Data Structures

Sorting Technique – Selection Sort

CODE FORTHINGS

Introduction

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Selection Sort:

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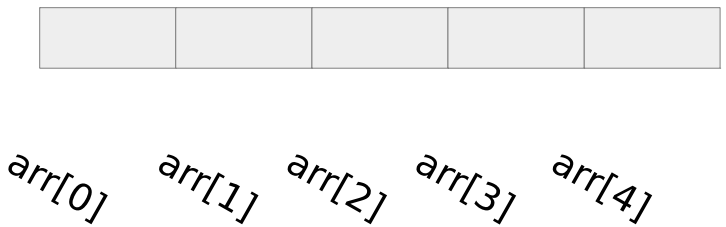
Selection Sort:

- The selection sort works by repeatedly going through the list of elements, each time selecting a minimum element according to its ordering and placing it in the correct position in the sequence.
- It is an in-place comparison-based sorting algorithm

Selection Sort

- arr[SIZE]

SIZE = 5



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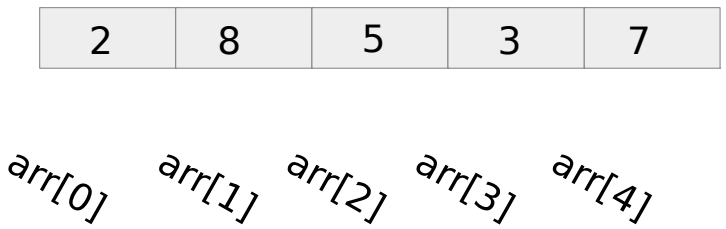

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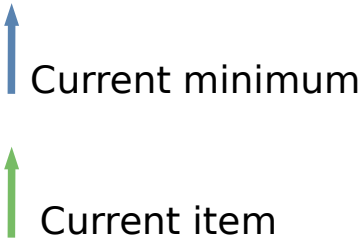

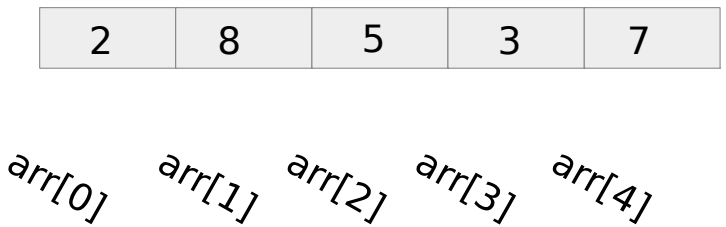

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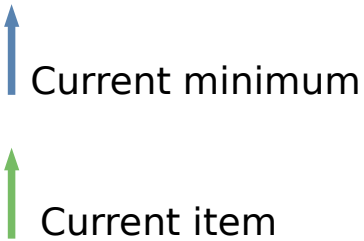

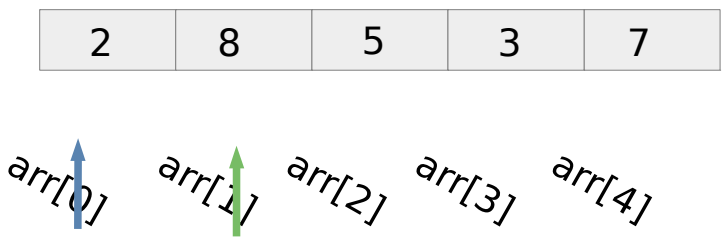

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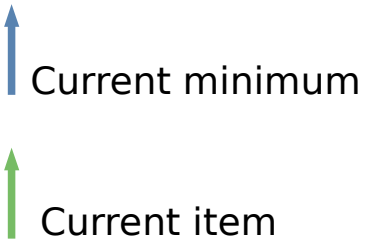

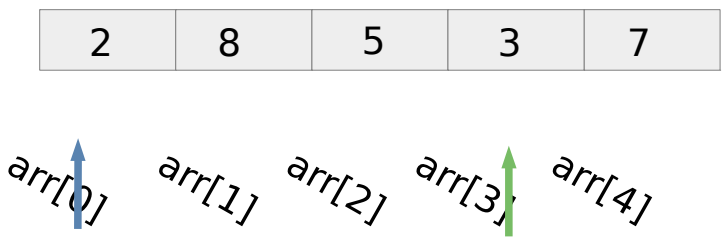

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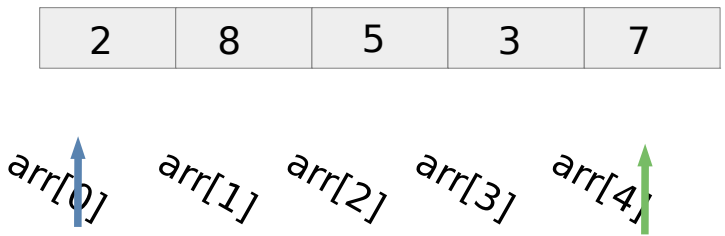

