

Project1:

A1:

```
(base) clarkes@LAPTOP-1W2BCY3:/mnt/c/Users/clarkes/Documents/mack/mscs/csc6013_algoritms_and_discrete_structures/week
Two array elements were compared 0 times
Two array elements were swapped 0 times
Current status of the array: [63, 44, 17, 77, 20, 6, 99, 84, 52, 39]

Two array elements were compared 2 times
Two array elements were swapped 1 time
Current status of the array: [63, 44, 17, 77, 20, 6, 39, 84, 52, 99]

Two array elements were compared 4 times
Two array elements were swapped 2 times
Current status of the array: [63, 44, 17, 77, 20, 6, 39, 52, 84, 99]

Two array elements were compared 5 times
Two array elements were swapped 3 times
Current status of the array: [63, 44, 17, 52, 20, 6, 39, 77, 84, 99]

Two array elements were compared 5 times
Two array elements were swapped 4 times
Current status of the array: [39, 44, 17, 52, 20, 6, 63, 77, 84, 99]

Two array elements were compared 7 times
Two array elements were swapped 5 times
Current status of the array: [39, 44, 17, 6, 20, 52, 63, 77, 84, 99]

Two array elements were compared 8 times
Two array elements were swapped 6 times
Current status of the array: [39, 20, 17, 6, 44, 52, 63, 77, 84, 99]

Two array elements were compared 8 times
Two array elements were swapped 7 times
Current status of the array: [6, 20, 17, 39, 44, 52, 63, 77, 84, 99]

Two array elements were compared 9 times
Two array elements were swapped 8 times
Current status of the array: [6, 17, 20, 39, 44, 52, 63, 77, 84, 99]

[6, 17, 20, 39, 44, 52, 63, 77, 84, 99]
```

A2:

```
(base) clarkes@LAPTOP-1W2BCY3:/mnt/c/Users/clarkes/Documents/mack/mscs/csc6013_algoritms_and_di
Two array elements were compared 0 times
Two array elements were swapped 0 times
Current status of the array: [84, 52, 39, 6, 20, 17, 77, 99, 63, 44]

Two array elements were compared 1 time
Two array elements were swapped 1 time
Current status of the array: [84, 52, 39, 6, 20, 17, 77, 44, 63, 99]

Two array elements were compared 1 time
Two array elements were swapped 2 times
Current status of the array: [63, 52, 39, 6, 20, 17, 77, 44, 84, 99]

Two array elements were compared 2 times
Two array elements were swapped 3 times
Current status of the array: [63, 52, 39, 6, 20, 17, 44, 77, 84, 99]

Two array elements were compared 2 times
Two array elements were swapped 4 times
Current status of the array: [44, 52, 39, 6, 20, 17, 63, 77, 84, 99]

Two array elements were compared 3 times
Two array elements were swapped 5 times
Current status of the array: [44, 17, 39, 6, 20, 52, 63, 77, 84, 99]

Two array elements were compared 3 times
Two array elements were swapped 6 times
Current status of the array: [20, 17, 39, 6, 44, 52, 63, 77, 84, 99]

Two array elements were compared 4 times
Two array elements were swapped 7 times
Current status of the array: [20, 17, 6, 39, 44, 52, 63, 77, 84, 99]

Two array elements were compared 4 times
Two array elements were swapped 8 times
Current status of the array: [6, 17, 20, 39, 44, 52, 63, 77, 84, 99]

[6, 17, 20, 39, 44, 52, 63, 77, 84, 99]
(base) clarkes@LAPTOP-1W2BCY3:/mnt/c/Users/clarkes/Documents/mack/mscs/csc6013_algoritms_and_di
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A3:

```
(base) clarkes@LAPTOP-1W2BCY3:/mnt/c/Users/clarkes/Documents/mack/mscs/csc6013_algoritms_and_discrete_struct
Two array elements were compared 0 times
Two array elements were swapped 0 times
Current status of the array: [99, 84, 77, 63, 52, 44, 39, 20, 17, 6]

