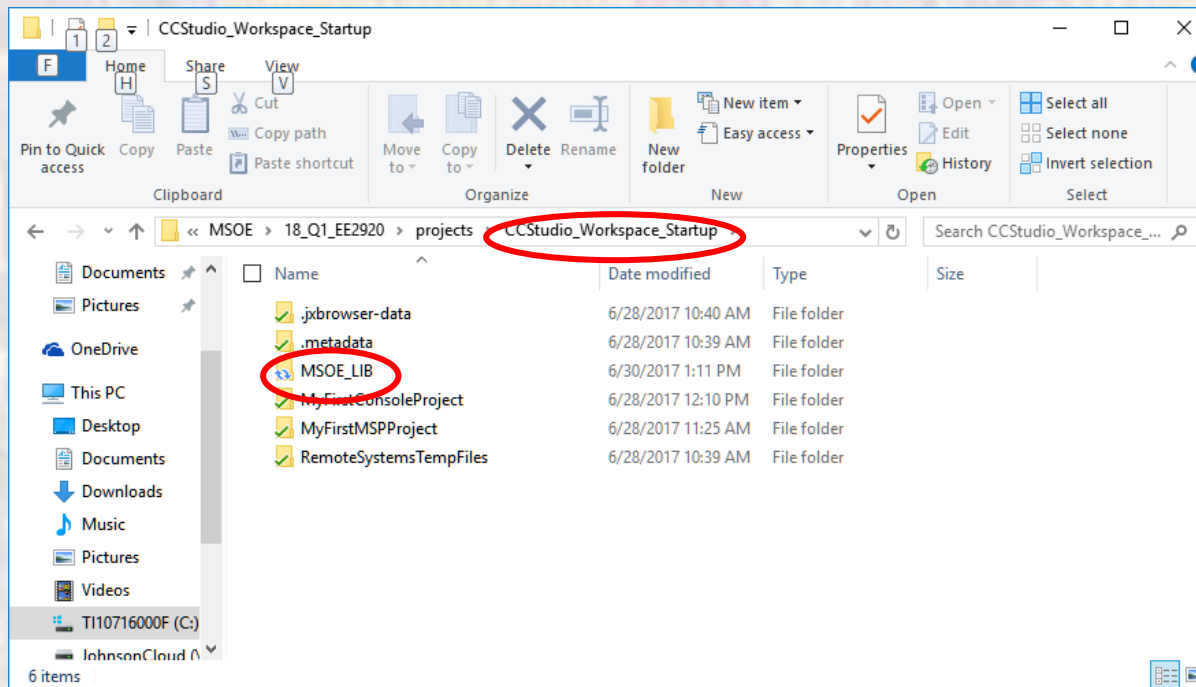


# MSOE\_LIB Setup

Last updated 7/23/18

# Library Setup

- Download the MSOE\_LIB.zip file from the web page
- Right click on the file and select **extract all**
- Select your workspace directory as the destination

