Sorting

4/4 points (100%)

Practice Quiz, 4 questions

1 / 1 points

1.
What is the running time of selecting the minimum element on each iteration of the selection sort?

- [x] $O(n)$

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

- [ ] $O(n^2)$
- [ ] $O(\log n)$
- [ ] $O(1)$

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
- [x] No

Correct
Both arrays must be sorted prior to merging.

1 / 1 points

3.

Sorting

Practice Quiz, 4 questions

4/4 points (100%)

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

- $O(1)$
- $O(n+m)$

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

- $O(nm)$
- $O(m \log n)$

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.