In the name of Allah

Advanced Programming

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Hw1

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Fall 2022

Repository on github : https:/github.com/TheChitman/Fall2022_Ap_Hw1

Report of hw 1:

First of All : the headers file(Book_inventory.h & Regression.h) has just some 1-line declaration of functions , … . These 5 files has been changed :

1.Renamer.sh

2.book_inventory.h 3.book_inventory.cpp

4.regression.h 5.regression.cpp

Question1. In first question to change name I try some of main syntax in bash script :

- We get filename with => ls
- We can change name with => mv $firstname $secondname
- We can copy and change name with => cp $firstname $secondname
- We need a loop for iterating in file names to do that we need => for do done
- We need a if statement for considering optional condition to do that we can do :

```
If [condition] then
    Something
Elif [condition] then
    Something
Fi
```

- Note : for ignoring “.” And “..” in ls output we should put another if to ignor them

**question1_1 :

Ans : #!/bin/bash is for setting bash terminal be used for running the file maybe if not mention this it uses other terminal for running program.

**question1_2 :

Ans : we should add our bash script path to our PATH variable that means its path saved in main path variables that always should be run and it is define in all scripts for that we should use (export) I think.

Question 2. In this question we try to manage a book inventory:

Main syntax used is some function and vector and vector of structure it works properly

- In read_database function it use a >Try-Catch and If-Else< structure for getting runtime error for wrong filename input (and also for regression read_database)
- I used getline for reading book.txt or fish.txt and after that use a delimeter of " , " to split up the strings and STOD for converting it to double and at last pushing back them maybe with a for to a vector.
- For order function I think we should use with reference to able changing count of books

**question2_1 : configure_file in cmake let us use file(read or write) and line 21 means that we can use inventory.txt for read only mode (to not changing its value by mistake or …) also it needs a path to file.

- The Books recipt look like this :

Question3. In this question we try to make a linear regression:

Main syntax is working with vectors and so on …

- It is some formula that the reach to the goal for linear regression

At end : all sample test runs currectly and some output come in below :

Maybe the last question is a bit slow for not being optimum.

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```
[       OK ] HW1Test.TEST10 (1 ms)
[ RUN      ] HW1Test.TEST11
*************************************************************************************
>>           title           ||         isbn         ||         price        <<
-------------------------------------------------------------------------------------
>>    Rising from the Pl...    ||       374520658      ||         4.23         <<
>>                 Heidi...    ||       753454947      ||         3.99         <<
>>    Giving Good Weight...    ||       374516006      ||         4.23         <<
>>    The Lord of the Ri...    ||       618212906      ||         4.59         <<
>>    Neither Here nor T...    ||       380713802      ||         3.86         <<
-------------------------------------------------------------------------------------
>>                                    Total Price       =>         20.9         <<
*************************************************************************************
[       OK ] HW1Test.TEST11 (1 ms)
[ RUN      ] HW1Test.TEST12
[       OK ] HW1Test.TEST12 (3 ms)
[ RUN      ] HW1Test.TEST13
[       OK ] HW1Test.TEST13 (0 ms)
[ RUN      ] HW1Test.TEST14
[       OK ] HW1Test.TEST14 (1 ms)
[ RUN      ] HW1Test.TEST15
[       OK ] HW1Test.TEST15 (0 ms)
[ RUN      ] HW1Test.TEST16
[       OK ] HW1Test.TEST16 (0 ms)
[ RUN      ] HW1Test.TEST17
[       OK ] HW1Test.TEST17 (4 ms)
[ RUN      ] HW1Test.TEST18
9991  ->  cost:  2.14798      - reduced cost:0.000157469
9992  ->  cost:  2.14782      - reduced cost:0.000157397
9993  ->  cost:  2.14766      - reduced cost:0.000157326
9994  ->  cost:  2.1475      - reduced cost:0.000157255
9995  ->  cost:  2.14735      - reduced cost:0.000157183
9996  ->  cost:  2.14719      - reduced cost:0.000157112
9997  ->  cost:  2.14703      - reduced cost:0.000157041
9998  ->  cost:  2.14687      - reduced cost:0.000156969
9999  ->  cost:  2.14672      - reduced cost:0.000156898
10000  ->  cost:  2.14656      - reduced cost:0.000156827
[       OK ] HW1Test.TEST18 (1886 ms)
[----------] 18 tests from HW1Test (1918 ms total)

[----------] Global test environment tear-down
[==========] 18 tests from 1 test suite ran. (1918 ms total)
[  PASSED  ] 18 tests.
<<<SUCCESS>>>
amirch@AmirCh-:/mnt/c/AmirCh/AP/AP1401-1-HW1-main/build$
```

```
amirch@AmirCh-:/mnt/c/AmirCh/AP/AP1401-1-HW1-main/bash$ ./renamer.sh files -c
name: file1.txt  type: .txt   -> copy&change name to: 2022-10-26_file1.txt
name: file2.txt  type: .txt   -> copy&change name to: 2022-10-26_file2.txt
name: file3.txt  type: .txt   -> copy&change name to: 2022-10-26_file3.txt
name: file4.txt  type: .txt   -> copy&change name to: 2022-10-26_file4.txt
name: file5.csv  type: .csv   -> copy&change name to: 2022-10-26_file5.csv
name: file6.csv  type: .csv   -> copy&change name to: 2022-10-26_file6.csv
name: file7.pdf  type: .pdf   -> copy&change name to: 2022-10-26_file7.pdf
name: file8.api  type: .api   -> copy&change name to: 2022-10-26_file8.api
name: file9.plist  type: .plist   -> copy&change name to: 2022-10-26_file9.plist
```