

ANÁLISIS DE COMPLEJIDAD EJERCICIO #4 – 2^SORT

Análisis método cándido

$$T(n) = 3 + \sum_{i=0}^{n-k-1} (6 + 1(\sum_{j=i}^{i+k-1} (6 + 5 + 2 + 4)) + 1 + 2 + 4) + 1$$

$$T(n) = 4 + \sum_{i=0}^{n-k-1} (14(\sum_{j=i}^{i+k-1} 18))$$

$$T(n) = 4 + \sum_{i=0}^{n-k-1} (14(((i + k - 1) - i + 1) * 18))$$

$$T(n) = 4 + \sum_{i=0}^{n-k-1} (14(18k))$$

$$T(n) = 4 + \sum_{i=0}^{n-k-1} (252k)$$

$$T(n) = 4 + (n - k - 1)(252k)$$

$$T(n) = 4 + 252nk - 252k^2 - 252k$$

$$T(n) \in O(n^2)$$

Análisis método óptimo

$$T(n) = 2 + 2 + \sum_{i=0}^{n-1} (5 + 5 + 2 + 1 + 2 + 3) + 1$$

$$T(n) = 5 + \sum_{i=0}^{n-1} (18)$$

$$T(n) = 5 + 18n - 18$$

$$T(n) = -13 + 18n$$

$$T(n) \in O(n)$$