

## Assignment-8

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Performance Data:  
Submission Data:

### Problem Statement:

Write a function template for selection sort that inputs, sorts & outputs an integer array & float array.

### Theory:

#### Template:

Templates are the foundation of generic programming, which involves writing code in a way that is independent of any particular type.

A template is a blueprint for creating generic classes or a function. The library containers like iterators & algorithms are e.g. of generic programming.

### Selection sort:

Selection sort is a sorting algorithm. It has  $O(n^2)$  complexity, making it inefficient for large lists, generally performs similar worse than insertion sort.

### Output Diagram:

#### Algorithm

1. Start
2. Define template parameter T
3. In main(), declare 2 arrays one of int & other of float.
4. Define selection sort in template.
5. Take inp from user for seq. operation.
6. Display the result
7. Stop.

### Test Case

Input	Output	Actual Output	Result
1. 5	Invalid choice	Invalid choice	Pass
2. Enter no of elements - a	Wrong input	Enter a no.	Pass
3. Enter no of elements - 4 Integers 2.1	Enter 2.1 integers	Enter integers	Pass
4. 1 5 8 9 2	12589	12589	Pass
5. 2.1, 2.0, 3.1 1	1, 2, 2.1, 3.1	1, 2, 2.1, 3.1	Pass
6. Enter integer value - 4a	Wrong inp	Integer should be entered	Pass
7. 9, 1, 10	1, 9, 10	1, 9, 10	Pass
8. 4, 6, 0, 3	0, 3, 4, 6	0, 3, 4, 6	Pass
9. 1, 2, 4, 7, 9	1, 2, 4, 7, 9	1, 2, 4, 7, 9	Pass
10. 1.9, 2.0, 3.0 4.0	1.9, 2.0, 3.0 4.0	1.9, 2.0, 3.0 4.0	Pass

### Conclusion:

We learned about templates, selection sort