Unit IV:
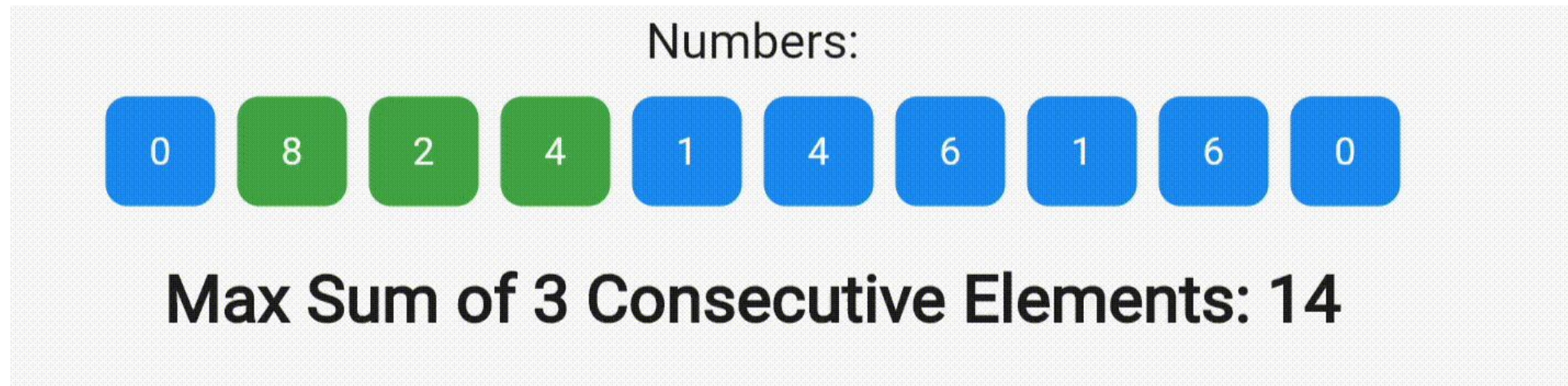# Introduction to Computational Problems & Algorithms

Programming Methodology (CSF101)

Outline

- Sliding Window : Best Time to Buy And Sell Stock, Longest Substring Without Repeating Characters

- Stacks & Queues; Valid Parentheses, Implement Stack using Queue(s)

Sliding Window

Two types of Sliding window

Fixed size sliding window

Variable size sliding window

Tips to identify sliding window problems

- Finding Maximum/Minimum Subarray, Substrings which satisfy some specific condition

- Sometimes the size of the subarray or substring 'K' will be given.

- An alternate solution can solve at O(n^2) time complexity.

Complexity Analysis

Time Complexity: O(n)

Space Complexity: O(1)

Leetcode problems of Sliding Window

1. best-time-to-buy-and-sell-stock
2. longest-substring-without-repeating-characters

Leetcode problems of Stack and Queues

1. valid-parentheses
2. implement-stack-using-queues

Reference

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YouTube. (2020a, March 31). Sliding window technique + 4 questions - algorithms. YouTube. https://www.youtube.com/watch?v=jM2dhDPYMQM