

Quiz 3: Elementary Sorting

Due Oct 20, 2022 at 4:30pm**Points** 10**Questions** 4**Available** Oct 20, 2022 at 8am - Oct 20, 2022 at 4:30pm 8 hours and 30 minutes**Time Limit** 10 Minutes

This quiz is no longer available as the course has been concluded.

Attempt History

| | Attempt | Time | Score |
|--------|---------------------------|------------|-------------|
| LATEST | Attempt 1 | 10 minutes | 9 out of 10 |

❗ Correct answers are no longer available.

Score for this quiz: **9** out of 10

Submitted Oct 20, 2022 at 8:12am

This attempt took 10 minutes.

Suzy Shaker has just invented what she thinks is a great sorting algorithm. Consider the following code:

```
void shaker_sort(int array[], const int length) {
    int max_index = length, min_index = 1;
    bool sorted;
    do {
        sorted = true;
        for (int i = min_index; i < max_index; i++) {
            if (array[i - 1] > array[i]) {
                swap(array, i - 1, i);
                sorted = false;
            }
        }
        max_index--;
        if (sorted) break;
        for (int i = max_index - 1; i >= min_index; i--) {
            if (array[i - 1] > array[i]) {
                swap(array, i - 1, i);
                sorted = false;
            }
        }
        min_index++;
    }
}
```

```
} while (!sorted);  
}
```

Question 1**4 / 4 pts**

Show the array [2, 1, 9, 7, 6] after the do-while loop executes once.

Parameters: `int array[] = [2, 1, 9, 7, 6]`, `const int length = 5`

(4 points, minus one for each element in the wrong position until 0 is earned)

First element:

Second element:

Third element:

Fourth element:

Last element:

Answer 1:

Answer 2:

Answer 3:

Answer 4:

Answer 5:

9

Question 2**2 / 2 pts**

What is the best-case complexity of the algorithm above? (1 point for symbol, 1 for function)

Symbol: Function: **Answer 1:**

Theta

Answer 2:

n

Partial**Question 3****1 / 2 pts**

What is the worst-case complexity of the algorithm above? (1 point for symbol, 1 for function)

Symbol: Function: **Answer 1:**

Theta

Answer 2:

n

Question 4

2 / 2 pts

Which of the sorting algorithms discussed in class is closest to what Suzy has written?

☐ Insertion Sort

☒ Bubble Sort

☐ Selection Sort

Quiz Score: **9** out of 10