

2020 March 29- Notes for VS Code w- Arduino

Tips & Tricks from the **DPRG 2020 March 24 Robot Builders Night** ~~Out~~ **Virtual**.
Carl Ott

Mirroring your phone display to a computer

- Reflector 3
- <https://www.airsquirrels.com/reflector>
- This lets you
 - Share the screen of your phone on a web meeting or in-room projector
 - remotely show somebody how to do something on your phone
 - Use your phone as a wireless web cam
 - Use the typically much better camera in your phone as a web cam

Using Microsoft VS Code with Arduino

Step 1- Install VS Code

- It's free
- **Use V1.42** (or hopefully the version *after* v1.43)
 - at least - do NOT use v1.43, since **v1.43 has a known issue** with the Arduino Plugin...
 - Why? the serial port does not work correctly with v1.43
 - <https://github.com/microsoft/vscode-arduino/issues/980>
 - **Download V1.42 from here**
 - https://code.visualstudio.com/updates/v1_42
- Note that VS Code is available also for **Linux** and **Mac**
 - <https://code.visualstudio.com/#alt-downloads>
- Main page for VS Code
 - <https://code.visualstudio.com/>

Step 2- Install favorite extensions to VS Code

- The VS Code Marketplace offers many extensions

Azure	(62)
Debuggers	(343)
Extension Packs	(771)
Formatters	(647)
Keymaps	(122)
Language Packs	(49)
Linters	(557)
Other	(8632)
Programming Languages	(3442)
SCM Providers	(48)
Snippets	(2638)
Themes	(2948)

- As of 29 March 2020 ->
- Many of those are free.
- Browse on the web
 - <https://marketplace.visualstudio.com/vscode>
- Or browse the extension marketplace within VS Code

