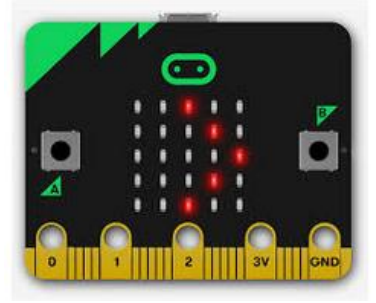day98 micro:bit temperature
Monday 5/16/22

When you look at your micro:bit on the top side it looks like this image to the right (ignoring the lit up LEDs). Today we're going to do two things:

1. Read data from pin 0 (bottom left in the picture to the right) to tell when or if someone is touching the micro:bit, and

2. Report the temperature

First do part 1:

1. Set up a standard program with "from microbit import *" and a "while True:".

2. Put your name at the top in a comment. Save your program.

3. Under the while True add an if statement "if pin0.is_touched():".
   Inside the if statement display a HAPPY face.

4. Add an else: and in the else display a sad face. Upload the program.

5. With one hand, hold your device by the GND pin. Then, with your other hand, touch the 0 (zero) pin. You should see the display change from grumpy to happy! Sometimes the board senses you easier than other times; if it doesn't switch, try twisting the board a bit under your grip, ask a neighbor to try your board, etc. I think a lot of this depends upon the humidity and factors beyond our immediate control. Try to limit your gripping to the 0 and GND pins, not all the other pins towards the center.

6. Ask the sub for help if you get stuck or your program won't load. He knows how to do this; I loaned him a micro:bit last week. It's OK if it doesn't work every time you touch it, as long as it sometimes show the happy face.

This is a bit like if we set up an Arduino with the button switch and then you press the button or let go and the Arduino acts on these states.

Part 2:

The micro:bit has a built-in temperature sensor. I want you to access that data and report it when the micro:bit is touched. When you finish with part 1, do the following:

1. You can access the temperature in Celsius using the call temperature(). For example, to read the temperature and save it in a variable t use this line: "t = temperature()". Add code to read the temperature and display it using display.scroll when the micro:bit is being touched. Use the "round" command to make the temperature a whole number.

   ```
   t = round(t)
   ```

2. Don't add any sleep calls.

3. Add code to convert the temperature to Fahrenheit before displaying it. Do the calculation (Google the formula, you can do it!) Does the value seem correct? Normally our classroom is most likely in

the 70s by the time our class meets. Does it say an appropriate temperature? Get it right. If it says the temperature is 8000 degrees, obviously there is something wrong with your code.

4. If you can think of something else fun to try, go for it, otherwise, you're done for the day. Turn the file in on the Google Classroom.

This is our second to the last micro:bit day. If you want to make up any old assignments, now is a good time.