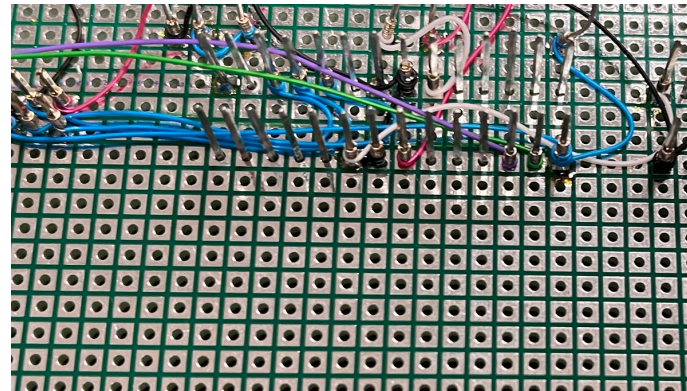
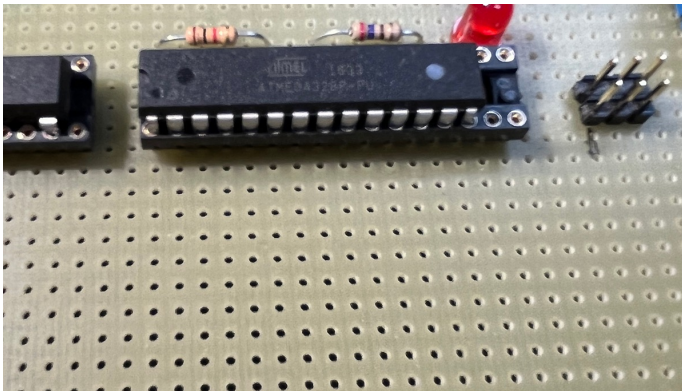


Sensor Modules

Sensor Modules

- EE459 projects are built on a protoboard that has been drilled with a grid of holes 0.1" apart, and has individual solder pads around each hole on the wiring side.



- This makes for easy assembly of components that have 0.1" spacing between their pins, but not all components meet that requirement.

Sensor Modules

- EE459 projects usually include multiple sensors of some type (temperature, acceleration, light, etc.)
- Many of these are only available in IC packages that are designed for surface-mount use on a PCB, or have pin spacing much smaller than 0.1”.
- When searching for components for projects, it’s very important to be aware of the packaging of the components.
- Always check the package type before requesting a component. Can it be used on our protoboards?

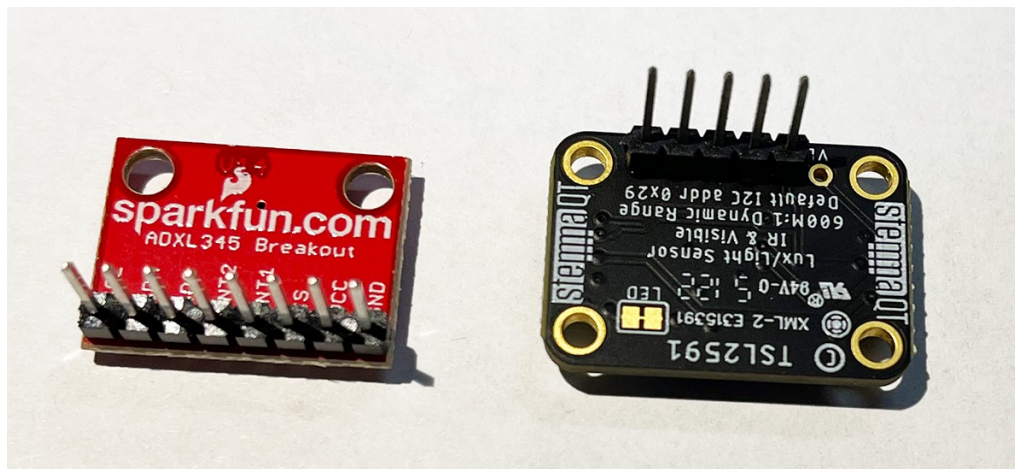
Sensor Modules

- Many small ICs are available from suppliers in the form of a “breakout board”.
- The suppliers have designed a small PCB to hold the components, and the PCB has connections on 0.1” centers that are compatible with our protoboards



Sensor Modules

- To mount these on a protoboard, header pins with 0.1" spacing are soldered into the holes on the module.
- The long part of the header should be on the bottom so it can stick through the protoboard and be used for a wire-wrapping connection.



Sensor Modules

- Other things to consider when selecting sensor devices:
 - What power supply voltage does it require? Many run on 3.3V and may require a voltage regulator to be added to the project board to supply this power.
 - Do signals have to be converted between 5V from the ATmega328P to other voltages? Signal level translators can be added to the board to handle level translation.
 - What interface does it use?

Sensor Modules

- Sensor modules for a variety of tasks can be found at these suppliers.
 - Adafruit (www.adafruit.com)
 - Sparkfun (www.sparkfun.com)
 - Parallax (www.parallax.com)
 - DFRobot (www.dfrobot.com)
- Always check the list of available parts on the EE459 web site to see if we have sensor modules you need in our stock.