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BESE – 8B

DSA Assignment - TASK 1

Limitations:

* The program is currently hardcoded to the sample-gradebook. For tuning it to take command line arguments, remove comment tag from line 31
* Program is currently tuned to the format of sample file. That is:
  + q1, a1, a2, a3, q2, q3 sequence
  + Total 30 marks for quiz and 30 for assignment hardcoded in line 41
  + Total marks for oht 50 each and ese 100 on line 41
* Maximum student number is set to 100 in line 20.

Logic:

* Libraries: Program use 4 library files
  + Iostream – Standard I/O library
  + String – for std::string and it’s methods
  + Fstream – for reading and writing csv files
  + Algorithm – For sort function
* Struct:
  + Program declares a struct on line 10 named “Student”. It groups all the values that are in a particular row representing a student in input csv file
* File Reading
  + Line 44-45 reads and ignores the header rows of csv file
  + Line 47-73 read cells and store then in struct variables
  + Line 75-79 calculate the aggregate marks for each student by the formula given in the instructions
  + n is the counter of how many valid rows we have encountered.
* Sorting
  + The struct array is then sorted in descending order with respect to the aggregate.
* Writing
  + The program them pass the upper and lower bounds of each grade along with the grade to the writing method which writes them into a new csv file.
* Custom Methods – The program uses 3 custom defined functions
  + s2i – Converts string to double. Basically do the same as std::stod but returns zero if encountered with a blank string
  + aggSort – Help the std::sort in sorting the struct with respect to aggregate.
  + writeToFile
    - Slice the name of input file to add the “-grade” in it.
    - Create a file with output file name
    - Create a header row (line 135)
    - Write the data of student’s row by row (line 136-138)

Grading criteria:

* Grade - Percentile
* A – 90
* B+ – 70
* B – 45
* C+ – 35
* C – 30
* D+ – 20
* D – 12
* F - <12