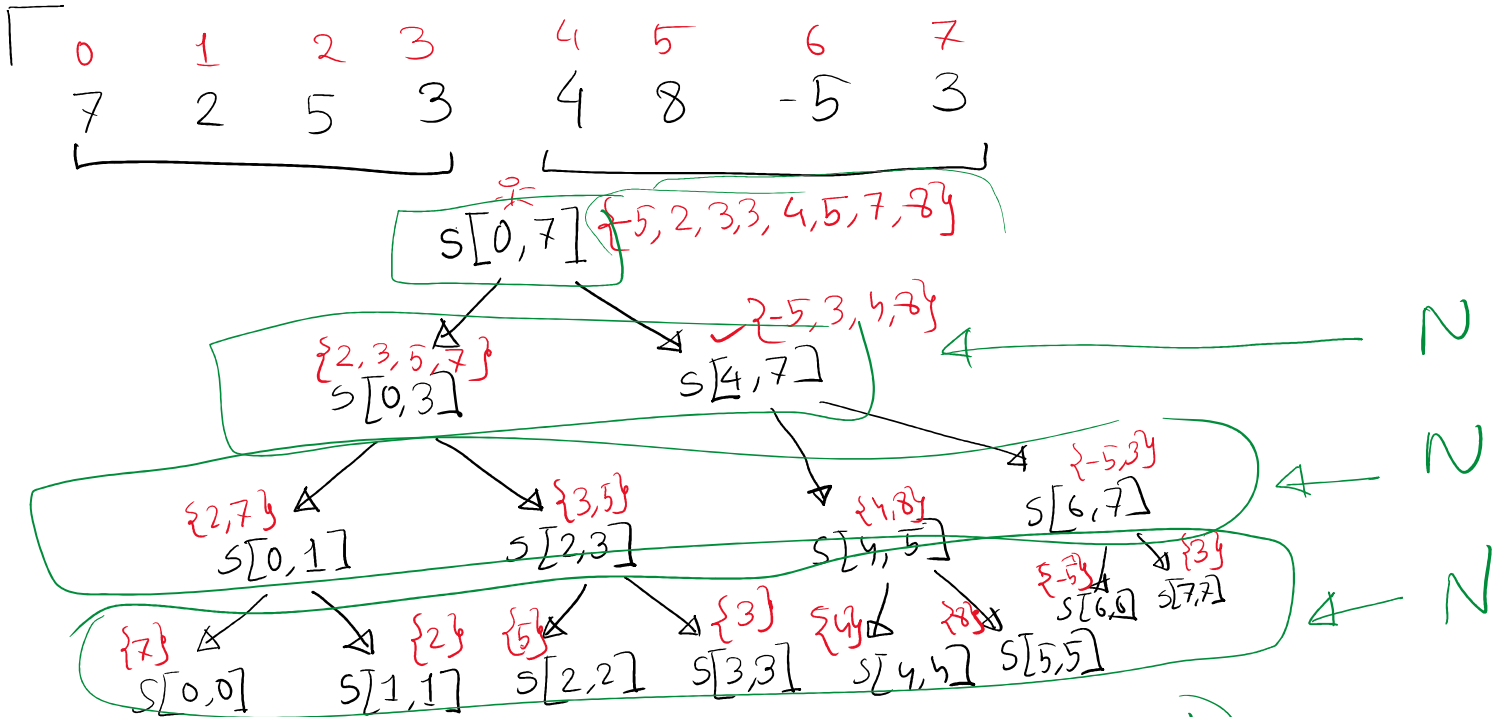


Merge Sort

Comparison based sorting algo

$$O(kN \log_2 N) \quad N = \# \text{ of elements}$$

k = cost of comparing two elements



$$\log_2(N) = 3 \quad \text{Te: } O(N \cdot \log_2 N)$$

Attendance !!

inversion count

$$a \quad \boxed{i < j} \rightarrow a_i > a_j$$

$$10 = 4 + 3 + 2 + 1$$

$$\binom{5}{2} = 10 \quad 5, 4, 3, \underline{2}, \underline{1}$$

$$\binom{n}{2} = \frac{n(n-1)}{2}$$

$$P_n = P_{n-1} + P_{n-2}$$

$$\Rightarrow \boxed{P_{n-2} = P_n - P_{n-1}}$$

