Tips for saving time and avoiding frustration:

1. **Act like a computer.**
   - which is what the debugger does.
   - When trying to figure out what the computer is doing, why it is doing it, you'll need to know what the current value of each relevant variable is and see exactly how the program makes the value change. (Dynamics of variables)
   - \( \frac{dy(t, y)}{dt} = F(t, y) \) dynamics in physics

2. **Become SURE of what each facility does ALL BY ITSELF.**

To learn exactly where Python "if" statements begin and end:

- Google search for Python Language Reference
- The first hit is an index of chapters
- One chapter is "Simple Statements"
- The next chapter is "Compound Statements"
- One of about a dozen subchapters is "if statement"

That subchapter begins with a 3-line specification of exactly what a Python if statement can be. The left hand side of "==" is if-stmt. That name is called a "syntax variable" in CSI409.

The right hand side is a "template" (thanks, Dave!) for if statements. It indicates that an if statement always begins with "if". After that, there is always one expression followed by a colon.
After the colon there must be a so-called suite.
A suite means the kind of stuff that a Python programmer can write in that part of an if statement.
Strictly, it does not express “what is done.” Program operations are executed long after the program code is written. The suite signifies what can be written in a Python code file having no syntax errors.

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Attempt to show how to begin (with not enough time).
Get ready: Bring up the LCR book, Ch 9 that contains the facilities to practice with.
First: Write the goal: Copy a Pyro picture.
Second: Draft an algorithm:

1. Obtain a new black picture with size and shape the same as the original.
2. Loop for each pixel:
   copy the color from that pixel in the original picture to the corresponding pixel in the new picture.

Why we don’t just duplicate with an API function? I don’t want to! My algorithm can be modified so the color is changed or processed instead of just be copied.