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Mohammed Abu-Hadhoud

MSA, PMOC, PMP®, PMP®, PMP-REP®, CS, ITIL®, MCPD, MCD



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## مهم جداً

هذا الملف للمراجعة السريعة واخذ الملاحظات عليه فقط ،لانه يحتوي على اقل من 20٪ مما يتم شرحه في الفيديوهات الاستعجال والاعتماد عليه فقط سوف يجعلك تخسر كميه معلومات وخبرات كثيره

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## Algorithms & Problem Solving Level 6

# Selection Sort

**Mohammed Abu-Hadhoud**

MBA, PMOC, PgMP®, PMP®, PMI-RMP®, CM, ITILF, MCPD, MCSD

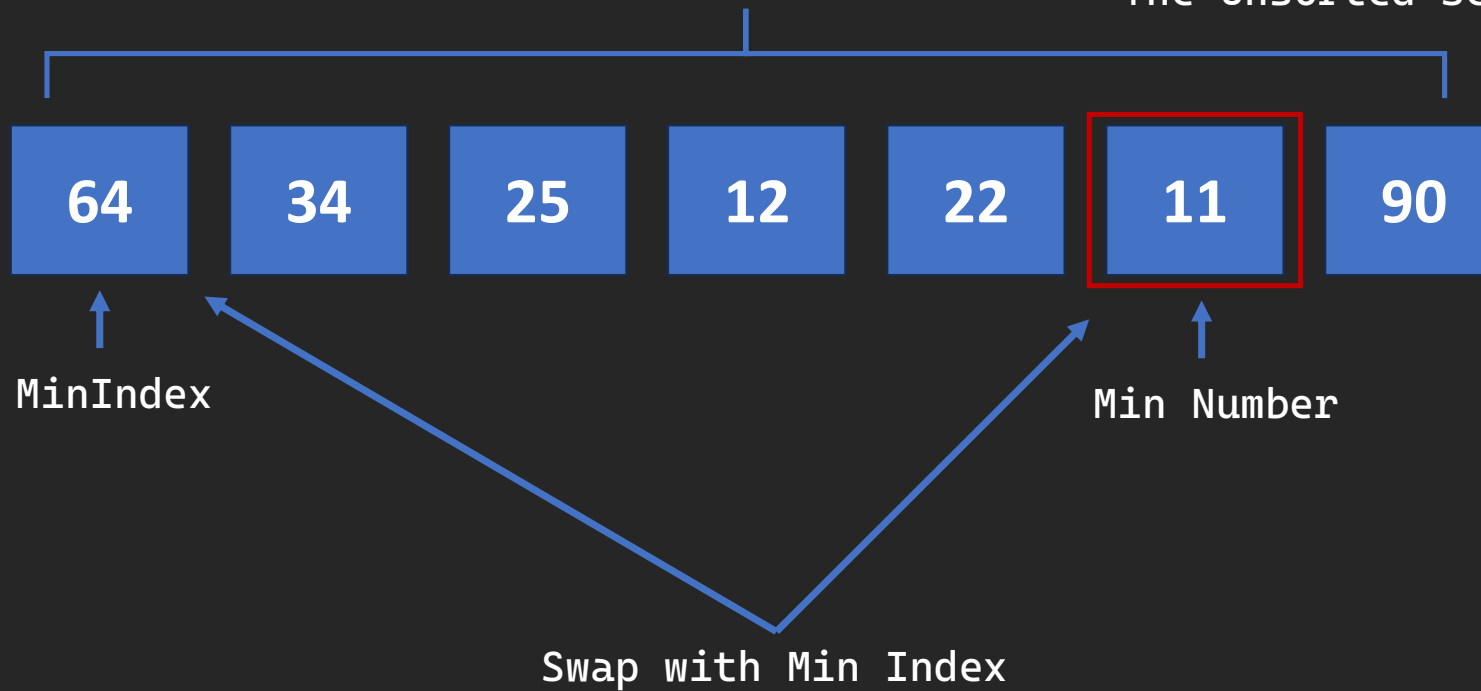
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# How it works? Example

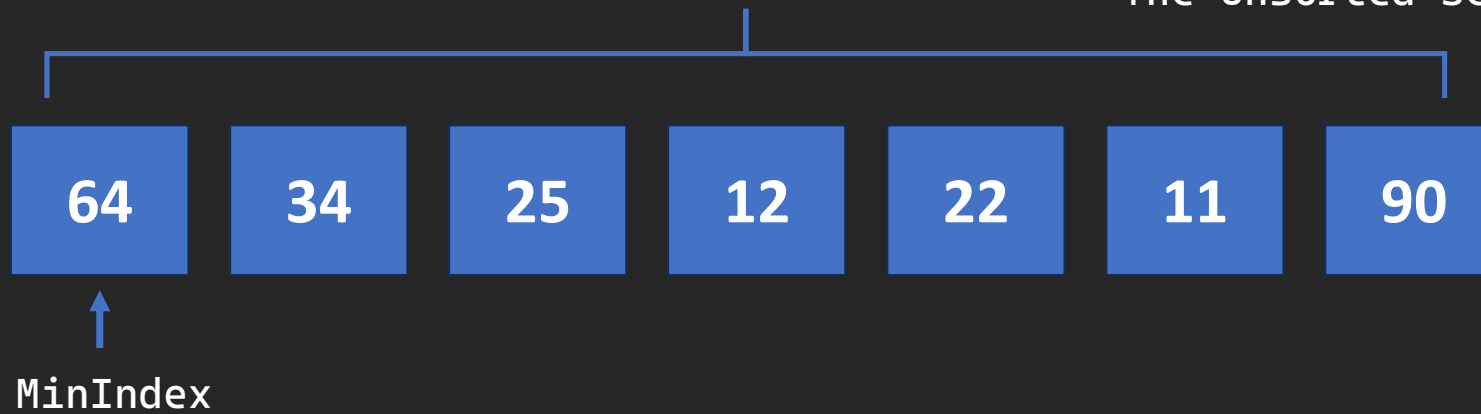
Find Min Number In  
The Unsorted Segment



