CC Studio MSP432 Mode

Last updated 11/30/21

CC Studio – MSP432 Mode

This guide assumes you have already successfully completed the Code Composer Tool Setup activities

CC Studio – MSP432 Mode

- Start Code Composer Studio
  - from
    - desktop shortcut
    - start menu
    - *install_dir*/Code Composer Studio x.x.x

CC Studio – MSP432 Mode

- Summary
  - 1) Select a workspace
    - Where all your files will be stored
    - Not in the installation directory
  - 2) Create a CCS Project
    - This is the type of project required for the MSP432
  - 3) Create a program file and enter your code
    - filename.c
  - 4) Build the project
    - Create all the necessary sw connections
  - 5) Debug the program
    - Create a communications channel from laptop to MSP board
  - 6) Run the program

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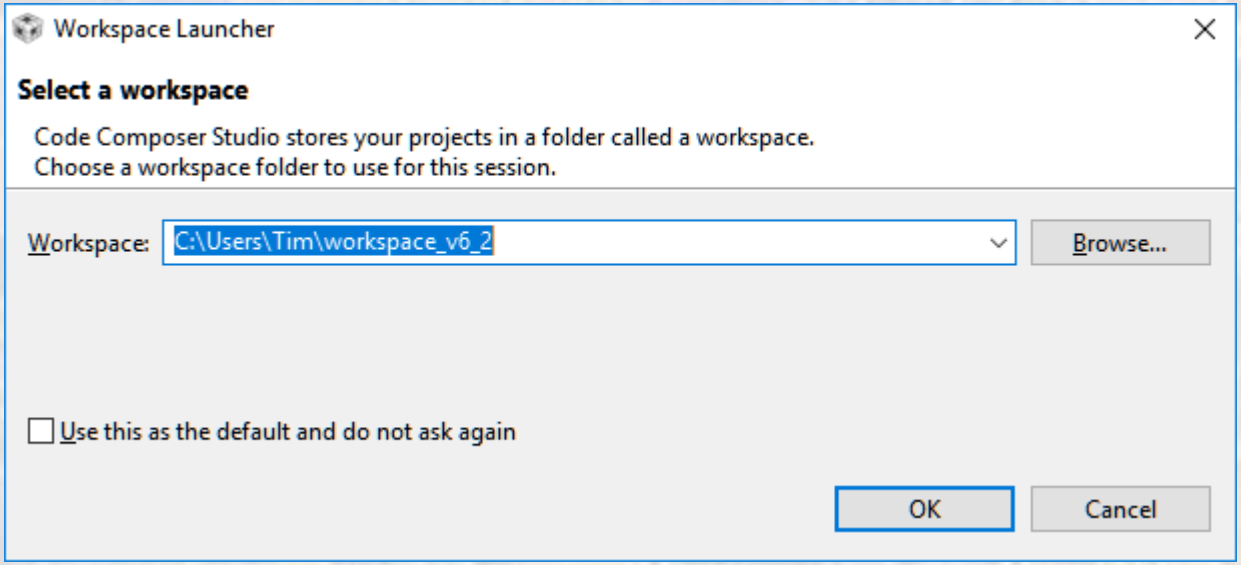
1

- Select a workspace
  - You can use the same workspace for all of your projects
  - You should already have a workspace selected from the CCStudio setup process



