Sorting

Quiz, 4 questions

4/4 points (100%)

✔ **Congratulations! You passed!**

<div style="border:1px solid">Next Item</div>

✔ 1 / 1 points

1.

What is the running time of selecting the minimum element on each iteration of the selection sort?

- ○ $O(1)$

- ○ $O(\log n)$

- ○ $O(n^2)$

- ◉ $O(n)$

Correct

Selecting the minimum of $O(n)$ elements is $O(n)$.

✔ 1 / 1 points

2.

Can we use the merging procedure from the lectures to merge the arrays [1, 3, 2, 5, 4] and [5, 6, 7, 8, 9] in order to receive a sorted array?

- ○ Yes

- ◉ No

Correct

Both arrays must be sorted prior to merging.

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✓ **1 / 1**
    points

4/4 points (100%)

3.
How many operations are needed to merge two sorted arrays of sizes m and n respectively?

○ $O(n + m)$

▲

Correct
Merge works in $O(n + m)$.

○ $O(nm)$

○ $O(1)$

○ $O(m \log n)$

✓ **1 / 1**
    points

4.
Can you use Count Sort to sort an array of positive real numbers which are less than 100, such as [0.572, 0.25, 2.34, 3.14159, 2.781828, 42], in $O(n)$ time?

○   Yes, because the numbers are bounded

○   No

▲

Correct
Although the numbers in the array are bounded, Count Sort is not applicable, because it can only be applied to integer numbers: real numbers cannot play the role of indices of an array.

👍   👎   🏳