Name: Daniel Detore Date: 10/5/2024

Pledge: I pledge my honor that I have abided by the Stevens Honor System.

For each algorithm, show the array after each iteration of the main (outer) loop. Since different implementations of these algorithms do exist, be sure to use the code supplied in Canvas under “Elementary Sorting Algorithms”. Do not show inner loop steps, and do not simply stop early if the array is sorted. Trace through these algorithms verbatim. [You may not need all the lines given.]

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bubble Sort Optimized   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | 0 | 1 | 2 | 3 | 4 | 5 | | 78 | 15 | 23 | 2 | 97 | 85 |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | 0 | 1 | 2 | 3 | 4 | 5 | | 15 | 23 | 2 | 78 | 85 | 97 |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | 0 | 1 | 2 | 3 | 4 | 5 | | 15 | 2 | 23 | 78 | 85 | 97 |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | 0 | 1 | 2 | 3 | 4 | 5 | | 2 | 15 | 23 | 78 | 85 | 97 |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | 0 | 1 | 2 | 3 | 4 | 5 | |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | 0 | 1 | 2 | 3 | 4 | 5 | |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | 0 | 1 | 2 | 3 | 4 | 5 | |  |  |  |  |  |  | | Selection Sort   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | 0 | 1 | 2 | 3 | 4 | 5 | | 78 | 15 | 23 | 2 | 97 | 85 |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | 0 | 1 | 2 | 3 | 4 | 5 | | 2 | 15 | 23 | 78 | 97 | 85 |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | 0 | 1 | 2 | 3 | 4 | 5 | | 2 | 15 | 23 | 78 | 97 | 85 |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | 0 | 1 | 2 | 3 | 4 | 5 | | 2 | 15 | 23 | 78 | 97 | 85 |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | 0 | 1 | 2 | 3 | 4 | 5 | | 2 | 15 | 23 | 78 | 97 | 85 |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | 0 | 1 | 2 | 3 | 4 | 5 | | 2 | 15 | 23 | 78 | 85 | 97 |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | 0 | 1 | 2 | 3 | 4 | 5 | |  |  |  |  |  |  | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Insertion Sort   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | 0 | 1 | 2 | 3 | 4 | 5 | | 78 | 15 | 23 | 2 | 97 | 85 |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | 0 | 1 | 2 | 3 | 4 | 5 | | 15 | 78 | 23 | 2 | 97 | 85 |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | 0 | 1 | 2 | 3 | 4 | 5 | | 15 | 23 | 78 | 2 | 97 | 85 |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | 0 | 1 | 2 | 3 | 4 | 5 | | 2 | 15 | 23 | 78 | 97 | 85 |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | 0 | 1 | 2 | 3 | 4 | 5 | | 2 | 15 | 23 | 78 | 97 | 85 |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | 0 | 1 | 2 | 3 | 4 | 5 | | 2 | 15 | 23 | 78 | 85 | 97 |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | 0 | 1 | 2 | 3 | 4 | 5 | |  |  |  |  |  |  | |  |