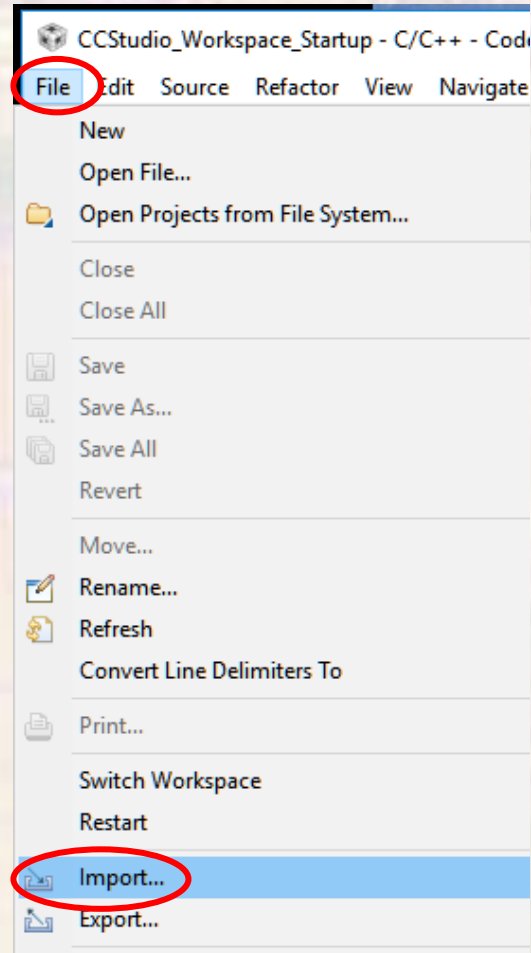


Windows:  
File Explorer

# Library Setup

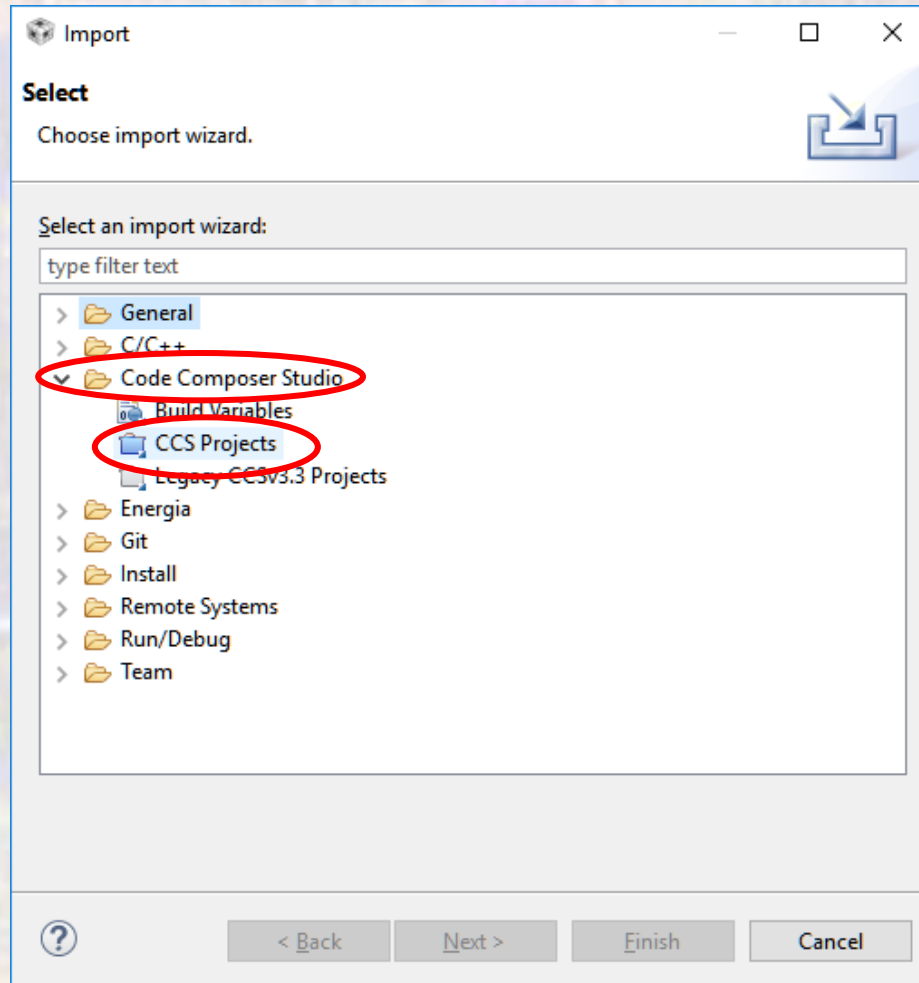
- Startup Code Composer Studio in your desired workspace