Two array elements were compared 0 times
Two array elements were swapped 1 time
Current status of the array: [6, 84, 77, 63, 52, 44, 39, 20, 17, 99]

Two array elements were compared 1 time
Two array elements were swapped 2 times
Current status of the array: [6, 17, 77, 63, 52, 44, 39, 20, 84, 99]

Two array elements were compared 3 times
Two array elements were swapped 3 times
Current status of the array: [6, 17, 20, 63, 52, 44, 39, 77, 84, 99]

Two array elements were compared 6 times
Two array elements were swapped 4 times
Current status of the array: [6, 17, 20, 39, 52, 44, 63, 77, 84, 99]

Two array elements were compared 10 times
Two array elements were swapped 5 times
Current status of the array: [6, 17, 20, 39, 44, 52, 63, 77, 84, 99]

Two array elements were compared 14 times
Two array elements were swapped 6 times
Current status of the array: [6, 17, 20, 39, 44, 52, 63, 77, 84, 99]

Two array elements were compared 17 times
Two array elements were swapped 7 times
Current status of the array: [6, 17, 20, 39, 44, 52, 63, 77, 84, 99]

Two array elements were compared 19 times
Two array elements were swapped 8 times
Current status of the array: [6, 17, 20, 39, 44, 52, 63, 77, 84, 99]

[6, 17, 20, 39, 44, 52, 63, 77, 84, 99]
(base) clarkes@LAPTOP-1W2BCY3:/mnt/c/Users/clarkes/Documents/mack/mscs/csc6013_algoritms_and_discrete_struct
```

Project 2:

A4:

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PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

(base) clarkes@LAPTOP-1W2BCY3:/mnt/c/Users/clarkes/Documents/mack/mscs/csc6013_
Two array elements were compared 0 times
Two array elements were swapped 0 times
Two array elements were compared 6 times
Two array elements were swapped 6 times
Two array elements were compared 11 times
Two array elements were swapped 11 times
Two array elements were compared 16 times
Two array elements were swapped 16 times
Two array elements were compared 19 times
Two array elements were swapped 19 times
Two array elements were compared 21 times
Two array elements were swapped 21 times
Two array elements were compared 22 times
Two array elements were swapped 22 times
Two array elements were compared 23 times
Two array elements were swapped 23 times
Two array elements were compared 23 times
Two array elements were swapped 23 times
[6, 17, 20, 39, 44, 52, 63, 77, 84, 99]
(base) clarkes@LAPTOP-1W2BCY3:/mnt/c/Users/clarkes/Documents/mack/mscs/csc6013_
```

A5:

```
(base) clarkes@LAPTOP-1W2BCY3:/mnt/c/Users/clarkes/Documents/mack
Two array elements were compared 0 times
Two array elements were swapped 0 times
Two array elements were compared 7 times
Two array elements were swapped 7 times
Two array elements were compared 13 times
Two array elements were swapped 13 times
Two array elements were compared 17 times
Two array elements were swapped 17 times
Two array elements were compared 19 times
Two array elements were swapped 19 times
Two array elements were compared 20 times
Two array elements were swapped 20 times
Two array elements were compared 20 times
Two array elements were swapped 20 times
Two array elements were compared 20 times
Two array elements were swapped 20 times
Two array elements were compared 20 times
Two array elements were swapped 20 times
[6, 17, 20, 39, 44, 52, 63, 77, 84, 99]
(base) clarkes@LAPTOP-1W2BCY3:/mnt/c/Users/clarkes/Documents/mack
```

A6:

```
(base) clarkes@LAPTOP-1W2BCY3:/mnt/c/Users/clarkes/Doc
Two array elements were compared 0 times
Two array elements were swapped 0 times
No swap was made... breaking loop
[6, 17, 20, 39, 44, 52, 63, 77, 84, 99]
(base) clarkes@LAPTOP-1W2BCY3:/mnt/c/Users/clarkes/Doc
```