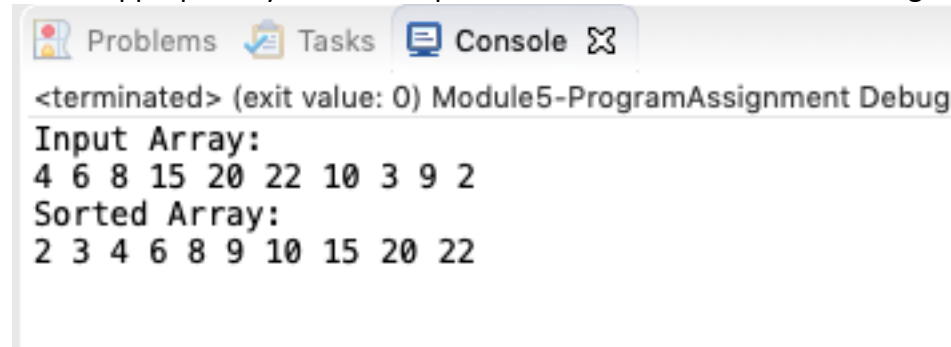Christopher Holmes
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Module 5 – Program Assignment
2/11/19

Part 1- In this part of the program assignment, we were tasked with implementing the selection sort algorithm to sort an array of integers that are passed to it. This program accomplished all of the requirements.

When provided with the input array of 4, 6, 8, 15, 20, 22, 10, 3, 9, 2, we can see the output is sorted appropriately with the implementation of the selection sort algorithm.
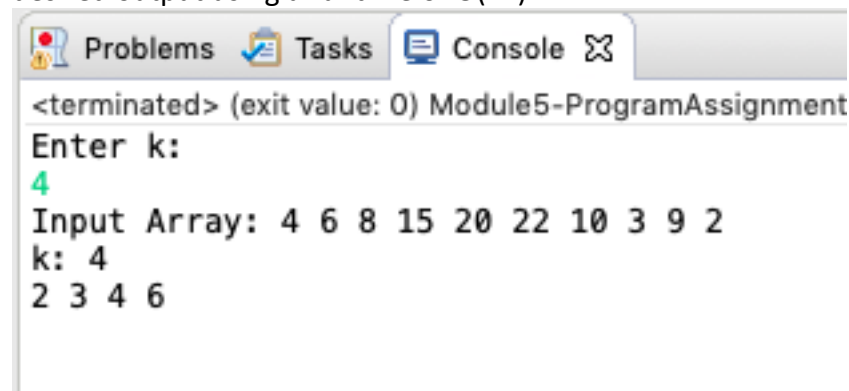

Part 2- In this part of the program assignment, we were tasked with implementing our selection sort algorithm to take in a value of k, and have a run time of $O(nk)$. After this was accomplished, we were to calculate the median using our $O(nk)$ implementation. This program accomplishes all requirements.

With the input array of 4, 6, 8, 15, 20, 22, 10, 3, 9, 2, and a K value of 4, we are given the desired output using a runtime of $O(nk)$

With the input array of 4, 6, 8, 15, 20, 22, 10, 3, 9, 2, and a K value of 6, we are given the desired output using a runtime of $O(nk)$

With an input array of 4, 6, 8, 15, 20, 22, 10, 3, 9, 2, we can see that the median calculated using our O(nk) function is 8.5 which is the average of the middle two numbers.

With an input array of 4, 6, 8, 15, 20, 22, 10, 3, 9, 2, we can see that the median calculated using our O(nk) function is 9, which is the middle number.