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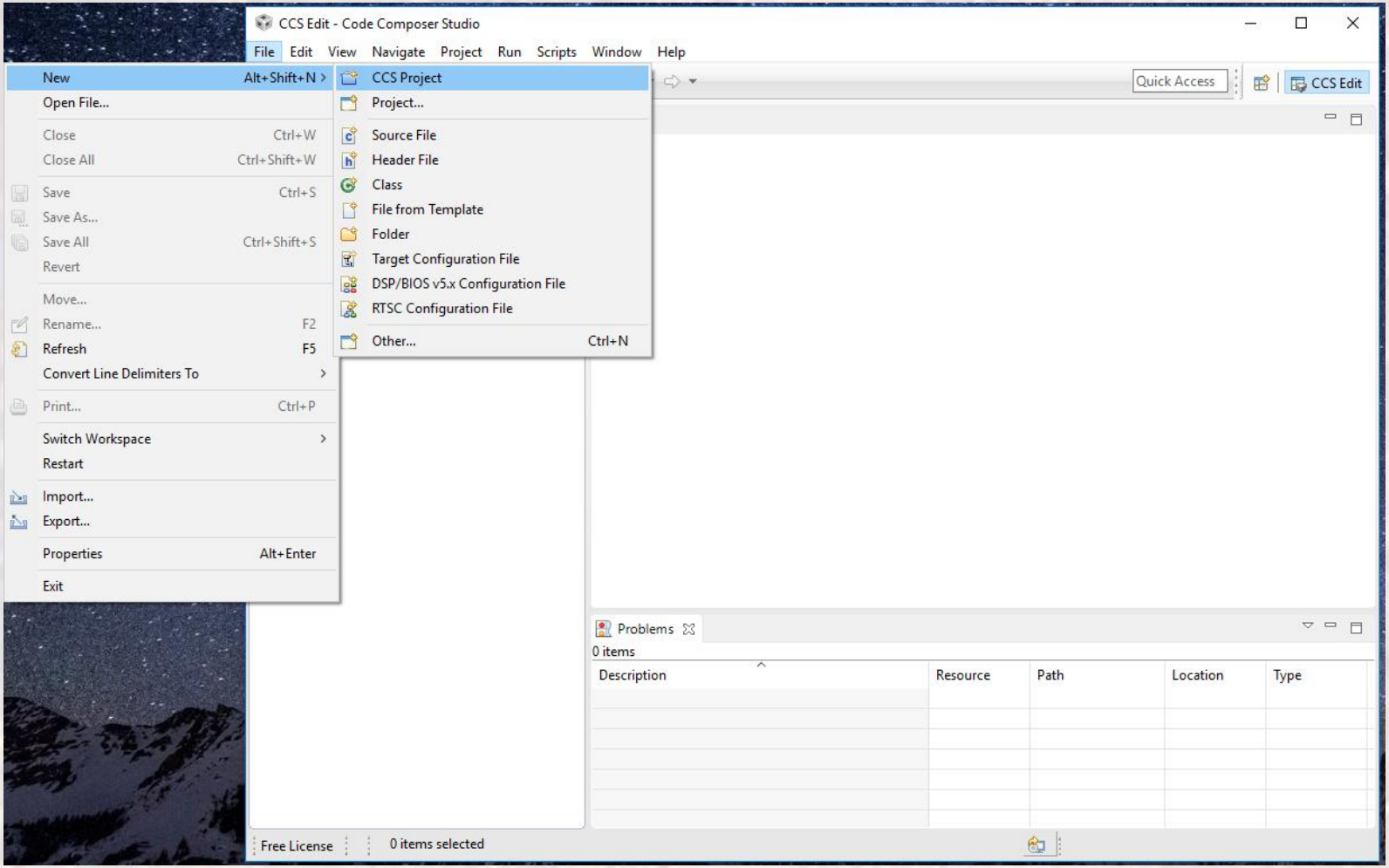
2

- Select file -> new -> CCS Project



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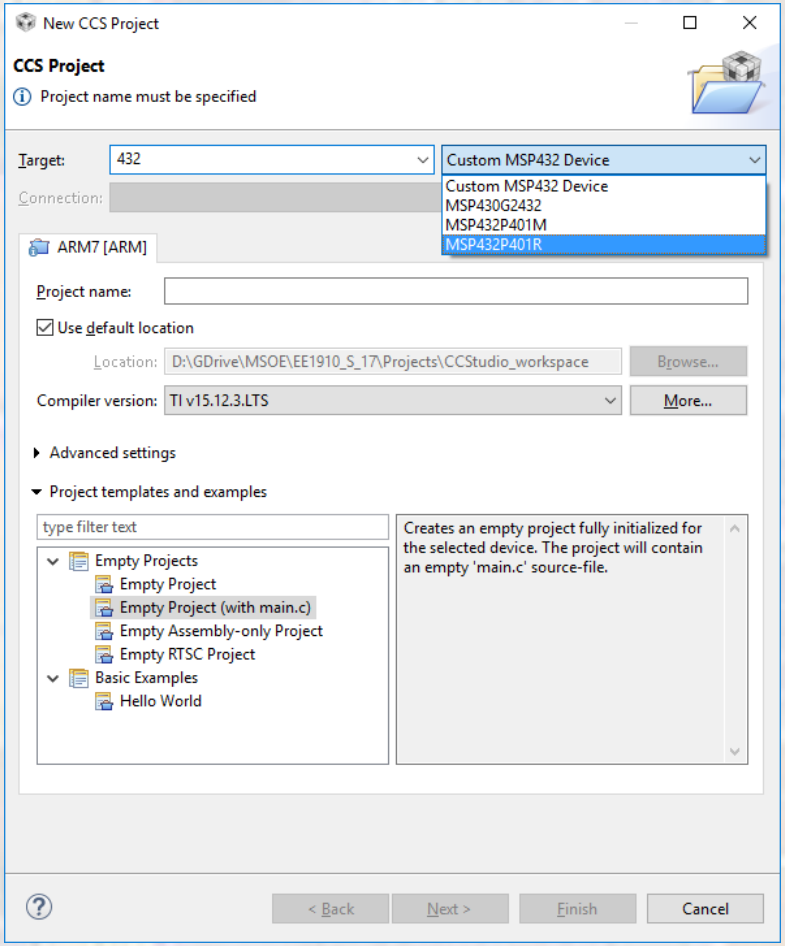
2

