

Section 2.

Q1. Write python program for a selection sort.

Selection sort algorithm is an in-place comparison based algorithm. The algorithm divides the array into two segments.

The sorted part at the left end.

The remaining unsorted part at the right hand.

The algorithm involved finding the minimum element in the unsorted portion of the array and then placing it in the correct position of the array.

Let's see an example:-

```
def selection_sort(array):  
    n = len(array)  
    for i in range(n):  
        minimum = i  
        for j in range(i+1, n):  
            if (array[j] < array[minimum]):  
                minimum = j  
        temp = array[i]  
        array[i] = array[minimum]  
        array[minimum] = temp  
    return array  
array = [13, 4, 9, 5, 3, 16, 12]  
print(selection_sort(array))  
[3, 4, 5, 9, 12, 13, 16]
```