1971.32)
DD(53585328,TVL,282.45)
TRANS(66375945,68063506,1382.13)
DD(59447890,ESB,45.04)
TRANS(51304645,66327585,1361.71)
FEX(63347903,USD,1.62,-530)
WITHD(82852048,287.54)
DEP(83661981,906.36)
WITHD(41439940,729.21)
DD(45263610,UPC,440.89)
FEX(81755813,GBP,1.25,-780)
DD(88504679,BGAS,302.16)
DEP(68372908,4.49)

Explanation

Each transaction consists of a transaction type, followed by transaction details in brackets.

The first entry in brackets is the main account number. TRANS transactions show a second account number to TRANSfer to, and an amount.

WITHD is withdrawal, DD is Direct Debit, DEP is DEposit.

FEX is Foreign EXchange, of the currency indicated, at the rate given; the last value is the amount to convert and add/subtract from the main account.

Submission

Submission requirements will be notified separately.

Due Date:

2014-10-24, 12:45, Friday
(subject to on-line Calendar changes)