STM32 Reference

IEEE Penn State - Projects Committee
SP26

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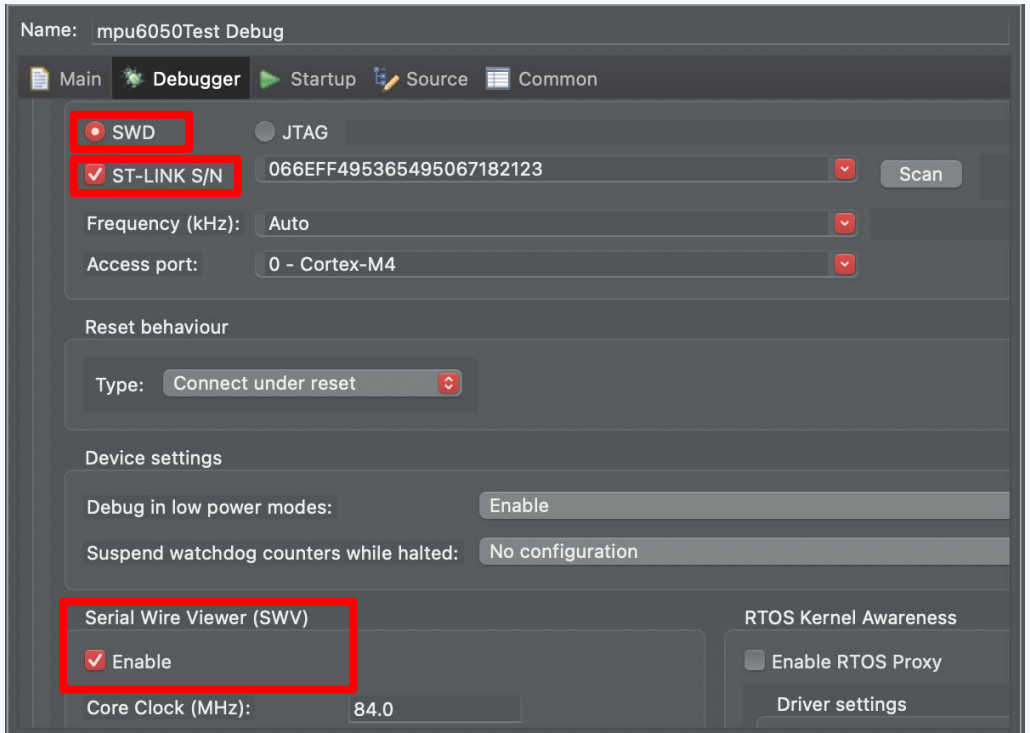
Getting setup with printf();

Make sure to add this code **BETWEEN THE COMMENTS**!!

```
/* Private user code ---------------------------------------------------------*/
/* USER CODE BEGIN 0 */
int _write(int file, char* ptr, int len) {
   for(int i = 0; i < len; i++) {
      ITM_SendChar((*ptr++));                    // ADD THIS
   }
   return len;
}
/* USER CODE END 0 */
```