- Click =>



- These are the extensions I currently use & recommend

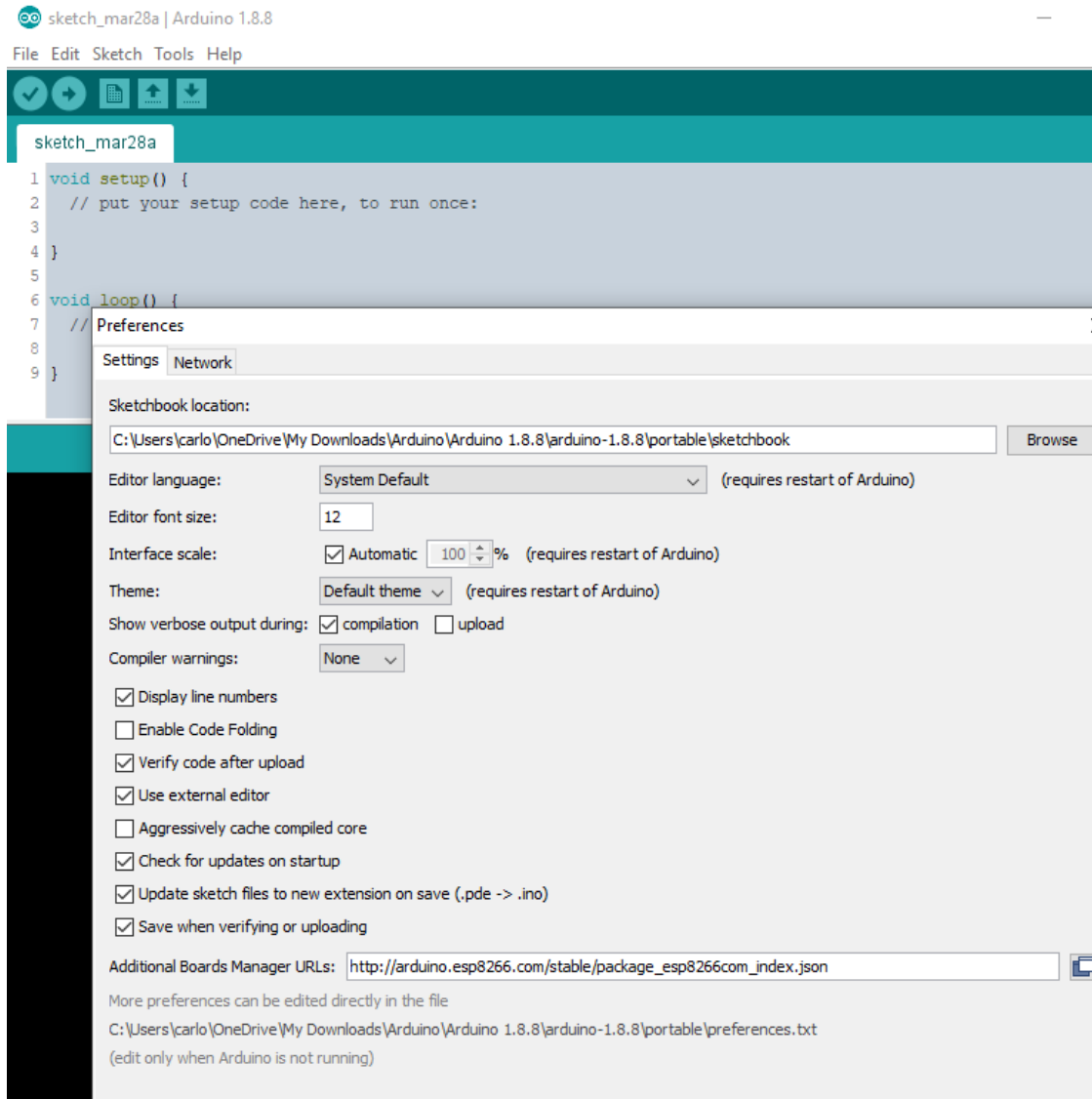
ENABLED 14

- Arduino** 0.2.29
Arduino for Visual Studio Code
Microsoft
605K ★ 4
- C/C++** 0.26.3
C/C++ IntelliSense, debugging, and code browsing.
Microsoft
10.3M ★ 3.5
- Git History** 0.6.3
View git log, file history, compare branches or commits
Don Jayamanne
2.3M ★ 4.5
- gitignore** 0.6.0
Language support for .gitignore files. Lets you pull .gitignore files from the https://github.com/github/gitignore repository.
CodeZombie
505K ★ 5
- GitLens — Git supercharged** 10.2.1
Supercharge the Git capabilities built into Visual Studio Code — Visualize code authorship at a glance via Git blame annotations and co...
Eric Amodio
4.7M ★ 5
- markdownlint** 0.34.0
Markdown linting and style checking for Visual Studio Code
David Anson
1.5M ★ 4.5
- Python** 2020.3.69010
Linting, Debugging (multi-threaded, remote), Intellisense, Jupyter Notebooks, code formatting, refactoring, unit tests, snippets, and mo...
Microsoft
17.9M ★ 4.5
- Remote - SSH: Editing Configuration Files** 0.51.0
Edit SSH configuration files
Microsoft
1M
- Remote - WSL** 0.42.4
Open any folder in the Windows Subsystem for Linux (WSL) and take advantage of Visual Studio Code's full feature set.
Microsoft
2M ★ 5
- Remote Development** 0.20.0
An extension pack that lets you open any folder in a container, on a remote machine, or in WSL and take advantage of VS Code's full fe...
Microsoft
560K ★ 5

- SVG Viewer** 2.0.0
SVG Viewer for Visual Studio Code.
cssho
423K ★ 4
- Visual Studio IntelliCode** 1.2.6
AI-assisted development
Microsoft
4.6M ★ 4.5
- vscode-pdf** 0.5.1
Display pdf file in VSCode.
tomoki1207
347K ★ 4
- XML Tools** 2.5.0
XML Formatting, XQuery, and XPath Tools for Visual Studio Code
Josh Johnson
1.7M ★ 4.5

Step 3- Configure your existing Arduino IDE (May or may not be needed?)

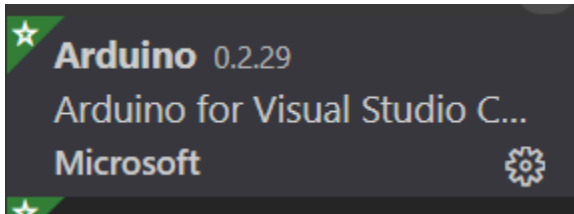
- Note that I prefer to run the Arduino IDE as a portable install,
 - So that I support several different versions at once on the same laptop
- I also like to have the Arduino IDE set up to compile files edited in VS Code
 - As a backup when needed to troubleshoot the Arduino extension in VS Code
- Hence I use these settings