- Type 432 into the Target window
- Expand the pulldown to select MSP432P401R



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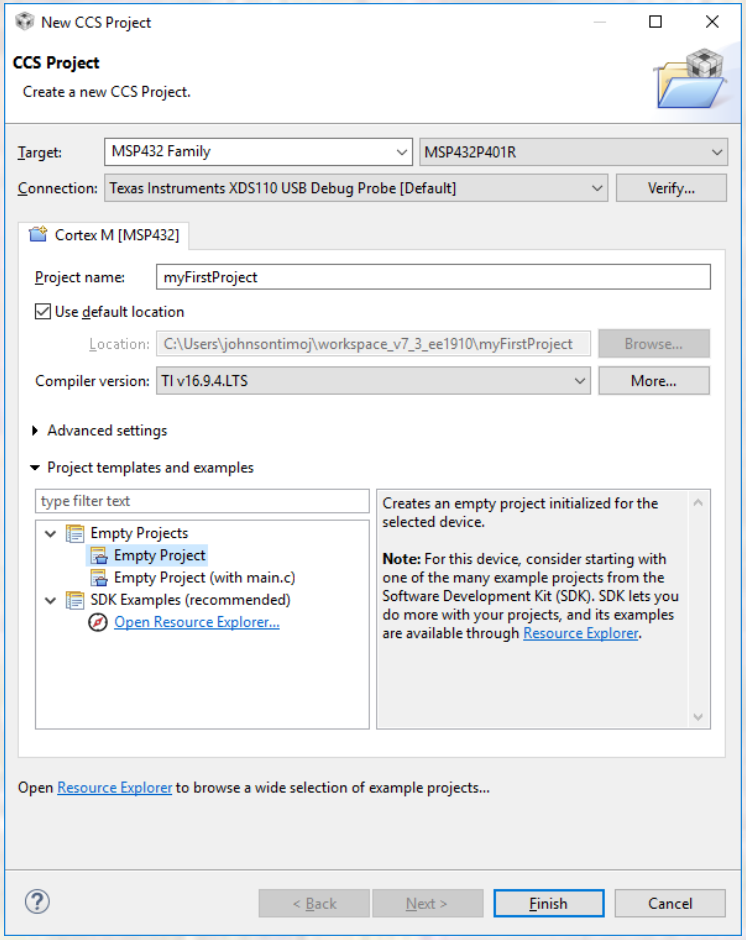
2

- Type in a project name (NO SPACES ALLOWED)
- Select “Empty Project”
- Finish



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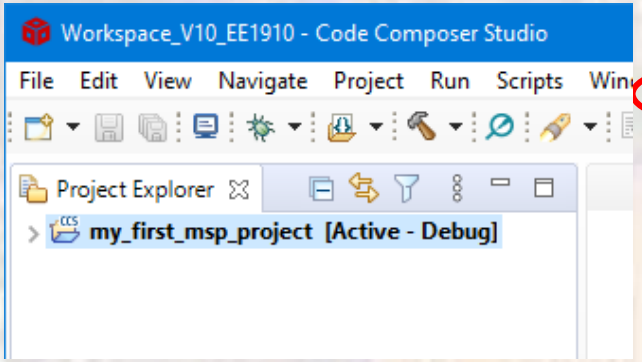
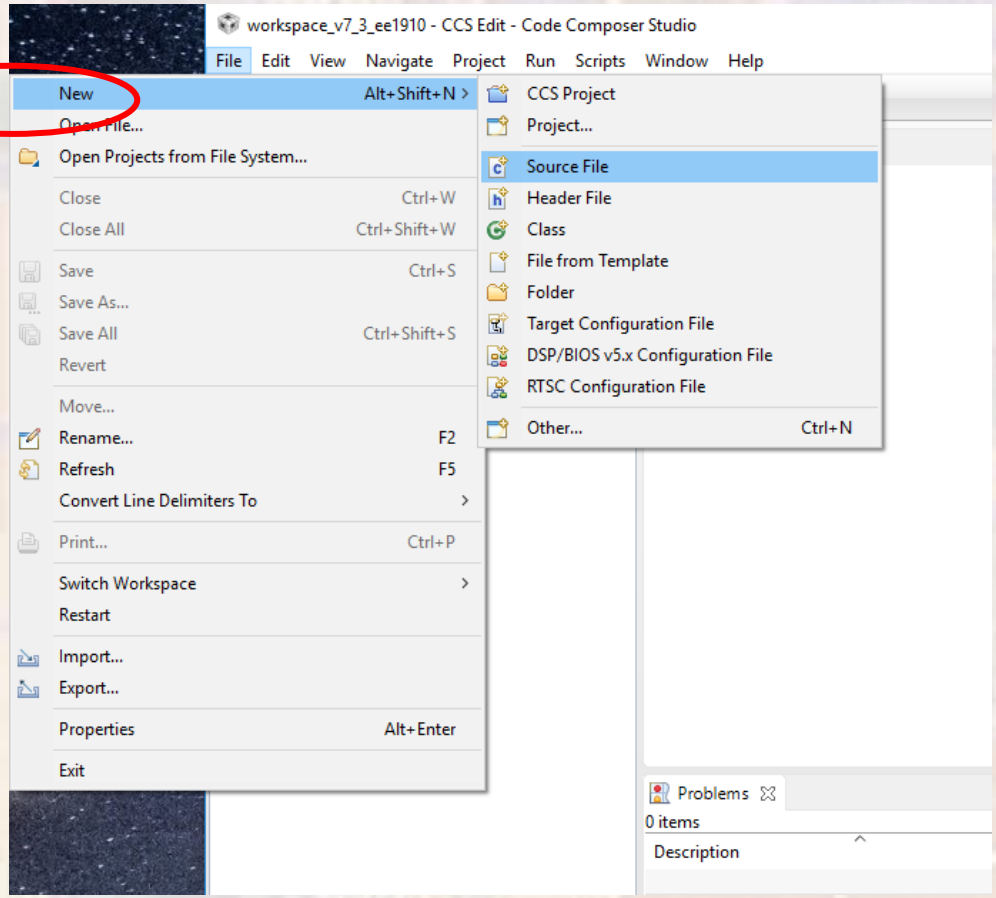
3

