**Quick Sort Pivot Algorithm**

Based on our understanding of partitioning in quick sort, we will now try to write an algorithm for it, which is as follows.

**Step 1** − Choose the highest index value has pivot

**Step 2** − Take two variables to point left and right of the list excluding pivot

**Step 3** − left points to the low index

**Step 4** − right points to the high

**Step 5** − while value at left is less than pivot move right

**Step 6** − while value at right is greater than pivot move left

**Step 7** − if both step 5 and step 6 does not match swap left and right

**Step 8** − if left ≥ right, the point where they met is new pivot

**Quick Sort Pivot Pseudocode**

function partitionFunc(left, right, pivot)

leftPointer = left - 1

rightPointer = right

while True do

while A[++leftPointer] < pivot do

//do-nothing

end while

while rightPointer > 0 && A[--rightPointer] > pivot do

//do-nothing

end while

if leftPointer >= rightPointer

break

else

swap leftPointer,rightPointer

end if

end while

swap leftPointer,right

return leftPointer

end function

**Quick Sort Algorithm**

Using pivot algorithm recursively, we end up with smaller possible partitions. Each partition is then processed for quick sort. We define recursive algorithm for quicksort as follows −

**Step 1** − Make the right-most index value pivot

**Step 2** − partition the array using pivot value

**Step 3** − quicksort left partition recursively

**Step 4** − quicksort right partition recursively

**Quick Sort Pseudocode**

procedure quickSort(left, right)

if right-left <= 0

return

else

pivot = A[right]

partition = partitionFunc(left, right, pivot)

quickSort(left,partition-1)

quickSort(partition+1,right)

end if

end procedure