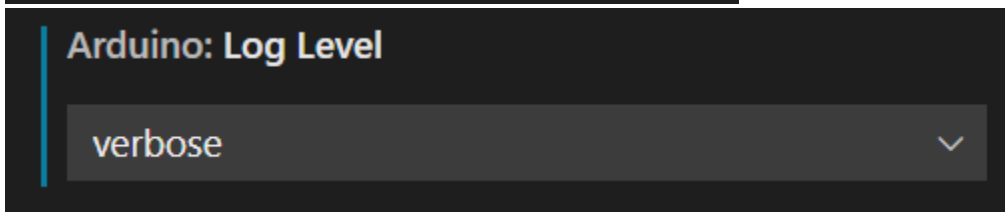
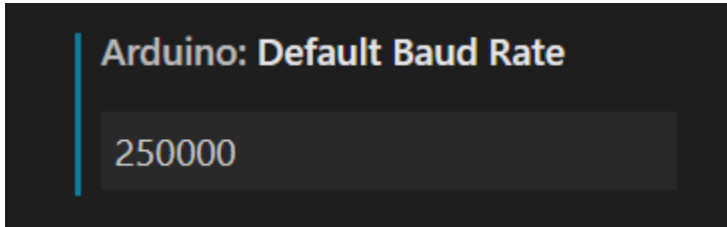
- Especially
 - Use external editor
 - Show verbose output during: compilation

Step 4- Configure the Microsoft Arduino extension in VS Code

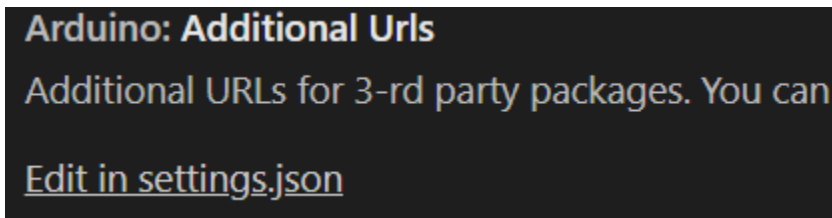
- Click the gear icon for Arduino



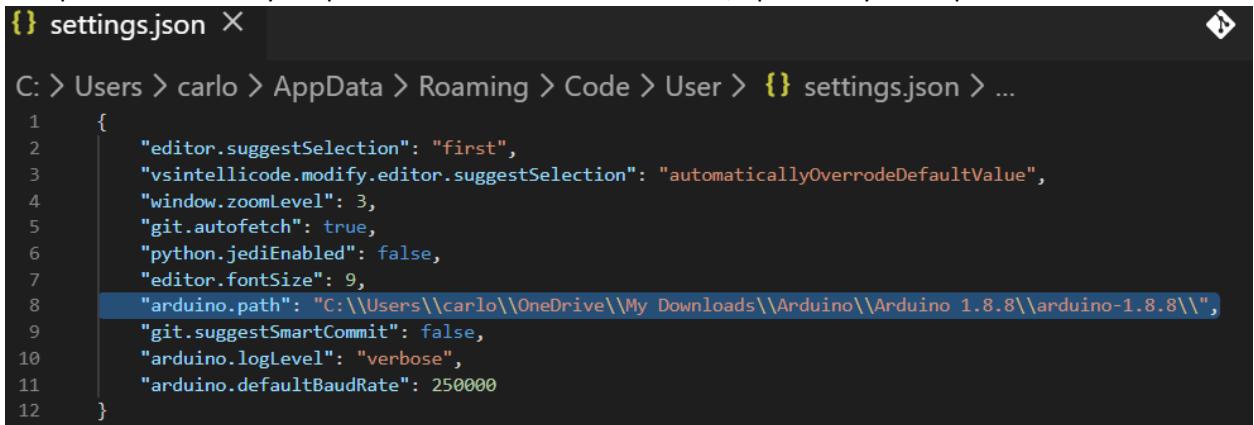
- adjust basic preferences from the settings screen



- Then click "Edit in settings.json"



- And point VS Code to your preferred instance of Arduino IDE, update any other preferences...



