**External Documentation for CPSC 1150 – W05 Lab 9**

**Program:** TestBubbleSort.java

File Name: TestBubbleSort.java

Purpose: Testing bubble sort

Input: Size of the array and numbers in the array

Output: sorted array smallest to largest

**Algorithm**

Testing bubble sort

START

1. Get array size and initialize the array
2. Get numbers from the user
3. Set up sort method to sort the array smallest to largest using bubble sort
4. In sort method, use a do-while loop that takes Boolean condition and set it so that it loops itself until all numbers are sorted
5. Use the method to sort the array
6. Display result

END

**Sample Input and Output**

How many numbers are in your item?: 4

Enter Your array: 12

13

12

4

4.0

12.0

12.0

13.0

**Program:** LargestInArray

File Name: PlayLottery.java

Purpose: Simulate lottery

Input: 6 distinct integers

Output: number of matches

**Algorithm**

Simulating lottery

START

1. Get 6 distinct integers from user
2. Initialize arrays
3. Set up getUserNumbers method
4. In getUserNumbers method, initialize array and program do-while loop that runs until there are 6 items in the array. It validates if the user input is in between 1 and 49 and checks if user inputs are distinct from each other
5. Use getUserNumbers method and assign the array from the method to array in main method
6. Set up getRandomNumbers method
7. getRandomNumbers method generates a random number between 1 and 49 and validates if there are any repeating numbers.
8. Use the method and assign the array to array2 in main method
9. Set up TotalMatchedNumbers method
10. TotalMatchedNumbers method uses bubble sort to see how many of the numbers in array1 and array2 match. Returns result as a integer
11. Display result

END

**Sample Input and Output**

Enter 6 distinct numbers between 1 and 49 : 42

16

32

49

48

47

You got 1 matches!>Exit code: 0

Largest double number in your array is: 565.0