

ANÁLISIS DE COMPLEJIDAD EJERCICIO #1 – HOTELS ALONG THE CROATIAN COAST

Análisis método cándido

$$T(n) = 3 + \sum_{i=0}^n \left(5 + 2 * \sum_{j=i}^n (5 + 1 + 3 + 3 + 1 + 1 + 2) + 1 + 2 \right) + 1$$

$$T(n) = 4 + \sum_{i=0}^n \left(10 * \sum_{j=i}^n (16) \right)$$

$$T(n) = 4 + \sum_{i=0}^n \left(10((n - i + 1)16) \right)$$

$$T(n) = 4 + 10 \left(\sum_{i=0}^n 16n - \sum_{i=0}^n 16i + \sum_{i=0}^n 16 \right)$$

$$T(n) = 4 + 10 \left(16n^2 - 16 \left(\frac{n(n+1)}{2} \right) + 16n \right)$$

$$T(n) = 4 + 10 \left(16n^2 - \left(\frac{16n^2 + n}{2} \right) + 16n \right)$$

$$T(n) = 4 + 10(16n^2 - 8n^2 + 8n + 16n)$$

$$T(n) = 4 + 10(8n^2 + 24n)$$

$$T(n) = 4 + 80n^2 + 240n$$

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

Análisis método óptimo

$$T(n) = 8 + 1 + \sum_{i=0}^n (3 + 3 + 1 + 1 + 2 + 1) + 1$$

$$T(n) = 9 + \sum_{i=0}^n (11)$$

$$T(n) = 9 + 11n$$

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