AP Java Lab 3.3 – In Place Sorts

These sorting algorithms should done in place without creating any new arrays. This makes them more space efficient than some of the other sorting algorithms we will investigate.

Skills:

- **Declaring and manipulating arrays.**
- **Introducing insertion sort, selection sort, bubble sort**

Class:

- **ArrayMethods3**

Methods:

- **public static void insertionSort(int[] list1)**
- **public static void selectionSort(double [] list1)**
- **public static void bubbleSort(String [] list1)**

Your Mission:

Insertion takes each element from the array, and adds it to the front of the array in the correct order. We need to keep track of where we are inserting elements as we sort.

public static void insertionSort(int [] list1)

Returns: void
Side-effect: list1 is sorted in ascending order

Selection sort finds the lowest element and moves it to the front of the array. Then searches the rest of the array for the next element, and repeats.

public static void selectionSort(double [] list1)

Returns: void
Side-effect: list1 is sorted in ascending order

Bubble sort iterates through the list, swapping any out of order elements. We keep iterating until no swaps are required. Then the array is sorted!
public static bubbleSort(String [] list1)

Returns: void

Side-effect: list1 is sorted in ascending order