

CS106 W21 - Assignment 07

Due: Friday, March 19, 11:59 PM

Assignment 7 is graded out of 14 marks.

1) [3 marks] “dogs.json”

A list of dog breeds.

Airedale Terrier

There is starter code: <https://openprocessing.org/sketch/1132924>

The starter code contains a JSON file named “dogs.json”. Have a look at “dogs.json” to see and understand its structure.

Your sketch should mimic what you see in the video. <https://vault.cs.uwaterloo.ca/s/L47weRLCKR5wX4L>

The exact color and layout doesn’t matter much as long as it is similar to the image above and similar to what you see in the video.

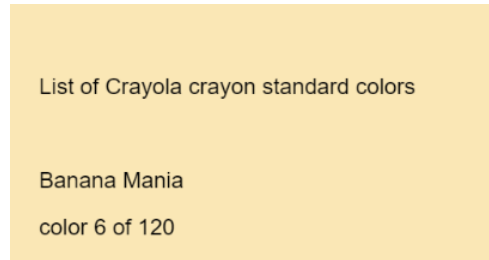
The file begins with the following. You can see that it has a “description” and then an array of the names of several hundred dog breeds. “descriptions” is a string and “dogs” is the array.

```
{
  "description": "A list of dog breeds.",
  "dogs": [
    "Affenpinscher",
    "Afghan Hound",
    "Aidi",
    "Airedale Terrier",
    "Akbash Dog",
    "Alano Español",
    "Alaskan Klee Kai",
    "Alaskan Malamute",
    "Alpine Dachsbracke",
```

Write a sketch to do the following:

- Displays the “description” at the top of the canvas. Note: You cannot type in “A list of dog breeds” with a line such as: text (“A list of dog breeds.”, 20, 20). You must use the “description” from the “dogs.json” file.
- Displays the name of the dog breeds, one at a time, on the canvas. (Perhaps set the frameRate to 1 and display one dog breed every second.)
- Your sketch must loop around when it gets to the end of the array. The last dog breed in the array is “Šarplaninac”. The first is “Affenpinscher”. After your sketch displays “Šarplaninac” it must then display “Affenpinscher” and then continue displaying dog breed names one at a time.

2) [4 marks] “crayola.json”



There is starter code: <https://openprocessing.org/sketch/1132948>

The starter code contains a JSON file named “crayola.json”. Have a look at “crayola.json” to see and understand its structure.

Your sketch should mimic what you see in the video. <https://vault.cs.uwaterloo.ca/s/kEEEmxSdbzzYzFJf>
The exact layout doesn’t matter much as long as it is similar to the image above and similar to what you see in the video.

Write a sketch to do the following:

- Displays the “description” at the top of the canvas. You must use the “description” from the “crayola.json” file.
- Displays the name of the color, one at a time, on the canvas. (Perhaps set the frameRate to 1 and display one color name every second.)
- Display a line showing the current color number and the total number of colors. For example, in the image above it displays “color 6 of 120”.
- Your sketch must loop around when it gets to the end of the array.

3) [3 marks] “palettes.json”



There is starter code: <https://openprocessing.org/sketch/1133005>

The starter code contains a JSON file named “palettes.json”. Have a look at “palettes.json” to see and understand its structure.

Your sketch should mimic what you see in the video. <https://vault.cs.uwaterloo.ca/s/oeAZxGEg2D79TsY>

The exact layout doesn’t matter much as long as it is similar to the image above and similar to what you see in the video.

Write a sketch to do the following:

- For each 5-colour palette, display the five colours as rectangles. (see the video)
- On each of the rectangles show the hex code for that color. (see the video)
- Your sketch must loop around when it gets to the end of the array.

4) [2 marks] "hail_size.json"

Largest hail size in inches is: 4.5

It is described as: softball

There is starter code: <https://openprocessing.org/sketch/1133031>

The starter code contains a JSON file named "hail_size.json". Have a look at "hail_size.json" to see and understand its structure.

Your sketch should mimic what you see in the video. <https://vault.cs.uwaterloo.ca/s/DdNNbTBQHf835H>

The exact layout doesn't matter much as long as it is similar to the image above and similar to what you see in the video.

Write a sketch to do the following:

- Find the size of the largest hail size, and display it on the canvas.
- Find the analog for the largest hail size, and display it on the canvas.

5) [2 marks] “elements.json”

Num	Name	Symbol
1	Hydrogen	H
2	Helium	He
3	Lithium	Li
4	Beryllium	Be
5	Boron	B
6	Carbon	C

There is starter code: <https://openprocessing.org/sketch/1133060>

The starter code contains a JSON file named “elements.json”. Have a look at “elements.json” to see and understand its structure.

Your sketch should mimic what you see in the video. <https://vault.cs.uwaterloo.ca/s/be6dbZs8wmtWK4C>
The exact layout doesn’t matter much as long as it is similar to the image above and similar to what you see in the video.

