

DAY-I

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Q. for ($i=1$; $i \leq n$; $i++$)

for ($j=1$; $j \leq n$; $j++$)

printf("Hi");

\Rightarrow for ($i=1$; $i \leq n$; $i++$) \leftarrow n times.

for ($j=1$; $j \leq n$; $j++$) \leftarrow n times.

$$\begin{aligned} \therefore C &\rightarrow C \cdot (n \times n) \\ &\rightarrow C(n^2) \\ &= O(n^2) \end{aligned}$$

if value of n is 3.

Then the "Hi" is printed 9 times.

$$\begin{aligned} \therefore n &= 3 \\ \Rightarrow (n)^2 &= (3)^2 = \underline{\underline{9}} \end{aligned}$$

Q

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for (i = 1; i <= n; i * = 3)
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for (j = 1; j <= n; j++)
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    pf ("Hello")
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$\Rightarrow 1 + 3 + 9 + 27 + 81 + 243 + \dots + n$

$\therefore n =$ upto 6 terms.

$a = 1$ $\{ \because a = \text{first term} \}$

$r = 3$ $\{ \because r = \text{common ratio} \}$

$n = 6$ $\{ \text{Here, } n = \text{no. of terms} \}$

Formula of GP series are;

$$a \left(\frac{1 - r^n}{1 - r} \right)$$

$$\Rightarrow 1 \left(\frac{1 - 3^6}{1 - 3} \right) \Rightarrow 1 \left(\frac{1 - 243}{-2} \right)$$

$$\Rightarrow \frac{+242}{+2} = \underline{\underline{121}}$$

\therefore Hello will be printed 121 times