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Handy - on - 3

Q1.)

$$n = f(n)$$

$$n = 1;$$

$$\text{for } i = 1 : n$$

$$\text{for } j = 1 : n$$

$$n = n + 1;$$

$$T(n) = \sum_{i=1}^n \sum_{j=1}^n 1$$

$$\text{with respect to } n = 1 + 1 + 1 + \dots + 1 \text{ (n times)} \Rightarrow n^2$$

it is therefore $\Theta(n^2)$ as per master

$$\therefore T(n) = n^2$$

$$= O(n^2)$$

(110) base function is n^2 as per master

no other cases as it is $\Theta(n^2)$

and master as it is $\Theta(n^2)$

related to the above: under
 FORS 133001: Q1 ATU
 1-10-2004

$$n = f(n)$$

$$n = 1;$$

$$y = 1;$$

$$\text{for } i = 1 : n$$

$$\text{for } j = 1 : n$$

$$n = n + 1;$$

$$y = 1 + j;$$

$$(n) j = n$$

$$i = n$$

$$N : i = i \text{ ref}$$

$$N : j = j \text{ ref}$$

$$1 + n = n$$

$$\frac{1}{2} \frac{1}{2} = (N)T$$

Q4) Yes, will take significantly larger time

because of an additional operation in the

'y' loop.

However since it's constant and $O(1)$

it will take the same time as

'n' operation in the previous line.

Q5) will not affect the results as the time

will remain same $O(n^2)$. Hence, correctness

does not affect complexity.