- With your project highlighted in the project explorer area
- File -> New -> C Source File





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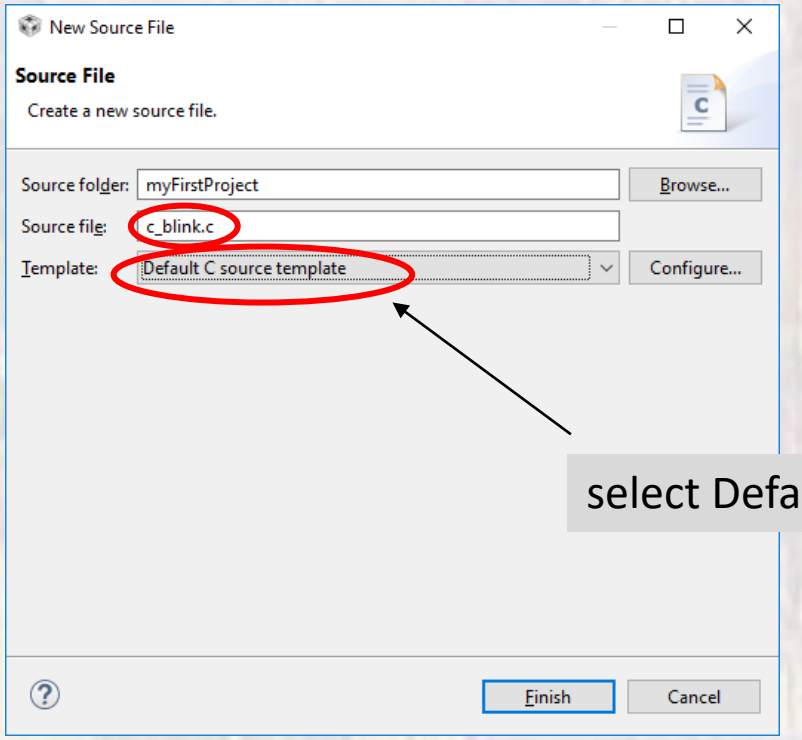
3

- Provide a file name
- You must include the xxxxx.c extension
- NO spaces
  - It is common to use an underscore "_" instead of spaces