Unsorted Segment

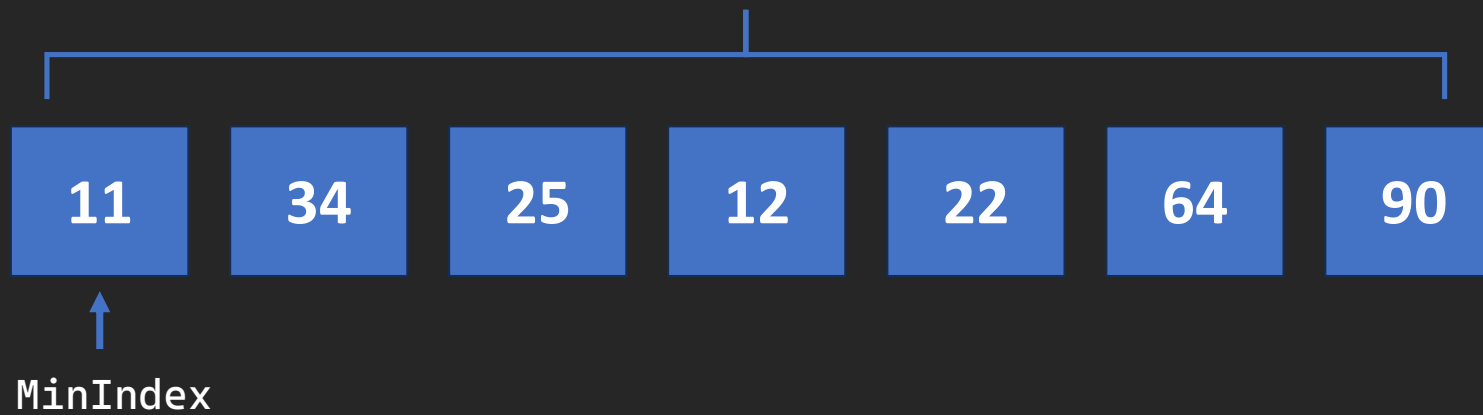
Sorted Segment

Find Min Number In  
The Unsorted Segment



Unsorted Segment

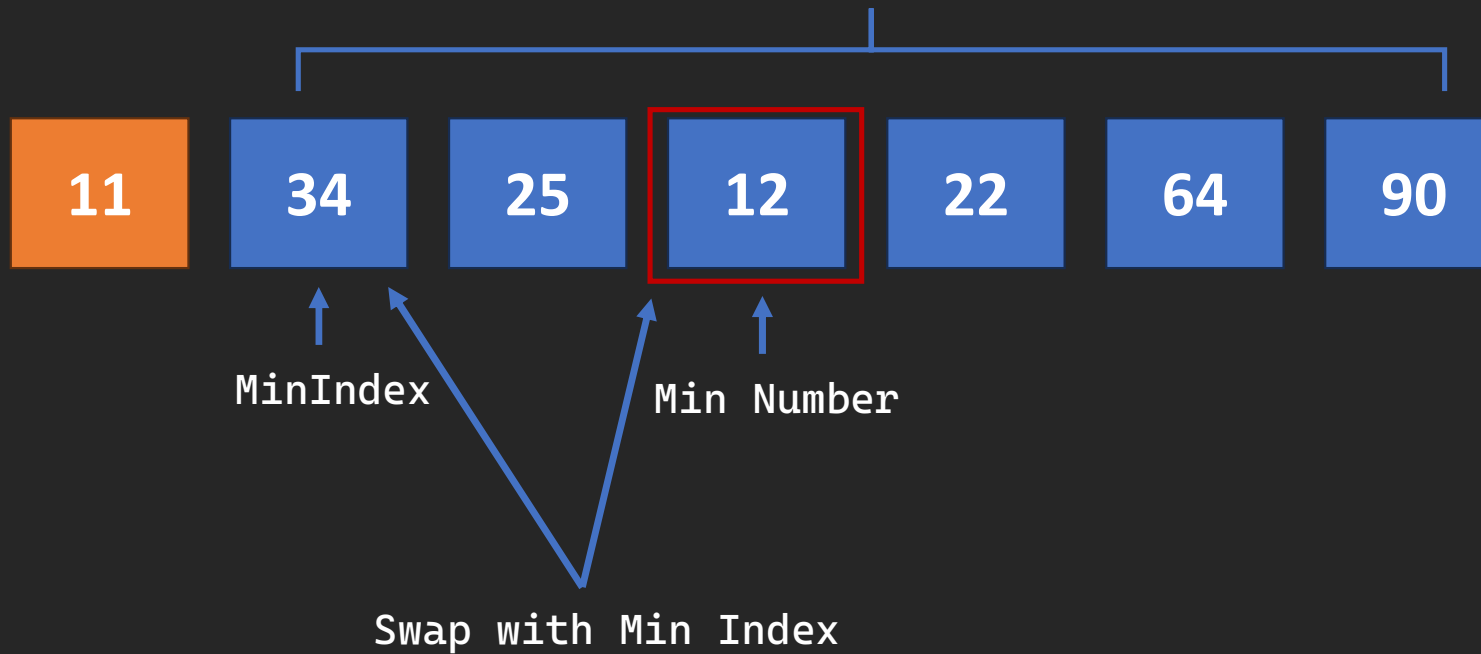
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Unsorted Segment

