Moisture Sensor

In this portion of the workbook we will be building a circuit and writing code to use a Moisture Sensor to monitor how wet soil is. We will also be using our Raspberry Pi to request information from the Arduino.

\*Fill in the missing information for later use\*

1. Gather Materials
   1. Arduino
   2. Raspberry Pi
   3. USB cable or Bluetooth dongle
   4. Breadboard
   5. Jumper wires (x 6)
   6. MoistureSensor-Student.py
   7. Your plant
   8. Moisture sensor
2. Assemble the Moisture Sensor
   1. Plug in the jumper wires to the holes on the moisture sensor. Remember which color wire does what.

*Note: GND means Ground, Vcc means Power, SIG means signal. SIG provides you with what the sensor is observing.*

1. Setup the Moisture Sensor circuit
   1. Plug a jumper wire into the 5v pin on your Arduino and the first hole in the (+) column of your breadboard.
   2. Plug a jumper wire into the GND pin on your Arduino and the second hole in the (-) column of your breadboard.
   3. Connect your moisture sensor to your breadboard.
   4. Connect a jumper wire from the (+) column to the row your moisture sensor’s power is plugged into.
   5. Connect a jumper wire from the (-) column to the row your moisture sensor’s ground is plugged into.
   6. Connect a jumper wire from the Analog pin of your choosing (write it down) \_\_\_ to the row your moisture sensor’s signal is plugged into.

*Note: Double check you have the power connected to power and ground to ground. Otherwise, you might break your parts.*

1. Write the pseudocode for the moisture sensor. Think about how the sensor might tell you what is going on (how fast), and what you want the sensor to tell you.

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1. Open the MoistureSensor-Student.py file in PyCharm
2. Look over the comments provided. Does your pseudocode match what you see? What differences do you see?

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1. Write the code you want to use! Use the MoistureSensor-Student.py as a framework. Consult the workbook if you need help finding a function or how to do something. If you’re still unsure, ask for help.
2. Have an instructor double check your work before you test out what you just made!
3. Connect your Raspberry Pi to the Arduino using a USB cable or the Bluetooth dongle. Consult the tutorial for the Bluetooth dongle, if you choose this path.
4. Run your code!
5. Is there a way to make the sensor readings show you only what you want to see? Experiment with the output!