Class 1: Outputs and Inputs

Date: 01/20/2019

Getting Started!

Depending on which Raspberry Pi you bought, please follow the steps below to set up. *(If you're not quite sure which one you have, raise your hand and I'll help you out!)*

If you bought OPTION 1: The Raspberry Pi "Starter Kit" with the Micro SD card INCLUDED

1. Stick-on your two heat sinks, using the diagram on the next page. If you have a case for your Raspberry Pi, you can put that on, too.
2. Plug in your keyboard, mouse, and monitor cables.
3. Insert the micro SD card into your Pi. It will stick out a little. Don't cram it in!
4. Now plug the USB power cable into your Pi.
5. Your Raspberry Pi will boot, and a window will appear with a list of different operating systems that you can install (Including "Raspbian," and possibly some others). When you see this, please ***raise your hand!***

If you bought OPTION 2: The Raspberry Pi "Basic Kit" with the Micro SD card PURCHASED SEPARATELY

1. Bring your Micro SD card to the front so Bella can install the operating system onto your card.
2. Once you get your card back, go ahead and begin the steps listed under Option 1.

Put your HEAT SINKS here, and here
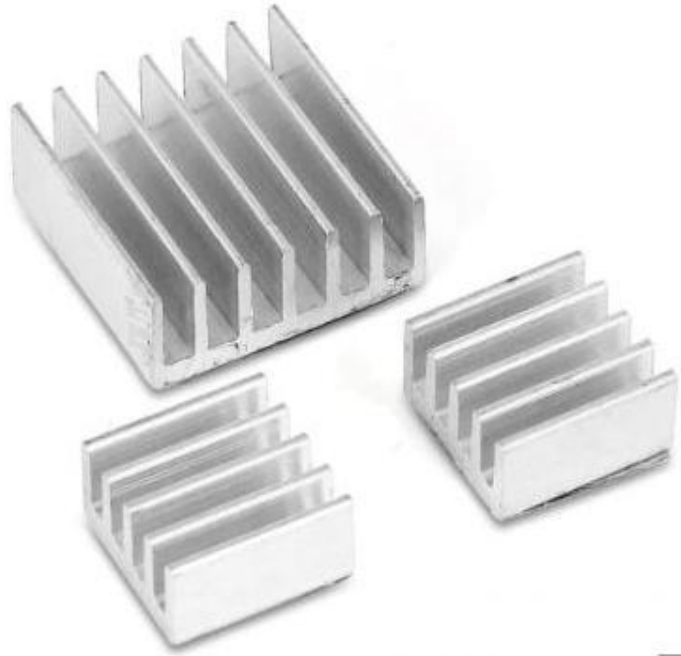
Micro SD Card Slot (underneath)

USB Ports (for keyboard & mouse)

Micro USB (power)

HDMI Port (for monitor)

Audio Port (for if you've got earbuds!)

(These are heat sinks)

Hello, World!

To start your very first program, we're going to learn how to program some simple outputs. An **output** is any information that a computer displays to its user.

1. Let's first enter the text editor. At the top-left of your screen, click on the Raspberry Pi icon (this is your Applications menu) and hover over Programming. From there, select Python 3 (IDLE).
2. This will open the Python 3 **terminal**, called "Python 3.5.3 Shell." In this window, click on File>New File. This will open up a new **text editor** window called "Untitled."
3. Let's save this text editor document to your desktop. On the window called "Untitled," click on File>Save As… and double-click on "Desktop."
4. Name your file "MyAdventure" then click Save.

Cool! Now let's try this:

1. Write the following expression into the window that's now called "MyAdventure.py," the text editor, THEN save the document using File>Save.

```
print("Hello, world!")
```

2. Then, to run your program, select Run>Run Module (OR, hit F5 on your keyboard). You should then see this in the "Python Shell" terminal window:

```
Hello, world!
```

3. Anything included in the parentheses/quotations will be displayed in the terminal. Try making it say anything that you want in the text editor, save it, and run it again!

Write an exposition for your story. It's like writing the first page of a book. Where does your story take place? In a castle? In a cave? On a pirate ship? What do you see around you? What's the weather like? Be creative!

Homework + Extra Learning

Finish writing the exposition for your adventure tale. Start brainstorming some routes in your Choose-Your-Own-Adventure!

Next-Week Snapshot: Variables

Don't worry if you don't have the time to get to this step; we'll cover it next week!

Next class, we're going to learn about variables. We can think of a **variable** as a sort of "container" that can hold a number, word, phrase, or other piece of important information. Let's say I'd like to create and use a variable in my program called `cool_gal` (you can name your variable *anything you want!* But, it's recommended that you name it something you can easily remember).

Try this:

1. In the text editor, at the very top of your program, write the following code:

    ```
    cool_gal = "Bella"
    ```

2. This tells the computer to open the container for "cool_gal," and put the word "Bella" in it.
3. On the next line, to print the variable to the terminal, you can then write the following code:

    ```
    print(cool_gal + " is the coolest.")
    ```

4. Run the program in the terminal, and you should now see:

    ```
    Bella is the coolest.
    ```

5. Try going back into your program and changing the value of the variable to your own name. And, if you're not a girl, try changing the name of the variable to something like `cool_dude`, `neatkid`, `thisismy_name`, or anything you like! Remember to change the name of the variable both in the first line as well as in the `print()` parentheses.

Practice creating, assigning, and outputting some more variables!