Tm4c Development Setup Guide (Ubuntu)

This guide is intended to help users through the set up of a development environment for the Tm4c microcontroller using open source tools on Ubuntu. For other operating systems, the process will vary slightly.

Software needed:

- VsCode
- arm-none-eabi-gcc
- arm-none-eabi-gdb
- Openocd
- Lm4flash
- Coolterm

Configuration files / scripts:

- For VsCode
    - launch.json
    - tasks.json
- For compiling
    - Makefile
    - Tiva.ld
    - Startup.c

Installing Software

VsCode

https://code.visualstudio.com/

Follow the link and download the .deb file. Open up the terminal, navigate to the location of the downloaded file, and use the following command to install the package:

sudo apt install ./{name of .deb file}

Arm-none-eabi-gdb

https://packages.debian.org/jessie/gdb-arm-none-eabi

Follow the link and download the .deb file for your system architecture, if you are unsure what that is use the command below to find out:

uname -p

Again, open the terminal and navigate to the .deb file, then use the following command to install:

sudo apt install ./{name of .deb file}

Gcc-arm-none-eabi, lm4flash, openocd

These packages are included in Ubuntu's Bionic repository, so they can be installed without browsing the web for a file.

Enter the following command in the terminal to install all 3 packages at once:

sudo apt install gcc-arm-none-eabi lm4flash openocd

Coolterm

https://freeware.the-meiers.org/

Follow the link above and download the linux version of coolterm. Extract the folder to a convenient location, and you're done. To run coolterm use the following command from inside the coolterm folder:

./CoolTerm

Configuration Files

https://github.com/jaidonlybbert/tm4c_configuration_files

VsCode

Download the .vscode folder from the github link. Paste the folder in your VsCode project folder.

Open launch.json and modify the following fields:

- "program" to the path of the .axf file to be flashed to your device

The Rest

Download startup.c, tiva.ld, and the makefile from the github link, and paste the files into your project folder.

Open the makefile, then find and replace all the instances of "filename" with the name of your program.

You should now be ready to begin debugging your programs with VsCode.