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**BATCH:** 2022-26

**CLASS:** CS-B1

**DATE OF SUBMISSION:** 29/08/2023

**TITLE OF THE ASSIGNMENT:** IMPLEMENT THE FOLLOWING SORTING TECHNIQUES AND FIND THE TIME COMPLEXITY: (i) BUBBLE (ii) SELECTION (iii) INSERTION

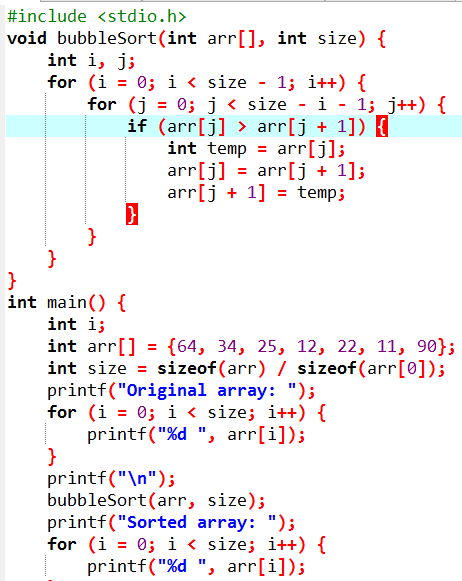
**THEORY:** DISCUSS THE BEST CASE, WORST CASE TIME COMPLEXITIES OF BUBBLE, SELECTION AND INSERTION SORT.

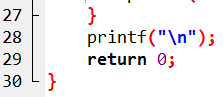
**PROGRAM:**

1. BUBBLE SORT

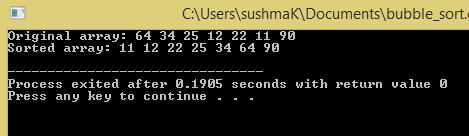
TIME COMPLEXITY:

1. Best case: O(n^2)
2. Average case: O(n^2)
3. Worst case: O(n^2)

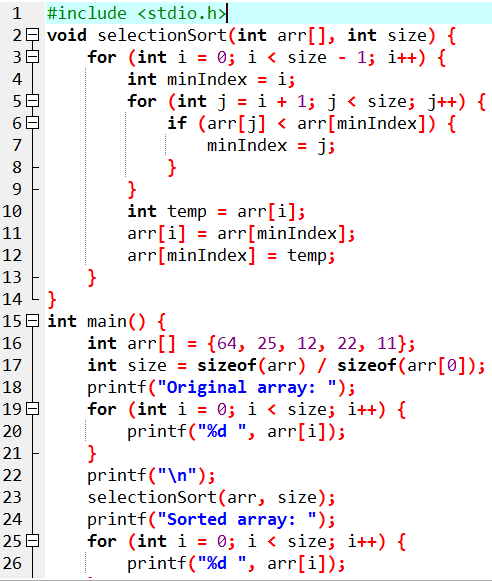


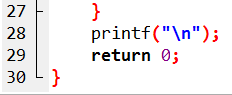


**OUTPUT:**

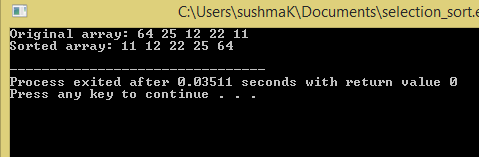


1. **SELECTION SORT:**



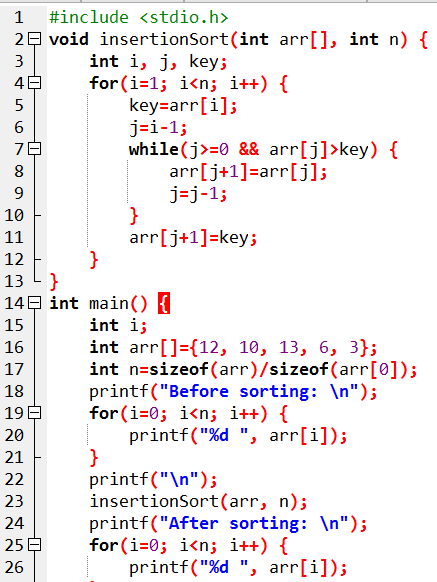


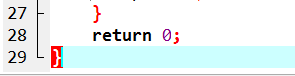
**OUTPUT:**

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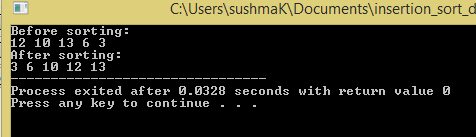
**TIME COMPLEXITY:**

1. Best case: O(n^2)
2. Average case: O(n^2)
3. Worst case: O(n^2)
4. **INSERTION SORT:**





**OUTPUT:**



**TIME COMPLEXITY:**

1. Best case: O(n)
2. Average case: O(n^2)
3. Worst case: O(n^2)

**CONCLUSION:** Thus we have studies different sorting algorithms and their time complexities.