

100-Days-of-DSA

Problem Statement: Given $\text{nums}[n]$, return an array answer , such that $\text{answer}[i]$ is equal to the product of all elements of nums except $\text{nums}[i]$

$$\text{nums}[] = \{1, 2, 3, 4\}$$

$$\text{ans}[] = \{24, 12, 8, 6\}$$

we have to multiply every index value
other than current index value

Algo

① Initialize a variable

$$\underline{\text{suffix} = 1}$$

② for($n-1 \rightarrow 1$)

$$\text{PrefixProduct}[i] = \text{PrefixProduct}[i-1] * \text{suffix}$$

$$\text{suffix} = \text{suffix} * \text{arr}[i]$$

③ $\text{PrefixProduct}[0] = \text{suffix}$

→ Explanation

arr : [1 2 3 4]

PP : [~~1~~ ~~2~~ ~~6~~ ~~24~~] Suffix = 1
 24 12 8 6

<u>i</u>	<u>PP[i] = PP[i-1] * Suffix</u>	<u>Suffix × ⇒ Suffix * arr[i]</u>
(n-1) 3	PP(2) * 1	1 * 4 = (4)
2	PP(1) * 4	4 * 3 = (12)
3	PP(0) * 12	