Announcements:
Ch 3 OWL assignment due today at 5; Ch 4 embedded problems due Thursday morning. Programming Problem 3 now up, due 2/17.

Lecture Summary: Soft introduction to ch 4, with discussion of arithmetic in Java, the cube sum problem.

1. Some arithmetic: what are the values of these expressions?
   \( \frac{119}{10} \)
   \( 119 \mod 10 \)
   \( \frac{5/4}{3/2} \)
   \( 4/2 == 2 \)
   if \( n\%10 == 3 \) is true, what’s a possible value for \( n \)?

2. What does this print?
   ```java
   int k = 5;
   if (k >= 5) System.out.println(9/k);
   ```

3. Below do an accurate trace of everything that happens during the execution of this loop:
   ```java
   for(int j = 0; j < 2; j++){
      if (j % 2 == 0) System.out.println(j);
   }
   ```

Recall from the last lecture: the digits of 365 the value of cur:

- \( \text{ones} = \text{cur} \mod 10; \text{// ones} = 5 \)
- \( \text{cur} = \text{cur} / 10; \text{// cur} = 36 \)
- \( \text{tens} = \text{cur} \mod 10; \text{// tens} = 6 \)
- \( \text{cur} = \text{cur} / 10; \text{// cur} = 3 \)
- \( \text{hundreds} = \text{cur}; \text{// hundreds} = 3 \)

How would you produce the digits of a 4 digit number like 9837?

Which 3 digit numbers equal the sum of the cubes of their digits?
Examples:
\(241 = 2^3 + 4^3 + 1^3 = 8 + 64 + 1 = 73 \) (Not 241)
\(153 = 1^3 + 5^3 + 3^3 = 1 + 125 + 27 = 153! \) (Yes!)

CubeSum class:
```java
class SumOfCubes{

   public int cubeSum(int k){
      int cur = k;
      int ones = cur % 10; // ones = 5
      cur = cur / 10; // cur = 36
      int tens = cur % 10; // tens = 6
      cur = cur / 10; // cur = 3
      int hundreds = cur; // hundreds = 3
      return (cube(ones)+cube(tens)+cube(hundreds));
   }

   private int cube(int n){return(n*n*n);} // private means what?
}
```
4. public class CubeTester { // which nums = sum of cubes digits?
   public static void main(String[] args) {
      // How would you do this, given CubeSum, above?
   }
}

5. Three more cubeSum problems (all use CubeSum class).
   A) Write an interactive program that reads in a value, then tells
      its cube sum.
   B) How would you check for 4 digit numbers that equal the sum of
      cubes of their digits? (Hint: add another method to SumOfCubes.)
   C) What fraction of 3 digit numbers have cube sums less than the
      number?

6. Given the driver below, write a Bed class that will make driver run
   properly:

   public class BedTester {
      public static void main(String[] args) {
         Bed kings = new Bed("king", 489.95, 42);
         // kind, cost, number in stock
         Bed doubles = new Bed("double", 249.95, 30);
         System.out.println(doubles.getPrice());
         System.out.println(kings.getCount()); // # in stock
         System.out.println(doubles.getValue()); // value of stock
      }
   }

7. Write a complete program that reads in an entire line of text from
   the keyboard, then prints out the total number of characters in the
   line. (Use Scanner method nextLine())