CS106 W2021 – Final Project

Due: Friday, April 9, 2021, 11:59 PM

Total of 62 marks. Starter code: None

As a Final Project, we would like to give you the opportunity to explore the new ideas and tools you learned in CS 106 to create something of your own. This Final Project is very open-ended: you can basically choose any theme or concept you want, as long as it uses a sufficient number of CS 106 topics/features.

Below you will find nine course-related topics. Your project must use five of them. If you use more than five, then only the five you document below are graded.

- Week 2: Arrays and Strings.
- Week 3: Input and Output.
- Week 4: Advanced Shapes.
- Week 5: Introduction to HTML and CSS (User Interface).
- Week 6: Randomness and Noise.
- Week 7: Data Processing and Text.
- Week 8: Tables.
- Week 9 and 10: Trees (JSON).
- Week 11: Geometric Context.

[24 Marks Total] Write-Up

You need to create a pdf document "readme.pdf" that describes your project and includes:

a) [3 marks] Description: What is your project? One paragraph is enough for this. Your description will also be graded as follows.
   - Correctness: Your description needs to explain your project correctly. [1 mark]
   - Effectiveness: Your description should make it easy to understand. [2 marks]
b) [3 marks] Inspiration: What was your inspiration?
   - What inspired you to create your specific project?
c) [3 marks] Instructions: Explain how to run your sketch, and how to use its features. The length of this section depends on how complex your sketch's user interface is.
   - Correctness: It needs to explain how to run your sketch correctly. [1 mark]
   - Effectiveness: It should make it easy for the course staff to understand how to use your sketch. Bullet point recommended; try to mimic assignment PDFs. [2 marks]
d) [3 marks each for a total of 15 marks] Topics: List the five topics from the menu above you used in your sketch that you want graded (you can use more than 5, but only 5 will be graded). For each one, give a paragraph explaining how you used that feature.

[30 Marks Total] Your sketch will be graded as follows:

- [3 marks each for a total of 15 marks] Correctness. Whether you're able to make the five features work as intended.
- [3 marks each for a total of 15 marks] Effectiveness (whether the feature is making a useful, non-trivial contribution to your project). The effectiveness mark is a bit of a judgment call, but we will be generous. The goal is to make sure you do something interesting with your feature. For example, adding a single line reading save(); to your sketch, saving a screenshot of your sketch window, would not be considered effective use of Input and Output.

[3 marks] Submit a zip of your sketch, readme.pdf, and your usual pdf file

Make sure you have submitted all three files to LEARN.

- [1 mark] In addition to your normal submission described below under "Submitting", you must also submit a zip of your sketch to the Final Project dropbox. You can download the zip from Open Processing. The following videos shows how to do that: https://vault.cs.uwaterloo.ca/s/oGsrewwAaPeS5pL After you have downloaded it, you then upload it to the Final Project dropbox.

- [1 mark] You must also submit your "readme.pdf" file as described above under Write-Up.
- [1 mark] You must submit your normal pdf document as described below under "Submitting".

[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 CS105 or CS106.

Submitting

Use the template file in Word "CS106 Assignment Template" in LEARN to create your Final Project submission.

Then convert your Word file to pdf. Please ensure that your URL is a 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:
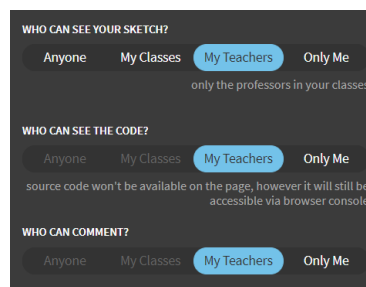
Submit that pdf file to the Final Project dropbox on LEARN.

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