What to do to prepare for CSO:

- Go more in-depth with trees: red-black trees, avl trees (more exposure to pointers)
- Study hashmaps and hashtables (useful for understanding random access memory)
- Learn the basics of C – learn c the hard way
- Learn how a heap works
- Learn heap sort
- Learn how to use a debugger with C

Review of the comparable interface

The comparable interface is how you tell Java that your object has a natural ordering. If your generic does not implement the comparable interface, you can be certain that the compareTo method will not work, because you may get some data that isn't comparable. Remember generics can be anything. Which means they can be user defined classes. And user defined classes are where the danger comes in.

By implementing a generic as comparable, you ensure that your Java program knows that the passed in object should have a compareTo method and should have a strict ordering.

Now let's review the syntax for creating an object that implements a compareTo method and implements comparable.

--Fruit class--

- compareTo() method
- comparable interface – ordering
- Comparator – comparing by a specific value, the right way.

--Mergesort--

Mergesort is one of the best sorting algorithms ever. When people sort things, they either do it with quicksort or mergesort. Quicksort is better some of the time. But mergesort is always consistent.

Exercises:

1) make this mergesort algorithm generic.
2) Make this mergesort able to handle objects.
3) Make this mergesort able to handle multiple orderings.

--Extra Credit --