

Time Complexity Analysis

Understanding Time Complexity

Time complexity is a crucial concept in computer science that helps us analyze and compare the efficiency of different algorithms.

Big O Notation

1. $O(1)$ - Constant Time
2. $O(\log n)$ - Logarithmic Time
3. $O(n)$ - Linear Time
4. $O(n \log n)$ - Linearithmic Time
5. $O(n^2)$ - Quadratic Time

Common Operations

Array Operations:

- Access: $O(1)$
- Search: $O(n)$
- Insert: $O(n)$
- Delete: $O(n)$

Linked List Operations:

- Access: $O(n)$
- Search: $O(n)$
- Insert: $O(1)$

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- Delete: $O(1)$