CPE 123 – Program 4
Self portrait using images

Due Friday, November 18th 11:59pm

Overview: artists have long used self portraits as a creative and expressive means of communicating their emotional state of being or personal story. In this assignment, we will use interaction and image p5.js to turn a selfie into a more expressive and artist depiction of ourselves. Consider looking at some famous self-portraits and think about what is important to you. This sketch can include multiple images as the input and not all have to be pictures of you.

Modality:
- You need to make your own p5.js sketch. You may talk to other students and your instructor to see what they are creating and how they did it. As always, you are not allowed to 'cut and paste' code from another student or a tutorial in order to complete this assignment, nor can any segment of your code (which generates a visual component) exactly match another student's code for this assignment.

Objectives:
- Create a self portrait using a digital image of yourself as the starting point
- Learn about image representations in P5.js
- Learn about 2D to 1D array mapping and indexing
- Practice referencing various regions of an array to create a desired effect
- Practice overlaying another image and blending two images together
- Practice making more shapes/designs with P5.js
- Familiarize yourself with loading and using images to create a more complex final image
- Practice expressing your aesthetic
- Practice using loops via the plotting of a shape using a parametric equation
- Practice writing an interactive program that uses conditionals to test mouse clicks against a specific region of a sketch
- Make an interesting sketch

Requirements:

For this assignment you must generate at least a 400x400 pixel sketch using P5.js that is a digital self portrait using at least three digital images (one must be of yourself).

This sketch, which should be representational of you in a clear way, must include:
- at least 3 clearly different regions of the image that are drawn differently. You could think of these regions as windows, through which the image is drawn slightly differently. At least one `window' must include a complex shape created with geometric primitives (such as a parametric shape or modeled creature/element) and at least one window must include a distinct image p5.js effect to distinguish it as a window region. The third window is up to you but must be clearly distinguishable and may be modeled with geometric shapes or using image p5.js.

- When these three different regions are clicked – they each must trigger three unique effects:
  - One must trigger an animation effect – this could either be the geometric primitives moving (opening, rolling away, etc.) or the image p5.js effect varying over time in a clearly visible way (ie fading in or out of view)
  - a change to the main image via some pixel wise modification (for example, edge detection, blur, combining pixels from multiple images, etc.), an implicit painterly effect. Note the effect must be per pixel and not global to the image (i.e. tint does not count as an effect).
  - A third change that is either a different image effect (consider a fading overlay, blending or combining some other image onto the original image, edge detection) or an interesting shape overlap, vines growing, creatures moving, etc.

  - This means your code must include conditional tests to change or animate the three regions only when the mouse is clicked in each region. The 'change' that is triggered must include a clear visual changes to the sketch. Be creative about how you animate the change, (i.e. squares flying apart, a circle slowly widening, etc.).
  - In general, this sketch, images, interaction, animation and regions should have a story or link back to the general theme of conveying something about your self.

Note that when loading an image in your script, due to security issues with opening images locally, your script will not work. You need to do one of two things:
 either run your own local server
https://github.com/processing/p5.js/wiki/Local-server
 (do this ONLY in the folder that you want the data shared publicly)
or just run the code on the web server (i.e. upload it to your unix account).

Demo:
You will need to present your sketch to the class and justify your choices. As usual, your score will be broken down 75% for meeting the technical requirements and 25% for aesthetics.

You are required to handin your final sketch code and all associated images in order to run the sketch. You can zip all the necessary files into one zip file to turn in the project on polylearn.

You are not required to post your program 4 to your webpage but are highly encouraged to do so.

Point break down:
30 pts	three clear regions drawn distinctly
	(one with shapes, one with image processing, one your choice but distinct)
36 pts	three distinct effects triggered per spec above
24 pts	coherent self portrait with good aesthetics
10 pts	general (code readability)

Resources:
```
loadImage
createImage
loadPixels
brightness
```

`updatePixels`

Examples of two different image-source self portraits with some various pixel wise effects to some regions of the images: