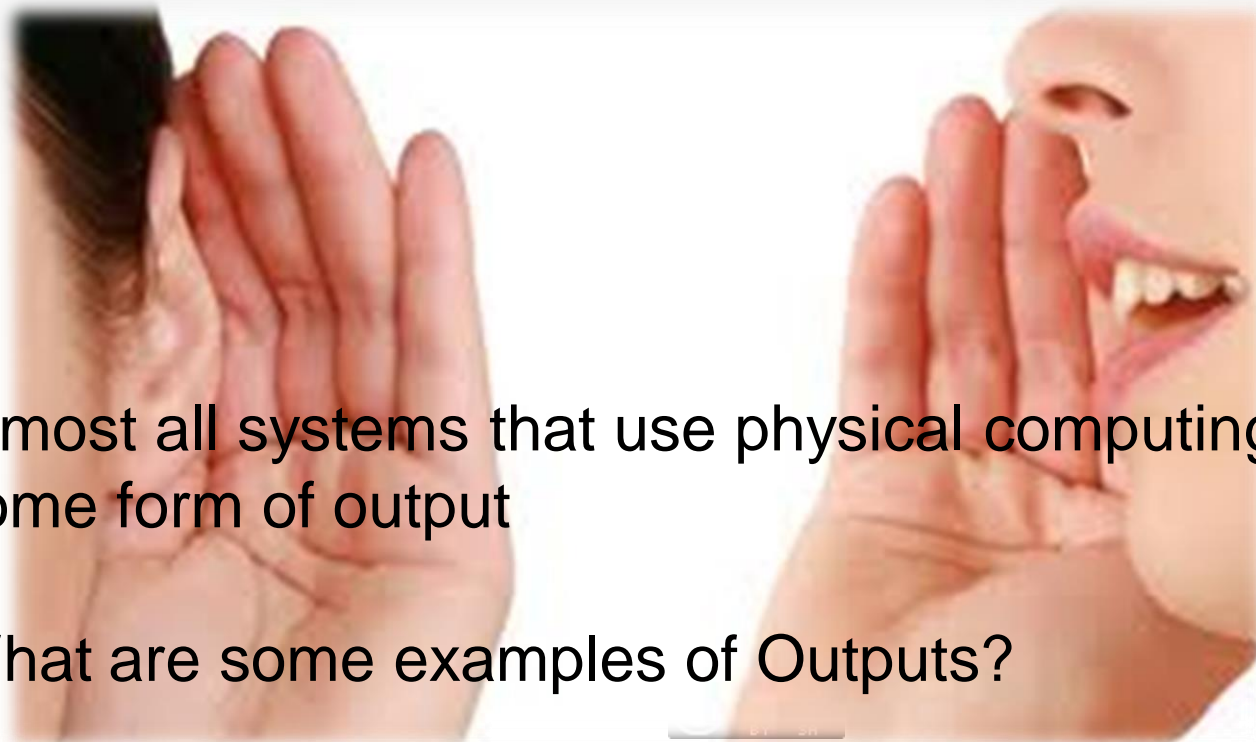


Concepts: INPUT vs. OUTPUT

Referenced from the perspective of the microcontroller (electrical board).

Inputs is a signal / information going into the board.

Output is any signal exiting the board.



Almost all systems that use physical computing will have some form of output

What are some examples of Outputs?

Concepts: INPUT vs. OUTPUT

Referenced from the perspective of the microcontroller (electrical board).

Inputs is a signal / information going into the board.

Output is any signal exiting the board.

Examples: Buttons Switches, Light Sensors, Flex Sensors, Humidity Sensors, Temperature Sensors...

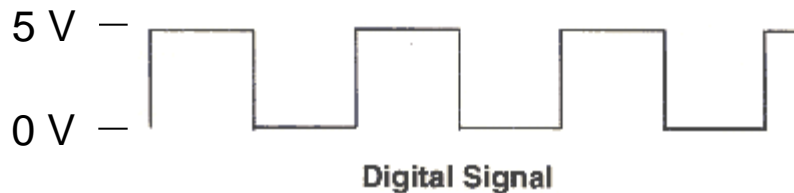
Examples: LEDs, DC motor, servo motor, a piezo buzzer, relay, an RGB LED



Concepts: Analog vs. Digital

Microcontrollers are **digital** devices – ON or OFF.
Also called – discrete.

analog signals are anything that can be a full range of values. What are some examples? More on this later...





