

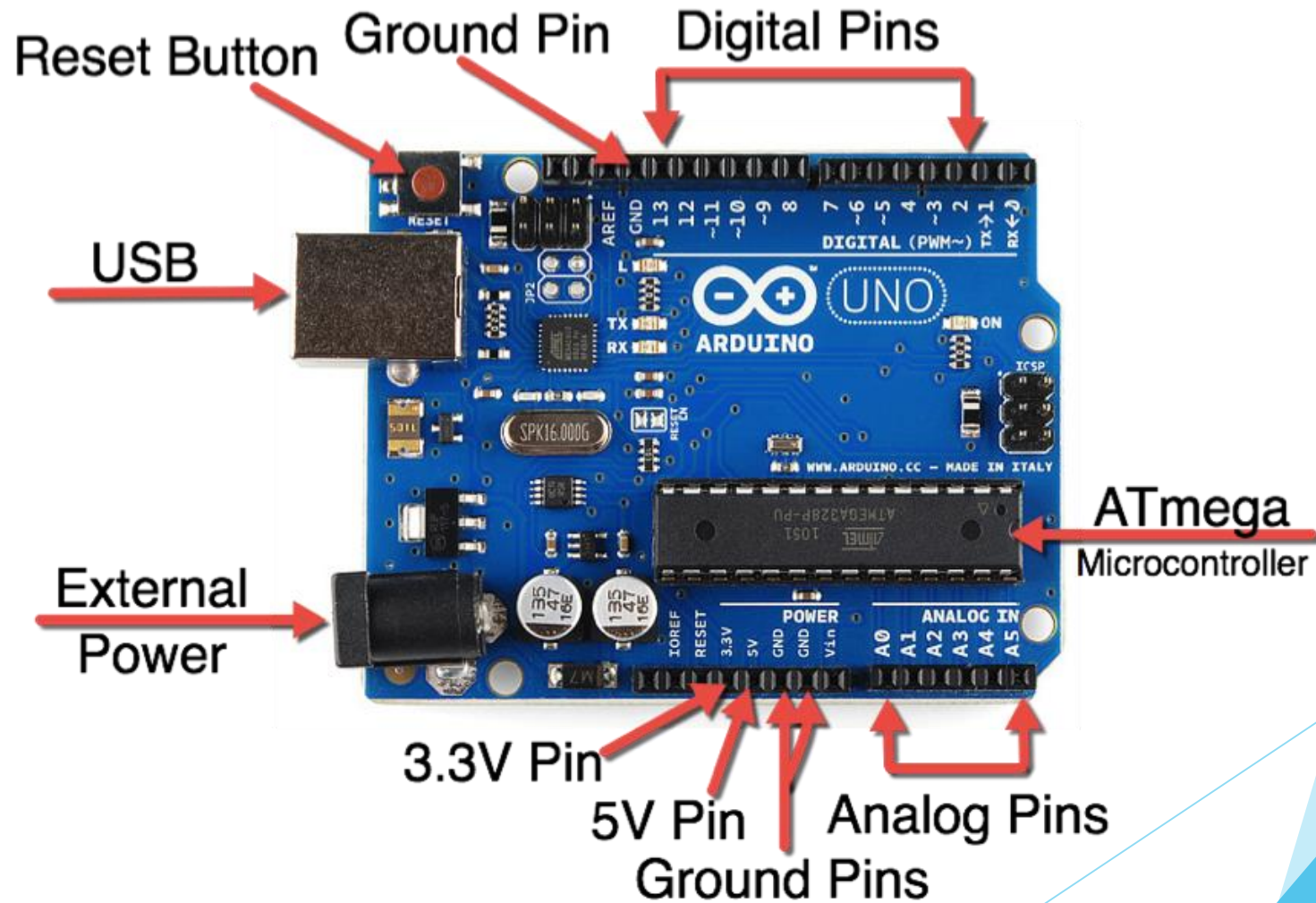
Ultrasonic LED strip

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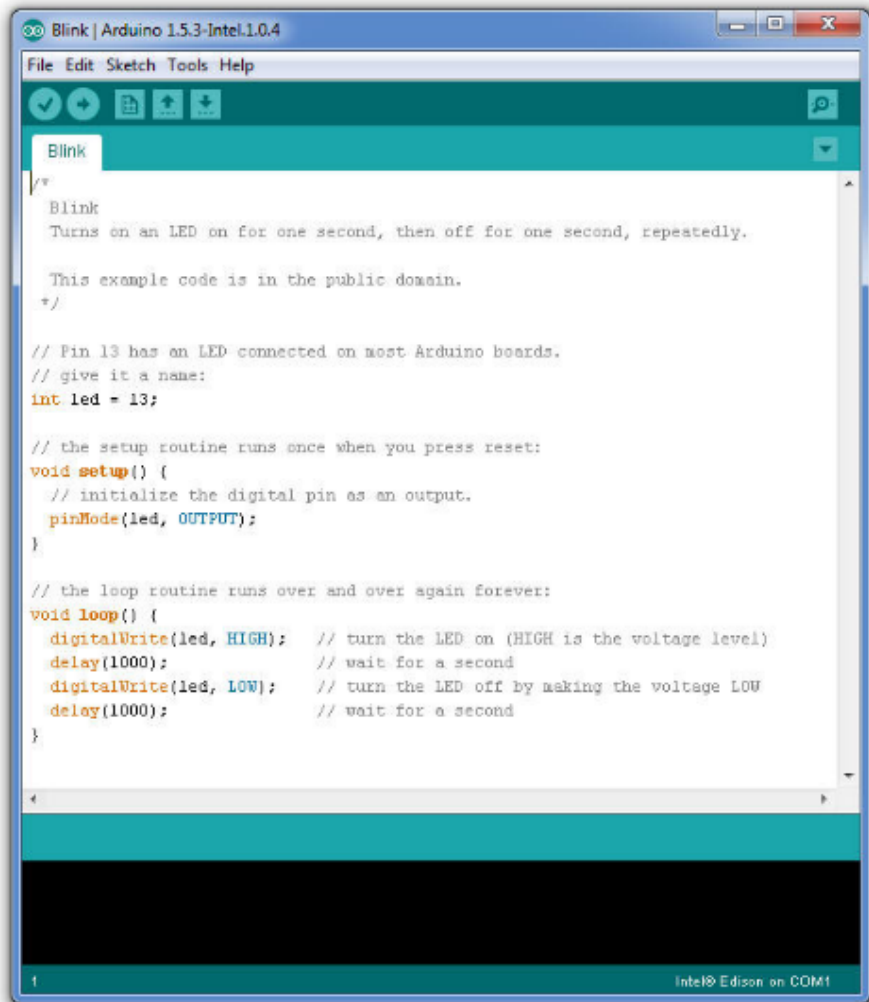
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Arduino



Arduino IDE

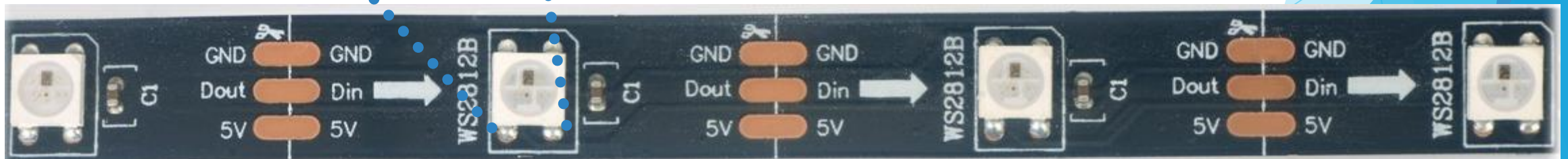


- ▶ **void setup ()** - a function for initial configuration, executed only once
- ▶ **void loop ()** - a function for the main behaviour, executed continuously