- File -> Import



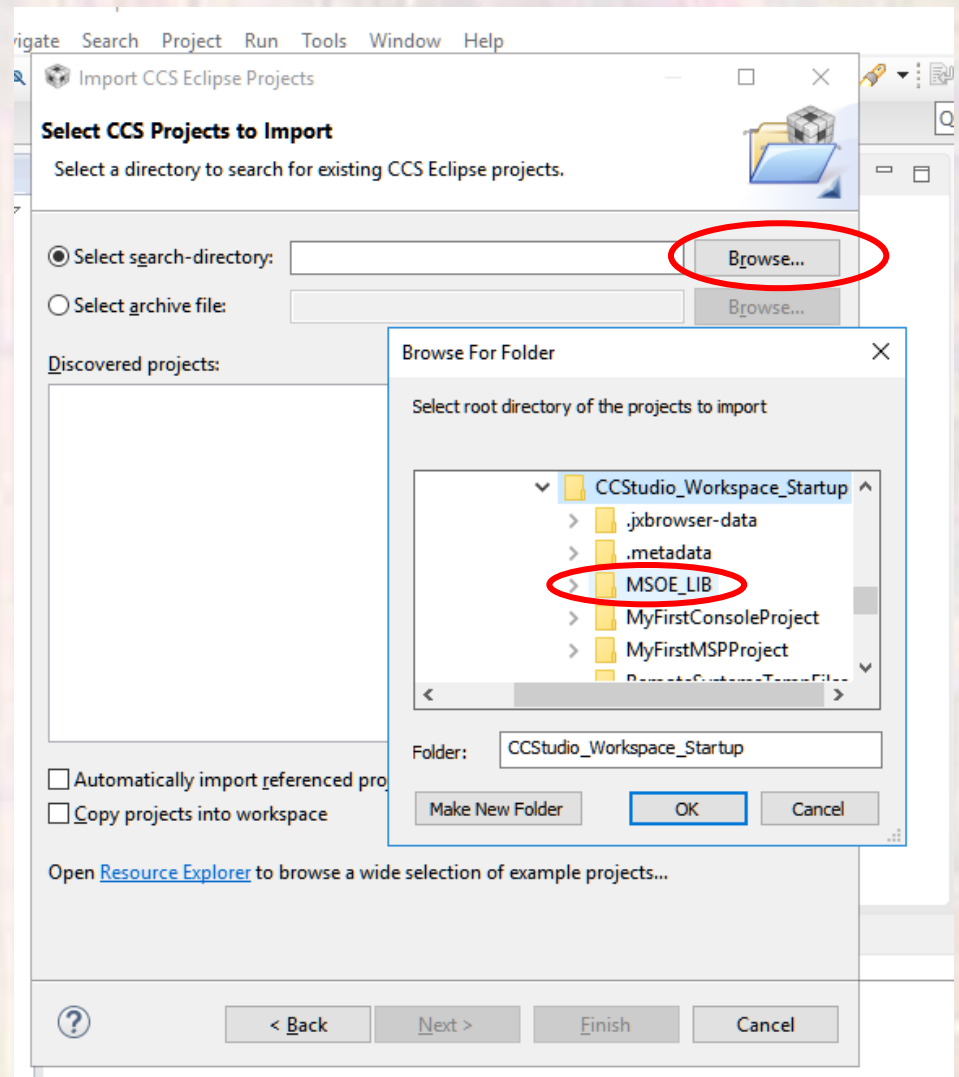
# Library Setup

- Code Composer Studio -> CCS Projects



# Library Setup

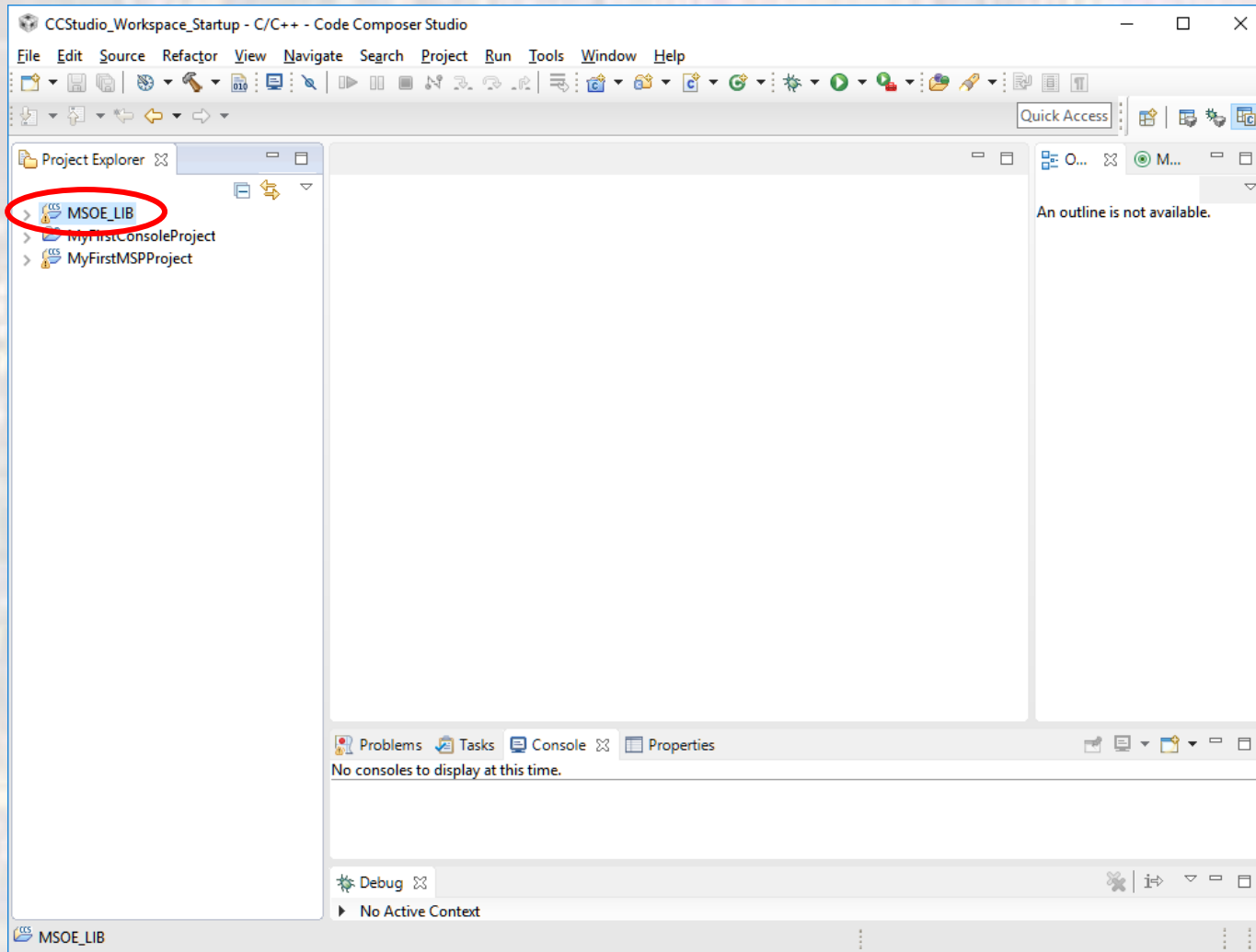
- Click Browse
- Select **MSOE\_LIB** from your workspace directory
- Finish





