CS106 W2020 - Lab 03

Due: Wednesday, January 22, 2020, 11:59 PM

This lab is about Input and Output.

The starter code for this lab is in L03.zip.

An example solution for this lab is shown in the following video. https://youtu.be/S_jLtP1HR44

Question 1 Input and Output

Write a JavaScript p5 program that processes a set of one-word "commands" read from an external text file “commands.txt”. Each command is explained below.

Here are suggested steps to follow to complete this question:

- Load the file commands.txt in the preload function.
- Create a canvas 600x600 with light gray background.
- Your function setup() should call a function processFile() to process the file (you do not need a draw() function). Your function setup() should have only the following code:

```
function setup() {
  createCanvas(900, 900);
  background(220);
  rectMode(CENTER);
  processFile();
}
```

- Start implementation of processFile().
  - Create a loop to iterate through each line of “commands.txt”.
  - Detect if the command is "circ". If it is, treat the next three numbers as the x and y coordinates of the centre of a circle, and the radius of that circle. Draw the circle in the sketch window
  - Detect if the command is "square". If it is, treat the next three numbers as the x and y coordinates of the centre of a square, and the width and height of the square. Draw the square in the sketch window. . Note again: The next three numbers are read in as strings. You must use the built-in function “int()” to convert them to integers.
  - Detect if the command is "print". If it is, write the next value on the line to the debugging console.

- Detect if the command is "save". If it is, save the current canvas as an external graphics file using the next value as the filename and concatenate that with ".jpg" (so it will be something like save(filename + ".jpg"), where filename is the value after the command "save".).
- Detect if the command is "return". If it is, return immediately from the processFile() function.
    - Note that "return" immediately stops processing the commands in the file; anything afterwards is skipped. If you're following the steps laid out so far, this will cause one of the circles not to be drawn in the sketch canvas, because it appears in commands.txt after "return". Note: To implement the "return" you may want to concert your For loop to a While loop, where the While loop terminates when either (a) a line contains "return" or (b) it has finished processing all lines in commands.txt.

Note that we may test your code with multiple different command files.

Create a folder "CS106_L03".

Save this program as "L03_Q1", within the directory "CS106_L03".

Question 2: Alternative "commands.txt" file

For this question, you are to use your JavaScript code from the above question without any modification to the JavaScript p5 code. You can do this by saving the above as "L03_Q2".

Now edit the command.txt file by first deleting all the lines and then creating adding commands as follows :

- At least three circ
- At least three square
- At least three print
- At least two save
- At least one return

The image you create on the canvas should be an image that draws something such as a car or house or the drawing of your choice.

Save this sketch as "L03_Q2".

Submitting

Submit both sketch directories from this lab as one ZIP file called CS106_L03.zip to the lab dropbox on LEARN. Consult “How to Submit: Handing in Code for Labs and Assignments” on LEARN for more information how to create a ZIP.

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