SNHU University

Analysis and Design 2024

CS300 Module Two Assignment

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**Code Reflection:**

Purpose of code: The 2-3 Assignment: Vector Sorting aims to implement and compare two sorting algorithms, selection sort and quicksort, for sorting a vector of bids obtained from a CSV file. This assignment was created to demonstrate my understanding and implementation of sorting algorithms in C++. Here are the main points of the assignment: Reading bid data from CSV files. Implementing selection sort and quicksort algorithms to sort bids according to the title field. Timing the execution of sorting algorithms to assess their performance. This project is intended to assist me comprehend the efficiency and practical use of various sorting algorithms.

I had several challenges with accomplishing this project, mostly writing the correct code to create the selection and quicksort. Lot of trial and error. I researched how each item was sorted about how each method sorted each item. I went through my mini library of books pertaining to C++ to get a better understanding of how to code each method then it was just put into practice until I got the desired results. Coding is not my strong suite. I took each challenge that I was faced with one at a time, so I would not get completely overwhelmed. After this assignment, I have learned that I need to practice my coding skills more often so that I will have a better understanding in the future. The largest help for me was testing and debugging my code constantly.

**Pseudocode:**

* Start Program
* Execute Print User Menu
* 1. Load Bids
* 2. Display All Bida
* 3. Selection Sort All Bids
* 4. Quick Sort All Bids
* 9. Exit
* While input is not 9 or equal to, continue
* Get and store User input from menu

Option 1 (Load Bids)

* Set variable ticks equal to clock () method. Store starting clock tick.
* Initialize .csv file

1. Parse .csv file and store data within bid object
2. Define vector to store all bids
3. Return Bids

* Print size of bids
* Calculate time elapsed = Clock () – ticks
* Output time

Option 2 (Display All Bids)

* Loop Bids Vector
* Output Bids
* Insert Break

Option 3 (Selection Sort All Bids)

* Set variable ticks equal to clock () method. Store starting clock tick.
* Use the selection sorting method and supply the vector bids as an input.
* Calculate time elapsed = Clock () – ticks
* Output elapsed time
* Insert Break

Option 4 (Quick Sort All Bids)

* Set variable ticks equal to clock () method. Store starting clock tick.
* Use the quick sort method and supply the vector bids as an input, starting and ending (bid size -1)
* Calculate time elapsed = Clock () – ticks
* Output elapsed time
* Insert Break
* Else
* Output “Goodbye”
* Return 0
* End Program