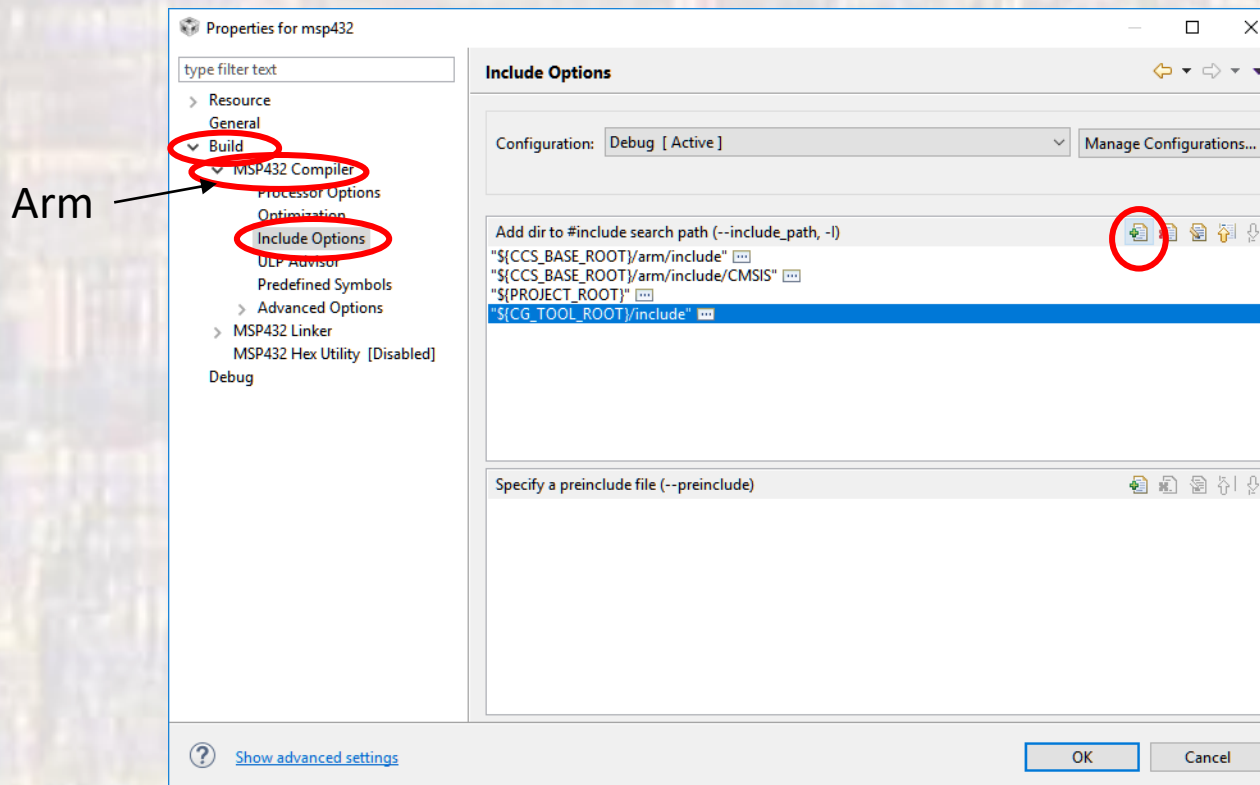
# Library Setup

- MSOE\_LIB is now visible in your workspace



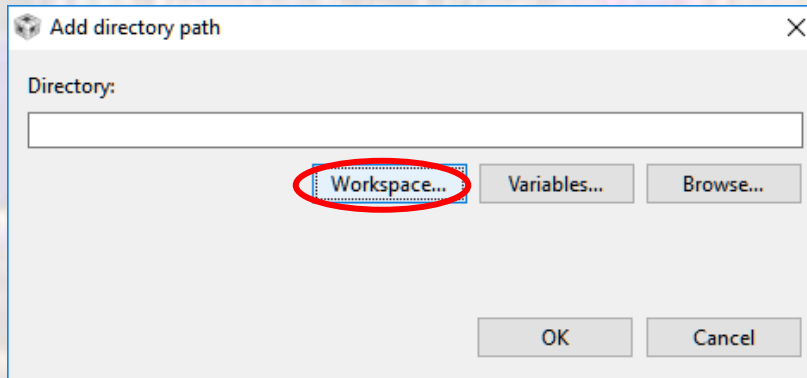
# Library Setup

- With your desired project highlighted
- Project -> Properties ->  
Build ->ARM Compiler -> include Options -> +

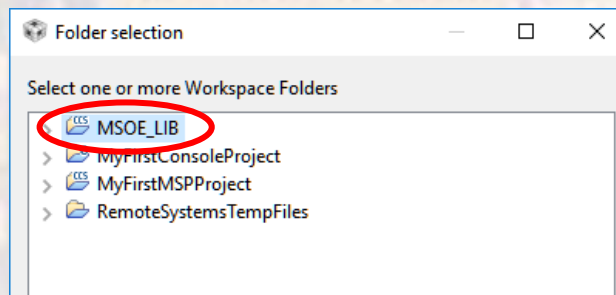


# Library Setup

- Select **Workspace**



- Select **M<sub>SOE</sub>\_LIB**





# Library Setup

Properties for msp432

type filter text

- > Resource
- General
- ▼ Build
  - ▼ MSP432 Compiler
    - Processor Options
    - Optimization
    - Include Options**
    - ULP Advisor
    - Predefined Symbols
  - > Advanced Options
  - > MSP432 Linker
  - MSP432 Hex Utility [Disabled]
- Debug

**Include Options**

Configuration: Debug [ Active ] Manage Configurations...

Add dir to #include search path (--include\_path, -I)

- "\${CCS\_BASE\_ROOT}/arm/include" ...
- "\${CCS\_BASE\_ROOT}/arm/include/CMSIS" ...
- "\${PROJECT\_ROOT}" ...
- "\${CCS\_TOOL\_ROOT}/include" ...
