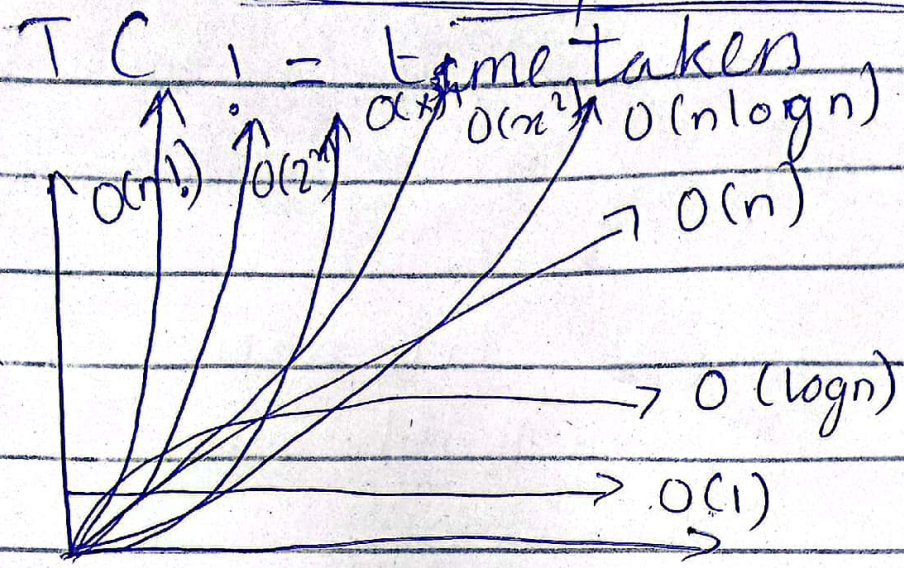
Time Compelexity



1) O(1) - Constant Time
   - Accessing an element in an array by index
   - Checking if a number is even or odd.

2) O(logn) - Logarithmic Time
   - Binary search
   - Finding an element in a balanced binary search tree.

   It is way better than O(n)

3) O(n) - Linear Time
   - Traversing an array or linked list.
   - Finding the maxim

4. $O(n \log n)$ - Linearithmic Time
   - Merge sort
   - Heap sort
5. $O(n^2)$ - Quadratic Time
   - Bubble sort
   - Checking all pairs in a set
6. $O(n^3)$ - Cubic Time
   When three nested loops are used.
   - Matrix multiplication
   - Checking all triplets in a dataset
7. $O(2^n)$ - Exponential Time
   - Brute Force
   - Recursive computation
8. $O(n!)$ - Factorial Time
   - Generating all permutations of a set