select Default C source template

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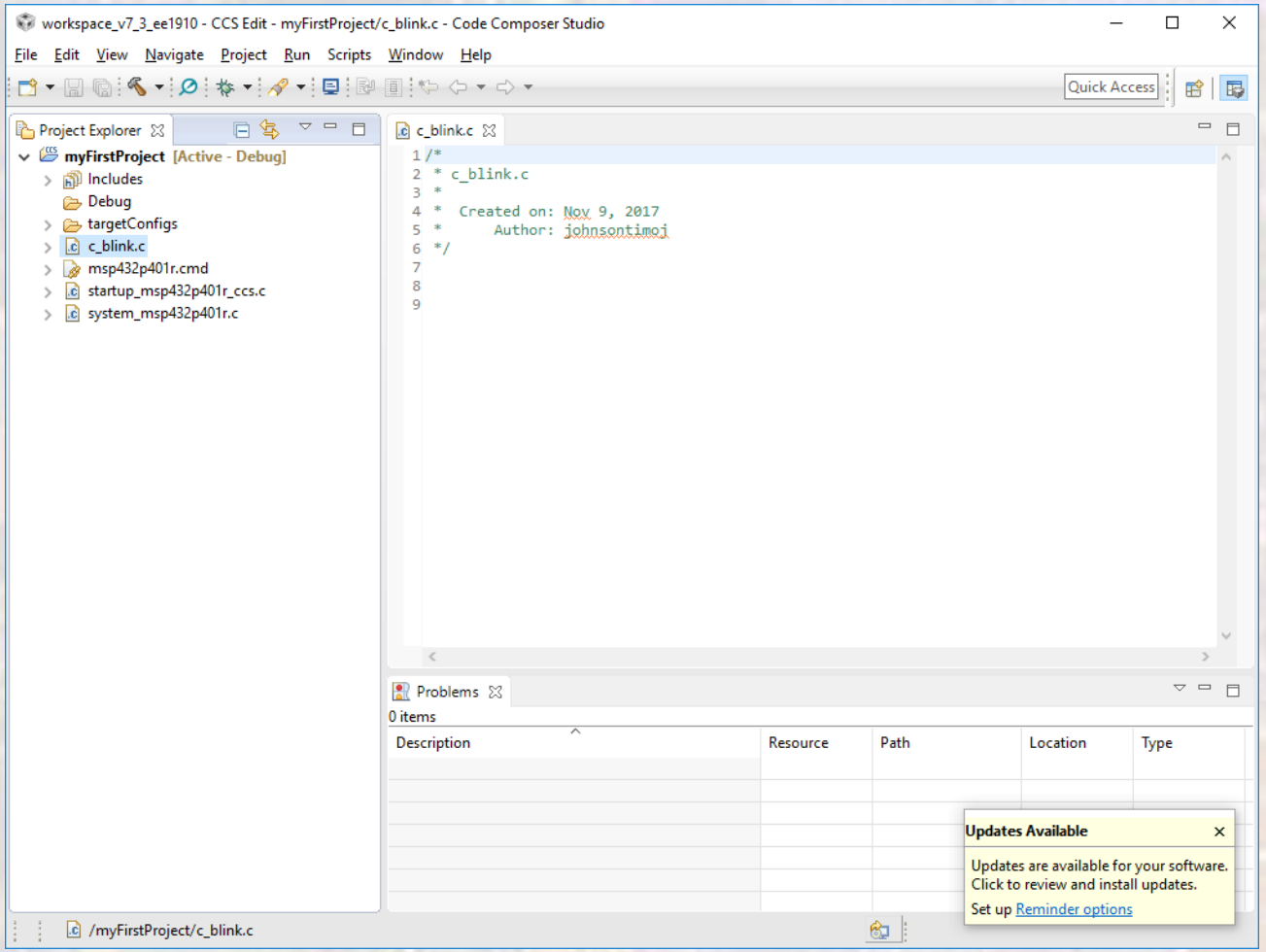
3

- The new file will be opened with a short comment section included at the top



CC Studio – MSP

- Type the following into the file
- Do not try to copy and paste
  - Microsoft adds hidden characters
- Save

```
/*
 * c_blink.c
 *
 *  Created on: Nov 9, 2017
 *      Author: johnsontimoj
 */

////////////////////////////////////////////////
//
// Our version of blink.c
//
////////////////////////////////////////////////

// Includes
#include "msp432.h"
#include <stdio.h>

// Global Variables

// Function Prototypes

void main(void){
    // Local Variables
    uint32_t i;

    // Note: Port 1, bit 0 (P1.0) is one of the on board LEDs
    P1->DIR |= 0x01;        // Configure P1.0 as output

    // Greeting code
    printf(" !! Hello EE1910 !!\n");

    // Blink and Print Code
    while(1){
        // Blink LED
        P1->OUT ^= 0x01;            // Toggle P1.0

        // Print to console
        if(P1->OUT & 0x01)
            printf("ON\n");
        else
            printf("OFF\n");

        // Delay so we can see blinking
        for(i=100000; i>0; i--);    // Lousy Delay
    } // end while

    return;
} // end main
```