- "\$(workspace\_loc:/MSOE\_LIB)" ...**

Specify a preinclude file (--preinclude)

[Show advanced settings](#) OK Cancel

Arm →

# Library Setup

- Project -> Properties ->  
Build -> ARM Linker -> File Search Path -> +

Arm →

Properties for msp432

type filter text

- > Resource
- General
- Build
- > MSP432 Compiler
- MSP432 Linker
- Basic Options
- File Search Path
- > Advanced Options
- MSP432 Hex Utility [Disabled]
- Debug

**File Search Path**

Configuration: Debug [ Active ] Manage Configurations...

Include library file or command file as input (--library, -l)

"libc.a"

Add <dir> to library search path (--search\_path, -i)

"\$(CCS\_BASE\_ROOT)/arm/include" ...

"\$(CG\_TOOL\_ROOT)/lib" ...

"\$(CG\_TOOL\_ROOT)/include" ...

Search libraries in priority order (--priority, -priority)

Reread libraries; resolve backward references (--reread\_libs, -x)

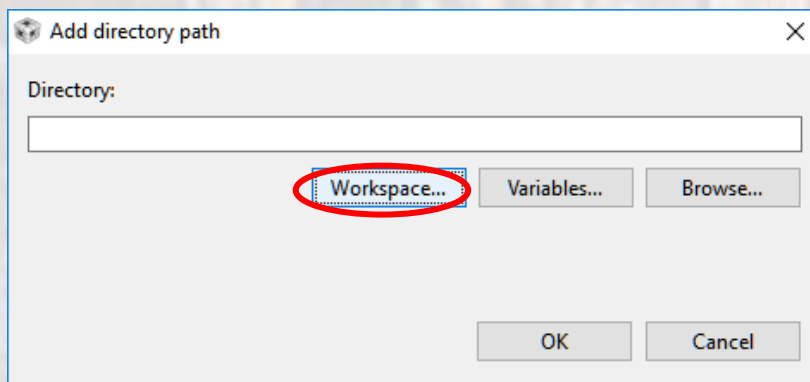
Disable automatic RTS selection (--disable\_auto\_rts)

