DSA assignment Day-1

1.) Find the time complexity for the following scenarios

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

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

printf("Hi");

Answer:-

i j

1 n

2 n-1

3 n-2

4 n-3

. .

. .

. .

n 1

Time complexity = n+(n-1)+(n-2)+.....+3+2+1

= n(n+1)/2

=n^2

Therefore the time complexity is O(n^2)

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

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

printf("Hello");

Answer:-

i j

1 n

3 n

6 n

9 n

. .

. .

. .

n n

The time complexity = O(nlogn)