M2: Hands-On: Sorting

Due Feb 12 at 11:59pm **Points** 4 **Questions** 4 **Time Limit** None
Allowed Attempts Unlimited

Instructions

Hands-On: Sorting

This activity focuses on four common sorting algorithms and sample implementations. After completing this activity you should

- Understand the selection sort algorithm.
- Understand an implementation of selection sort in a Java method.
- Understand the insertion sort algorithm.
- Understand an implementation of insertion sort in a Java method.
- Understand the quicksort algorithm.
- Understand an implementation of quicksort in a Java method.
- Understand the merge sort algorithm.
- Understand an implementation of merge sort in a Java method.

You will need the following files to complete this activity.

- Sorts.java
- Sorts.selection_sort.jgrasp_canvas.xml
- Sorts.insertion_sort.jgrasp_canvas.xml

Take the Quiz Again

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	less than 1 minute	4 out of 4

Score for this attempt: **4** out of 4
Submitted Feb 12 at 9:36pm
This attempt took less than 1 minute.

Question 1

1 / 1 pts

Given the array a = [66, 67, 20, 86, 55, 74, 11, 91, 43, 47] which sorting algorithm would perform the following sequence of array modifications?

```
[66, 67, 20, 86, 55, 74, 11, 91, 43, 47]
[20, 66, 67, 86, 55, 74, 11, 91, 43, 47]
[20, 66, 67, 86, 55, 74, 11, 91, 43, 47]
[20, 55, 66, 67, 86, 74, 11, 91, 43, 47]
[20, 55, 66, 67, 74, 86, 11, 91, 43, 47]
[11, 20, 55, 66, 67, 74, 86, 91, 43, 47]
[11, 20, 55, 66, 67, 74, 86, 91, 43, 47]
[11, 20, 43, 55, 66, 67, 74, 86, 91, 47]
[11, 20, 43, 47, 55, 66, 67, 74, 86, 91]
```

A. selection sort

B. insertion sort

C. merge sort

D. quicksort

- ○ A
- ◉ B
- ○ C
- ○ D

Correct!

Question 2

1 / 1 pts

Given the array a = [66, 67, 20, 86, 55, 74, 11, 91, 43, 47] which sorting algorithm would perform the following sequence of array modifications?

```
[11, 67, 20, 86, 55, 74, 66, 91, 43, 47]
[11, 20, 67, 86, 55, 74, 66, 91, 43, 47]
[11, 20, 43, 86, 55, 74, 66, 91, 67, 47]
[11, 20, 43, 47, 55, 74, 66, 91, 67, 86]
[11, 20, 43, 47, 55, 74, 66, 91, 67, 86]
[11, 20, 43, 47, 55, 66, 74, 91, 67, 86]
[11, 20, 43, 47, 55, 66, 67, 91, 74, 86]
[11, 20, 43, 47, 55, 66, 67, 74, 91, 86]
[11, 20, 43, 47, 55, 66, 67, 74, 86, 91]
[11, 20, 43, 47, 55, 66, 67, 74, 86, 91]
```

A. selection sort

B. insertion sort

C. merge sort

D. quicksort

Correct!

- (selected) A
- B
- C
- D

Question 3

1 / 1 pts

Given the array a = [66, 67, 20, 86, 55, 74, 11, 91, 43, 47] which sorting algorithm would perform the following sequence of array modifications?

```
[66, 67, 20, 86, 55, 74, 11, 91, 43, 47]
[20, 66, 67, 86, 55, 74, 11, 91, 43, 47]
[20, 66, 67, 55, 86, 74, 11, 91, 43, 47]
[20, 55, 66, 67, 86, 74, 11, 91, 43, 47]
[20, 55, 66, 67, 86, 11, 74, 91, 43, 47]
[20, 55, 66, 67, 86, 11, 74, 91, 43, 47]
[20, 55, 66, 67, 86, 11, 74, 91, 43, 47]
[20, 55, 66, 67, 86, 11, 43, 47, 74, 91]
[11, 20, 43, 47, 55, 66, 67, 74, 86, 91]
```

A. selection sort

B. insertion sort

C. merge sort

D. quicksort

- ○ A
- ○ B
- ◉ C
- ○ D

Correct!

Question 4

1 / 1 pts

Which of the arrays below would be the final result of *partitioning* the following portion of an array using 59 as the pivot in the quicksort partition implementation presented in lecture? Only the partitioning operation is happening.

```
[97, 20, 84, 24, 25, 59, 93, 13, 94]
```

A. `[20, 93, 13, 97, 59, 24, 25, 94, 84]`

B. `[94, 93, 97, 84, 59, 20, 24, 25, 13]`

C. `[20, 24, 25, 13, 59, 94, 93, 97, 84]`

D. `[20, 24, 84, 97, 59, 13, 25, 93, 94]`

- A
- B
- C

Correct!

- D

Quiz Score: **4** out of 4