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/*-----------------------------------------------------------------------------
Programming Assignment 5 Submission
Sorting Algorithms - Sort arrays in ascending order using Selection Sort at O(n^2)
                     and O(nk) time complexities and finding the median value
                     using k index.
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02/09/2016
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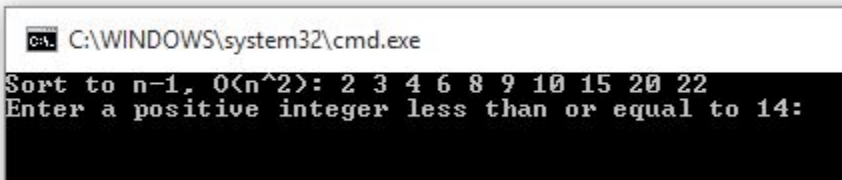
1.

Sort at O(n^2) using sample test case as provided.

Input: { 4, 6, 8, 15, 20, 22, 10, 3, 9, 2 }

Sort at O(n^2) using a set with negative, repeating, and decimal numbers.

Input: { 2, 7, 4, 1, 5, 6, 3.2, 3, 2, -10 }

2.

Sort at O(nk) using sample test case provided.

K = 4

Input: { 4, 6, 8, 15, 20, 22, 10, 3, 9, 2 }

Sort at O(nk) using sample test case provided.
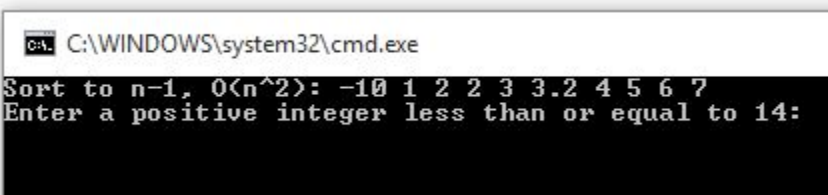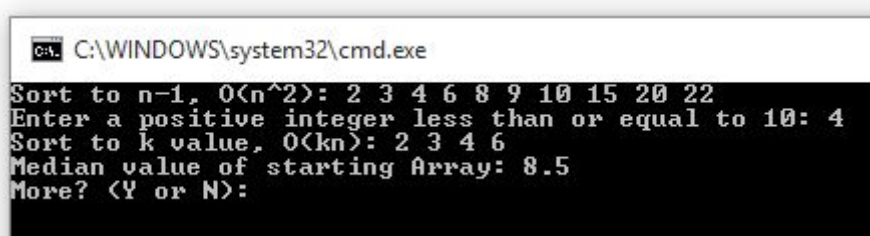
K = 6

Input: { 4, 6, 8, 15, 20, 22, 10, 3, 9, 2 }

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C:\WINDOWS\system32\cmd.exe

Sort to n-1, O(n^2): 2 3 4 6 8 9 10 15 20 22
Enter a positive integer less than or equal to 10: 4
Sort to k value, O(kn): 2 3 4 6
Median value of starting Array: 8.5
More? (Y or N): y
Enter a positive integer less than or equal to 10: 6
Sort to k value, O(kn): 2 3 4 6 8 9
Median value of starting Array: 8.5
More? (Y or N):
```

Sort at O(nk) using a set with negative and decimal numbers.

K = 14

Input: { 6, -4, 9, 15, 20, 22, 10, 3, 44, 2.2, 11, 4, 5, 1 }

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C:\WINDOWS\system32\cmd.exe

Sort to n-1, O(n^2): 2 3 4 6 8 9 10 15 20 22
Enter a positive integer less than or equal to 14: 14
Sort to k value, O(kn): -4 1 2.2 3 4 5 6 9 10 11 15 20 22 44
Median value of starting Array: 7.5
More? (Y or N):
```
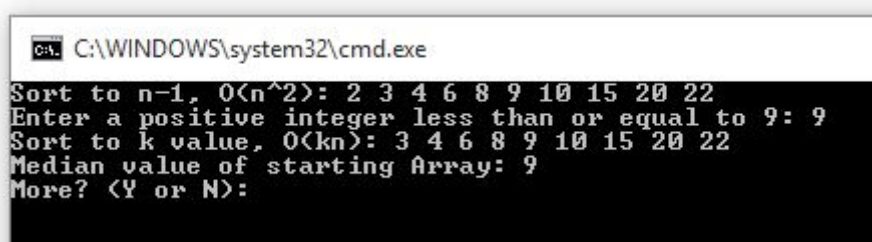
3. Find the Median value of the starting array.

Median value of even set. Correct as 8.5.

Input: { 4, 6, 8, 15, 20, 22, 10, 3, 9, 2 }

```
C:\WINDOWS\system32\cmd.exe

Sort to n-1, O(n^2): 2 3 4 6 8 9 10 15 20 22
Enter a positive integer less than or equal to 10: 4
Sort to k value, O(kn): 2 3 4 6
Median value of starting Array: 8.5
More? (Y or N): y
Enter a positive integer less than or equal to 10: 6
Sort to k value, O(kn): 2 3 4 6 8 9
Median value of starting Array: 8.5
More? (Y or N):
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Median value of odd set. Correct as 9.

Input: { 4, 6, 8, 15, 20, 22, 10, 3, 9 }

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C:\WINDOWS\system32\cmd.exe

Sort to n-1, O(n^2): 2 3 4 6 8 9 10 15 20 22
Enter a positive integer less than or equal to 9: 9
Sort to k value, O(kn): 3 4 6 8 9 10 15 20 22
Median value of starting Array: 9
More? (Y or N):
```