State of the Array After Each Pass

Bubble Sort

```
6 12
            1 15
                  8
                     3 10 17
4
  6
     9
         1 12
               8
                  3 10 15 17
  6
            8
     1
         9
               3 10 12 15 17
4
  1
     6
         8
            3
               9 10 12 15 17
  4
               9 10 12 15 17
1
     6
         3
            8
  4
     3
               9 10 12 15 17
1
         6
            8
1
  3
     4
        6
            8
              9 10 12 15 17
  3
     4
         6
            8
               9 10 12 15 17
  3
     4
        6
            8
               9 10 12 15 17
```

Selection Sort

```
4
       9
          6 12
                1 15
                          3 17
10
                       8
    4
       9
          6 12
                 1
                    3
                       8 15 17
10
10
    4
       9
          6
             8
                1
                   3 12 15 17
                1 10 12 15 17
3
   4
       9
          6
             8
3
   4
       1
          6
             8
                9 10 12 15 17
                9 10 12 15 17
3
   4
       1
          6
             8
3
                9 10 12 15 17
   1
       4
          6
             8
    3
       4
          6
                9 10 12 15 17
             8
```

Merge Sort

```
4 17
         6 12
     9
               1 15
                      8
                         3 10
                         3 10
   9 17
         6 12
                1 15
                      8
4
   9 17
         6 12
               1 15
                         3 10
                      8
4
   6
      9 12 17
                1 15
                         3 10
4
   6
      9 12 17
                1 15
                      8
                         3 10
      9 12 17
4
   6
                1
                   8 15
                         3 10
   6
      9 12 17
                1
                   8 15
                         3 10
      9 12 17
                   3
   6
                1
                      8 10 15
      4 6 8
               9 10 12 15 17
```

1221437 COSC 2316
Michaels **InClass 03** 16th of March 2021

Quick Sort

6 12 1 15 8 3 17 8 10 12 15 17 4 8 10 12 15 17 4 9 10 12 15 17 3 4 6 8 9 10 12 15 17