//Day 1 Assignment Answer

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//Course : Data Structures and Algorithm

**Question 1:**

**for(**i**=**1 **;** i **<=** n**;** i**++){**

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

printf**(**"Hi"**);**

**}**

**}**

**Explanation:**

This nested loop is printing "Hi"**,**it will **do** it **for** the number of times of outer loop**,**

which itself runs **for** n length**.** hence**,** it will **do** the work **for** 1 **+** 2 **+** 3 **+** **.....**n times**,**

which becomes n**\*(**n**+**1**)/**2 times**.** Hence**,** it will simply be O**(**n**^**2**).**

**Answer for Question 1:**

So the time complexity will be O**(**n**^**2**).**

**Question 2:**

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

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

printf**(**"Hello"**);**

**}**

**}**

**Explanation:**

there are two loops which are present**.** The first loop in the code snippet**,**

the loop variable is multiplied by a constant value **and** hence the time complexity

of the first loop is of O**(**log n**).** The second loop in the code snippet**,**

the loop variable is increamented with a constant amount **and** hence the

time complexity of the second loop is of O**(**n**).**

**Answer for Question 2:**

So the time complexity will be O**(**n**\***log n**).**