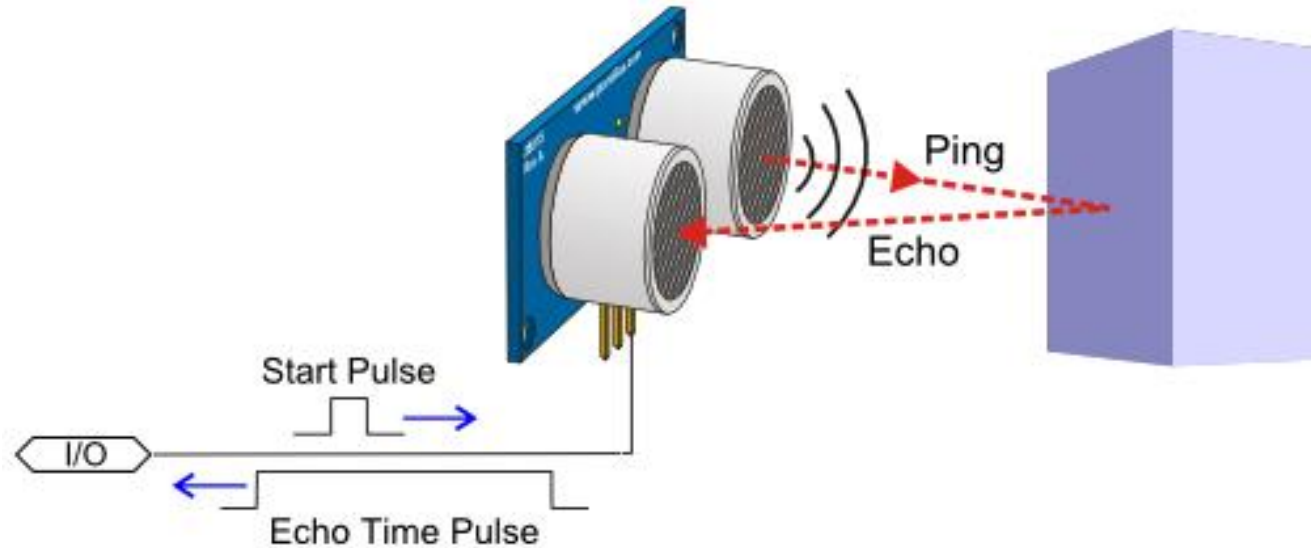
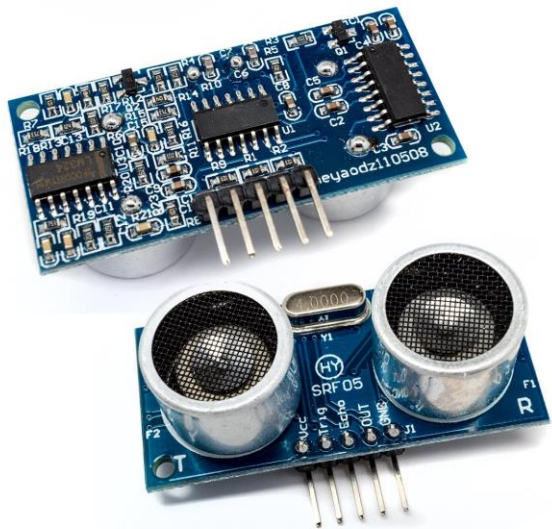
LEDs



- ▶ These LEDs are made out of 3 mini LEDs and a chip which controls them.
- ▶ The 3 different LEDs are Red, Green and Blue, which, when together can produce any colour.
- ▶ They are connected in a strip and by using just one control pin can be individually addressed