your information here

3

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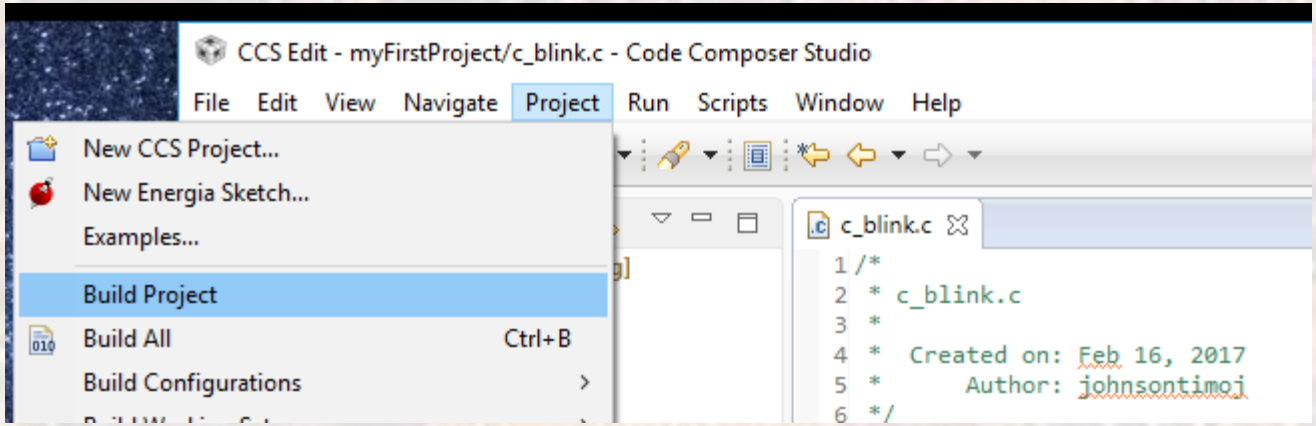
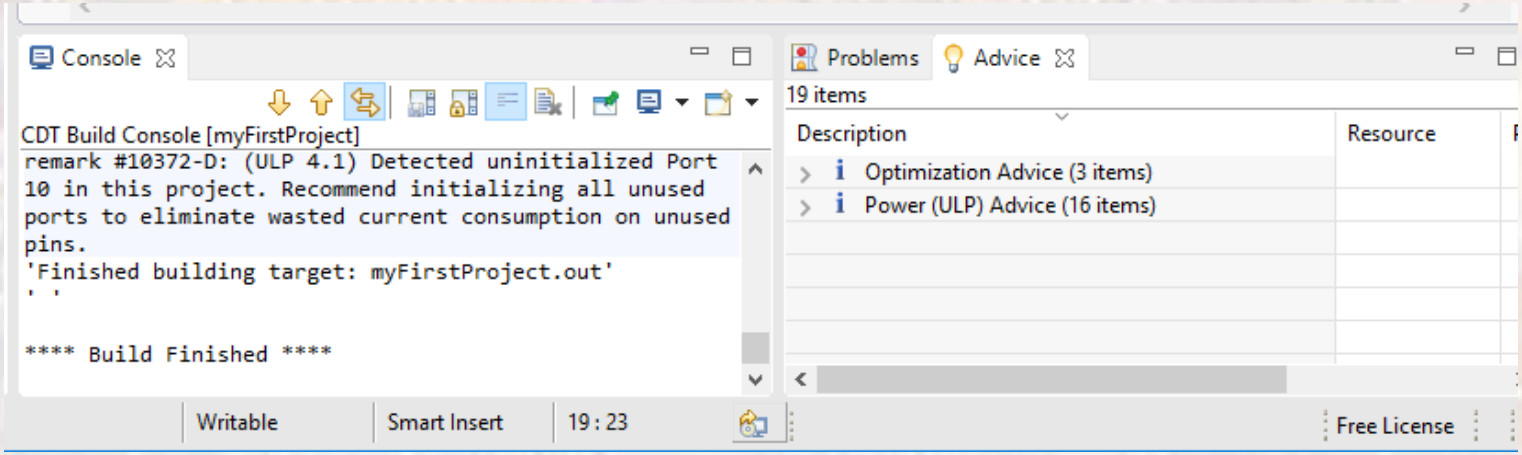
4

- Select Project -> Build Project



This compiles, assembles, and links the program

Check the console for errors



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5

- Plug your MSP432 board into your computer via the USB port
  - The software may ask you to update your board's firmware – select yes
- It will probably still have the original factory blink program running

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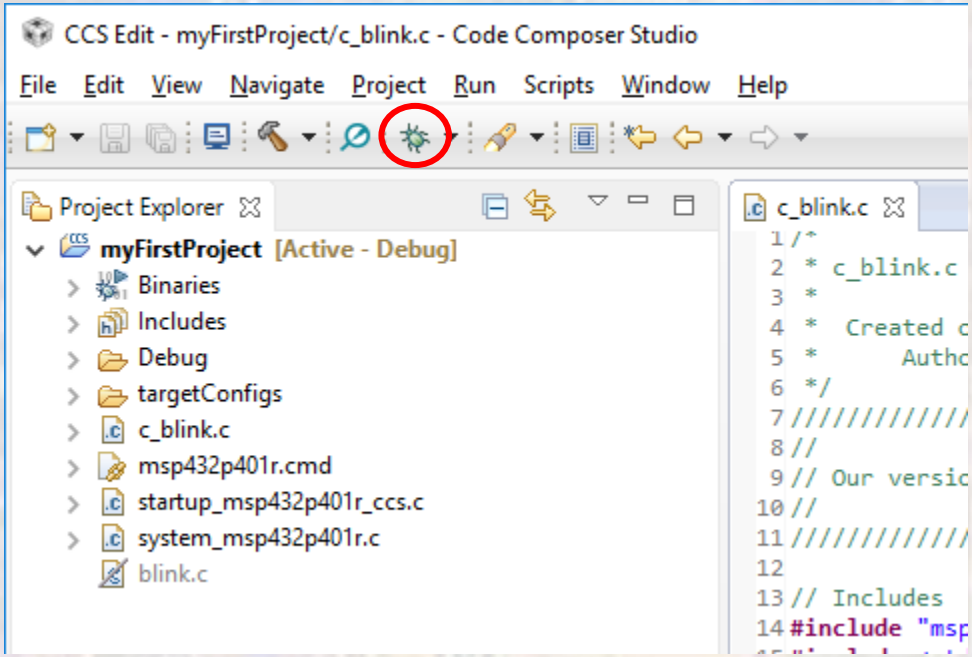
5

