

CS 105 Introduction to Computer Programming using JavaScript

Lab 1: Drawing and Animation

Watch the Khan Academy videos linked for Week 1 on the class website.

Use JavaScript and HTML5 canvas to draw an animated picture conveys some message. The message should be simple enough to understand without text. There must be at least 15 draw commands, where a draw command is one of **line**, **rect**, **ellipse** and/or **arc**. Note: setting or changing line or fill color does not count as a draw command. At least two elements of the image must be animated. That is, you must use a variable (or variables) and a simple math equation to change the variable in every call to the draw function so that each time the draw function is called, a slightly different image is drawn.

The class website shows an example of this, only it has just 5 draw commands are used (you need to use at least 15).

After you get the drawing the way you want it on the Khan Academy website, download, from the class website: [CS105-Lab1.html](#)

Do not just save this in your “downloads” folder or on your desktop, but create a new folder named: **CS105-Lab1_MyFirstName_MyLastName**. Of course, change the folder name to use your actual first and last name. Note: do NOT use SPACES in the folder name. For example, if your first name is “Supreme Leader Kylo” and your last name is “Ren”, then use the folder name “CS105-Lab1_SupremeLeaderKylo_Ren”.

Download the processing library file, **p5.js**, from the class website. Save both the **p5.js** library and your .html file in the **same folder**.

Now, open the .html file with Google Chrome and verify that it runs and looks like it does on the class website.

Now you are ready to change it to make it your own.

Within the .html file, change the title to your name followed by "CS 105 Lab 1: Drawing and Simple Animation by *your name*."

Edit the code within the draw() function (you can copy/paste what you have in Khan Academy into the draw() function or write it directly in the draw() function).

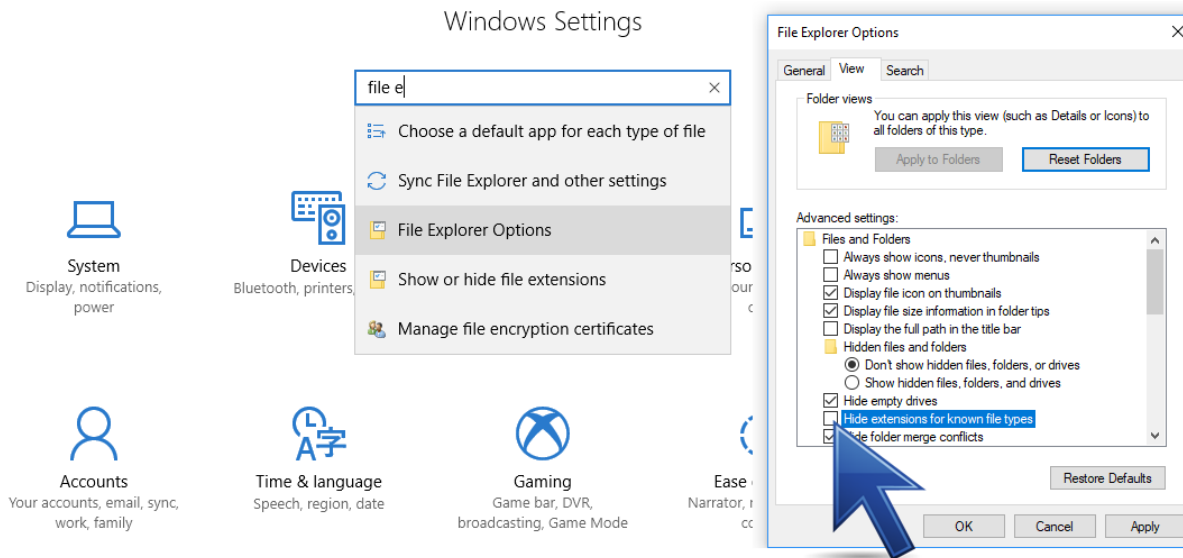
Note: Anything you make in Khan Academy is drawn on a 400 × 400 pixel canvas. However, the canvas created in the .html example on the website is 508 × 508 pixels. If you want your image to look the same as it does in Khan Academy, you will need to change the size to 400 × 400 by changing the command in the **setup()** function of the given .html file.

When you are done, create a .zip archive of your folder. The .zip archive must have be named:

CS105-Lab1_MyFirstName_MyLastName.zip

Attach the .zip file in Blackboard Learn under Lab 1.

Note: .html, .zip, and .js are called **file extensions**. They are called extensions because they come at the end of the file name. The Windows operating system uses these extensions to know the format of the data in the file. By default, Windows 10 hides extensions of known file types. Throughout this course, and in many other CS courses, it is useful to be able to see this information. You can change the Windows default by unchecking the box in the File Explorer Options:



Grading Rubric [20 points total]:

[Turn in: 5 points]: Your .zip file that contains your .html file and p5.js is correctly attached in Blackboard learn under lab 1 with the correct file name:

CS105-Lab1_yourFirstName_yourLastName.zip

Of course, replace “*yourFirstName*” and “*yourLastName*” with your actual first and last name.

[Draw Commands Exist and Work: 5 points]: When your file is opened in the Google Chrome browser, it displays a picture different from any of the given examples.

[15 Draw Commands: 5 points]: The image you create uses at least 15 different draw commands. Note: a draw command is one of: **line**, **rect**, **ellipse** or **arc**.

[Animation: 5 points]: At least one part of the image changes every frame.