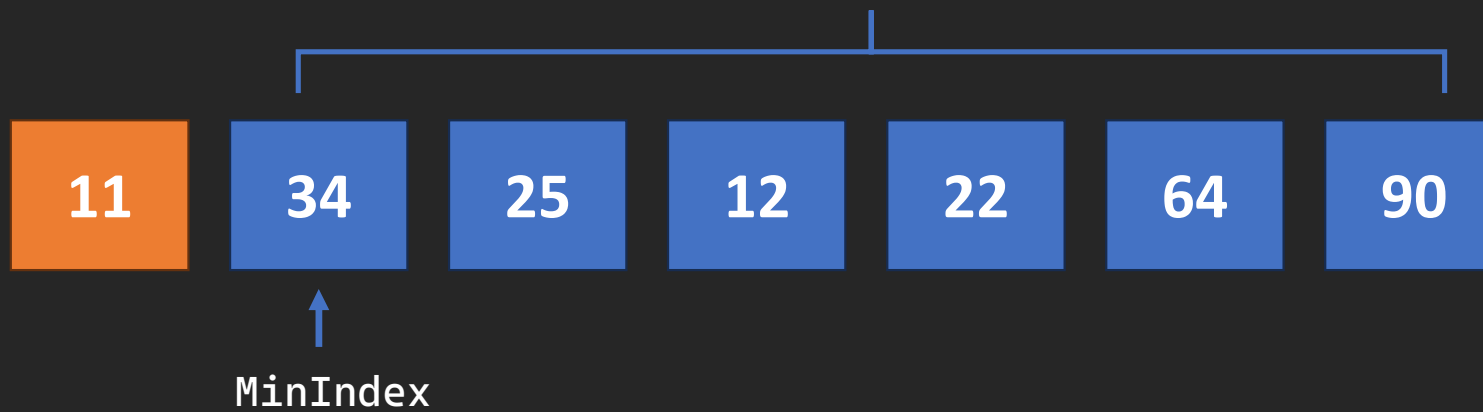
Sorted Segment

Find Min Number In  
The Unsorted Segment



Unsorted Segment

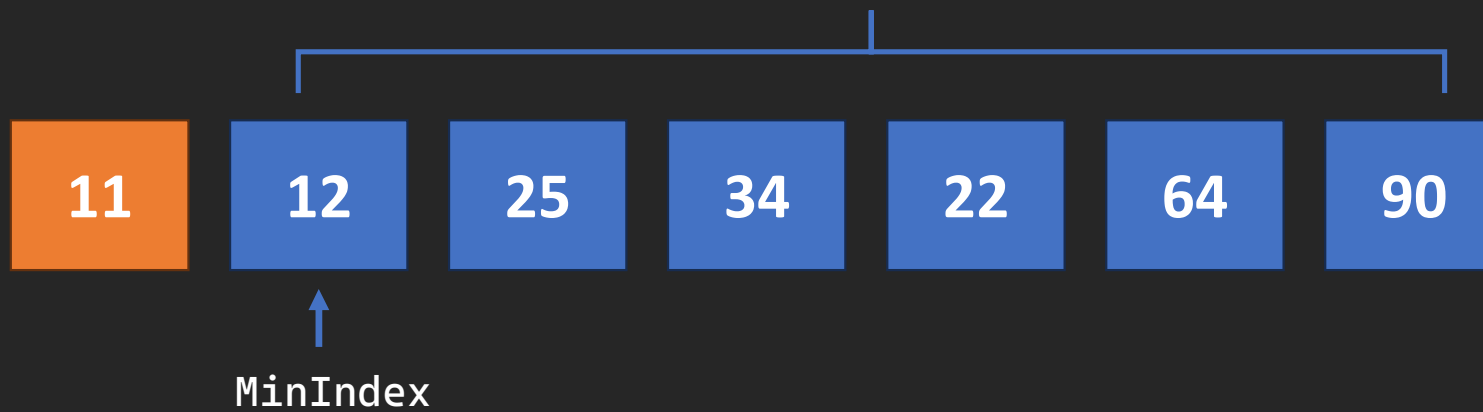
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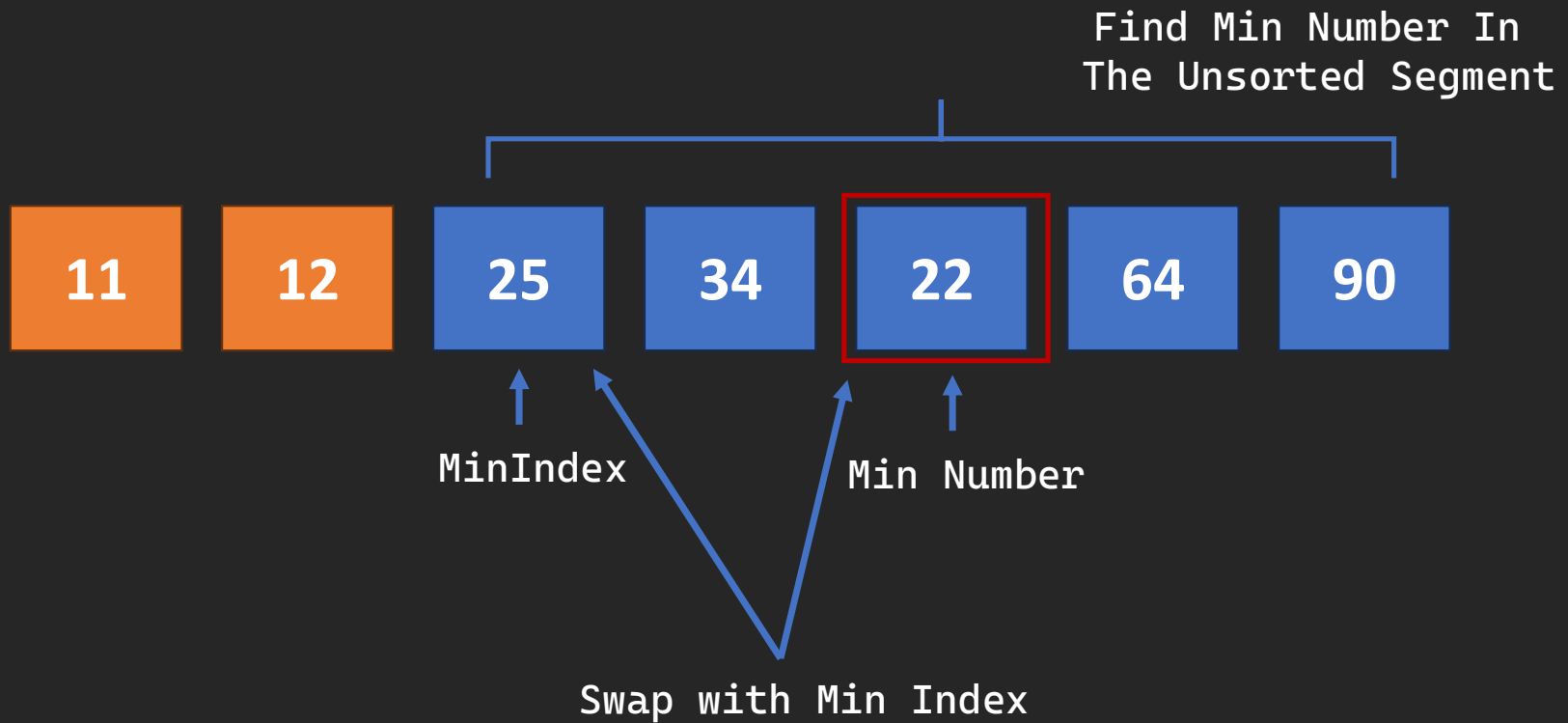
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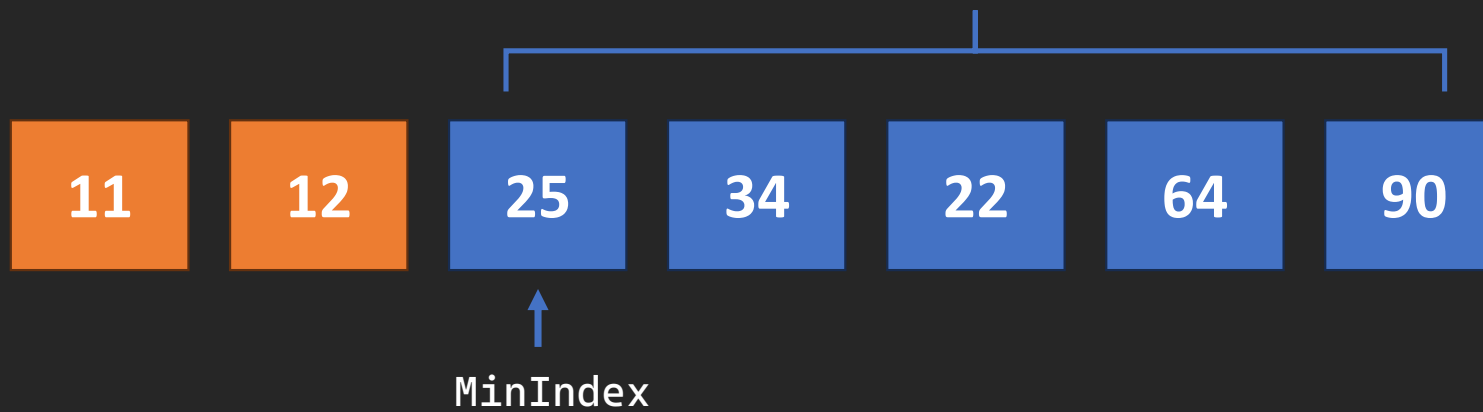
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Sorted Segment



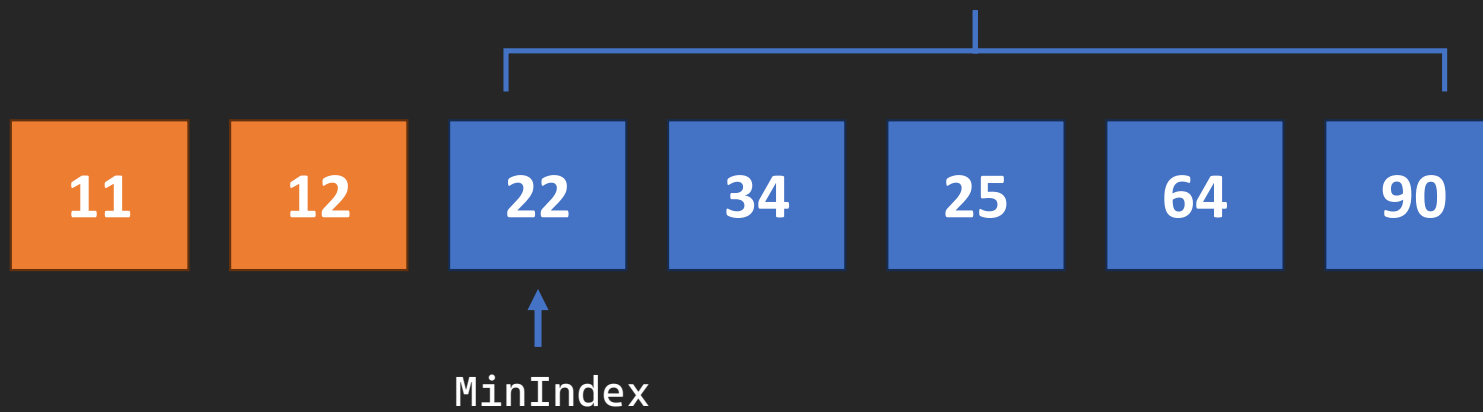
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Sorted Segment



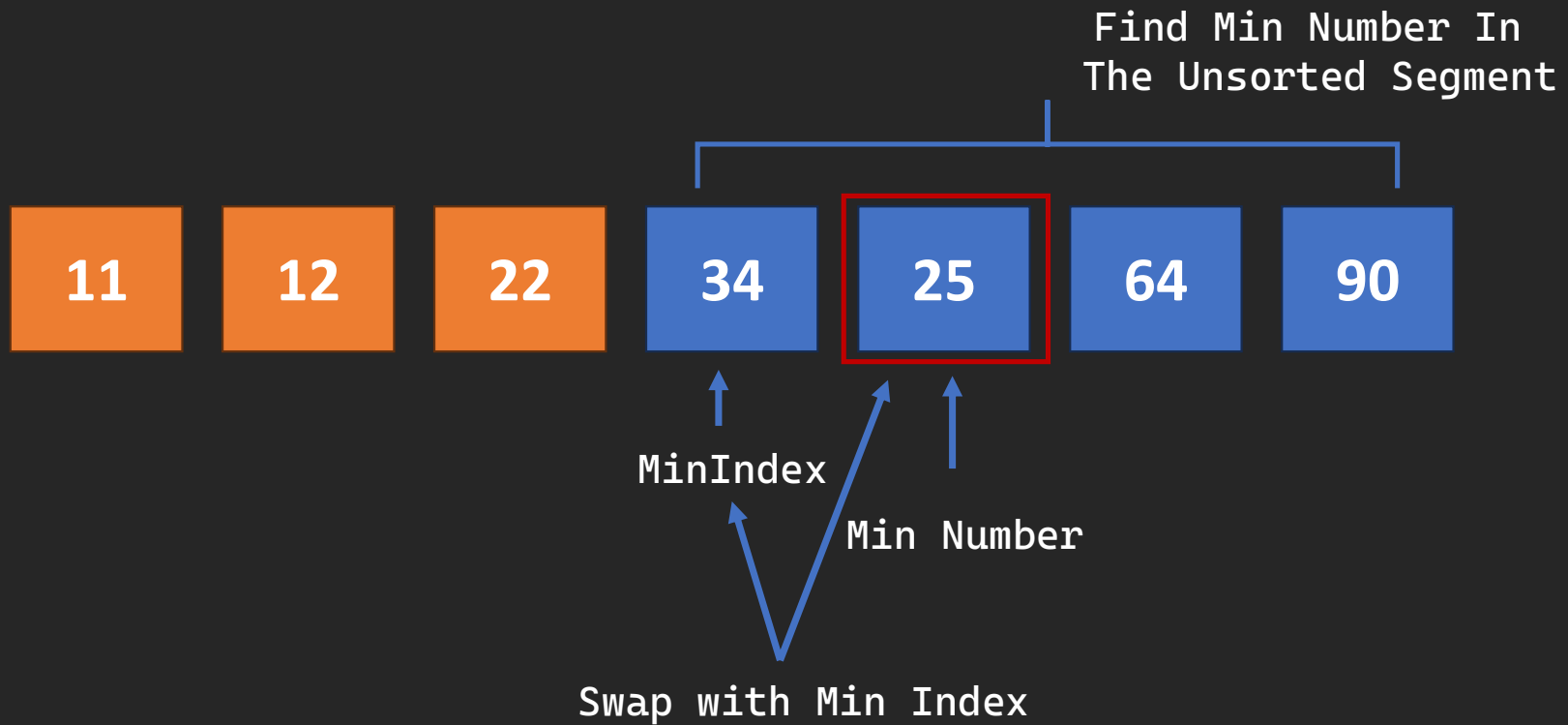
Unsorted Segment

Sorted Segment



Unsorted Segment

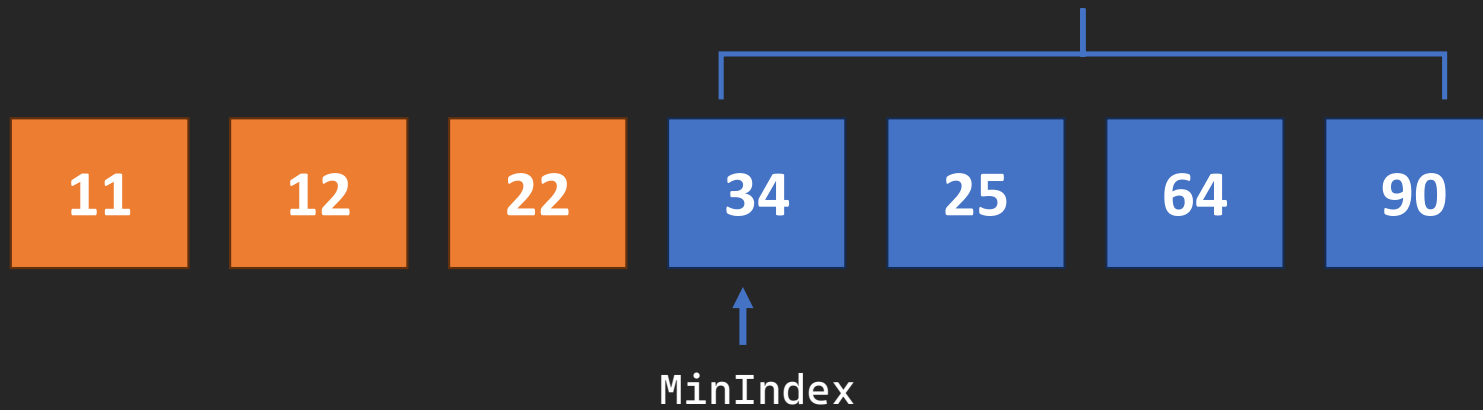
Sorted Segment



Unsorted Segment

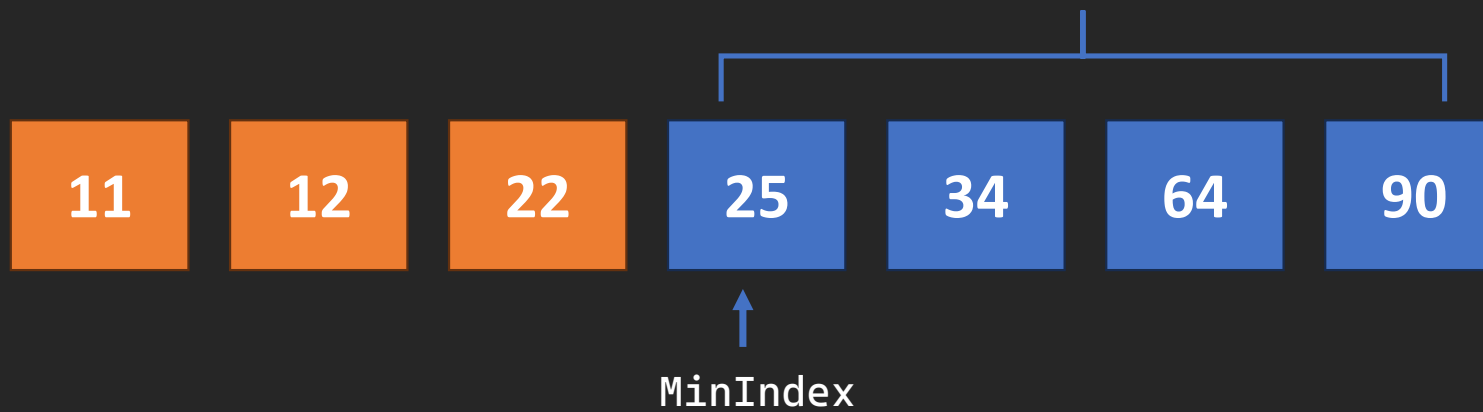
Sorted Segment





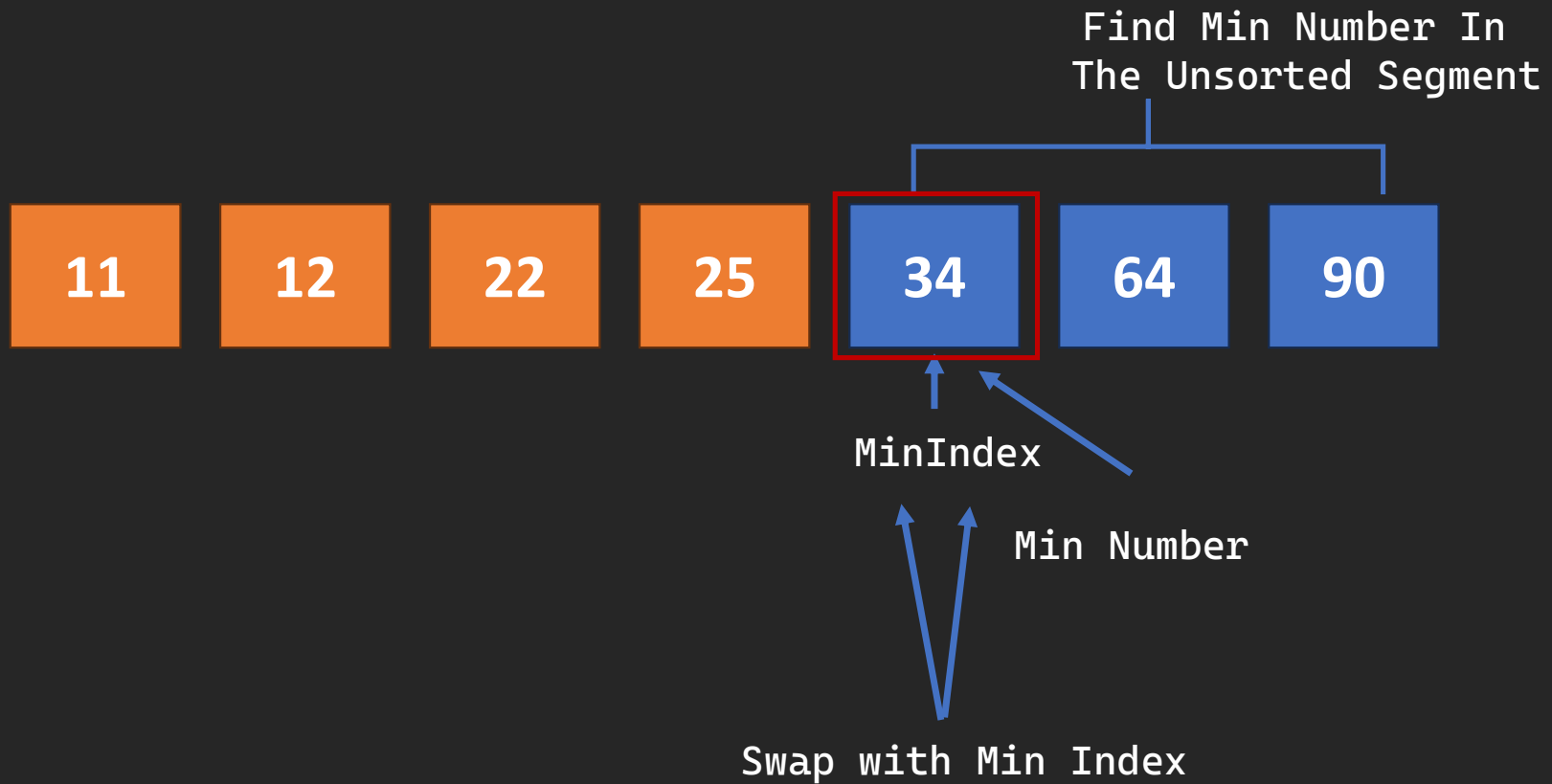
Unsorted Segment

Sorted Segment



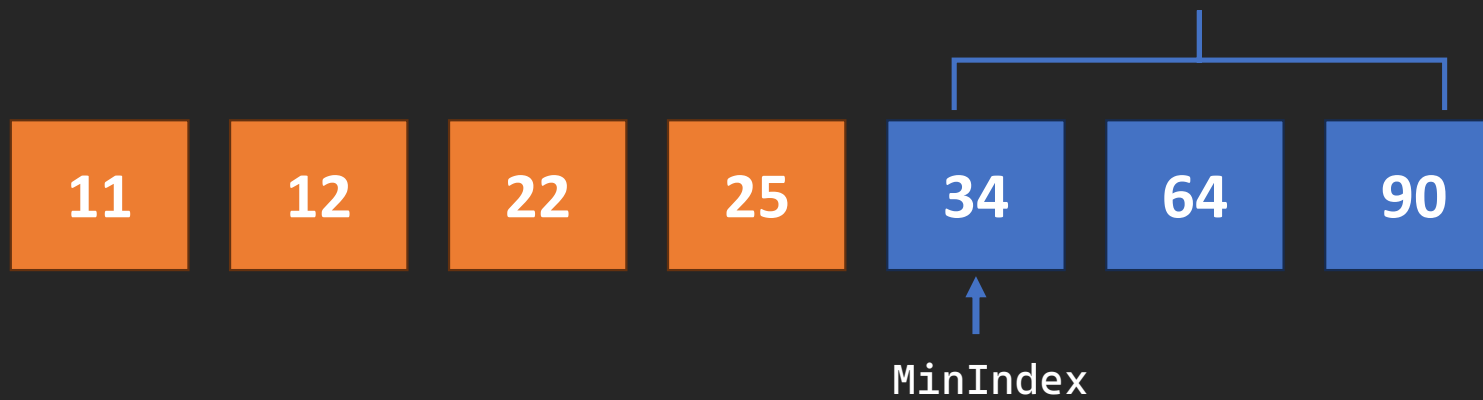
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Sorted Segment



