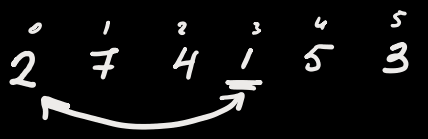
Friday, November 19, 2021 9:58 AM

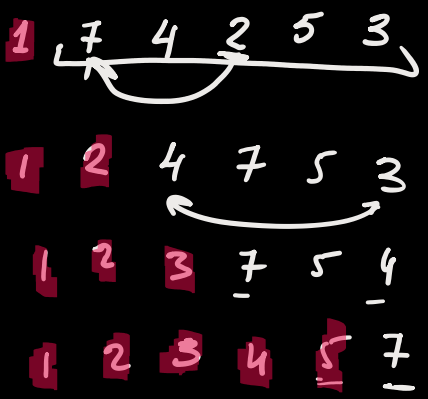
SELECTION SORT

- IT SHARES SOME SIMILARITIES WITH INSERTION SORT.
- IT HAS A TIME COMPLEXITY $O(n^2)$



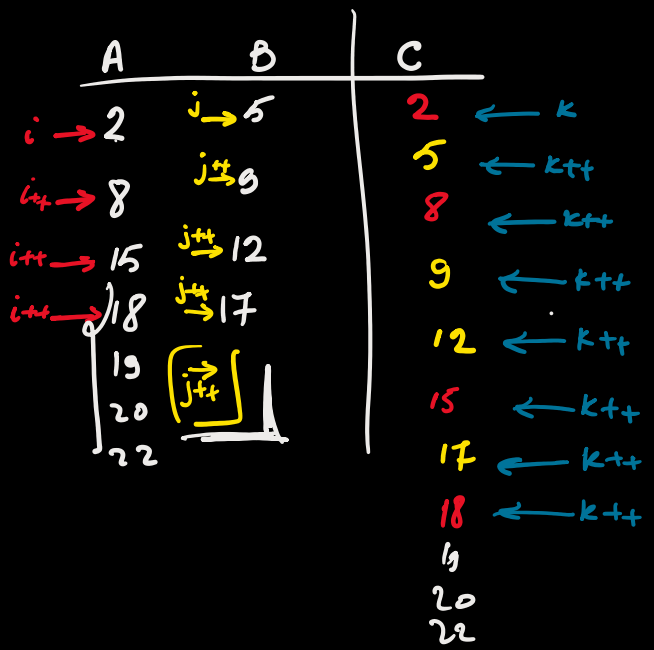
⇒ ASCENDING ORDER ⇒ TRY TO FIND THE SMALLEST NUMBER

⇒ DESCENDING ORDER ⇒ TRY TO FIND THE BIGGEST NUMBER.

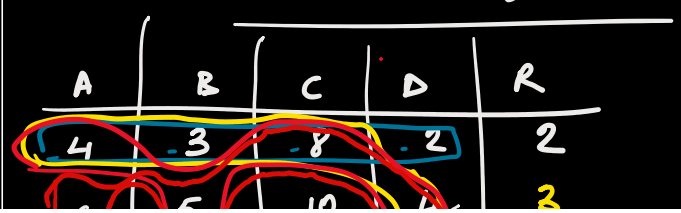


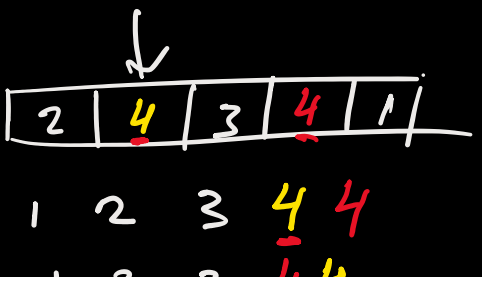
DIVIDE & CONQUER ALGORITHMS | MERGE SORT / QUICK SORT

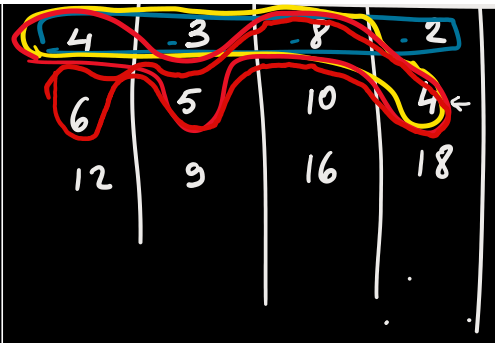
MERGE SORT → PART 1 : MERGING.



⇒ 2 WAY MERGING



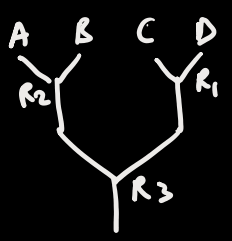


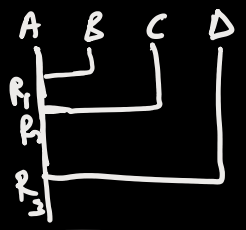


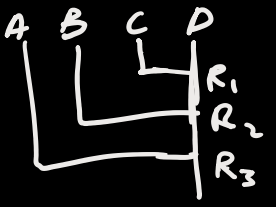
1 2 3 4 4

1 2 3 4 4

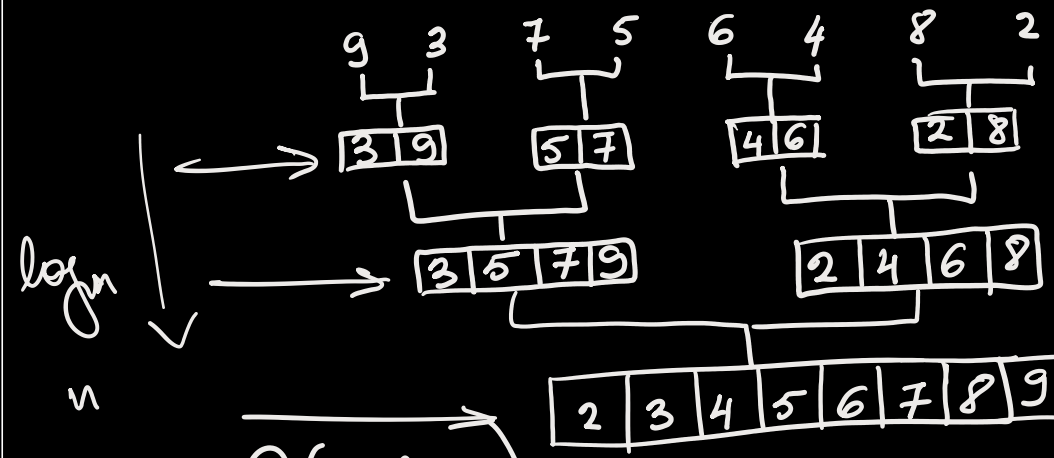
→ 4 WAY MERGING

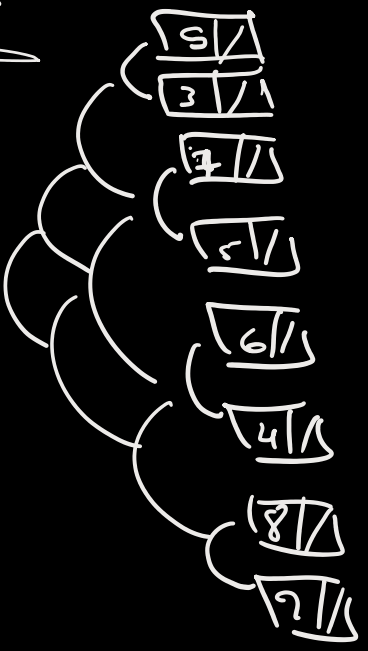






2 WAY MERGE SORT





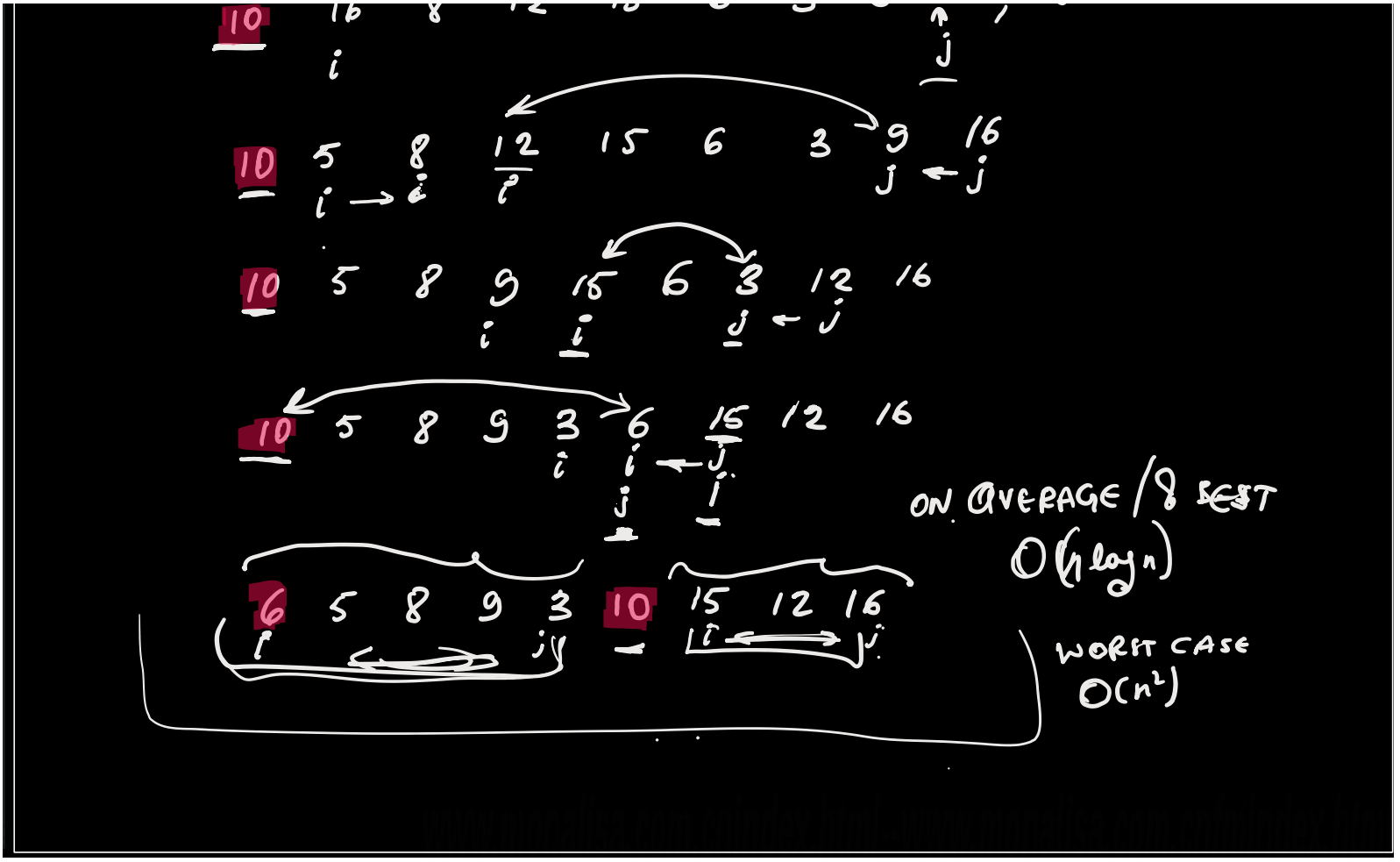
$O(n \log n)$

QUICK SORT ⇒ TONY HOARE 1960

- DIVIDE & CONQUERE ALGORITHM.
- IT RELIES ON CHOOSING A PIVOT
- ALL NUMBERS BEFORE THE PIVOT SHOULD BE LESS THAN THE PIVOT & ALL NUBERS AFTER THE PIVOT SHOULD BE LARGER THAN PIVOT

10 16 8 12 15 6 3 9 5 , ∞

i j


ON AVERAGE / BEST
O(n log n)
WORST CASE
O(n²)