

Selection Sort: 1 7 8 5 3 6 4 2

found biggest
1 7 8 5 3 6 4 2

swap
1 7 2 5 3 6 4 8

no swap
1 4 2 5 3 6 7 8

1 4 2 5 3 6 7 8

1 4 2 3 5 6 7 8

1 3 2 4 5 6 7 8

1 2 3 4 5 6 7 8

1 2 3 4 5 6 7 8

Insertion sort : 1 7 8 5 3 6 4 2

1

1 (7)

1 7 (8)

swap from right
to left

1 7 8 (5) \Rightarrow 1 5 7 8

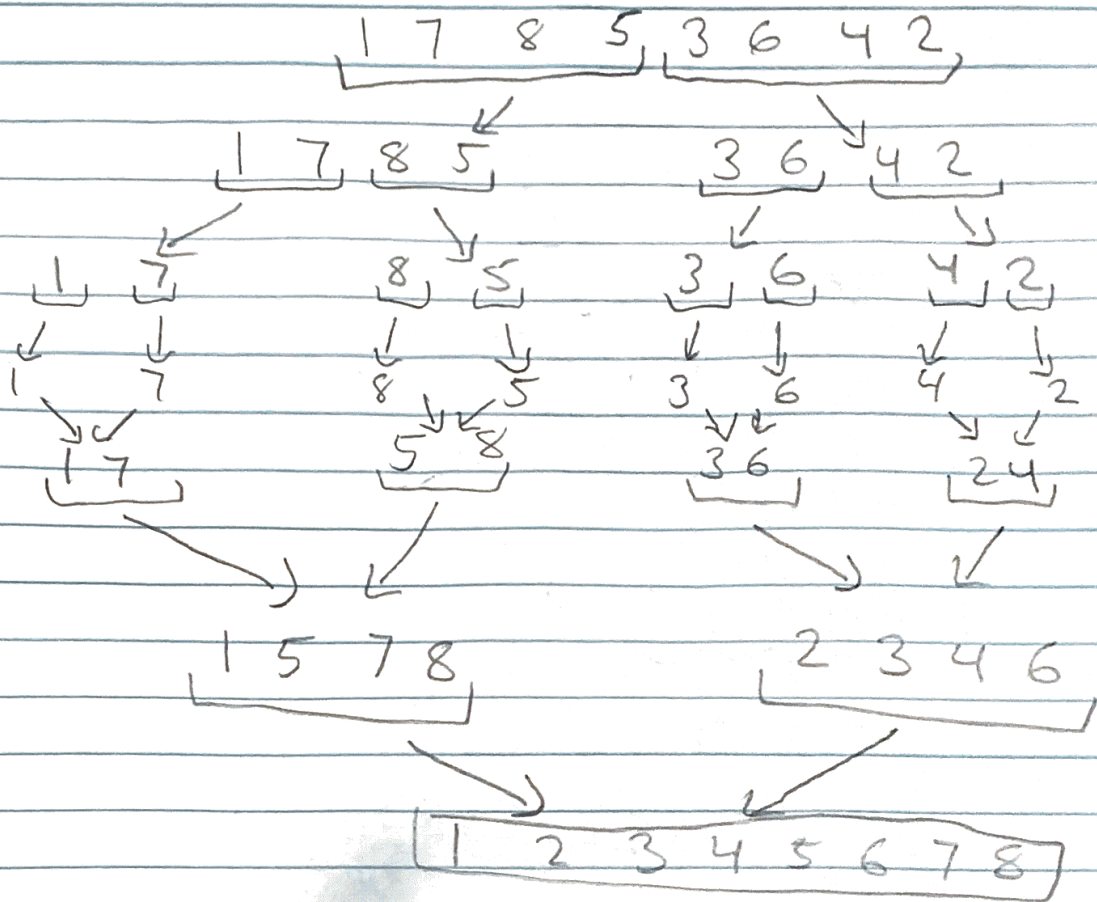
1 5 7 8 (3) \Rightarrow 1 3 5 7 8

1 3 5 7 8 (6) \Rightarrow 1 3 5 6 7 8

1 3 5 6 7 8 (4) \Rightarrow 1 3 4 5 6 7 8

1 3 4 5 6 7 8 (2) \Rightarrow 1 2 3 4 5 6 7 8

Merge Sort: 1 7 8 5 3 6 4 2



Quick Sort: 1 7 8 5 3 6 4 2

1 7 8 (5) 3 6 4 2

↗ swap with last

Pivot

(1) 7 8 2 3 6 4 (5)

7 < 5

Swap

4 < 5

1 (7) 8 2 3 6 (4) 5

(1) 4 8 2 3 6 7 (5)

8 < 5

3 < 5

1 4 (8) 2 (3) 6 7 5

(1) 4 3 2 8 6 7 (5)

8 < 5

bounds cross

1 4 3 2 (8) 6 7 (5)

Pivot

5 swaps to its final location

(1) (4) 3 2 5 6 7 8

Quicksort

(1) 2 3 (4) 5 6 7 8

4 < 4, bounds cross

4 moves to final location

Pivot

1 (2) 3 4 5 6 7 8

Quicksort

1 3 2 4 5 6 7 8

↗ ↖

1 2 3 4 5 6 7 8

both sublists have 1 element so are sorted

Pivot

1 2 3 4 5 6 (7) 8

1 2 3 4 5

(6) 8 (7)

↗ ↖

1 2 3 4 5 6 7 8

both have 1 element so is sorted

Quicksort Right Sublist

Whole list is sorted

1 2 3 4 5 6 7 8

Heap Sort: 1 7 8 5 3 6 4 2

