Class: CMSC140

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Project 6A

Section 1: A small market maintains an inventory of exactly 20 items. You will read these items from a file (minimart.txt.) Each item named will have an associated cost and a character code to indicate whether or not it is taxable. You will place your online order. A file will contain your "printed" receipt with the total amount of your order.

PROJECT DESIGN/ALGORITHM/PSEUDO CODE:

* Create ifstream and ofstream variables
* Main
  + Create string array1, double array2, string array3
  + Call readInventory
  + If readInventory returned 0
    - Call processOrder(3 arrays)
  + Else
    - Print file not found
* readInventory function (3 parallel arrays)
  + Try to open the file:
    - For all lines in the file
      * First word goes in array1
      * Second word goes in array2
      * Third word goes in array3
    - Return 0
  + File not found
    - Return -1
* processOrder function (the 3 arrays)
  + Make double tax and double total
  + Make taxable and notTaxable arrays
  + while(id item isn’t -1)
    - Read in item code
    - Call validateItem(itemCode)
    - If -1 then stop reading
    - If valid
      * Find the related item’s tax code
      * If taxable put in taxable array
      * If not taxable put in not taxable array
    - If invalid then ignore
  + When input is finished, total the taxable items and find the tax from that
  + Add the rest of the prices to that and store in total
  + Print out tax, total
  + Print out the receipt
    - Call printReceipt(total, tax, taxable, notTaxable)
  + Print out the thank you
* validateItem(int code)
  + If code is not between 1 and 20, return false else return true
* printReceipt(taxable, notTaxable, tax, total)
  + For all items in notTaxable
    - Print corresponding name and cost
  + For all items in taxable
    - Print corresponding name and cost and “taxable”
  + Print tax and total
  + Print thank you

Read the inventory: Prompt for and get the input file name, open the file, read the items from the file, and store them into the three parallel arrays. The three arrays will be passed as parameters. (NO GLOBAL VARIABLES) Assume that the file contains exactly 20 lines of input and is constructed correctly. Return 0 to the calling function if the file opens, -1 if the file is not found. If the file is not found, do NOT process the grocery order or attempt to write to the output file.

Process the grocery order: Assume the user will choose no more than 20 non-taxable items and 20 taxable items. The user enters the code for the item. Validate the item code. Determine from the tax code of ‘N’ or ‘T’ whether to place the item in the non-taxable array(s) or the taxable array(s). Output the amount of the tax and the total amount due for the order. All items used in this function should be passed as parameters. Your last line from this function should be “Thank you for your online order.”

Calculate and return the total of array elements. The array and the number of elements in the array should be parameters. This function should be called at least two times.

Validate the input item code using a Boolean function (return true or false) from this function.

Write the "printed receipt" to the output file: Prompt for and get the output file name, open the file, and output the items, non-taxable items first with the cost of each, then the taxable items with the cost of each and “taxable” in the same line. Print the total amount of the tax, and the total amount due for the order. Your last line should be "Thank you for your on-line order." Your parameters should include all items needed for your “printed receipt.”