

# Intel Galileo Gen 2 & Grove Seeed Starter Kit Gen 1

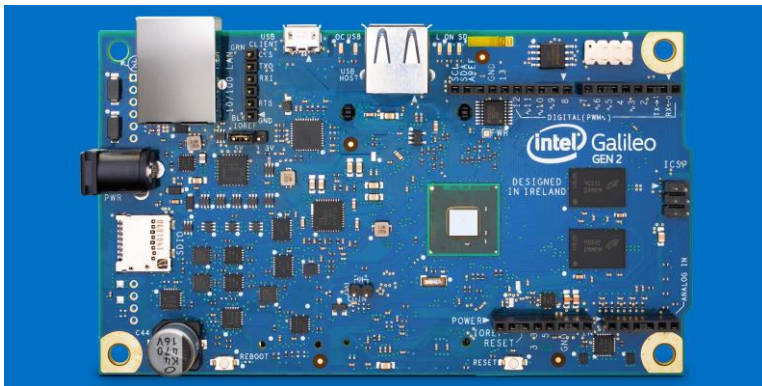
## Intel Galileo Board

- Platform for prototyping embedded systems, sensors, robotics, electronics hacking, Internet of Things, no soldering
- \$60 retail, Gen 2 board; latest version is Edison with WiFi/Bluetooth
- Compatible with Arduino Uno shields (expansion boards)
- Quark SoC which is a 32 bit single core single threaded Pentium CPU at 400 Mhz
- Can program with Arduino “sketches” or node.js, python
  - Not with ours unless put linux image on microSD card
- <https://software.intel.com/iot/getting-started>

## Caveats

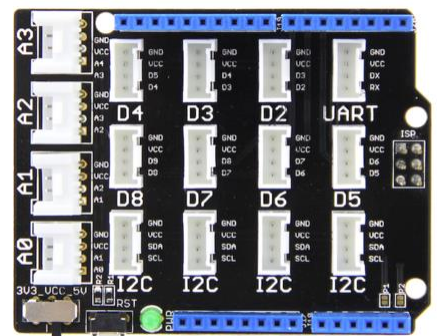
- Not 100% Arduino compatible (drivers, libraries)
- No wifi module for us
- No SD card
  - Programs go away when unplugged
  - Can't use Intel IoT or Eclipse IDE, must use Arduino IDE
- You have to install on your own machine
  - Install drivers then Arduino IDE
- Driver setup
  - Check your COM port, it may change when you reconnect

Ports (COM & LPT)  
Galileo (COM3)



Galileo

Seed Base Shield



## Seed Starter Kit

- See <http://www.seeedstudio.com/document/Grove%20Starter%20Kit.pdf>
- Note that this is set up for Gen 1 so not everything works and some things look different



[1 Grove-Base Shield](#)



Connectors - 10 [Grove Cables](#)

+ LED's, power connectors, microUSB

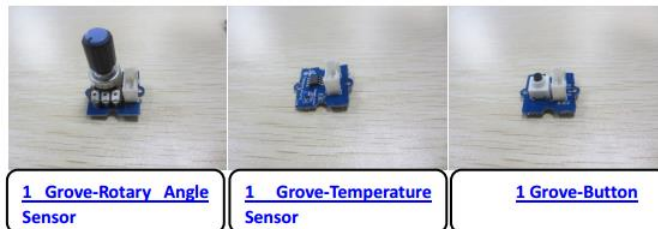


[1 Grove-Buzzer](#)

[1Grove-LED](#)

[1 Grove-Tilt Switch](#)

Touch Sensor



[1 Grove-Rotary Angle Sensor](#)

[1 Grove-Temperature Sensor](#)

[1 Grove-Button](#)

Mic/Sound Sensor  
Light Sensor



[1 Grove-Smart Relay](#)

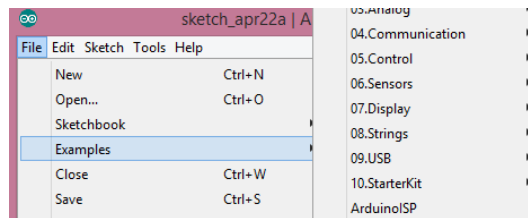
[1 Grove-Protoshield](#)

[1 Grove-Serial LCD](#)

RGB LCD Backlight

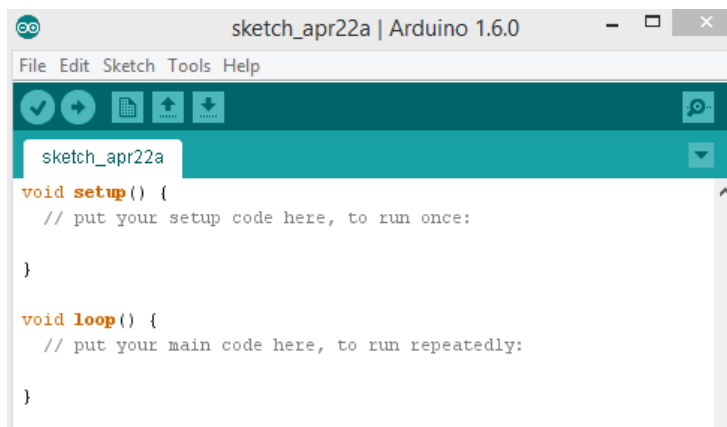
# Arduino Programming

- Essentially C programming
- functions, int, float, arrays, while/for loops
- The main thing to learn is the API for the sensors
- If using a new library need to add to the libraries folder
- Can walk through examples; we'll just hit some examples