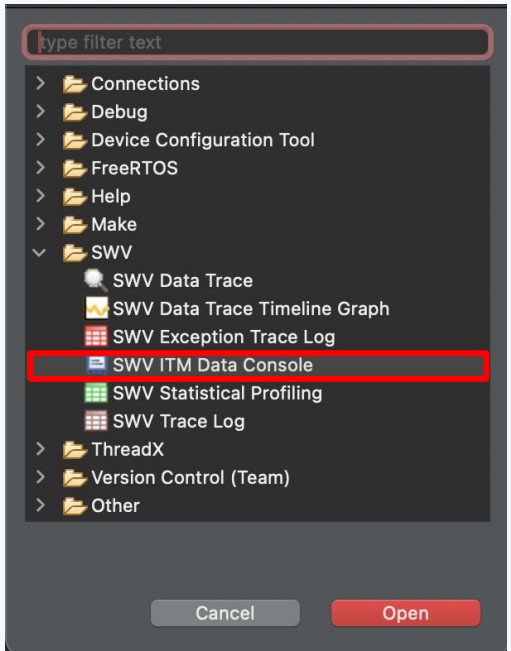
Setting up - Continued

1. Click the  debug button, make sure settings look like this



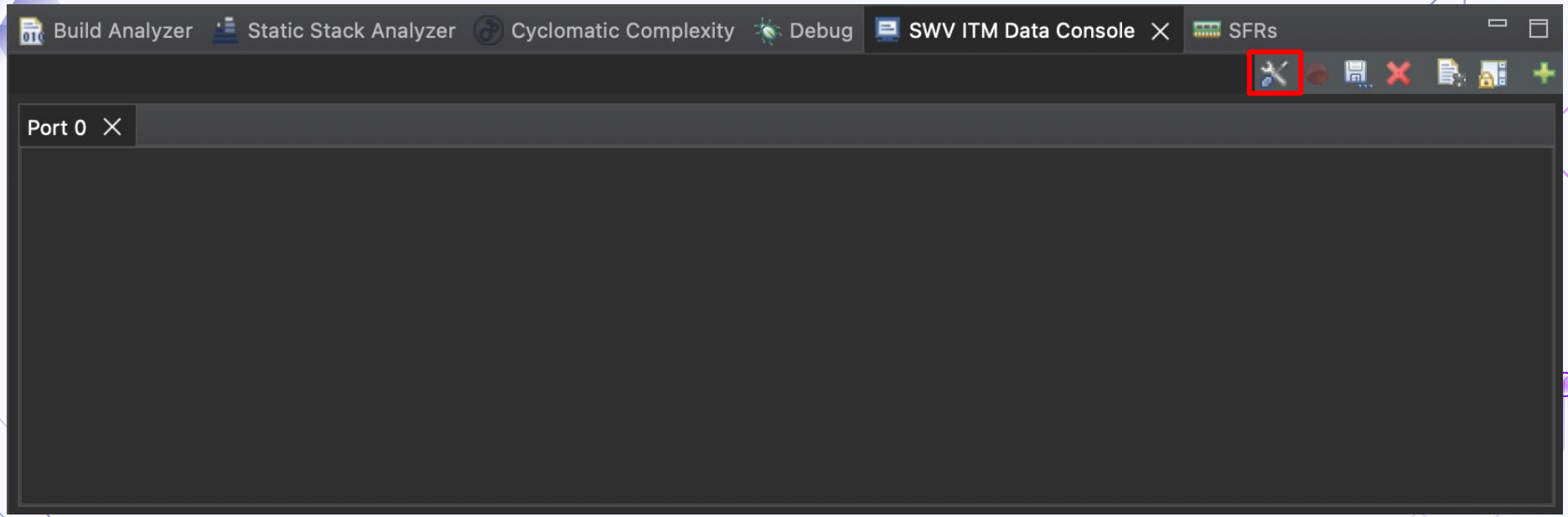
Open SWV Console

1. Go to the toolbar, **Window -> Show view -> Other**
2. Click the highlighted option below and then click open



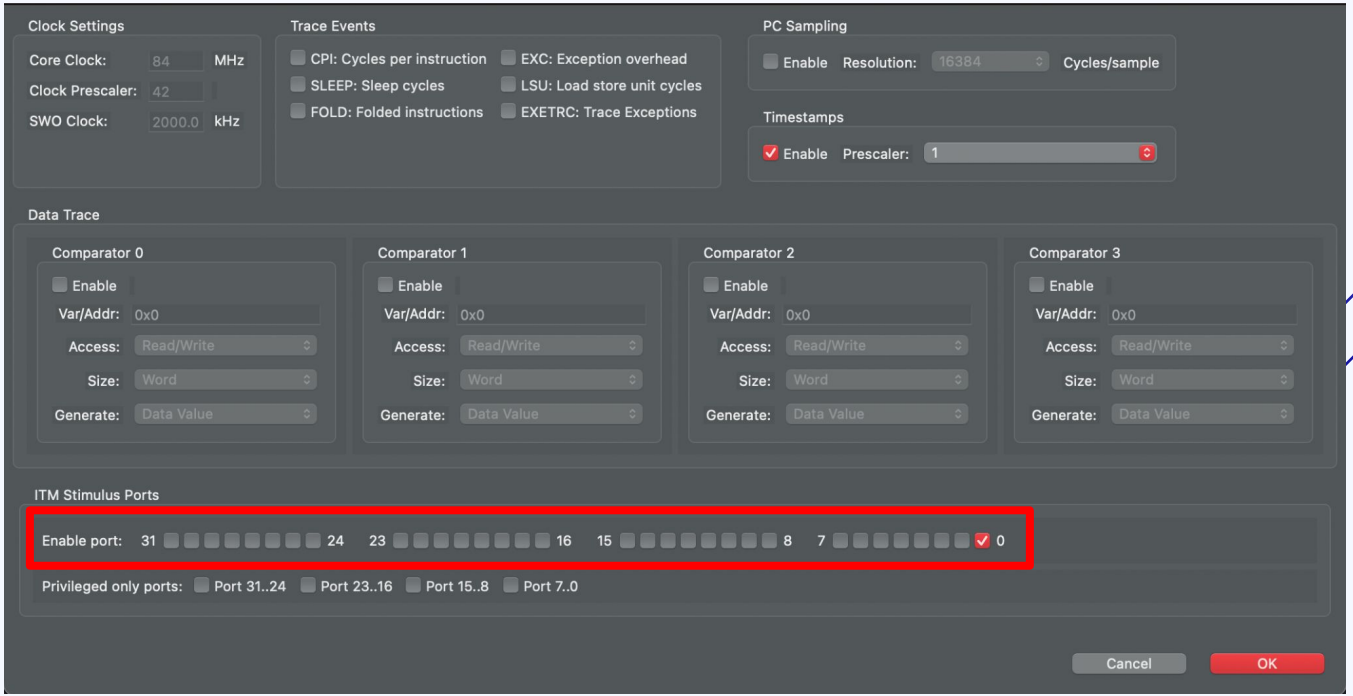
SWV Configuration

Click the highlighted settings button (make sure you run the debugger)



