Announcements

- Piazza Accounts
Recall – 8 Primitive Types

Variables for whole numbers:
   long magnitude = 10500123971L;
   int length = 705;
   short height = 25;
   byte age = 22;

Variables for floating point numbers:
   double weight = 52.37;
   float GPA = 3.98F;

Others
   char symbol = ‘&’;
   boolean onFire = true;
Recall – 8 Primitive Types

The range of each data type in terms of \( n \) (number of bits required to store it)

\((-2^{n-1}) - (2^{n-1} - 1)\)

For example:
for datatype byte, \( n = 8 \) bits (1 byte)
\((-2^{(8-1)} - 2^{(8-1)} - 1)\)
\(= -128 - 127\)
Strings

• What's a String?

Example:

    String name = "Fred";  // note the double quotes

IMPORTANT: Strings are not primitives - they are objects! (More about that later.)

• What is “concatenation”? 

Example:

    String firstName = "Bob";
    String lastName = "Smith";
    String fullName = firstName + lastName;  // no space?
Examples: stringsExample.java

Things to observe:

• Use double quotes around String literals
• Concatenation with +
• x.length() yields the length of the String x
• Java will sometimes implicitly convert things to Strings (e.g. when using the + operator)
Different Data types

You can’t usually mix types in Java!

Points to raise:

• Conversions between numerical types
• Distinction between char and String
• In Eclipse: Errors are in red, warning are in yellow