Quick Exercise

What kind of sound does this method make?

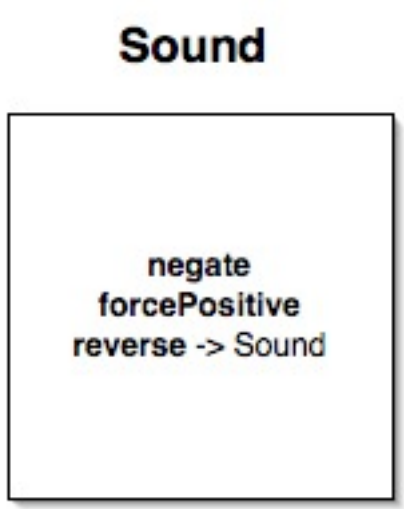
```
public Sound makeSound( int seconds )
{
    int   length = framesFor(seconds);
    Sound result = new Sound( length );
    int digit, value;

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

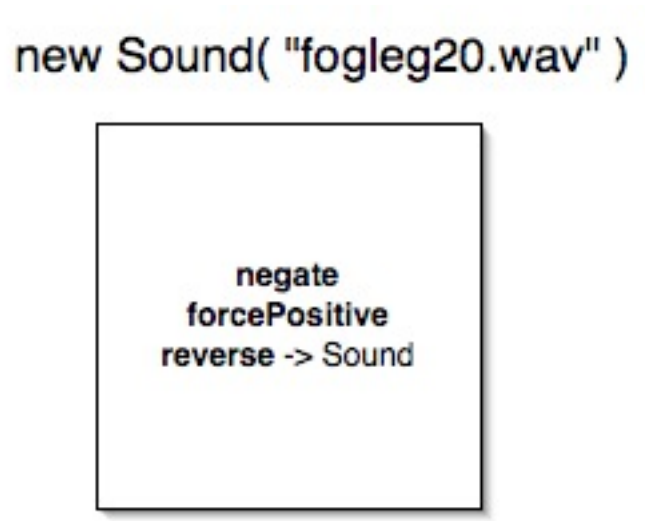
For these values of X:

- **`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

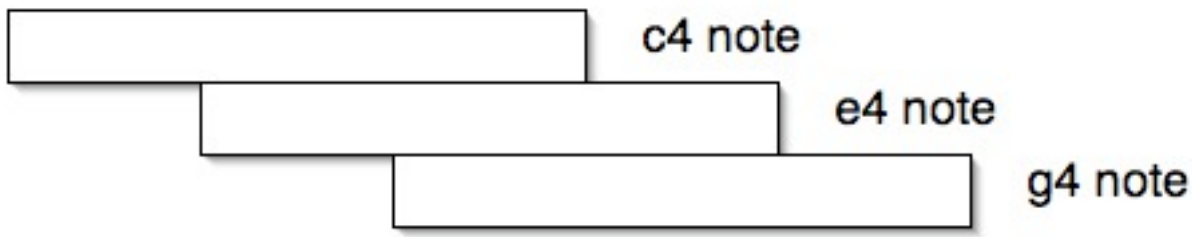
Methods that create sounds *from scratch* are usually made features of the **class**:

```
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.

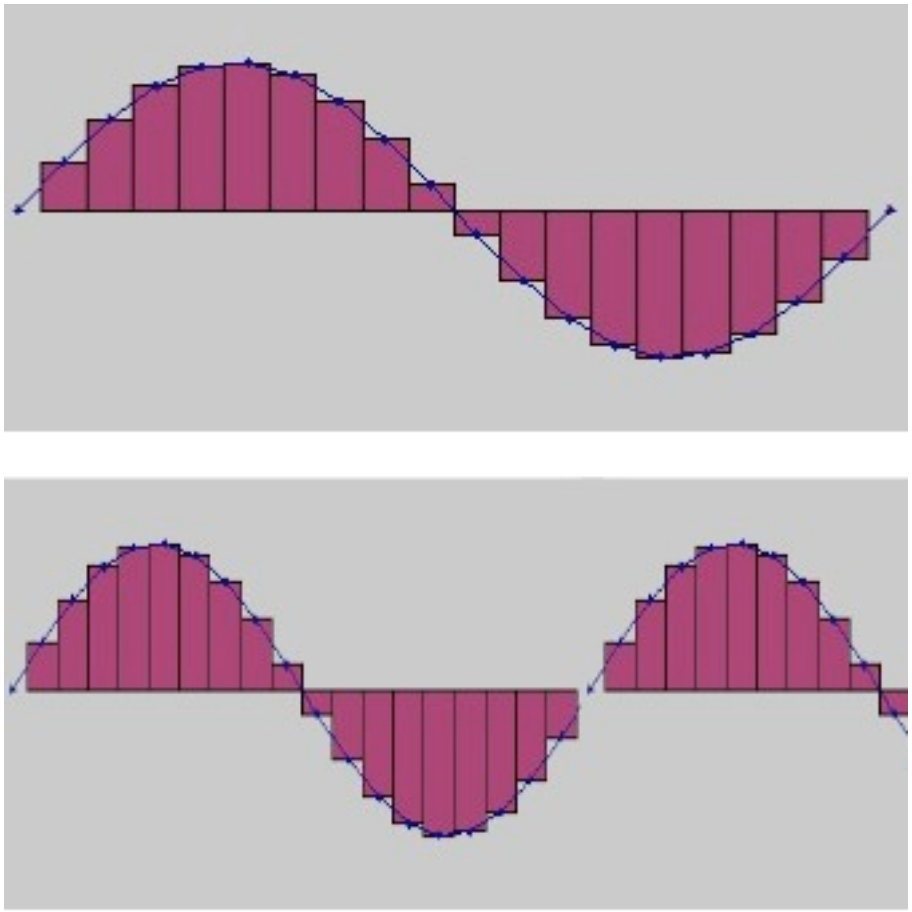
Write a method that creates a "blended chorded":



where the notes overlap by 1/3.

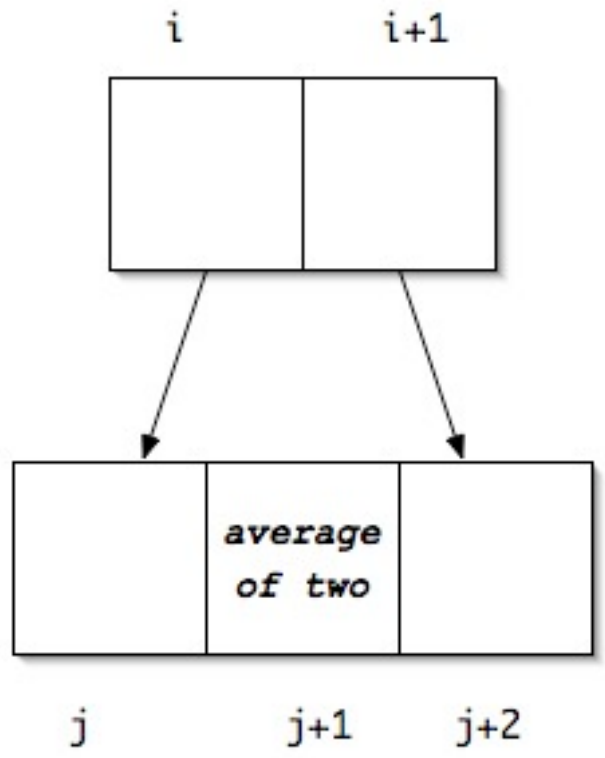
(How big a result sound will you need?)

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.