Assignment
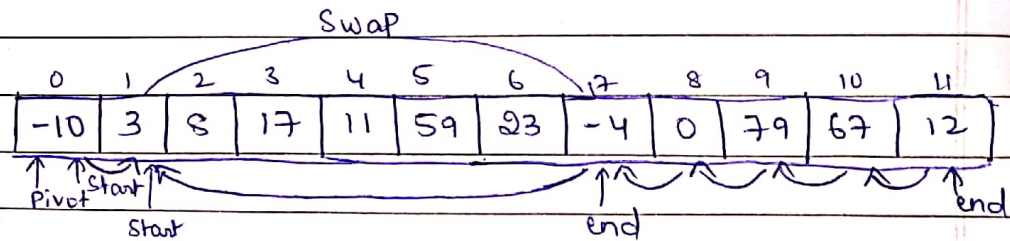
Quicksort

① -10, 3, 8, 17, 11, 59, 23, -4, 0, 79, 67, 12

Pivot = -10.

Swap

0	1	2	3	4	5	6	7	8	9	10	11
-10	3	8	17	11	59	23	-4	0	79	67	12

↑ Pivot   ↑ Start   ↑ end   ↑ end

Start

(i) Swap 3 and -4

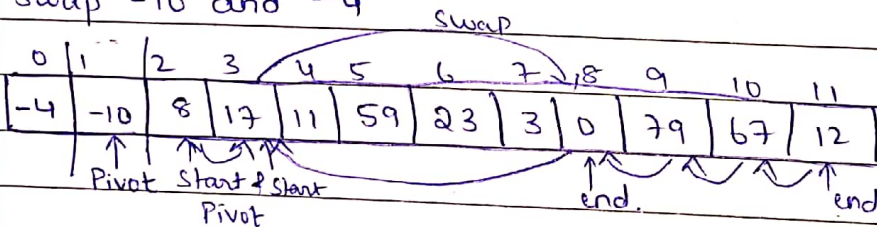| 0	1	2	3	4	5	6	7	8	9	10	11
-10	-4	8	17	11	59	23	3	0	79	67	12

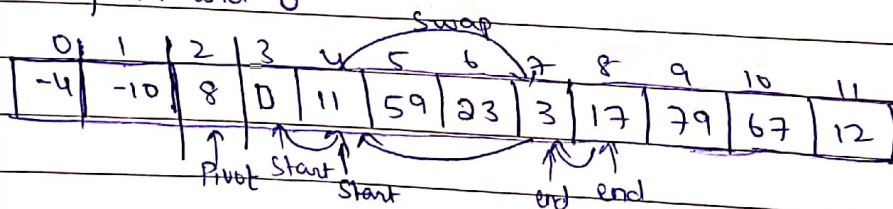↑ Pivot   ↑ start   ↑ end Start   ↑ end
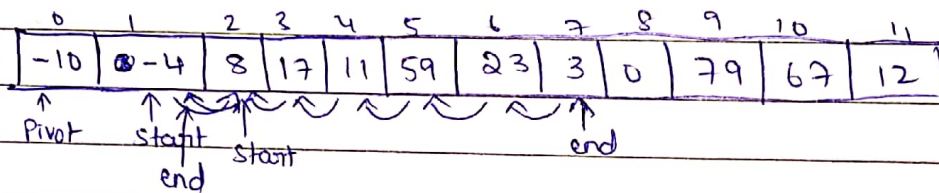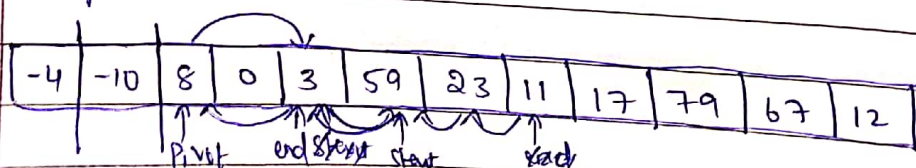
No Swapping because Start is Crossed end element.
Swap end element with Pivot element

(ii) Swap -10 and -4

Swap

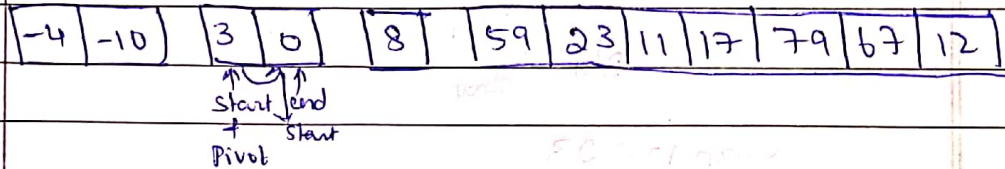| 0	1	2	3	4	5	6	7	8	9	10	11
-4	-10	8	17	11	59	23	3	0	79	67	12