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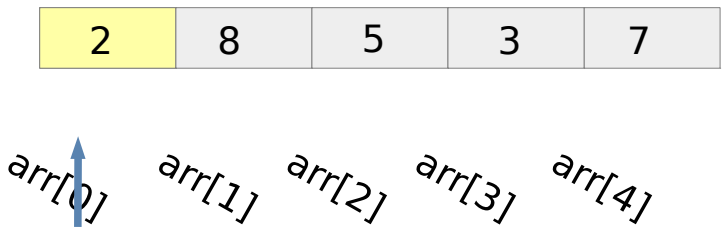

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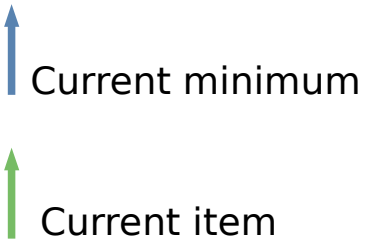

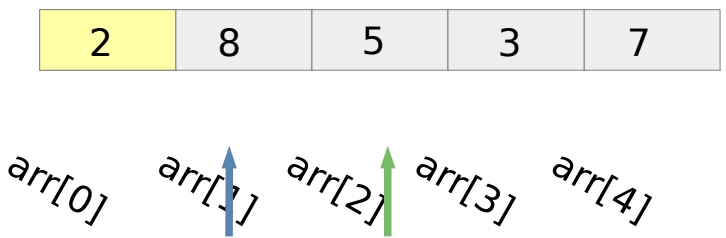

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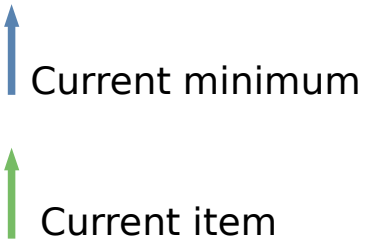

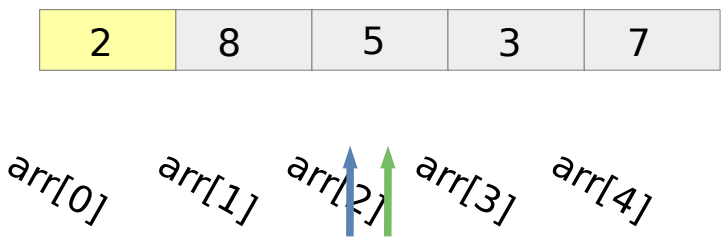

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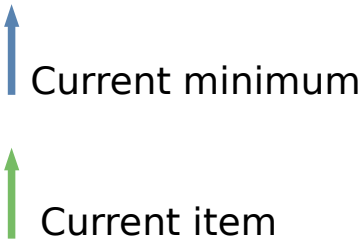

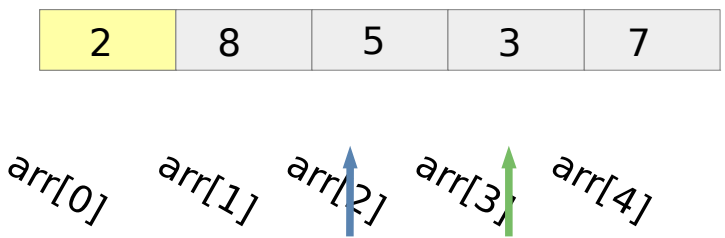

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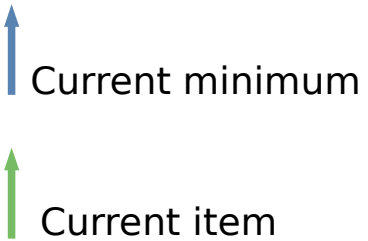