- Select debug icon
- The windows will change to CCS Debug mode



This downloads the program onto the board and establishes an active communications link between the board and Code Composer

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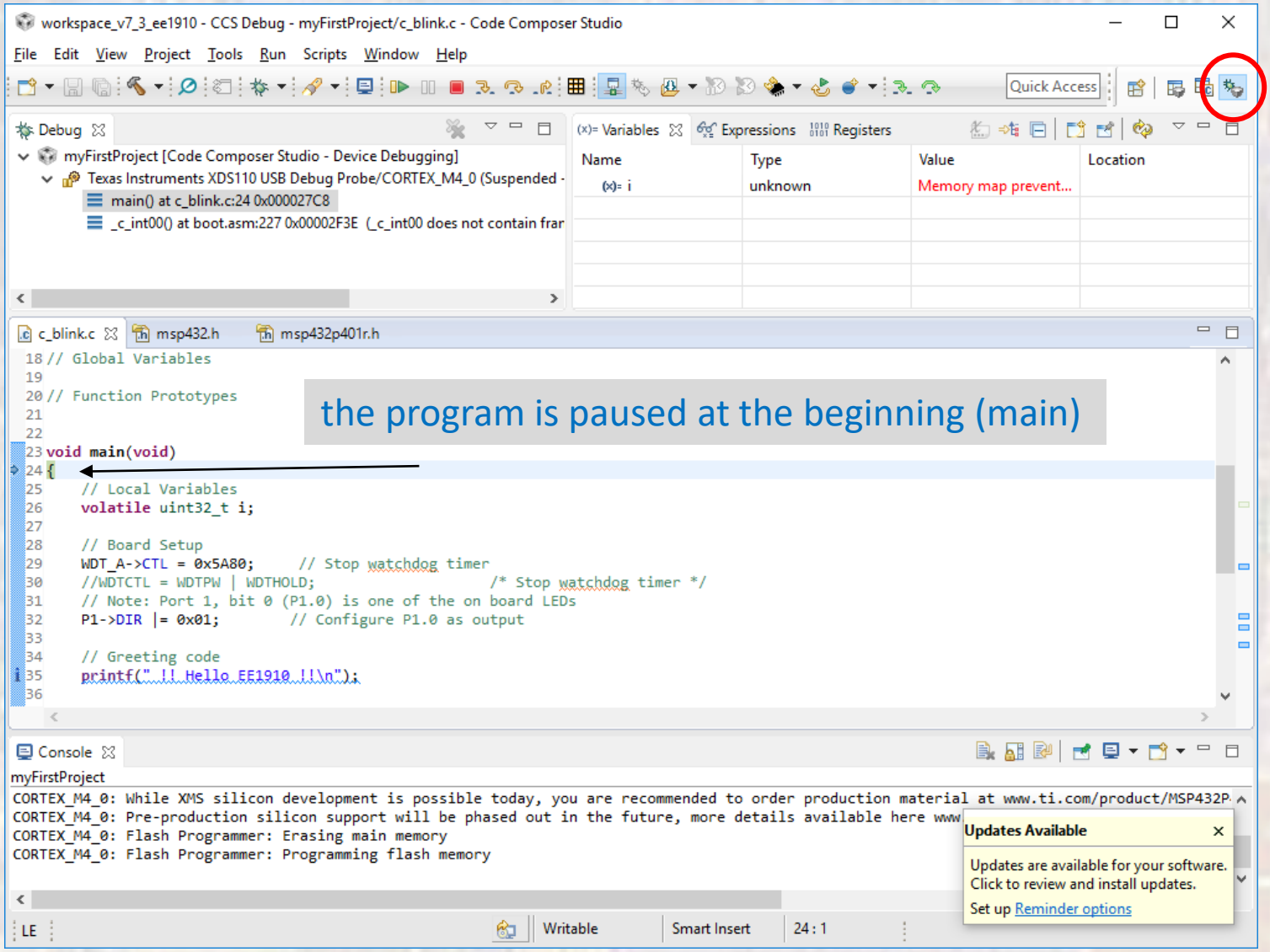
5



