Quick Exercise

What kind of sound does this method make?

```java
public Sound makeSound( int seconds )
{
    int length = framesFor(seconds);
    Sound result = new Sound( length );
    int digit, value;

    for (int i = 0; i < length; i++)
    {
        digit = (i / 10) % 10;
        if ( X )
            value = 1000;
        else
            value = -1000;
        result.setSampleValueAt( i, value );
    }

    return result;
}
```

For these values of X:

- digit < 5
- digit % 2 == 0

Why??
Objects and Classes

a description of
a set of objects with
common behavior
and representation

a particular object
with particular
data: length,
sample values
Alternative Method — Preferred

Methods that create sounds from scratch are usually made features of the class:

```java
public static Sound makeSound( int seconds )
{
    int length = framesFor(seconds);
    Sound result = new Sound( length );
    int digit, value;

    for (int i = 0; i < length; i++ )
    {
        digit = (i / 10) % 10;
        if ( digit < 5 )
            value = 1000;
        else
            value = -1000;
        result.setSampleValueAt( i, value );
    }
    return result;
}
```
Musical Exercise

The sounds bassoon-c4.wav, -e4.wav, and -g4.wav all consist of 55125 samples.

Write a method that creates a "blended chorded":

where the notes overlap by 1/3.

(How big a result sound will you need?)
Changing a Sound's Frequency

How can we recreate the top curve?
Solution #2
Solution #3

Rather than copy three-for-two,
copy 22050-for-16000,
using rounding to let the loop know
when to repeat a sound sample.
Upcoming Days

TUE  Submit Homework 5.
     Read beginning of Chapter 10.

WED  Lab as usual — bring headphones
     Read rest of Chapter 10.

TUE  Start on Homework 6.
     Finish discussing Chapter 10.