Insertion Sort

1. An insertion sort is to be used to put the following list of values in sorted ascending order. Show the values as they would appear after each pass of the sort.

   6   2   8   3   1   7   4

2. **InsertionSortSimple.java**: Create a method `insertionSort` that uses an insertion sort to arrange an array of double values in ascending order. Create a `main` method in the class to test the method.

3. **InsertionSortPlanets.java**: Create a method that uses an insertion sort to arrange an array of strings alphabetically. To trace the progress of the sort, the method should print the list after each pass. Write a main method that initializes an array with the names of the planets order by their distances from the sun (Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, and Pluto) and prints them in that order on one line. It then makes use of the above method and outputs the list in alphabetical order on one line.

4. **Median.java**: The median of an ordered list of numerical values is defined in the following way. If the number of values is odd, the median is the middle value. If the number of values is even, the median is the average of the two middle values. Write a program that prompts the user for the number of items to be processed, reads that many real values (not in sorted order), and then finds their median.

5. A sort is said to be *stable* if it always leaves values that are considered to be equal in the same order after the sort. How does the algorithm of a *stable* insertion sort differ from that of an non *stable* insertion sort?