Open up Arduino

Hints:

For PC Users →

1. Let the installer copy and move the files to the appropriate locations, or
2. Create a folder under C:\Program Files (x86) called Arduino. Move the entire Arduino program folder here.

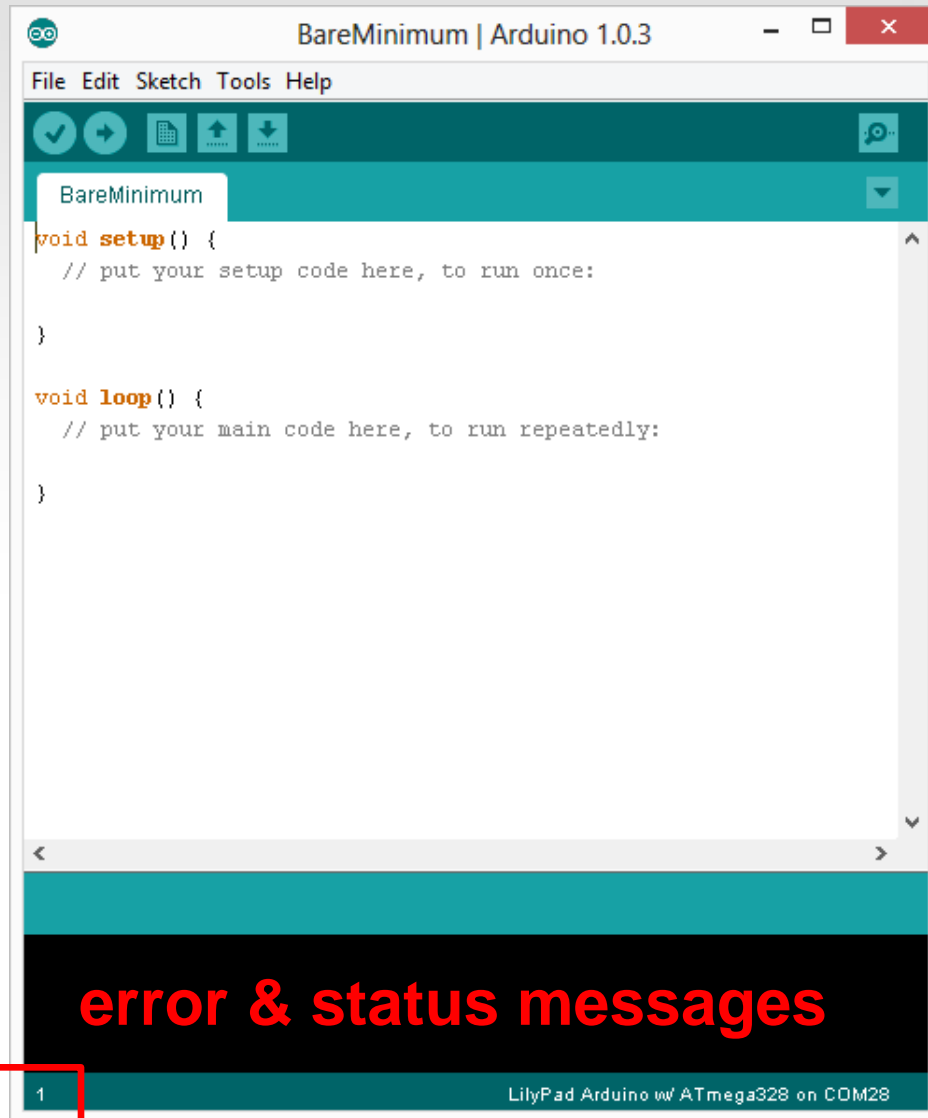
For Mac Users →

1. Move the Arduino executable to the dock for ease of access.
2. Resist the temptation to run these from your desktop.



Arduino

Integrated Development Environment (IDE)