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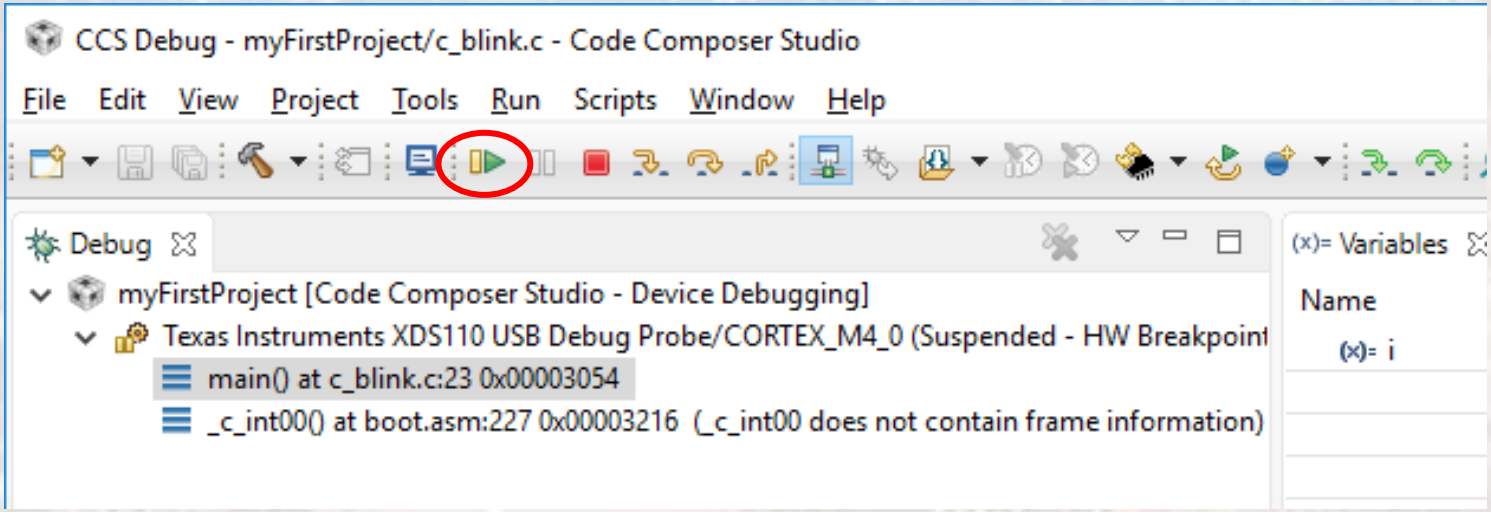
6

- Select run (green arrow)
  - This causes the program to continue



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6

- Check the console, and the on board LED

```
27      // Board Setup
28      WDTCTL = WDTPW | WDTHOLD;
29      // Note: Port 1, bit 0 (P1.0) is one of the o
30      P1DIR |= 0x01;
31
32      // Greeting code
```

Console

myFirstProject:CIO

```
[CORTEX_M4_0]  !! Hello EE1910 !!
OFF
ON
OFF
```

The on board LED will be blinking

The console will display our greeting message followed by on off on off …

[CORTEX_M4_0] indicates we are running on the MSP432 board

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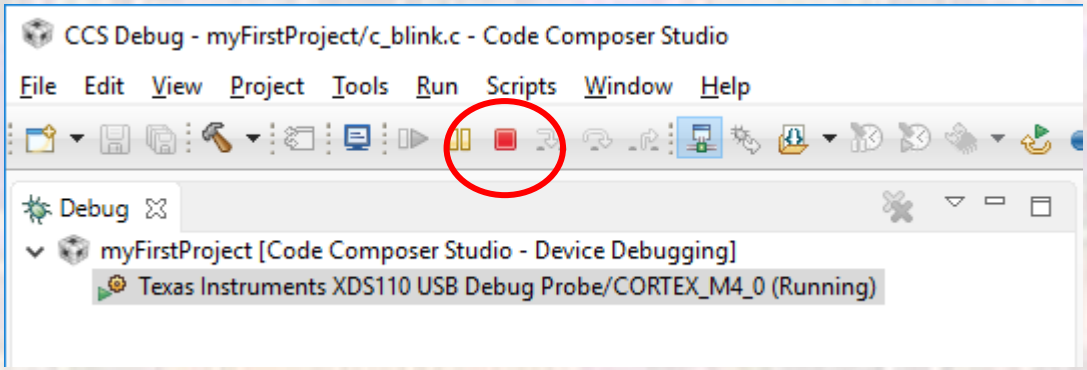
6

- Stop the program (red square)



- The window returns to CCS Edit mode
- The LED continues to blink
  - The program continues to run on the board
- The console quits updating
  - The communications link is broken