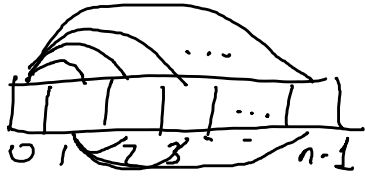


Algoritmar Seans 3

3 Mart 2022 Perşembe 16:23

$$\sum_{i=1}^{n-1} 1 = n-1 \text{ (with } -1+1 \text{ crossed out)} = n-1 \in \Theta(n)$$



$$i \rightarrow 0 : n-2$$

$$j \rightarrow i+1 : n-1$$

$$i=0 \quad j=1, 2, 3, \dots, n-1$$

$$i=1 \quad j=2, 3, \dots, n-1$$

$$\sum_{i=0}^{n-2} \left(\sum_{j=i+1}^{n-1} 1 \right) = \sum_{i=0}^{n-2} (n-1-i-1+1) \text{ (with } -1+1 \text{ crossed out)} = \sum_{i=0}^{n-2} (n-1-i) = \sum_{i=0}^{n-2} (n-1) - \sum_{i=0}^{n-2} i$$

$$\begin{aligned} (n-1) \sum_{i=0}^{n-2} 1 - \sum_{i=0}^{n-2} i &= (n-1)(n-1) - \frac{(n-2)(n-1)}{2} \\ &= n^2 - 2n + 1 - \frac{n^2 - 3n + 2}{2} \\ &= \frac{2n^2 - 4n + 2 - n^2 + 3n - 2}{2} = \frac{n^2 - n}{2} \end{aligned}$$

$$\frac{n^2 - n}{2} \in \Theta(n^2)$$