

Assuming all the values in the array are the same, we get the following relation :

$$\begin{aligned} T(N) &= 2 * T(N/2) + \text{constant} \\ &= 4 * T(N/4) + \text{constant} \quad (2 * \text{constant} = \text{another constant}) \\ &= 8 * T(N/8) + \text{constant} \\ &\dots \\ &= N * T(N/N) + \text{constant} \\ &= N + \text{constant} \\ &= O(N) \end{aligned}$$