

Getting Started with Microcontroller Development

EG-252 Group Design Exercise – Microcontroller Laboratory

Dr Timothy Davies

September 2020

Introduction

This is a simple program that performs the same function as Exercise 1 but it uses polling instead of interrupt.

Procedure

View **toggle2.asm** online. To download, right-click on the *Raw* button and save to your desktop.

Now run the Code Warrior IDE from the start/electrical/codewarrior menu. Use version 6 initially.

1. Create new project
2. Name the project and store somewhere convenient e.g. “H” drive.
3. Set processor AW60, P&E multilink
4. Untick “C” programming language, tick “absolute assembly”
5. Finish

Replace `name/sources/main.asm` with the `toggle2.asm` you downloaded previously,

Delete the default `main.asm` and change the name from `toggle2.asm` to `main.asm`.

Now run Code Warrior, assemble the code, and call up the debug feature.

Exercises

Make notes on each of the following:

1. Use the debug feature to step through the program observing what happens when the button is pressed and when it is released.
2. Change the code so that the LEDs count up from 0 in binary each time the button is pressed.

3. Change the code so that button 1 counts up and button 2 counts down.
You will need to test each button separately.
4. Convert the code from assembler into C.

Enter your notes into the **Self-Check Quiz** on Canvas.