

## Lab 7

### Sorting

Add a function to your Array class that will permit the caller to sort the array of NodeElements entered. The unsorted array must contain at least 16 items to be sorted in either ascending or descending order.

You will also need a method to swap the positions of two elements.

Adjust the user interface accordingly.

The sort method employed will be BubbleSort or the QuickSort.

#### **Testing via the Main user interface:**

Write a program that tests each of the methods used to manipulate the data structure

Display the content (the sort field) with each pass of the sort.

Display the count of the number of passes, the number of comparisons and the number of swaps required to complete the sorting operations.

```
Pass: 123 99 98 87 76 65 54 43 32 21
Pass: 99 98 87 76 65 54 43 32 21 123
Pass: 98 87 76 65 54 43 32 21 99 123
Pass: 87 76 65 54 43 32 21 98 99 123
Pass: 76 65 54 43 32 21 87 98 99 123
Pass: 65 54 43 32 21 76 87 98 99 123
Pass: 54 43 32 21 65 76 87 98 99 123
Pass: 43 32 21 54 65 76 87 98 99 123
Pass: 32 21 43 54 65 76 87 98 99 123
Pass: 21 32 43 54 65 76 87 98 99 123
Pass: 21 32 43 54 65 76 87 98 99 123
```

```
Passes: 11 Swaps: 45 Comparisons: 45
```