Show advanced settings

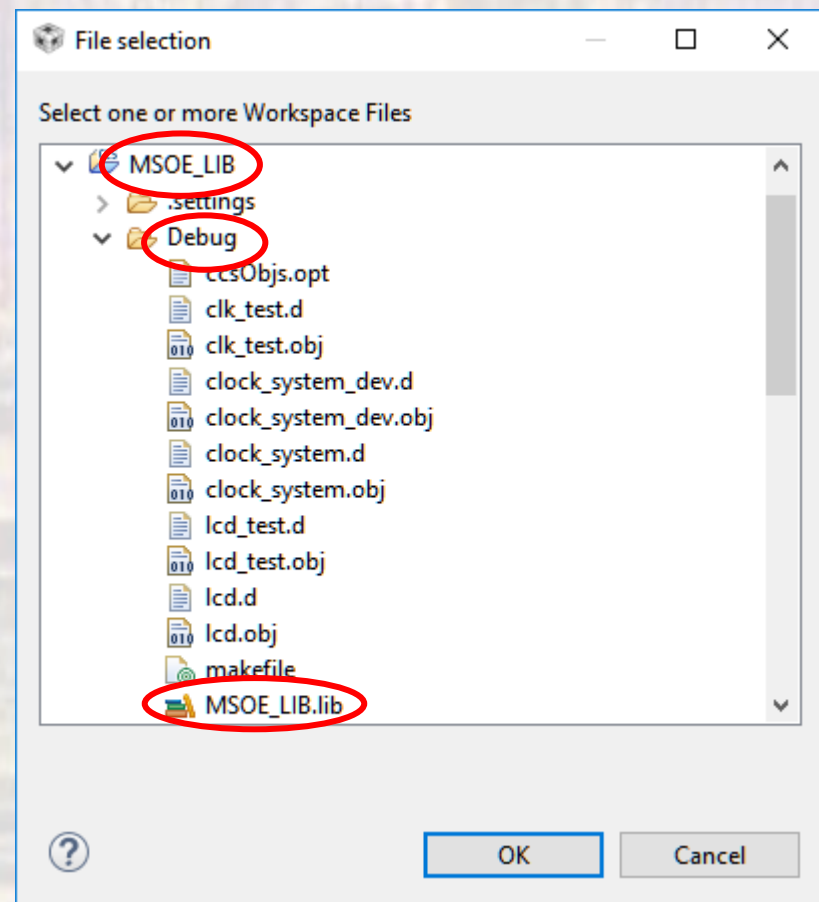
OK Cancel

# Library Setup

- Select Workspace

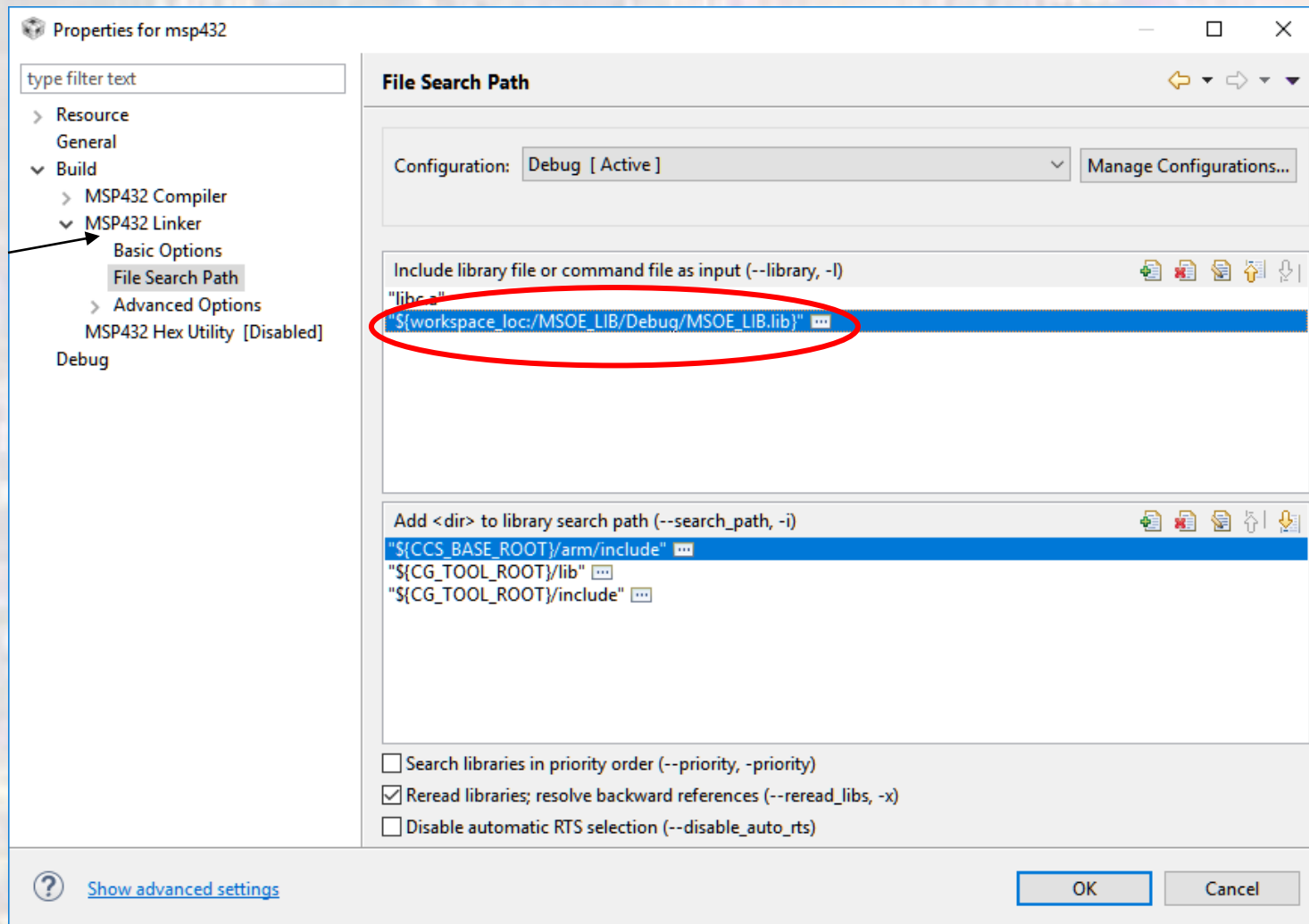


- Expand MSOE\_LIB
- Expand Debug
- Select MSOE\_LIB.lib



# Library Setup

Arm



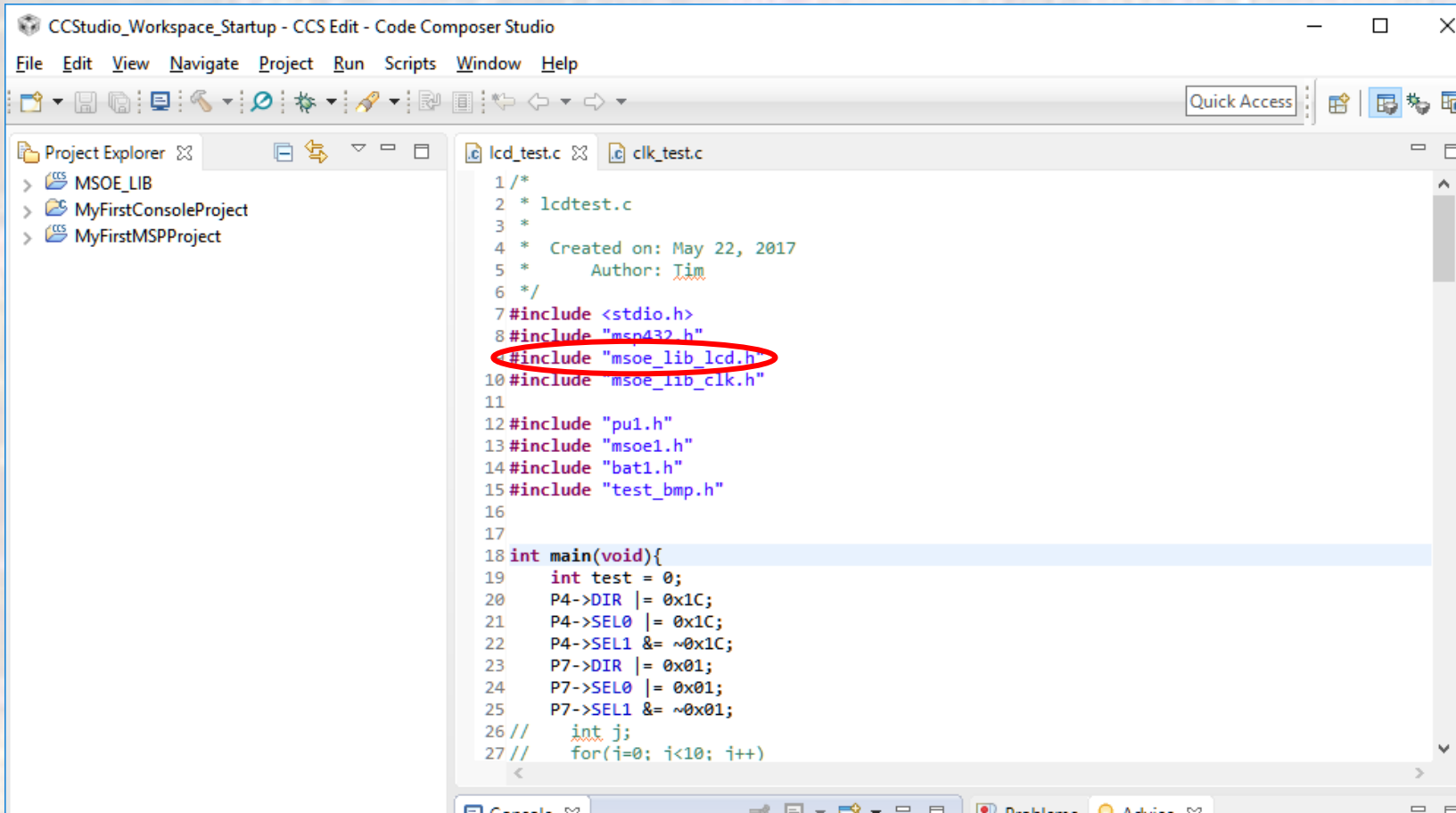
# Library Setup

- #include “msoe\_lib\_xxx.h” in your program



# Library Setup

- #include “msoe\_lib\_lcd.h” in your program



```
CCStudio_Workspace_Startup - CCS Edit - Code Composer Studio
File Edit View Navigate Project Run Scripts Window Help