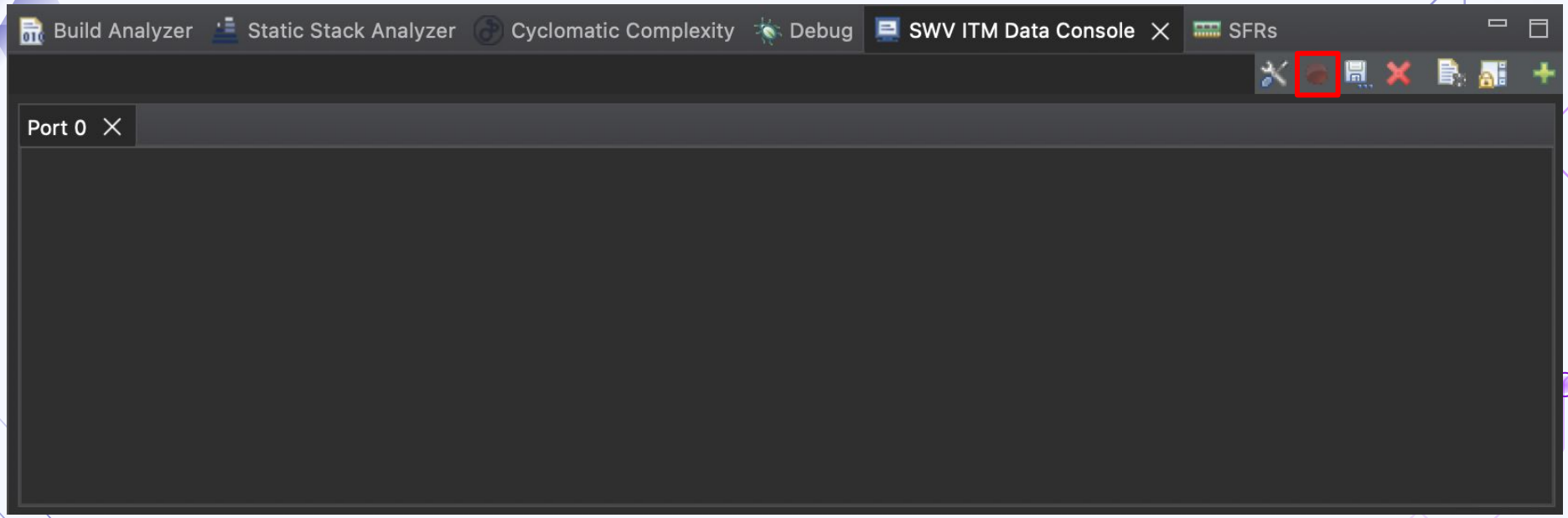
SWV - Continued

Make sure your port configuration looks like this (port 0 enabled)