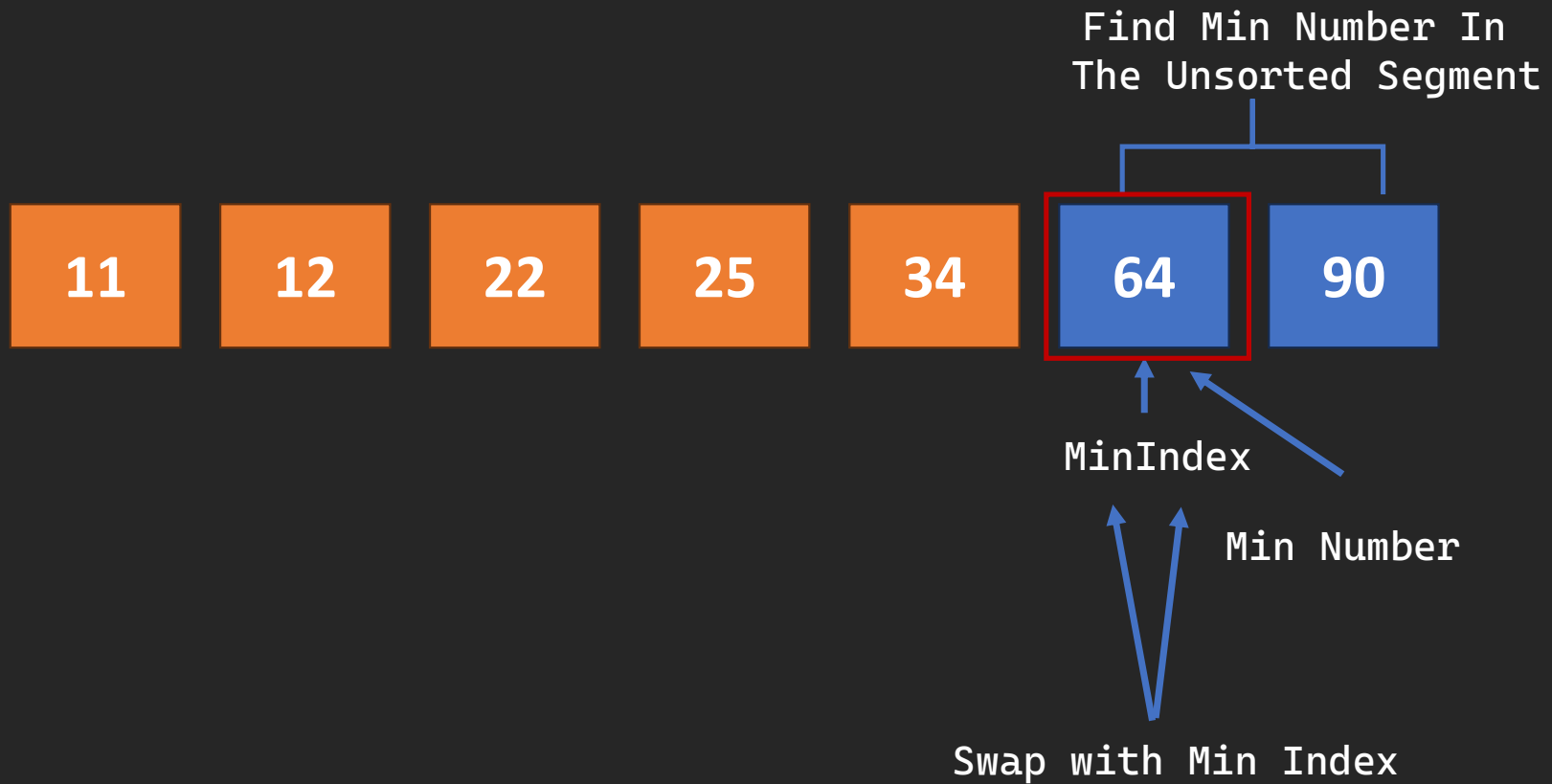
Unsorted Segment

Sorted Segment



Unsorted Segment

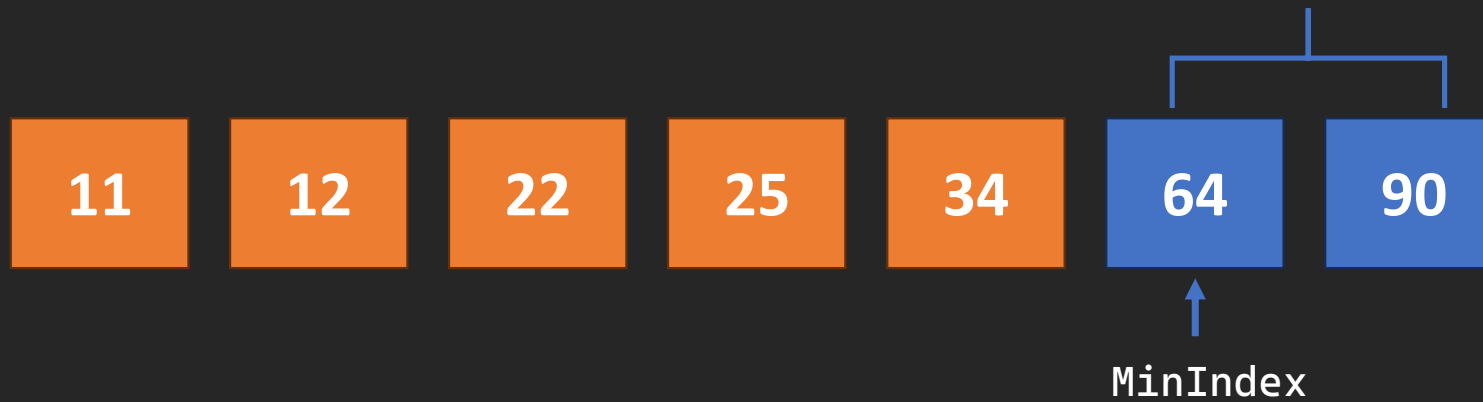
Sorted Segment



Unsorted Segment

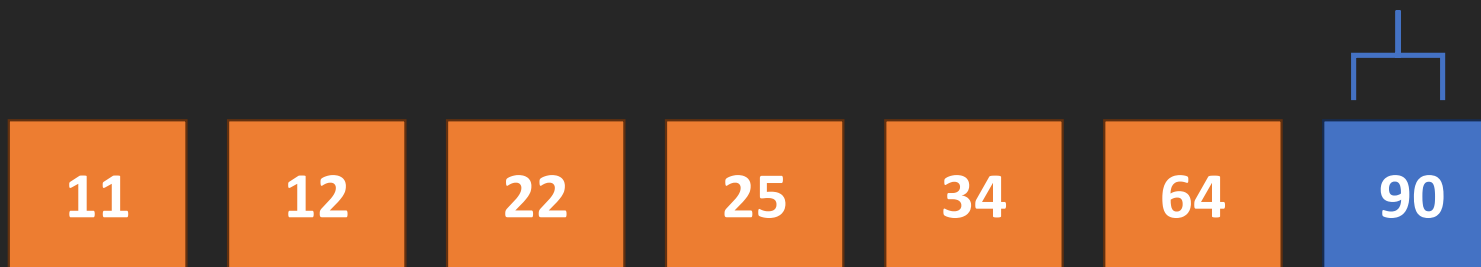
Sorted Segment





Unsorted Segment

Sorted Segment



Unsorted Segment

Sorted Segment

# Done: Array Sorted 😊

11

12

22

25

34

64

90

Unsorted Segment

Sorted Segment

# What is Selection Sort?

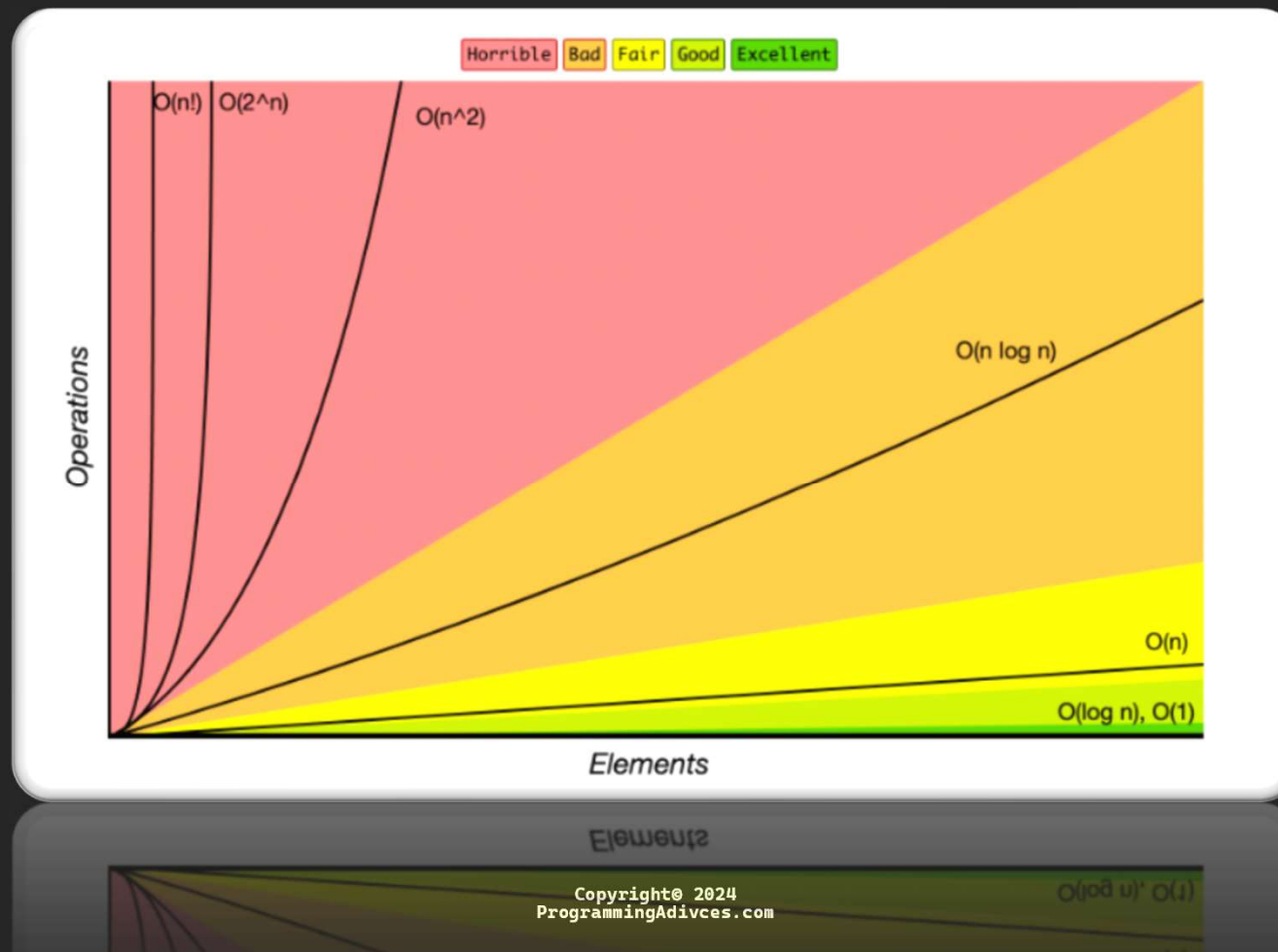
- Selection Sort is a straightforward sorting algorithm that segments the list into two parts:
  - Sorted
  - Unsorted.
- It repeatedly selects the smallest (or largest, depending on sorting order) element from the unsorted segment and moves it to the end of the sorted segment.
- The name "selection sort" comes from this process of selecting the next smallest (or largest) element from the unsorted portion of the list and then swapping it into place.

# Complexity of Selection Sort:

- Despite its simplicity, Selection Sort is not suitable for large datasets as its average and worst-case complexity are both  $O(n^2)$
- $O(n^2)$ , where  $n$  is the number of items being sorted.
- Though not efficient on large lists compared to more advanced algorithms like Quick Sort, Merge Sort, or Heap Sort, its simplicity makes it easy to understand and implement.



# Selection Sort is $O(N^2)$





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Thank You

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