Engineering Animuthyam

Java DSA – Course Part -11

Time Complexity

Course Link:
https://www.youtube.com/playlist?list=PLjzLBp9HHZWhVXBSPS1VqxXXDoVk07gd9

Website Link:
https://www.vigneshreddyjulakanti.in/

Hello machas, Bagunnara.

Leetcode Problems

121. Best Time to Buy and Sell Stock

https://leetcode.com/problems/best-time-to-buy-and-sell-stock/description/

Approach – 1 : TLE

```java
class Solution {
    public int maxProfit(int[] prices) {
        int m = Integer.MAX_VALUE;
        int profit = 0 ;
        int n=prices.length;
        for(int i=0;i<n;i++){
            for(int j=i+1;j<n;j++){
                profit = Math.max(profit, prices[j]-prices[i]);
            }
        }
        return profit;
    }
}
```

Time Complexity: Kattapa ni evaru champiru

O(n): line ga okokari degariki veli katapani nuve champinava aduguthe val chepdam

0(n**2) , O(1), O(logn)

Order of time taking

O(n**2) > O(n) > O(logn) > O(1)

Approach – 2: O(n)

```java
class Solution {
    public int maxProfit(int[] prices) {
        int m = Integer.MAX_VALUE;
        int profit = 0 ;
        for(int i=0;i<prices.length;i++){
            m = Math.min(m,prices[i]);
            profit = Math.max(profit,prices[i]-m);
        }
        return profit;
    }
}
```

Lets try to figure out time complexities of all the Problems we solved till now.