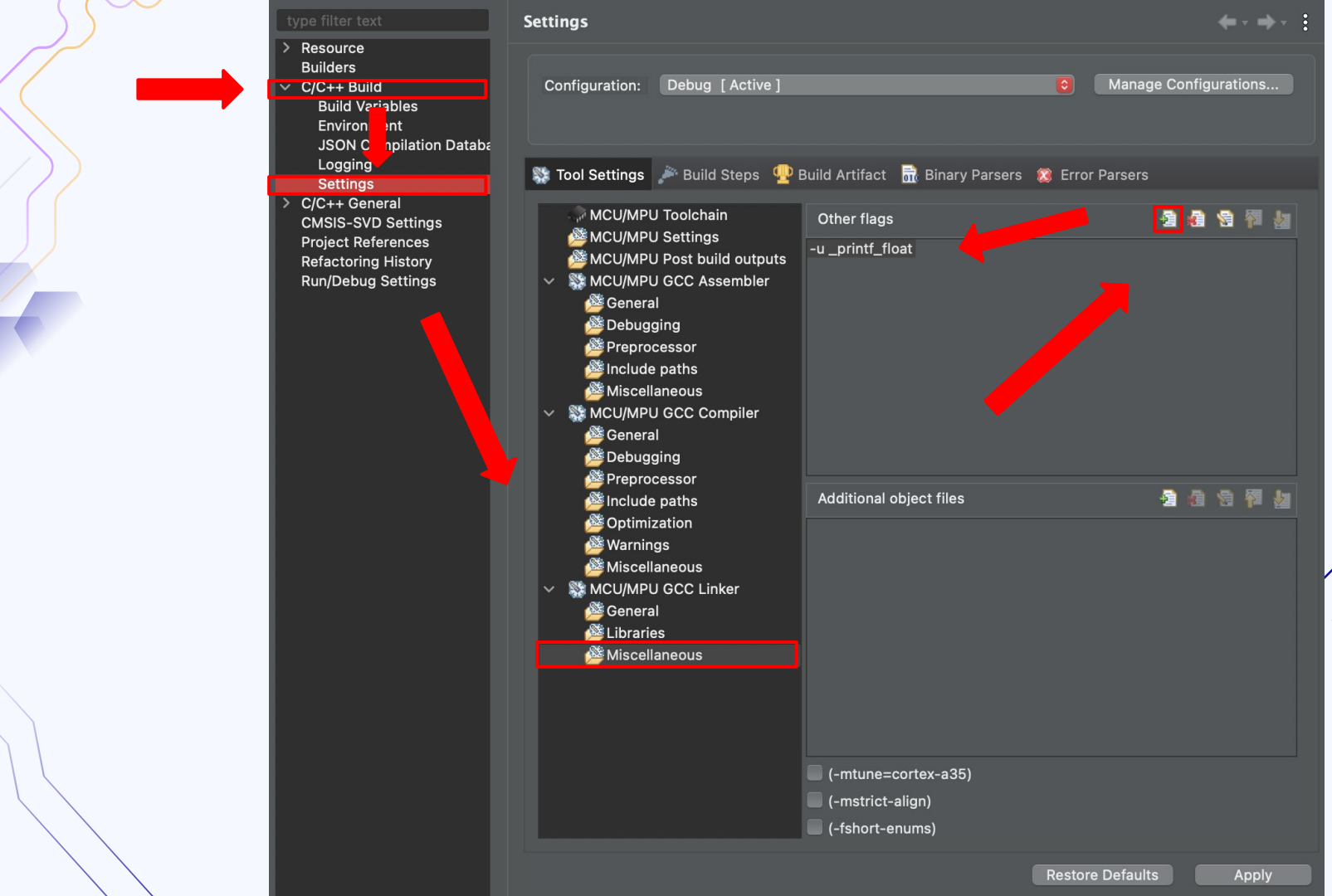
SWV Configuration

Click red circle to start listening!



Extra - Enabling float output

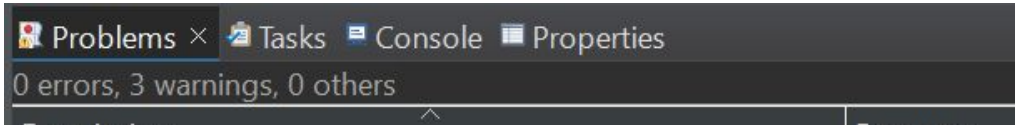
1. In the project explorer on the left side of your screen, right click the blue icon for your project
2. Click ‘properties’
3. Add ‘-u _printf_float’ to the C linker settings as shown in the next slide


type filter text
Resource
Builders
C/C++ Build
Build Variables
Environment
JSON Compilation Database
Logging
Settings
C/C++ General
CMSIS-SVD Settings
Project References
Refactoring History
Run/Debug Settings
Settings
Configuration:
Debug [Active]
Manage Configurations...
Tool Settings
Build Steps
Build Artifact
Binary Parsers
Error Parsers
MCU/MPU Toolchain
MCU/MPU Settings
MCU/MPU Post build outputs
MCU/MPU GCC Assembler
General
Debugging
Preprocessor
Include paths
Miscellaneous
MCU/MPU GCC Compiler
General
Debugging
Preprocessor
Include paths
Optimization
Warnings
Miscellaneous
MCU/MPU GCC Linker
General
Libraries
Miscellaneous
Other flags
-u _printf_float
Additional object files
(-mtune=cortex-a35)
(-mstrict-align)
(-fshort-enums)
Restore Defaults
Apply

Congratulations, enjoy printf()!

Debugging (workshop 2)

If you click Debug  and it your code has 0 errors BUT your STM32/OLED screen doesn't output correctly, check your wiring!