Step 5- Basic "How-To"

- Learn about the Arduino extension for VS Code here
 - <https://marketplace.visualstudio.com/items?vsciot-vscode.vscode-arduino>
- Compile to verify, or Compile and upload

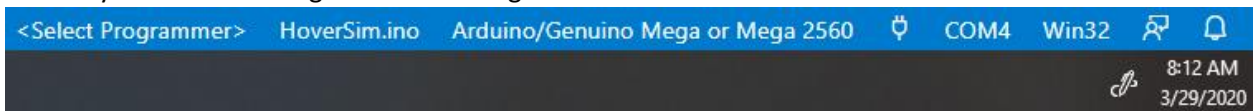
Keybindings



- - **Arduino: Upload** Alt + Cmd + U *or* Alt + Ctrl + U
 - **Arduino: Verify** Alt + Cmd + R *or* Alt + Ctrl + R
- Select or manage Arduino extension options from the VS Code Command Palette

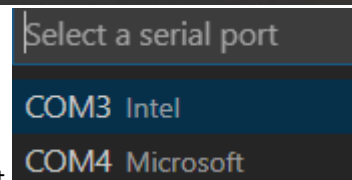
Commands

This extension provides several commands in the Command Palette (F1 or Ctrl + Shift + P) for working with *.ino files:

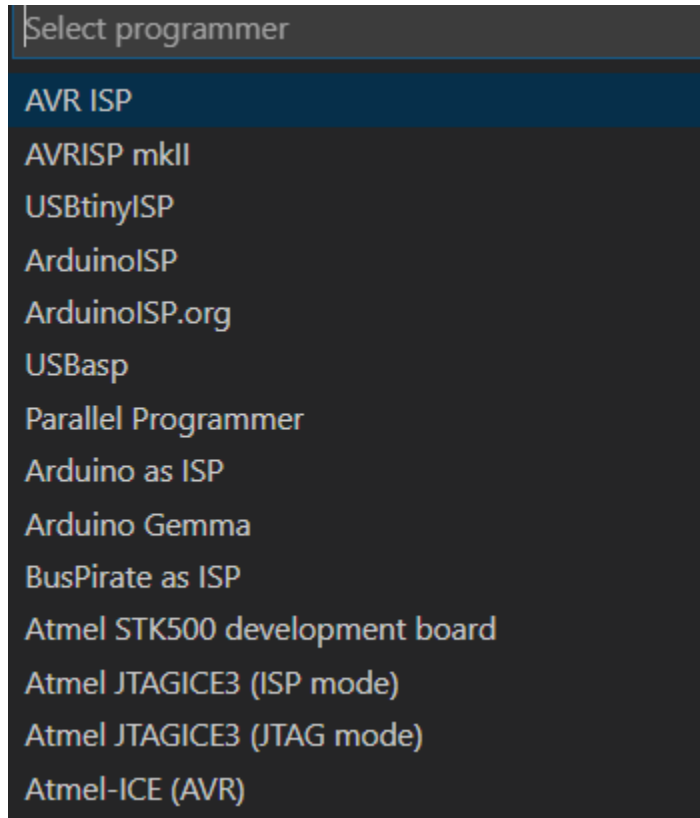
- **Arduino: Board Manager:** Manage packages for boards. You can add 3rd party Arduino board by configuring `Additional Board Manager URLs` in the board manager.
 - **Arduino: Change Baud Rate:** Change the baud rate of the selected serial port.
 - **Arduino: Change Board Type:** Change board type or platform.
 - **Arduino: Close Serial Monitor:** Stop the serial monitor and release the serial port.
 - **Arduino: Examples:** Show list of examples.
 - **Arduino: Initialize:** Scaffold a VS Code project with an Arduino sketch.
 - **Arduino: Library Manager:** Explore and manage libraries.
 - **Arduino: Open Serial Monitor:** Open the serial monitor in the integrated output window.
 - **Arduino: Select Serial Port:** Change the current serial port.
 - **Arduino: Send Text to Serial Port:** Send a line of text via the current serial port.
 - **Arduino: Upload:** Build sketch and upload to Arduino board.
 - **Arduino: Upload Using Programmer:** Upload using an external programmer.
 - **Arduino: Verify:** Build sketch.
- Note key extension settings in the lower right status bar



- **COM4** => view/change currently selected COM port
- open serial monitor =>  => or close it 
- **HoverSim.ino** => the main file in your Arduino project



- **<Select Programmer>** => advanced users can choose to flash their Arduino with something other than a USB cable. For example



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- May also come in handy when using VS Code with a JTAG cable to debug a project with breakpoints (?)..