March 2nd, 2016

- Today's agenda:

  - (a) Making **web requests** from our Photon

  - (b) Changing request **parameters** from a web form

  - *(a) is useful for design project #1.

Review

- Previously we learned how to use Particle.function() to call a function on our Photons from a web form:

```
Particle.function("name", func);
```

Our goal - *Part Uno*

- Download TCP example and JSON example on Piazza.

- Change TCP example to get weather data for Ithaca,NY from <u>openweathermap.org</u>.

- Parse web response using modified aJSON library.

- Output temperature to Serial.

Tips

- Use http://codebeautify.org/jsonviewer to understand the structure of the JSON returned by openweathermap.

- To pass a String to aJSON, cast it as char* with strudup(s.c_str()):

```
aJson.parse(strdup(s.c_str()));
```

analogRead

3.3V —— sensor

row

resistor
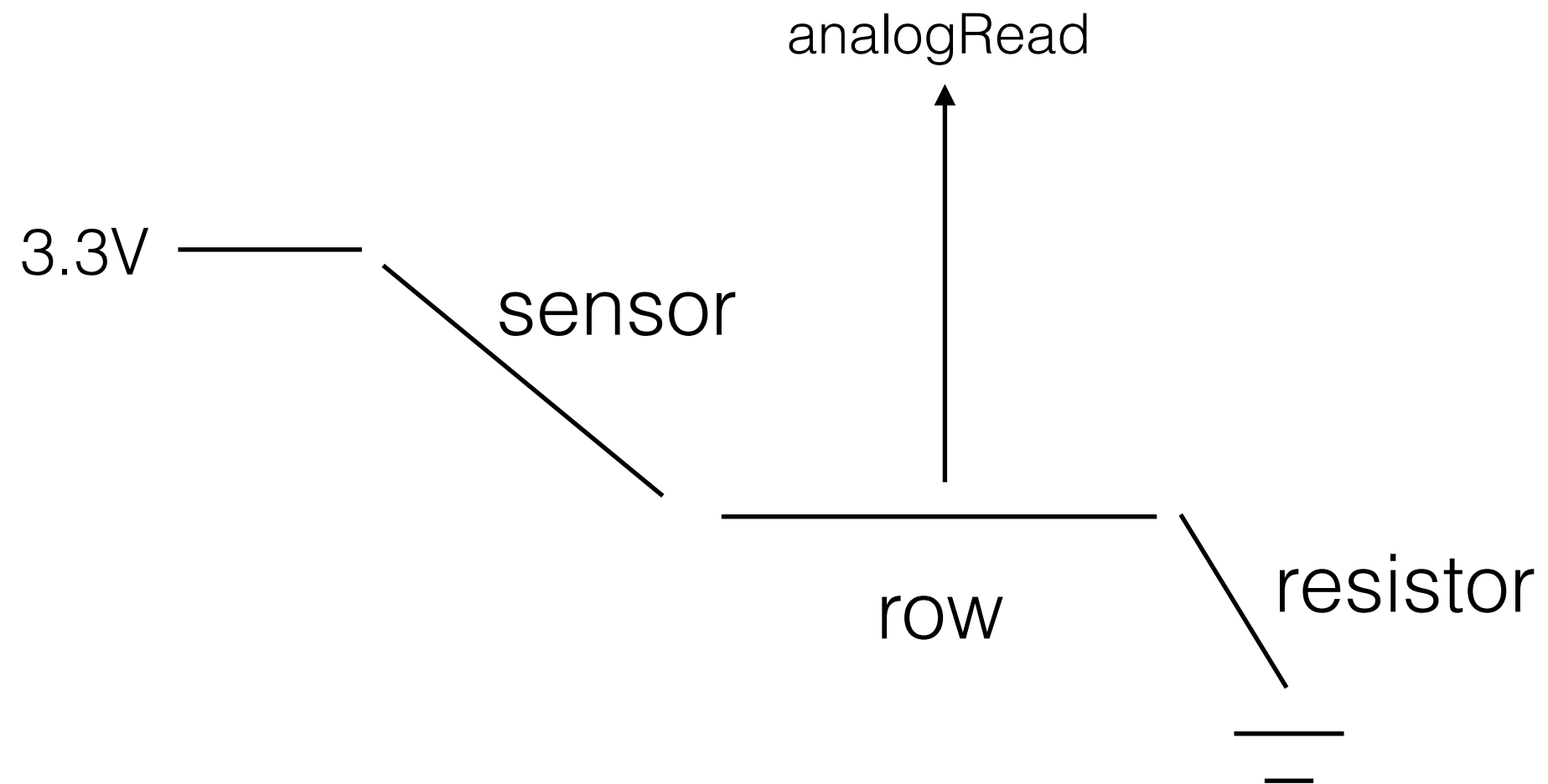
Our goal - Part Dos

- Create a function that takes in a city name (e.g. "Ithaca,NY") and change the openweathermap web request to get weather data for that city.

- Register that function to the cloud with Particle.function(…).

- Modify web form from Feb 17th class as needed.

- Extra: **Do something** with the weather data!

Advanced -
Persistent Parameters

- Modify function to **store the String parameter to Photon memory** (<u>EEPROM</u>). Read the stored result on setup().

  - This means the Photon will '**remember**' your setting entered via the Web form even when it is turned off.

  - *You can use this trick to change setup parameters for your projects without having to re-flash every time!*

Extra -
Improving battery life

- If your project needs to be online for a long time, but doesn't need to connect to WiFi, you can save power by periodically calling:

  - **System.sleep(/*seconds*/);**

- This puts the WiFi module to sleep for the # of seconds.

- You can also put the whole Photon to sleep (for 60s) by calling:

  - **System.sleep(SLEEP_MODE_DEEP, /*seconds*/);**

- But your Photon will not remember any global variables after it wakes up! If you need to store something, use EEPROM (prev slide)