**Algorithm Analysis**

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COMP 251 AB1

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October 8th, 2025

# Algorithm Complexity

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Singley Linked List | | | | Array Based List | | | |
|  | Time | | Space | | Time | | Space | |
|  | Best Case | Worst Case | Best Case | Worst Case | Best Case | Worst Case | Best Case | Worst Case |
| add(T) | O(1) | O(1) | O(1) | O(1) | O() | O() | O() | O() |
| add(int, T) | O(1) | O(n) | O(1) | O(1) | O() | O() | O() | O() |
| Set(int,T) | O(1) | O(n) | O(1) | O(1) | O() | O() | O() | O() |
| Remove(int) | O(1) | O(n) | O(1) | O(1) | O() | O() | O() | O() |
| Remove(T) | O(1) | O(n) | O(1) | O(1) | O() | O() | O() | O() |
| Contains(T) | O(1) | O(n) | O(1) | O(1) | O() | O() | O() | O() |
| Get(int) | O(1) | O(n) | O(1) | O(1) | O() | O() | O() | O() |
| indexOf(T) | O(1) | O(n) | O(1) | O(1) | O() | O() | O() | O() |
| subList(int,int) | O(1) | O(n) | O(1) | O(n) | O() | O() | O() | O() |

# Findings and Results

# AI Use

* Disabled VS Code’s “inline suggestions”.
* Used ChatGPT for some debugging, but with prompts similar to “debug, but just explain the problem without giving me the solution”.