↑ Pivot   ↑ Start & Start   ↑ end   ↑ end
          Pivot

Swap 17 and 0

Swap

0	1	2	3	4	5	6	7	8	9	10	11
-4	-10	8	0	11	59	23	3	17	79	67	12

↑ Pivot ↑ Start   ↑ end end
         Start

Swap 3 and 11

0	1	2	3	4	5	6	7	8	9	10	11
-4	-10	8	0	3	59	23	11	17	79	67	12

↑ Pivot   end & next start   end
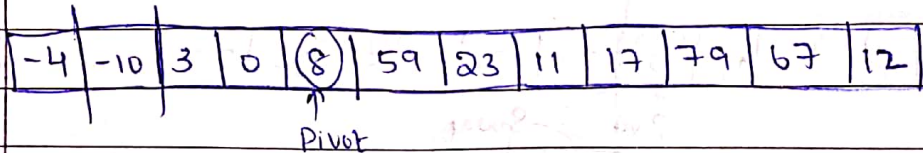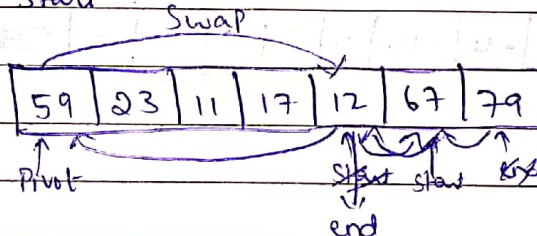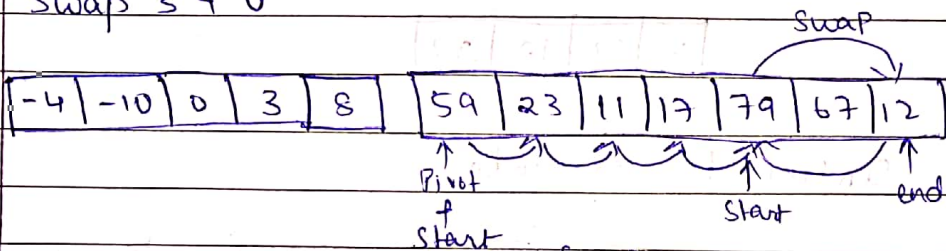
No Swap bcoz start is crossed end element
Swap end element with pivot element

| -4 | -10 | 3 | 0 | (8) | 59 | 23 | 11 | 17 | 79 | 67 | 12 |

Pivot

| -4 | -10 | 3 | 0 | 8 | 59 | 23 | 11 | 17 | 79 | 67 | 12 |

Start end
↑ Start
Pivot

Swap 3 & 0

Swap

| -4 | -10 | 0 | 3 | 8 | 59 | 23 | 11 | 17 | 79 | 67 | 12 |

Pivot
&
Start   Start   end.

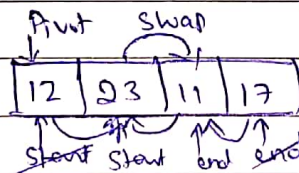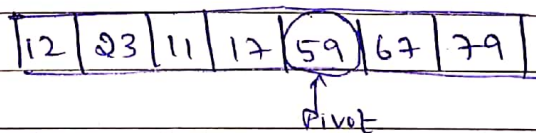Swap

| 59 | 23 | 11 | 17 | 12 | 67 | 79 |

Pivot   Start start end
end
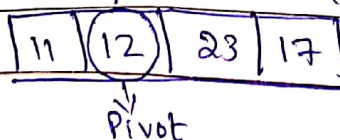
No swap since start crossed end.
Swap Pivot with end element

| 12 | 23 | 11 | 17 | (59) | 67 | 79 |

Pivot

Pivot   Swap

| 12 | 23 | 11 | 17 |

Start Start   end end

Swap 23 & 11

Pivot Swap

| 12 | 11 | 23 | 17 |
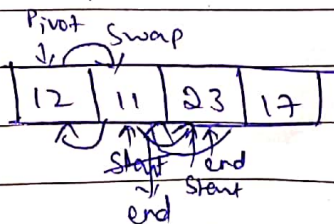
Start end
end   Start

No swap since start crossed end.
Swap with Pivot & end.

| 11 | (12) | 23 | 17 |

Pivot

| -4 | -10 | 0 | 3 | 8 | | 11 | (12) | | 23 | 17 | | 59 | 67 | 79 |

↑ Pivot

Swap

| 23 | 17 |

↑ Pivot ↑ Start ↑ End

Start

Swap 17 & 23

| 11 | 12 | 17 | 23 |

Combine the elements.

Sorted → | -4 | -10 | 0 | 3 | 8 | 11 | 12 | 17 | 23 | 59 | 67 | 79 |
array