1. Quick sort

35 50 15 25 80 20 90 45 +infinite (to stop the execution of pointer P).

Step 1: first element as pivot , second as P and last as Q

35 50 15 25 80 20 90 45 +infinite

pivot P Q

Step 2: pointer P moves to right till P >= pivot

P>=pivot

50>35 stops

Step 3: pointer Q moves to left till Q <= pivot

Q<=pivot

45<35 false moves left

90<35 false moves left

20<35 true stops

Step 4: swap the element of P and Q.

after the first swap elements

35 20 15 25 80 50 90 45 +infinite

pivot P Q

P>=pivot Q<pivot

20>35 continue 50<35 continue

15>35 continue 25>35 continue 80<35 continue

80>35 stops 25<35 stops

Step 5: if the pointer P and Q are at same position or cross each other we need to swap pivot with pointer Q element.

after the first pass pivot reach at right location and left side lesser than pivot and right side element greater that the pivot.

25 20 15 **35** 80 50 90 45 +infinite

left array right array

25 20 15 80 50 90 45

pivot P Q