CMPE1250 – ICA #01

Supporting Materials

- 'Using Visual Studio Code as an Editor' document on Moodle
- 003 - Toolchain and VsCode video (Video Tutorials YouTube playlist)
- Course lecture and demonstration(s)

In this ICA, you will be given a block of code as text (below). Your task will be to take that code and get it into a properly documented and formatted project using the Skeleton main file template provided on Moodle and execute the completed project using Code Warrior.

Unfortunately, all the code is in a block, but really belongs in different parts of the template for a main program. See if you can get the correct blocks of code into the correct positions in a copy of the template file. Use Visual Studio Code to edit, and CodeWarrior to build, device program, and execute the completed code.

```c
//Constant defines
#define RED_LED 0b10000000
#define INDEX_MAX 10

// Global Variables
unsigned int counter, index;

// one-time initializations
PT1AD1 |= RED_LED;
DDR1AD1 |= RED_LED;
counter = 0;
index = 0;

//Infinite loop
for (;;)
{
  if(++counter == 0)
  {
    if(++index >= INDEX_MAX)
    {
      index = 0;
      PT1AD1 ^= RED_LED;
    }
  }
}
```

Note: code is not suitable for submission until:

- The programmer's block is complete *and accurate*
- All variable declarations have a comment as to the purpose of the variable (includes scope justification if global, or at scope of main)
- All blocks of code worthy of comment have a comment as to purpose
- All comments are context centric, not syntax centric.

This will be your first exposure to some of the differences between C# and C, and perhaps some of the similarities too.

Answer the following questions during your live checkoff or submission video:

- What is the purpose of the USBDM Pod?

- Why do we need an infinite loop when running a program in a micro-controller?

- When you have your code running on your board, you should see something happening. What is it?

- What happens if the ***INDEX_MAX*** constant define is changed from 10 to 5?

- What is the following line of code?
```
_DISABLE_COP();
```

Your instructor will spend time going over the solution and will point out the highlights of what you should be aware of, and how you should be documenting your code.