Write a sketch to do the following:

- Put a column header on the canvas with “Num”, “Name”, and “Symbol”.
- Display every element in the “elements.json” file. You may need a large height for your canvas such as 1500 or something like that.

[5 marks] Coding Style and Efficiency

Follow the course coding style for whitespace and comments. Consult the “**Code Style Guide**” on LEARN. For example:

- 1) [0.5] Include your name on the first line of code and your student ID number on the second line of code.
- 2) [0.5] Leave the third line blank.
- 3) [0.5] Comment your code appropriately. Avoid superfluous comments.
- 4) [0.5] Correctly and consistently indent your code blocks.
- 5) [0.5] Use correct inline spacing for variable declaration and assignment.
- 6) [0.5] Use good line spacing to chunk sections of your code.
- 7) [0.5] There are no variables that are declared or assigned, but not used.
- 8) [0.5] There are no unnecessary variables that are duplicates of other variables.
- 9) [0.5] There is no unnecessarily repeating the same code in multiple places.
- 10) [0.5] Semicolons were used appropriately (i.e. at the end of most lines).

Restrictions

- You may not use any functions or statements not covered in lecture or labs. This includes, but is not limited to:
 - No `translate()`, `rotate()`, or `scale()` functions.

Submitting

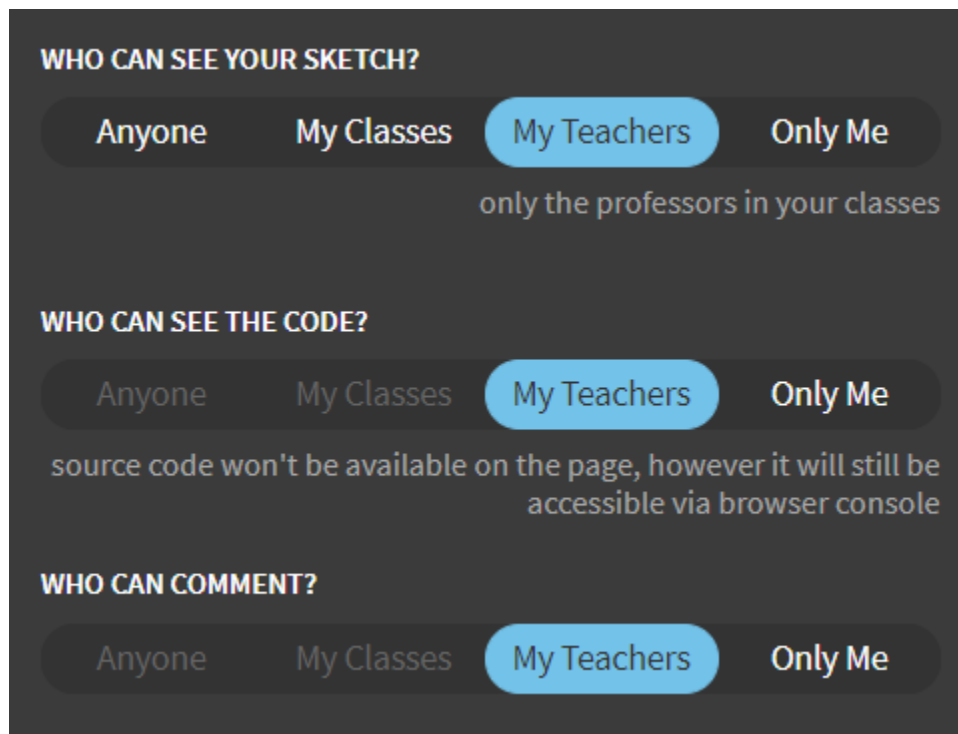
Use the template file in Word “CS106 Assignment Template” in LEARN to create your Assignment 07 submission.

Then convert your Word file to pdf. Please ensure that your URLs are hot links. The TAs need to be able to click on each link in your pdf and go directly to your sketch.

So for example, don't have a link like this: <https://openprocessing.org/sketch/1050954>

but rather have that link as a hot link as follows: <https://openprocessing.org/sketch/1050954>

Ensure that each URL you submit has its settings so that the access is as follows:



Submit that pdf file to the Assignment 07 dropbox on LEARN.

An example of how to submit a Lab is shown in the following video:

<https://vault.cs.uwaterloo.ca/s/9Xx7AGsewaea773>

It is your responsibility to submit to the correct dropbox with the correct file before the deadline. Otherwise you may receive a mark of 0.

Academic Integrity

All assignments in CS106 are done individually. Group work and sharing of code is not allowed.

Detecting Plagiarism:

- We monitor Reddit, File Trading Sites, past year CS106 assignments, etc.
- Measure Of Software Similarity (MOSS)
 - automatic system for determining the similarity of code

Discipline

- Discipline (Policy 71)
 - <https://uwaterloo.ca/secretariat-general-counsel/policies-procedures-guidelines/policy-71>