CS100J 23 September 2003

More on Methods. Scope of parameters. Functions versus procedures. The return statement in a function. Static vs non-static methods. Top-down design. Read section 2.3.

Paradoxes.

Is this sentence true or false: **This sentence is false.**

In a small town, a barber cuts (only) the hair of all people who don't cut their own hair. Who cuts the barber's hair?

If you try to fail and succeed, have you failed?

Consider the set S of all sets that do not contain themselves. Does S contain itself?

About using method specifications

```
public class FramingFrame {
    private Jframe partner= new Jframe();

   /** Create a partner at location … and with size … */
   public void createPartner() {
        partner.setLocation(…);
        partner.setSize(…);
   }

   /** Set partner's location, size as defined in createPartner */
   public void  reset Partner() { createPartner(); }
}
```

This is bad because

(1) createPartner does not to what the spec says.

(2) acc. to createPartner's spec, resetPartner does more than it should.

Redoing the methods of previous slide

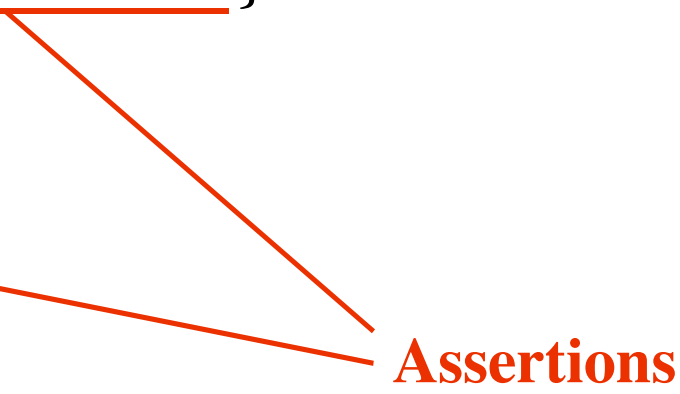
```
public class FramingFrame {
    private Jframe partner;

   /** Create a partner at location … and with size … */
   public void createPartner() {
        partner= new Jframe();
        resetPartner();
   }

   /** Set partner's location, size as defined in createPartner */
   public void  resetPartner() {
       partner.setLocation(…);
        partner.setSize(…); }
}
```

A function produces a result

```
/** = smallest of b, c, d */
public static int smallest(int b, int, c, int d) {
        if (b <= c  && b <= d) {
            return b;
        }
        // { The smallest is either c or d }
        if (c <= d) {
            return c;
        // { the smallest is d }
         return d;
}
```



Top-down programming, stepwise refinement

We developed a method to anglicize numbers
(e.g. from 25 produce “twenty five”).
using stepwise refinement.

Pleae study section 2.5 on stepwise refinement.