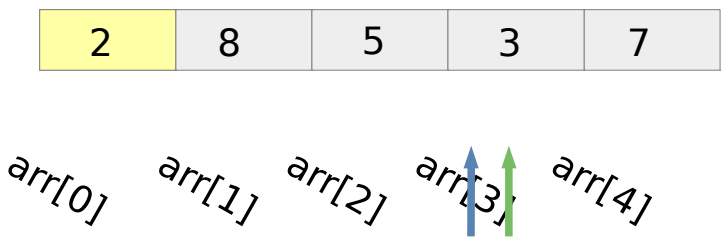

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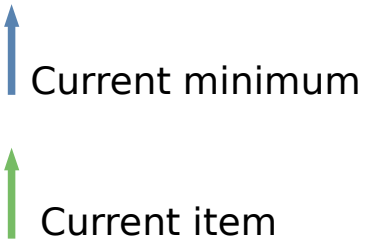

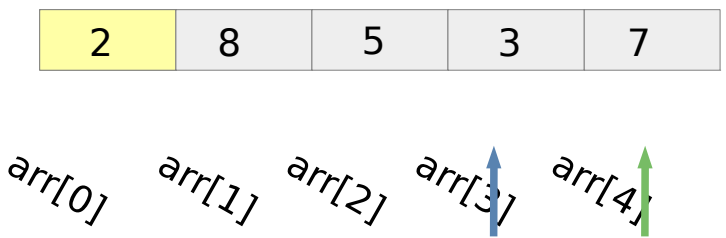

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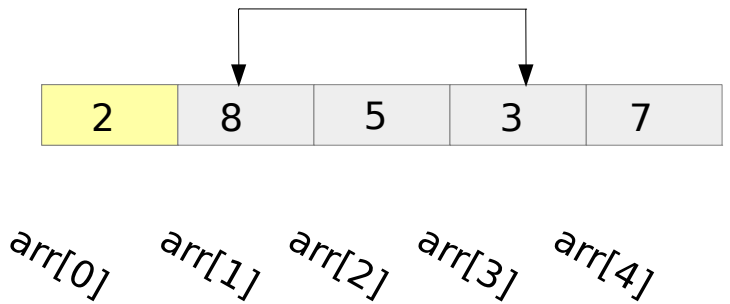

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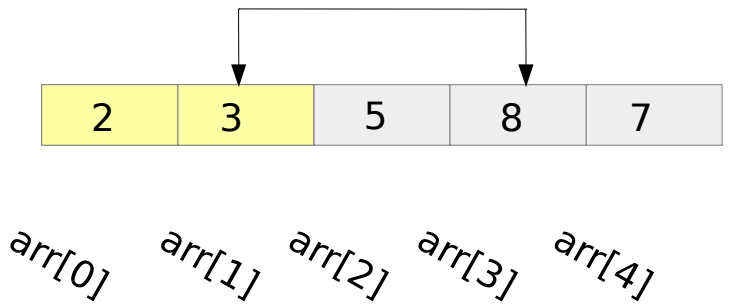

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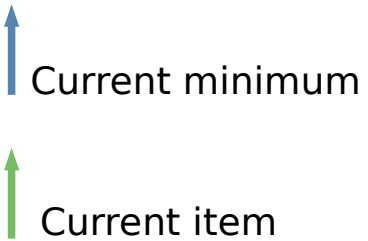

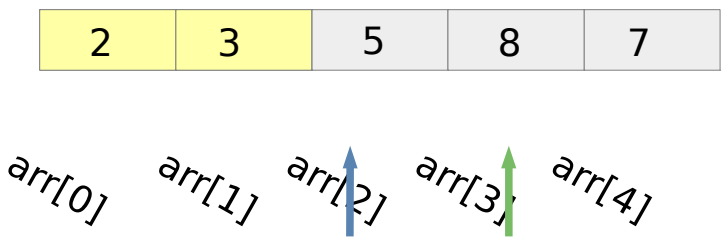

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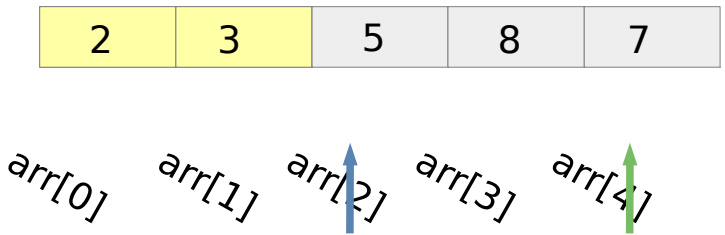

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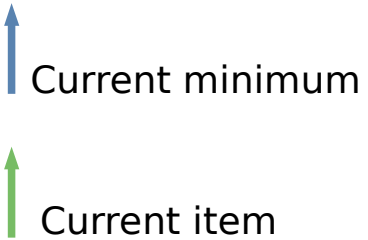

