Assignment 4: a gradually-revealed musical instrument

Due 5pm Mon Sep 19

The task for this assignment is to create a *gradually-revealed* musical instrument in Processing. This means that it shouldn't show all of the things it can do right at the beginning—certain aspects should only be revealed over time, or as the user interacts with the sketch.

Your instrument can be based on an existing instrument (e.g. a piano) or be a new instrument of your own design. You should explain the inspiration and design process in your artist statement.

For this assignment, I've provided you with three very useful building blocks—a synth widget for making "pitched" sounds, a sampler widget for playing "samples" (audio files), and a noise widget for making noise. I've also included an example project (in the **benExample** folder) to show you how these things can be used. These classes are just a starting point - you can change/improve them as much as you like to create your instrument.

Check the documentation for the [Processing sound library](#) for a list of the methods on the SinOsc, Env, PinkNoise, SoundFile objects used in the provided widget classes.

If you have any questions, we can discuss them on the Piazza forum under the *assignment4* label.

1 Spec

Your submission **must**:

1. provide "drawing" functionality for the provided synth/sampler/noise widget classes (e.g. by defining and calling a **display()** method)

2. make sound in response to user interaction (mouse, keyboard or both)

3. reward user interaction by gradually revealing its functionality

4. include an **artist-statement.md** (200 words)

5. be submitted as a `.pde` file & artist statement which fulfils this spec in a **zipped folder** according to the **submission instructions** below

2 Ideas

- change the **trigger()** method in provided synth/sampler/noise widget classes so they can take more arguments, e.g. to control the loudness or duration of the notes

- use other parts of the sound library for sound processing,

- single actions can trigger multiple notes/sounds, and vice versa!

- connect the "playing of a sound" to a change in the visuals to provide feedback to the user

- create collections (e.g. an **ArrayList**) of Widgets, and loop over them to

3 Submission instructions

Be careful you create your sketch using the template **assignment4.pde** in the **assignment4** folder, not in Ben's **benExample** folder.

Before you zip it, the folder structure should look (something) like this:

```
└── assignment4
    ├── artist-statement.md (required)
    ├── NoiseWidget.pde
    ├── SynthWidget.pde
    ├── SamplerWidget.pde
    ├── ...
    └── assignment4.pde (required)
```

after you zip it, you'll end up with

```
assignment4.zip
```

then, rename `assignment4.zip` to (replacing the XXXXXX with your uni ID)

```
uXXXXXXX-assignment4.zip
```

and submit it through the COMP1720 Wattle page (in the *Assignments* section). The submission **must be a zip file** (not a `.rar` or `.7z`), here are some (Windows instructions, or Mac instructions) if you're unsure.

4 Getting help

There's a special **assignment4** label in the Piazza forum—if you have any questions related to the assignment you can ask them there. You can also ask questions during the Thursday afternoon lab session.