## setup and loop

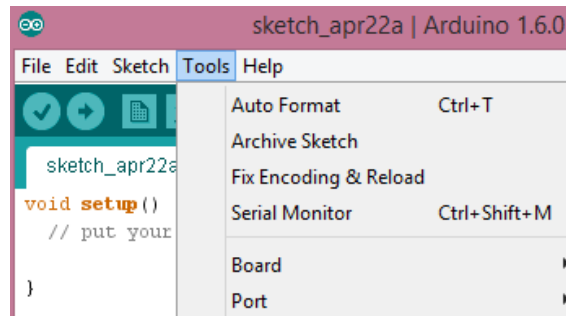
- Special functions that are self-explanatory

A screenshot of the Arduino IDE code editor. The window title is 'sketch\_apr22a | Arduino 1.6.0'. The code editor shows the following code:

```
void setup() {  
  // put your setup code here, to run once:  
}  
  
void loop() {  
  // put your main code here, to run repeatedly:  
}
```

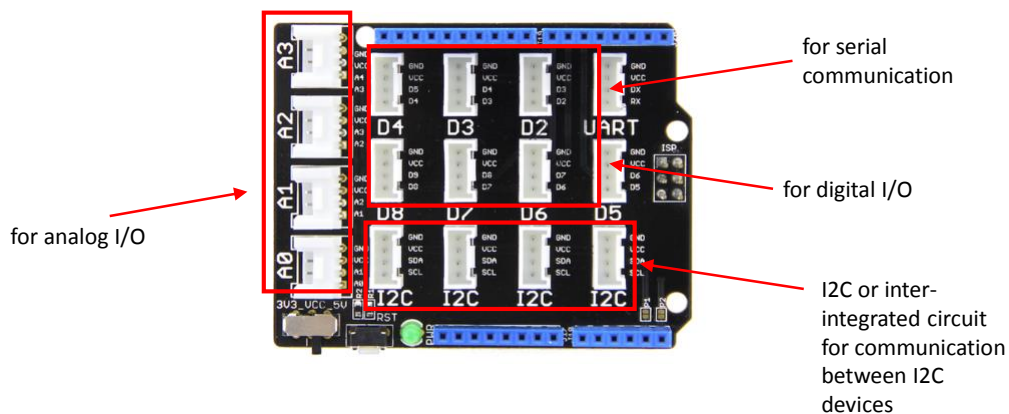
## Programming

- Don't forget to set the board and port
- Check port if reconnecting after power-down

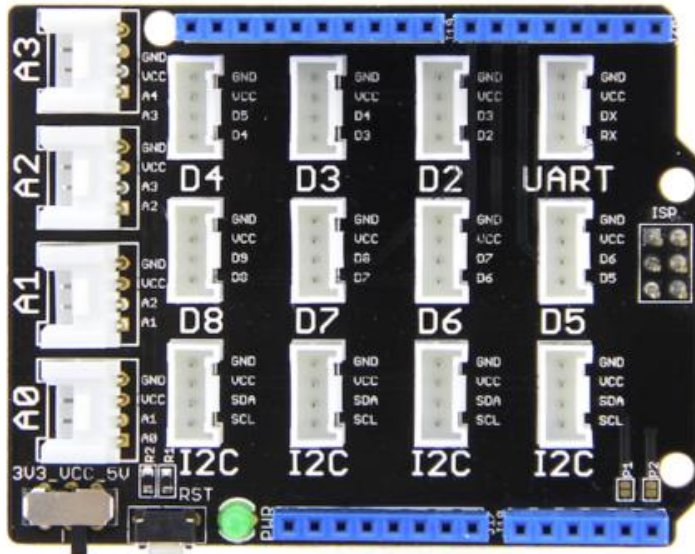


## Connecting Sensors

- The base shield allows easy connection of I/O pins



## Note shared pin on adjacent sockets



If your module uses two pins they have to be separated by a socket.

If only use one digital pin each they can sit alongside each other.

Otherwise they will share a pin simultaneously.

## Sample Programs

- Buzzer
  - Button on D3, Buzzer on D2
  - Can replace Buzzer with LED
- Musical Buzzer
  - Shows a variety of programming constructs
- DigitalReadSerial
  - Output to serial monitor for debugging and testing purposes
- AnalogReadSerial
  - Analog sensor on A0
  - Output values for Rotary Angle, Sound, Temperature, Touch
- AnalogMusicalBuzzer
  - Link analog device with musical buzzer