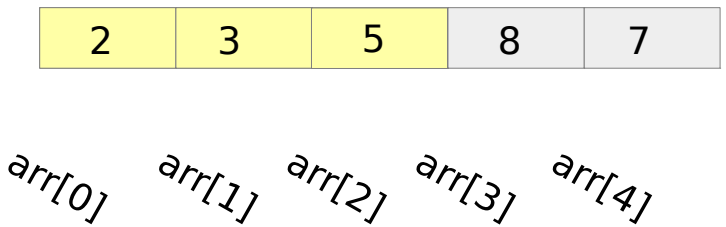

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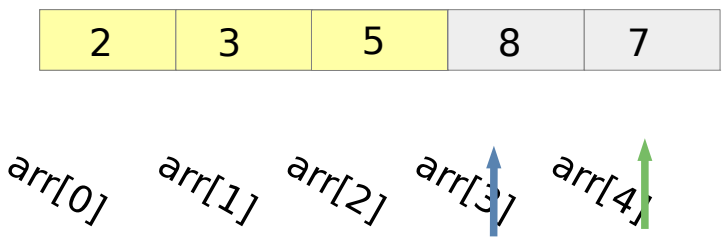

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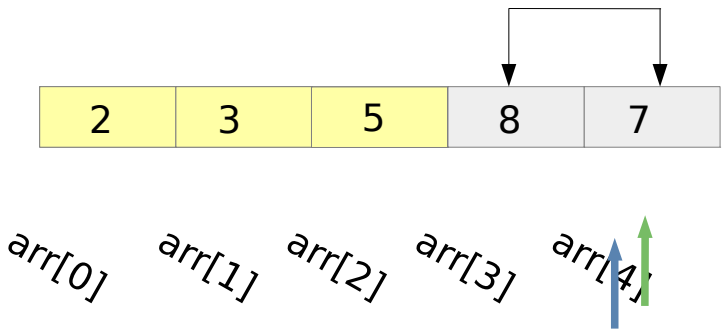

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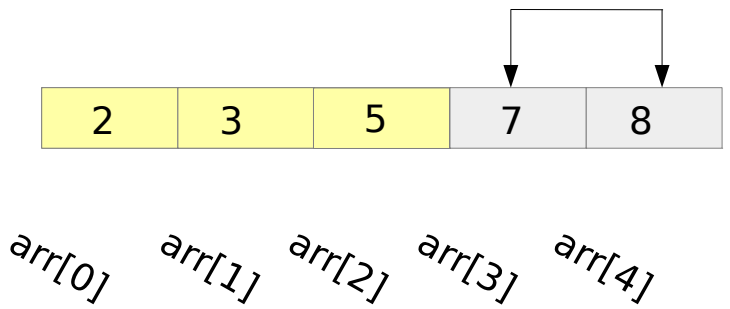

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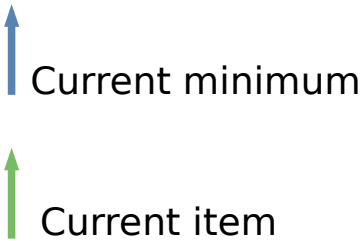

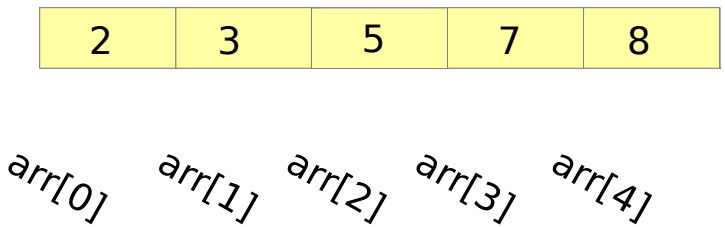

Algorithm

Selection Sort(arr,size)

```
for j = 0  upto  size-1
  current_min = j
  for current_item = j+1 upto size
       if (arr[current_item] < arr[current_min])
            current_min = current_item
  if(current_min != j)
      swap(arr[j],arr[current_min])
return e_true
```

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Advantages

- It exhibits a good performance when dealing with a small list.
- The Selection Sort is an in-place sorting algorithm so the space requirement
- is minimal..

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Disadvantages

- It requires n-squared processing steps for every n number of elements to be sorted.
- Time complexity = $O(n^2)$

Code - Selection Sort