Project Explorer
  > MSOE_LIB
  > MyFirstConsoleProject
  > MyFirstMSPProject
  lcd_test.c
  clk_test.c
1 /*
2  * lcdtest.c
3  *
4  * Created on: May 22, 2017
5  * Author: Jim
6  */
7 #include <stdio.h>
8 #include "msp432.h"
9 #include "msoe_lib_lcd.h"
10 #include "msoe_lib_clk.h"
11
12 #include "pu1.h"
13 #include "msoe1.h"
14 #include "bat1.h"
15 #include "test_bmp.h"
16
17
18 int main(void){
19     int test = 0;
20     P4->DIR |= 0x1C;
21     P4->SEL0 |= 0x1C;
22     P4->SEL1 &= ~0x1C;
23     P7->DIR |= 0x01;
24     P7->SEL0 |= 0x01;
25     P7->SEL1 &= ~0x01;
26 //     int j;
27 //     for(i=0; i<10; i++)
```

# Library Setup

- Use the library functions in your code

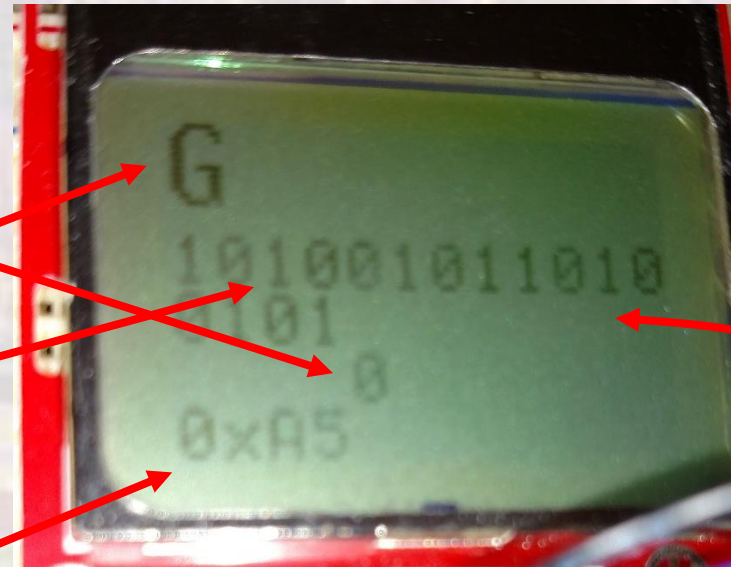
```
LCD_Config();  
LCD_clear();
```

```
char foo = '0';  
LCD_goto_xy(4,4);  
LCD_print_char(foo);
```

```
LCD_print_bigchar(0, 0, 'G');
```

```
uint16_t bin16 = 0xA5A5;  
LCD_goto_xy(0,2);  
LCD_print_bin16(bin16);
```

```
uint8_t hex8 = 0xA5;  
LCD_goto_xy(0,5);  
LCD_print_hex8(hex8);
```



note wrap-around