2-3 Assignment: Vector Sorting

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CS-300

**Code Reflection**

This code loads bid data from a .csv file into a vector and uses multiple sorting methods to organize the bids from smallest to largest. This program is necessary because the number of bids can go into the thousands and sorting this amount of data manually would be impractical. A couple of methods are used to sort the code. The partition method finds the middle element as the pivot element. It then increments the index lower than the pivot and decrements the index higher than the pivot. The sortSelection method is slower because it iterates through every element in the vector, but it is also more precise. While going through the vector it assigns the minimum bid if its less than the current minimum.

**Pseudocode**

**FIXME (1a): Implement the selection sort logic over bid.title**

Min value equals 0

FOR position equals 0, position is less than bids size, increment position

Min equals position

FOR i equals position plus 1, j less than bids size increment i

IF bids at i take title and compare it bids at the min title if all is less than 0

Min equals i

IF Min not the position

SWAP bids at position for bids at Min

**FIXME (1b): Invoke the selection sort and report timing results**

selectionSort(bids)

Print number of ticks

Print number of ticks per second

**FIXME (2a): Implement the quick sort logic over bid.title**

Min equals begin of array

Max equals end of array

pivot equals begin + (end – begin) / 2

BOOL done equals false

WHILE not done

WHILE bids title is low compare it to the pivot title and, if its less than 0 increment Min

element

WHILE bids title is the pivot point title compare it to the bids high title, < than 0

decrement high element

IF low is greater than or equal to Max done equals to true

ELSE

SWAP Min bids title with bids Max title

increment Min

decrement Max

RETURN Max element

**FIXME (2b): Invoke the quick sort and report timing results**

quickSort(bids, 0, bids.size() - 1)

Print number of ticks

Print number of ticks per second