QUESTION 1 – Find the complexity of the following Scenarios -

1. for(i=1;i<=n;i++)

for(j=i;j<=n;j++)

print(“Hi”);

**i** **j**

1 n  
 2 n-1  
 3 n-2  
 4 n-3

. .  
 . .

n-1 n-(n-1)=n-n+1 =1  
 n n-n =0

So n+(n-1)+(n-2)+(n-3)+.......2+1+0

* n(n+1)/2
* (n2+n)/2
* n2
* O(n2)

1. for(i=1;i<=n;i\*=3)

for(j=1;j<=n;j++)

print(“Hello”);

If n =9 then it will loop will run 3 times

**i j**

1 n  
 3 n  
 9 n

3 times for 9

* 33 = 9
* Log 33 = log 9
* 3log33 = log 9
* 3 = log 9
* O(log3n)