Insertion Sort

Putting data in order

Search

- Sequential Search vs. Binary Search?

- A Binary Search requires data to be sorted in order.

int []x= {6,3,5,8,2}

6	3	5	8	2

- Begin the sort by looking at index 1 (the 3)

- Compare it to all values from the left until you either
  - reach the beginning or
  - reach a value that is less than 3.

3	6	5	8	2

- Continue the sort by looking at the next index. (index 2 with a value of 5)

- Compare it to all values from the left until you either
  - reach the beginning or
  - reach a value that is less than 5.

3	5	6	8	2

- Continue the sort by looking at the next index. (index 3 with a value of 8)

- Compare it to all values from the left until you either
  - reach the beginning or
  - reach a value that is less than 8.

3	5	6	8	2

- Continue the sort by looking at the next index. (index 4 with a value of 2)

- Compare it to all values from the left until you either
  - reach the beginning or
  - reach a value that is less than 2.

2	3	5	6	8

The method `insertSort` uses an insertion sort to arrange an array of double values in ascending order.

```
public static void insertSort (double[] list)
{
  for (int top = 1; top < list.length; top++)
  {
    double item = list [top];
    int i = top;
    while (i > 0 && item < list[i-1])
    {
      list[i] = list [i-1] ;
      i--;
    }
    list[i] = item;
  }
}
```