1. Consider the following piece of incomplete pseudocode: **1 point**

$$\textbf{function } \text{Shift}(vector, i, j)$$
$$\quad \textbf{if } i \leq j \textbf{ then}$$
$$\quad\quad \textbf{return } vector$$
$$\quad \textbf{end if}$$
$$\quad store \leftarrow vector[i]$$
$$\quad \textbf{for } 0 \leq k \leq (i - j - 1) \textbf{ do}$$
$$\quad\quad \boxed{\text{MISSING}}$$
$$\quad \textbf{end for}$$
$$\quad vector[j] \leftarrow store$$
$$\quad \textbf{return } vector$$
$$\textbf{end function}$$

This pseudocode, when completed, is supposed to implement the Shift function. What should go in the place of **MISSING**?

○ $vector[i - k] \leftarrow vector[i - k - 1]$

○ $vector[i - k - 1] \leftarrow vector[i - k]$

2. Consider the following piece of incomplete pseudocode: **1 point**

$$\textbf{function } \text{InsertionSort}(vector)$$
$$\quad \textbf{for } 2 \leq i \leq \text{LENGTH}(vector) \textbf{ do}$$
$$\quad\quad j \leftarrow i$$
$$\quad\quad \textbf{while } \boxed{\text{MISSING}} \wedge (j > 1) \textbf{ do}$$
$$\quad\quad\quad j \leftarrow j - 1$$
$$\quad\quad \textbf{end while}$$
$$\quad\quad \text{Shift}(vector, i, j)$$
$$\quad \textbf{end for}$$
$$\quad \textbf{return } vector$$
$$\textbf{end function}$$

This pseudocode, when completed, is supposed to implement to Insertion Sort algorithm. What should go in the place of **MISSING**?

○ (vector[j] > vector[j-1])

○ (vector[j-1] > vector[i])

○ (vector[j-1] > vector[j])

○ (vector[i] > vector[j-1])

3. Consider the following piece of pseudocode: 1 point

$$\textbf{function } \text{InsertionSort}(vector)$$
$$\textbf{for } 2 \leq i \leq \text{LENGTH}(vector) \textbf{ do}$$
$$j \leftarrow i$$
$$\textbf{while } (vector[j-1] > vector[j]) \wedge (j > 1) \textbf{ do}$$
$$\text{Swap}(vector, j, j-1)$$
$$j \leftarrow j-1$$
$$\textbf{end while}$$
$$\textbf{end for}$$
$$\textbf{return } vector$$
$$\textbf{end function}$$

This utilises the Swap function that will swap the values at j and j-1 in a vector. The claim is that this function will implement the Insertion sort algorithm. Is this true or false?

○ False

○ True

4. Why does the Insertion Sort work?   1 point

○ Because all elements are compared with each other

○ Because all smaller sub-vectors from left to right will be sorted

○ It only works for vectors that are mostly sorted

5. Consider the following sequence of vectors, where each vector is on a separate line: 1 point

4	2	1	5	3
2	4	1	5	3
1	2	3	4	5

In each line we should have the vector after the values have been shifted according to the Insertion Sort algorithm. What values should go in the third line?

○

1	2	3	4	5

1	2	3	4	5

○
1	2	4	5	3

○
2	1	4	5	3

Coursera Honor Code Learn more ↗

☐ I, **TODOR SIMEONOV**, understand that submitting work that isn't my own may result in permanent failure of this course or deactivation of my Coursera account.*

You must select the checkbox in order to submit the assignment

Submit   Save draft

Last saved on Feb 15, 7:10 PM CET

👍 Like   👎 Dislike   🏳 Report an issue