

	Department of Computer Engineering Faculty of Engineering University of Sri Jayewardenepura
Course	Programming Quest
Course Code	C02210
Deadline	On or before 23:55H on 28 th September 2021
Assignment Number	03
Total Marks	100
Objectives	<ul style="list-style-type: none"> ● Get familiar with the Programming Quest Continuous Assessment Process. ● Use file operations ● Use good coding practices.

General Instructions

- This is an individual assignment.
- This assignment should be completed using C++ programming language.
- Use the standard header files in the assignment.
- Do not use external libraries in this assignment.
- Submit all source code files (*.cpp) in a zip file. The zip file should be named in the yy_ENG_abc.zip format. (for example, if the index number is 19/ENG/777, the zip file name should be 19_ENG_777.zip.
- Late submission are accepted upto 72 hours from the original deadline but marks will be deducted.
- Submit the zip file to C02210 Programming Quest LMS page on or before the deadline mentioned above. If the LMS course page is not working, then the zip file can be emailed to randima@sjp.ac.lk.

Quest 03 - Book keeping

A urban development bank has used paper based records so far and decided to use an electronic record keeping system for convenience. The software developer is provided a sample balance sheet (balance.txt) where it represent the cash balance of all the customers and cash in the bank's vault. In addition, a transaction log sheet (transaction.txt) is provided, which keep all the transactions occurred in the accounts. However, monthly interest calculation and account keeping charges are not indicated in the transaction logs.

Develop a C++ console programme according to the following guidelines for the urban development bank:

First, read the balance.txt and create text file for each account under account number with opening balance as indicated in the balance.txt.

Second, perform the transactions on the accounts as indicated in the transaction.txt.

E. g. : If a customer deposit money, it should be indicated in both customer and bank vault account as well.

Thirdly, implement the following two operations on the accounts:

- If the balance is less than Rs 1000.00, a Rs10.00 charge will be added to the customer's account and add that charge to the bank vault at the end of each day.
- If the balance is negative, Rs50.00 will be charged from the customer's account as overdraft charge at the end of the day.
- A daily interest of 0.02% will be added to all the customers' accounts at the beginning of the day if the balance is positive. Round the interest value up to 2nd decimal place (eg. 0 to 0.005 rounded to .00 and 0.0051 to 0.0099 to 0.01) before adding it to account balance.

When the program starts, delete all the customer account files and rewrite them freshly.

The UI should give options to view bank vault balance and current balance of all the customer accounts.

User can enter the date and see the starting balance (before applying interest) and end of the day balance of any account.

Text file description:

Balance.txt

Each line contains the account number and balance of the account by 1-1-2021.

The account number is an integer and the balance is indicated up to two decimal places.

The account number and the balance is separated by a comma (,).

Transaction.txt

Each line contains the date(in yyyymmdd format), customer's account number, transaction type, and transaction amount (up to two decimal places), and they are separated by a comma (,). It contains transactions taken place from 1st to 11th January 2021.

Transaction types

1-deposit

2-withdraw

Account.txt <created by the programme for each account>

These accounts should indicate these details

Date

Transaction type

0-opening balance

1-deposit

2-withdraw
3-interest added
4-charges for lower/negative balance
Transaction amount
Balance

BankAccount.txt

Following details should be included.

Total amount of money in the bank at the beginning of the year.

Indicate all the transactions with following details:

Date
Transaction type
0-opening balance
1-deposit
2-withdraw
3-interest paid
4-charges for lower/negative balance
Transaction amount
Balance

No need to add a file header for account.txt files.

Columns are separated by a comma (,)