

DATA STRUCTURES AND ALGORITHMS  
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HOMEWORK-1

TIME ANALYSIS

Note- For each performed time analysis will be with respect with the array functionality in data structures, as I have implemented the homework with arrays structure.

**InsertAccount function:**

Best case- The best case will be when there is no element present in the array and thus there would be no traversal or comparisons which makes the complexity constant and the notation to be  $O(1)$ .

Worst case- It will be when it has to travel the entire array making comparisons and thus the complexity will be  $O(n)$  as the traversal is dependent on the length of the array.

**RemoveAccount function:**

Best case- The best case will be when there is no element present in the array and thus complexity will be constant referring as  $O(1)$ .

Worst case- It will be the worst case when it has to traverse the entire array to make comparisons and remove the last element. The complexity becomes  $O(n)$ , linear time complexity.