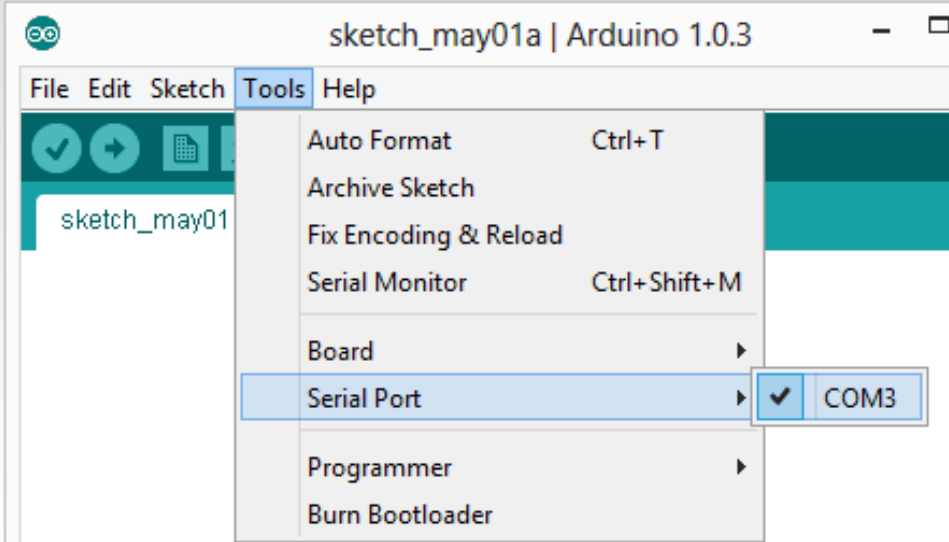


Two required functions /
methods / routines:

```
void setup()  
{  
    // runs once  
}
```

```
void loop()  
{  
    // repeats  
}
```

Settings: Tools → Serial Port

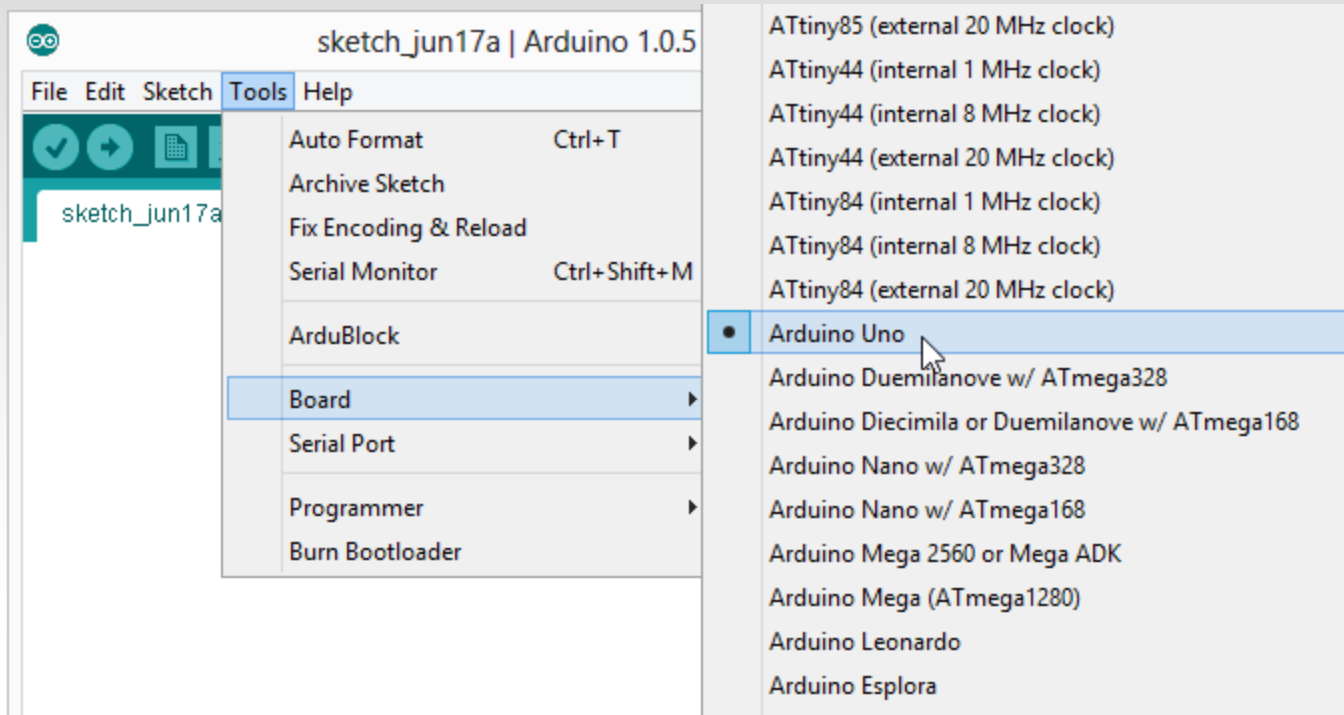


Your computer communicates to the Arduino microcontroller via a serial port → through a USB-Serial adapter.

Check to make sure that the drivers are properly installed.



Settings: Tools → Board



Next, double-check that the proper board is selected under the Tools→Board menu.

