

## Lets\_upgrade Assignmnet Question

```
1)for (i = 1 ; i <= n ; i ++){  
  
    for(j =i ; j < = n ; j++){  
  
        pf("hii");  
    }  
  
}
```

Time complexity :  $O(n^2)$

Explanation :

here in the first loop  $i = 1$  and  $i$  is less than  $n$  and increment is  $+1$

And in second loop  $j=i$  and less than  $n$  and increment of  $+1$

As the value of loop increase as the number will decrease .

Therefore the time complexity for first loop is  $(n)$

And for the second loop it is  $(n-1)$

And then the time complexity for whole loop will be  $O(n^2)$

```
2)for(i =1 ; i <= n ; i *=3){
```

```
        for(j=1 ; j<=n ; j++){  
            pf("hello");  
        }  
    }
```

Time complexity :  $O(\log n)$

Explanation :

for the first loop the incrementation in  $i$  is  $i*3$  and next element will be 1,3,9,27,....

So it is log function

Therefore time complexity is  $O(\log n)$