Three Way Quicksort Algorithm

1. Choose a random element index, k, to serve as the pivot.
2. Save that value as Pivot
3. Call the Partition Algorithm
   1. Set I = 0
   2. Set Left Idx Copy = I
   3. Set Right Idx Copy = R
   4. While Left Index Copy < Right Index Copy
      1. If element is less than pivot
         1. Append to the end of the list
         2. Pop from the list
         3. Increment Left Idx Copy by 1
      2. If the element is greater than the pivot:
         1. Append to end of list
         2. Pop from the list
         3. Decrement Right Idx Copy by 1
      3. If the element is equal
         1. Swap positions using the Left Idx Copy
         2. Increment Left Idx Copy by 1
      4. I += 1
4. Call Quicksort:
   1. Define the Pivot as between index zero and Left Index Copy
   2. For all elements in the array **after** the Left Index Copy
      1. If the element is less than the Pivot Value
         1. Insert at the front
      2. If the element is greater than the Pivot Value
         1. Keep/Append to the back of the Pivot Section
5. Call Quicksort on the left and right partitions recursively until the array has been sorted.