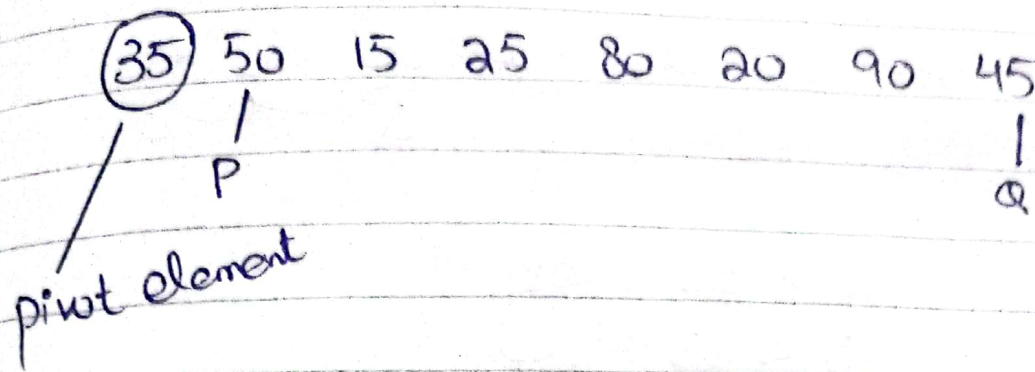


Quick Sort: (DAC)



Pivot element = 35

P = 50

Q = 45

- P pointer move karta hai right hand side
- Ak ak kr k increment karta hai
- or p rukta tb hai, jb element milay ga greater than pivot
- Q pointer move karta hai left hand side.
- Ak ak kr k decrement karta hai
- or q rukta tb hai, jb element less than pivot ho.

Less ← P → Greater

(35) 50 15 25 80 20 90 45
P

50 > 35 Yes.

45 < 35 NO

90 < 35 NO

20 < 35 Yes

Swap P and Q.

