**Sorting**

**Bubble Sort**

* Not very efficient
* Time complexity – O(n^2)
* Space complexity – O(1)

**Steps in bubble sort:**

1. Compare the first two elements of the array.
2. Switch places if the value of the second element is less than the value of the first element
3. If the value of the second element is greater than the first, leave it alone.
4. Now compare the value of the second element to the third.
5. Repeat steps 2 – 4 until you have reached the end of the array.
6. Once you have reached the end of the array, repeat steps 1 – 5.

**Selection Sort**

* Time Complexity – O(n^2)
* Space Complexity – O(1)
* Looks for the smallest item in the array then places it in the first index. Then it starts from the second index and scans the array again until the smallest element is found and is placed in the second index. This process continues until the whole array is sorted.

**Steps in selection sort:**

1. Compare the first two elements of the array to determine the smallest element.
2. The smallest element gets marked with a red.
3. Now compare the next (third) element to the previous marked smallest element.
4. If it is smaller, then mark red that element as the smallest.
5. Repeat steps 3 and 4 until you have checked all elements in the array
6. Once you’ve traversed the array, move the smallest element to the beginning of the array.
7. Repeat steps 3 to 6. Each time the array is traversed move the smallest element to the next index of the array until the array is sorted.