

# CS106 W2021 - Lab 04

Due Tuesday February 2 at 11:59pm.

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- 1) Write a function `secondsToday()` that takes no arguments. It uses the built-in functions `hour()`, `minute()` and `second()` to return an integer telling you how many seconds have elapsed since midnight. So, if the function was called at exactly 2:37.19pm, it would return  $14*60*60 + 37*60 + 19 = 52639$ .

There is no starter code provide in Open Processing but your `setup()` function may look something like the following.

```
function setup() {
  createCanvas(windowWidth, windowHeight);
  background(100);

  let result = secondsToday();
  textSize(30);
  text("The seconds since midnight is:" + result, 25, 50)
}
```

- 2) Write a function `findMiddle()`. It takes no argument, and returns a p5 Vector object, representing the middle of the canvas. For example, if the canvas is 450x650 then the function returns a p5 vector with the x of the vector being 225 and the y being 325.

Starter code is given at: <https://openprocessing.org/sketch/1079335>

That starter code with your correct `findMiddle()` function creates the following at the top of the canvas:

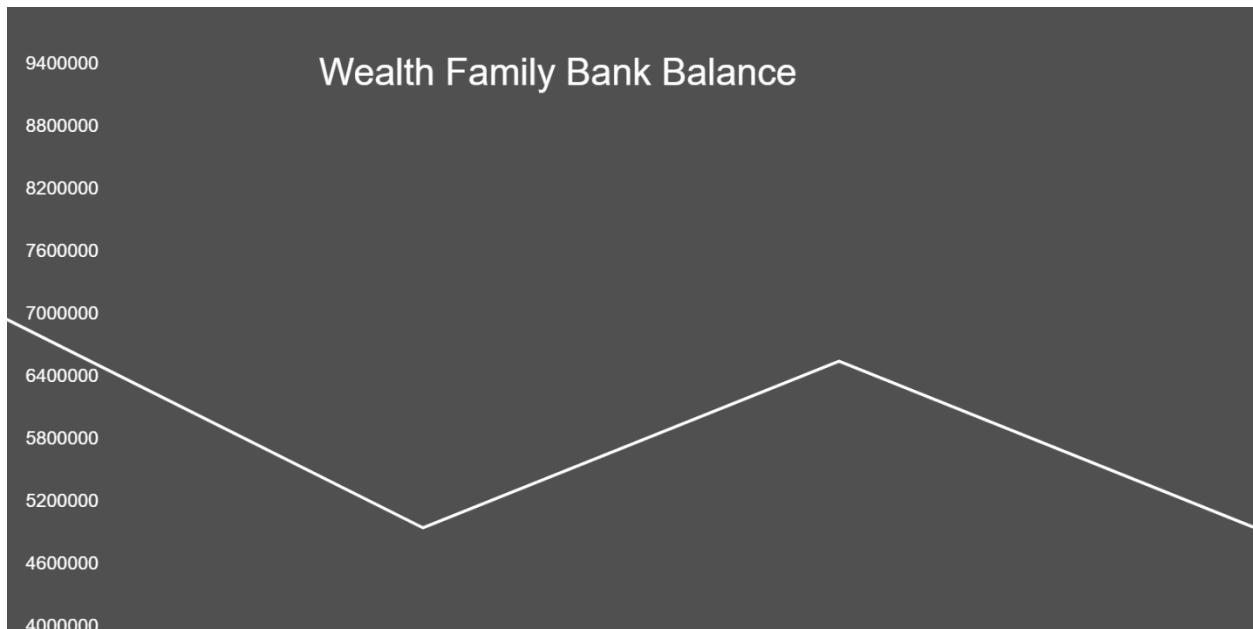
The middle is at: 225 325

3) A fictitious wealthy Waterloo family has a large amount of money in the bank. Their fictitious bank balances for each quarter in 2020 were as follows: the first line (\$7 million) is their end of March 2020 balance, the second (\$5 million) is their end of June balance, the third (\$6.6 million) is their end of September balance, and fourth (\$5 million) is their end of December balance.

7000000
5000000
6600000
5000000

Create a line graph of their 4 balances using the starter code from lecture slides 26-27. That code is at: <https://openprocessing.org/sketch/1077561>

Your canvas will look something like the following:



- 4) Create the splash screen for a fictitious computer game of your choice. It must have:
- Something rotating clockwise
  - Something rotation counter clockwise
  - Text to identify the game such as "Super Soccer"

Have fun, create a splash screen for the game of your choice. Good code to start with would be the code from lecture slide 50-51: <https://openprocessing.org/sketch/1079232>

Slides 50-51 is the rotation/animating soccer ball. You may create a splash screen for any game of your choice except it cannot be a soccer game.

# Submitting

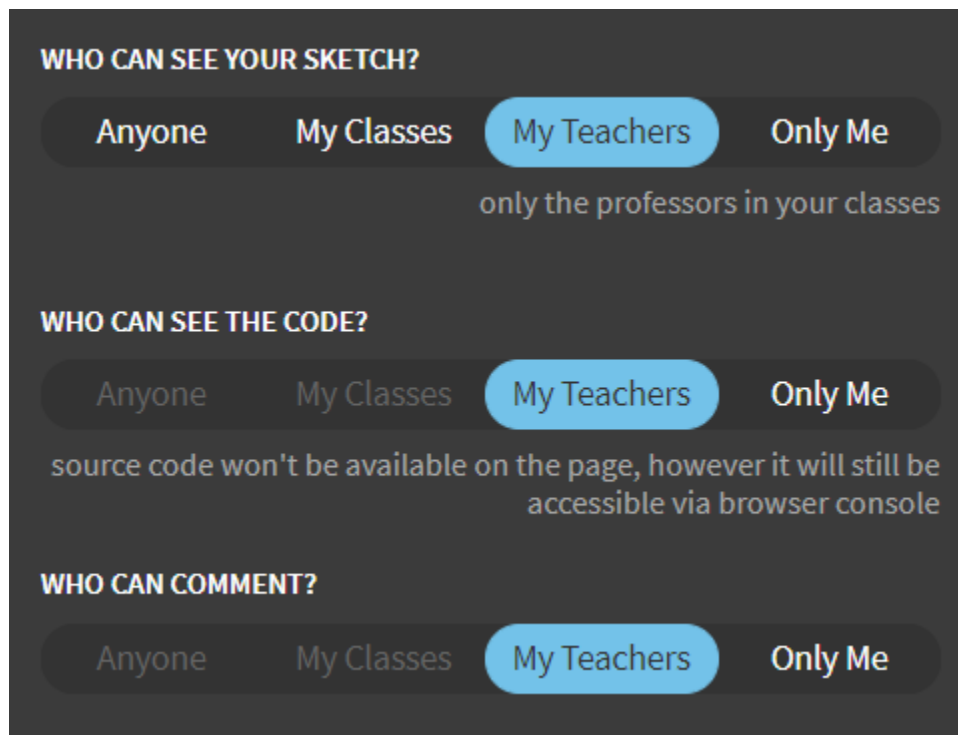
Use the template file in Word “CS106 Lab Template” in LEARN to create your Lab 04 submission.

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 Lab 04 dropbox on LEARN.

An example of how to do 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 files before the deadline. Otherwise you may receive a mark of 0.