(35) 20 15 25 80 50 90 45
P Q P Q

Agar P & Q cross

20 > 35 NO

kr jain to

15 > 35 NO

pivot ko change

25 > 35 NO

Kartay hai : Q

80 > 35 Yes

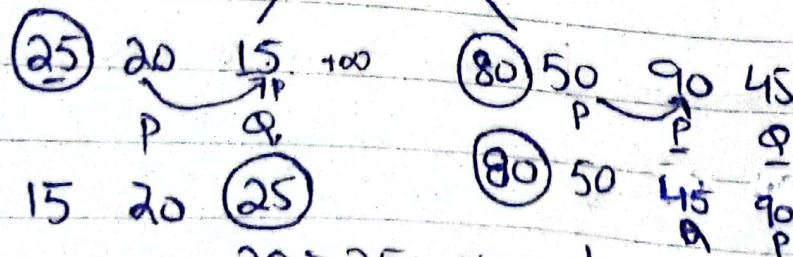
sy,

50 < 35 NO

80 < 35 NO

25 < 35 Yes

25 20 15 (35) 80 50 90 45



20 > 25 NO

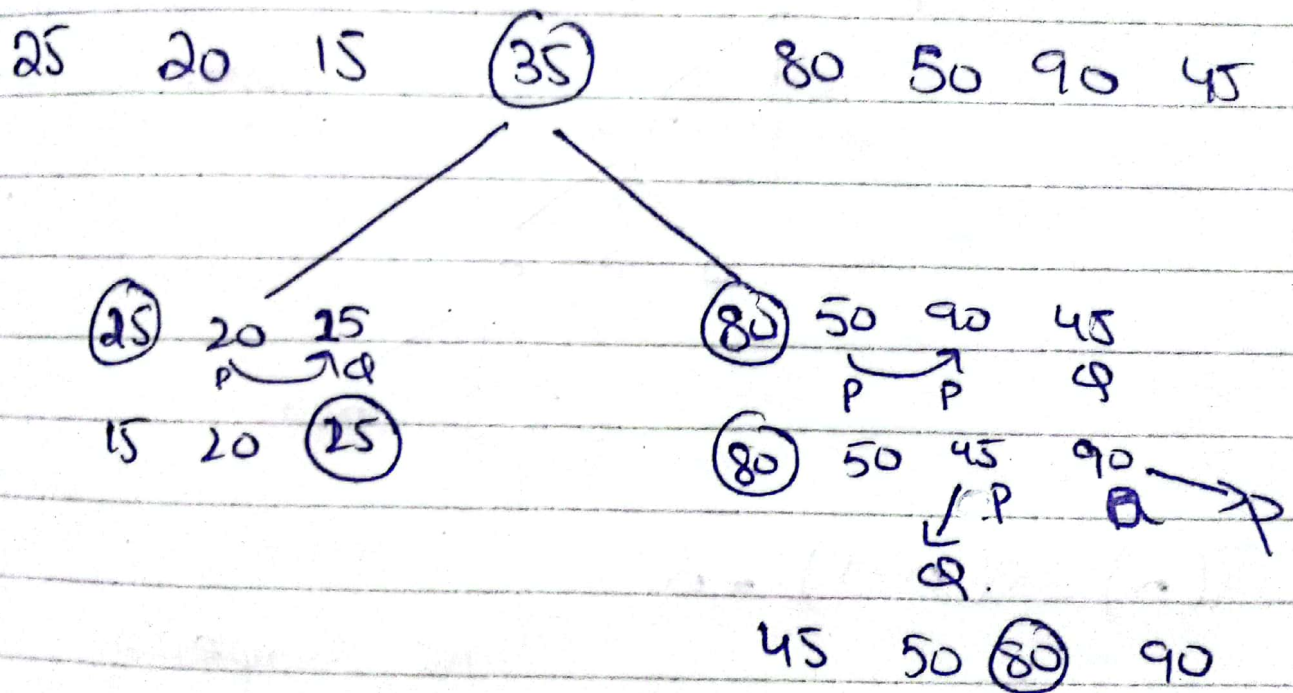
15 > 25 NO

15 < 25 Yes

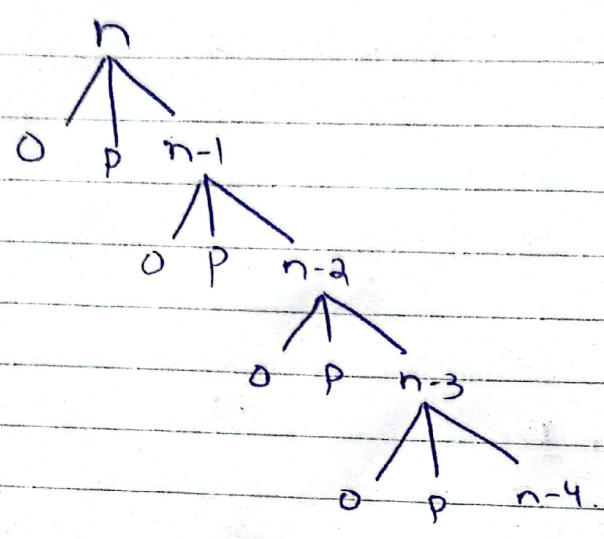
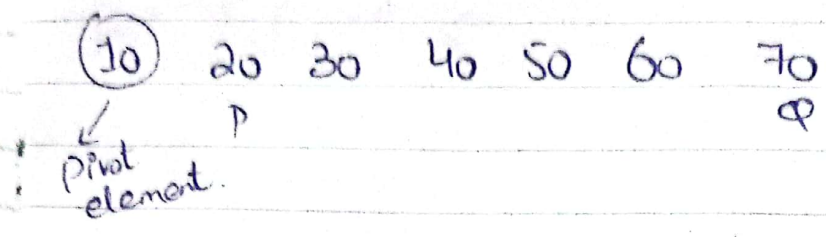
$50 > 80$ No | $45 < 80$ Yes
 $90 > 80$ Yes

$90 > 80$ Yes.

$90 < 80$ No, $45 < 80$ Yes.



Performance of Quick Sorts

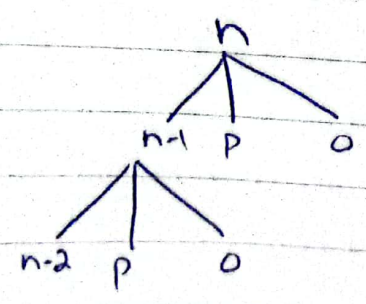
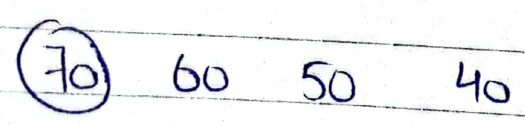


$$T(n) = T(n-1) + n$$

Time complexity.

$$= O(n^2)$$

Worst case.



$$O(n \log n)$$

Average case.