CSE 8A Lecture 15

• Reading for next class: 10.1-10.4

• Today’s (and Wednesday’s) goals:
  – Recover from Exam #3 (it was challenging!)
    • Review/Bring your graded midterm for 2/27 lecture (returned in lab 2/26)
    • 2nd chance to learn! Exam #4 (on 3/8) will be similar to Exam #3
  – Practice writing and typing in code from scratch
  – Practice tracing code
  – Applying the same algorithm to a picture and a sound
  – Modifying data “in place”

• PSA 8 (basics/loops/decisions) due Monday (3/4)
  – Individual (no partner)
Exam 3

• Was hard, but many of you did great!!

• Stats:
  – Mean: 54% (Median 55%)
  – 20% of the class (62 students) \( \geq \) 80% (16 points /20 points)

• If you scored 80% or above, NICE JOB! You are doing extremely well and should be very proud of your performance.

• If you scored between 60 and 80, not bad. You’re doing well. Keep working; you’re on a good track.

• If you scored lower than a 60, it’s time to PRACTICE
  – Write code (on paper)
  – Practice writing code and typing code by yourself
  – Come see instructors/TAs/Tutors for more help
Become a super hero!

Sneha Jayaprakash and Sarah Haroon
Sandra Hui and Sandeep Gill
Sachi Pitkin and Tiffany Truong
Political commentary

Michael Chin + Chu Jang
Michelle Wu and Kirk Wong
"It's a-me, Mario! And my brother, Luigi!" :D
Jason Tan and Zeyu Chen
Daniel Chang and Kevin Nguyen
SO MANY MORE… GO CHECK IT OUT!

Inspiration:
Options to raisePitch

• Create new Sound
  – V1) Of exact length needed for higher pitched sound
  – V2) Of same length as original with “silence” at end
Complete the raisePitch method

```java
public Sound raisePitch()
{
    int origI, newPlace = 0;
    SoundSample [] original = this.getSamples();

    Sound highP = new Sound( original.length / 2 );
    SoundSample [] higher = highP.getSamples();

    for( origI = 0; origI < original.length ; origI+=2 )
    {
        higher[newPlace].setValue( original[origI].getValue() );

        newPlace++;
    }

    return highP;
}
```
public Sound raiseP()
{
    int newPlace = 0;
    Sound highP = new Sound(this);

    SoundSample[] original = this.getSamples();
    SoundSample[] higher   = highP.getSamples();
}

public void mystery() // In the Sound class
{
    SoundSample [] original = this.getSamples();
    for ( int index = 0 ; index < original.length ; index++ )
    {
        original[index].setValue( original[index/2].getValue() );
    }
}

A 100 100 150 150 200 200 300 300 140 140
B 100 100 100 100 100 100 100 100 100 100
C 100 200 140 -40 -250 10 -40 -100 -250 -150
D It causes an error
public void lowerPitch() // In the sound class
{
    SoundSample[] original = this.getSamples();

    for ( int index = 0; index < original.length; index++ )
        original[index].setValue( original[index/2].getValue() );
}

Problem: We are overwriting the values we need to use before we have used them!
Possible solutions?
public void lowerPitch() // In the sound class
{
    SoundSample[] original = this.getSamples();

    for(int index = 0; index < original.length; index++)
    {
        original[index].setValue(original[index/2].getValue());
    }
}
Another name for this method...

```java
public void stretchInPlace() // In the sound class
{
    SoundSample[] original = this.getSamples();

    for (int index = original.length - 1; index >= 0; index--)
    {
        original[index].setValue( original[index/2].getValue() );
    }
}
```

Before:

```
|   | 100 | 150 | 200 | 300 | 140 | 10  | -40 | -100 | -250 | -150 |
```

After:

```
|   | 100 | 100 | 150 | 150 | 200 | 200 | 300 | 300  | 140  | 140  |
```
Complete the code below to stretch the calling object Picture both horizontally and vertically

```java
public void stretchInPlace() {
    SoundSample[] original = this.getSamples();

    for( int index = original.length-1 ; index >= 0 ; index-- )
        original[index].setValue( original[index/2].getValue() );
}
```

```java
public void stretchInPlace() {
    for ( int x =
        for ( int y =
            { 
                Pixel source = this.getPixel( );
                Pixel target = this.getPixel( );
                target.setColor( source.getColor() );
            }
    }
} 
```
TODO

• Reading for next class: 10.1-10.4
• Finish PSA 7 by tonight (Bring headphones to lab!)
• Bring graded Exam #3 to class Wednesday for review