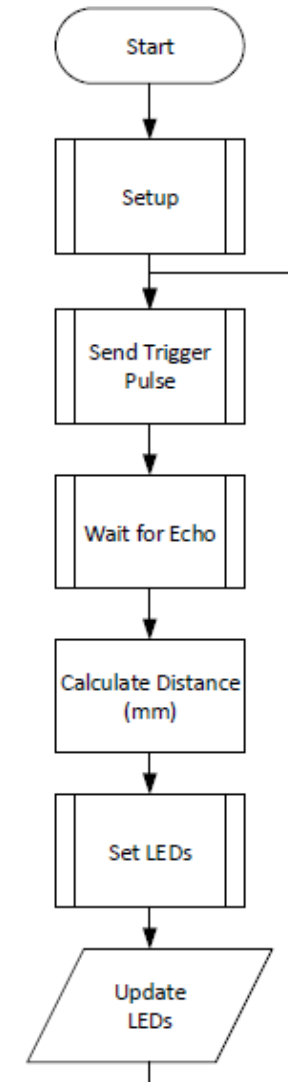
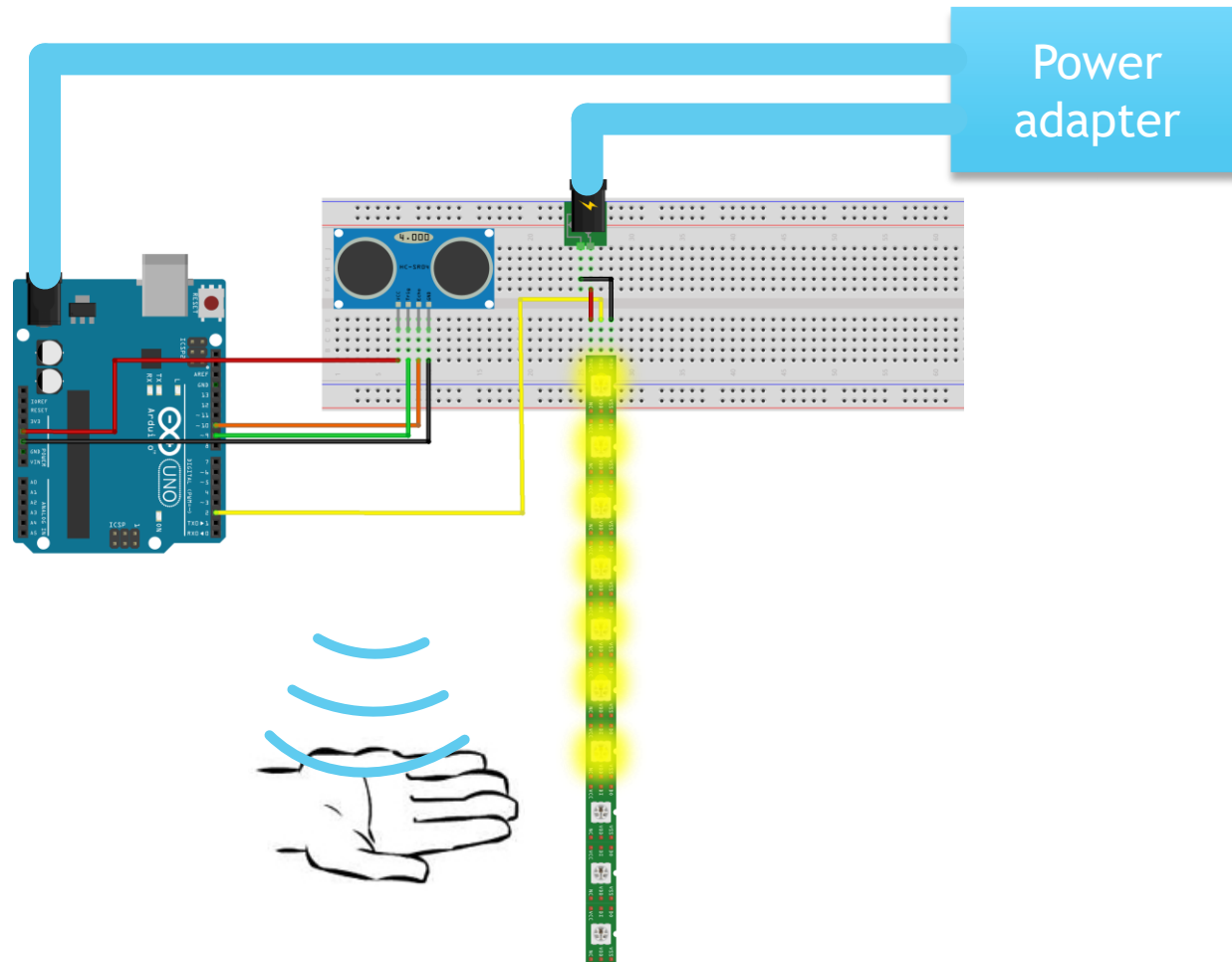


Ultrasonic sensor



- ▶ This device emits sound waves at 40 kHz and records the reflections
- ▶ Its output is the time taken for the signal to come back
- ▶ Can you derive the distance?

Complete system



Your tasks

- ▶ Building up the complete system in a few steps:
 - ▶ Light up the strip of LEDs
 - ▶ Configure the Ultrasonic sensor to output distance readings to the Serial Monitor
 - ▶ Connect the LEDs with the Ultrasonic sensor to complete the system
- ▶ Each of these tasks will involve setting up the hardware and completing the provided code templates.
- ▶ The work will be carried out in pairs
- ▶ If in doubt, ask away!



let's
DO
this!