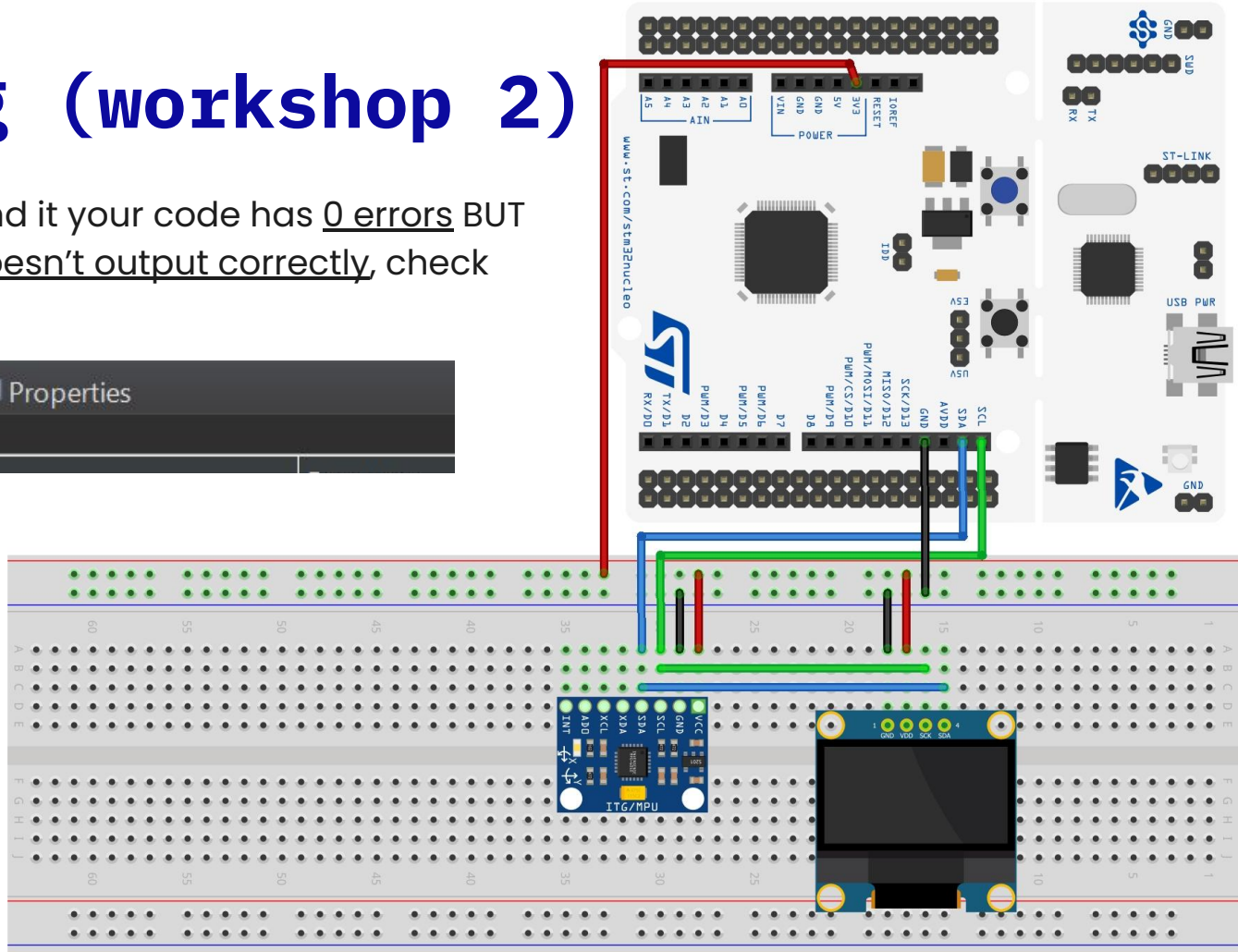


Diagram on slide 12 of "IEEE STM32 Peripherals Workshop"

Wiring checklist

Before checking connections, **REMOVE STM32 FROM POWER** (laptop)

- ❑ SDA connected from OLED screen to MPU6050 and STM32
- ❑ SCL connected from OLED screen to MPU6050 and STM32
- ❑ VCC connected from OLED screen and MPU6050 to + vertical strip (on breadboard)
- ❑ GND connected from OLED screen and MPU6050 to - vertical strip (on breadboard)
- ❑ + vertical strip (on breadboard) connected to **3V3 pin** (not 5V) on STM32
- ❑ - vertical strip (on breadboard) connected GND pin on STM32

If anything isn’t working, don’t hesitate to ask for help!

Raise your hand to get the attention of someone from Projects Committee