

~~Or~~

- 1-) $a \leftarrow 0$
- 2-) For $i \leftarrow 1$ to n
- 3-) $a \leftarrow a + i$
- 4-) return a

$$\sum_{i=1}^n 1 = n$$

$$O(n)$$

~~Or~~

- 1-) $a \leftarrow 0$
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- 3-) For $j \leftarrow 1$ to n
- 4-) $a \leftarrow a + 1$
- 5-) return a

↳ by set n
de fobaca
coliziyor

$$\sum_{i=1}^n \sum_{j=1}^n 1 = \sum_{i=1}^n n = n^2$$

$$O(n^2)$$

! $i \in \mathbb{N}$ $i \in \mathbb{N}$ \hookrightarrow adet döngü var ise
 mümkün $\Theta(n^2)$ olur

~~1~~

1- $a \leftarrow 0$

2- for $i \leftarrow 1$ to n

3- for $j \leftarrow i$ to n

4- $a \leftarrow a + 1 \rightarrow$ en çok
 çalışır yer

5- return a

1. 5. adımlar
 Her ikisi de $\Theta(n^2)$
 olur.

$$\sum_{i=1}^n \sum_{j=i}^n 1 = \sum_{i=1}^n \left(\underbrace{\sum_{j=i}^n 1}_n - \underbrace{\sum_{j=1}^{i-1} 1}_{i-1} \right) = \sum_{i=1}^n (n - i + 1)$$

$$= \sum_{i=1}^n (n+1) - \sum_{i=1}^n i = n(n+1) - \frac{n(n+1)}{2} = \frac{1}{2}n^2 + \frac{1}{2}n$$

$\Theta(n^2)$

①

Sinada bayle
bir son
soracagiz

1-) $a \leftarrow 0$

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3-) For $j \leftarrow i$ to n
 $a \leftarrow a + 1$

4-)

5-) return a

$$\sum_{i=1}^n \sum_{j=i+1}^n 1 = \sum_{i=1}^n \left(\underbrace{\sum_{j=1}^n 1}_n - \underbrace{\sum_{j=1}^i 1}_i \right) = \sum_{i=1}^n (n-i) =$$

$$= \sum_{i=1}^n (n) - \sum_{i=1}^n i = n^2 - \frac{n(n+1)}{2} = \underline{\underline{\frac{1}{2}n^2 - \frac{1}{2}n}}$$

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1- $a \leftarrow 0$

2- For $i \leftarrow 1$ to $n-1$

3- for $j \leftarrow i+1$ to n

4- for $k \leftarrow 1$ to j

5- $a \leftarrow a+1$

6-)

7- return a ;

$$\sum_{i=1}^n \sum_{j=i+1}^n \sum_{k=1}^j 1 = \sum_{i=1}^{n-1} \left(\frac{1}{2} n(n+1) - \frac{1}{2} i(i+1) \right)$$

$$= \frac{1}{12} n(n-1)(4n+4)$$

$$= \underline{\underline{\Theta(n^3)}}$$

2023 Vize

Sorular

1-) $s \leftarrow 0$

for $i \leftarrow 1$ to $n-4 \rightarrow n-4$ defo salar

2-)

for $j \leftarrow i$ to $i+4 \rightarrow 5$ defo salar

3-)

for $k \leftarrow i$ to $j \rightarrow i, i+1, i+2, i+3$

4-)

$s \leftarrow s + a_i$ u $i+4$ e kadar

5-)

sayilar 1,2,3,4 u 5

defa, tekrara 15
defo salar.

$$= \underline{\underline{(2)(n)}}$$