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Due Date: Next Lab Hour

HOMEWORK 3

A Counter Application by Using 7-Segment Displays (SSEG)

In this homework, **KEY1(RB0)**, **KEY2(RB1), SSEG1 and SSEG2** will be used.

Define a variable called "counter" and its initial value must be 0. When program is started, counter must be stopped. When KEY1 is pressed, if counter is at the beginning of the program, it must be started or if counter was stopped, it must continue. If you press KEY1 one more time, counter must be stopped. If you press KEY1 one more time, counter must be started again. KEY1 operation cycle must go on like this. When KEY2 is pressed, then counter must be reset. To read from KEY1 and KEY2, you need to use External Interrupt. "counter" should be increased from 0 to 99 by 1 at a speed that you want. If it passes 99, it should turn back to 0. Print value of "counter" to the SSEGs as two digits by using scanning method and Timer0 Interrupt at a speed that our brain can't realize the changing.

Write the **"main.c"** code that achieves the desired functionality above in MPLAB X IDE program by using example projects.

RECOMMENDATIONS AND WARNINGS

PIC18F4520 examples and documents about PIC18F4520 development board can be found at following website: https://github.com/burakenez/PIC18F4520-MPLABXProjects

Firstly, copy the code that you wrote in your "main.c" file to http://www.planetb.ca/syntax-highlight-word website. Select "C, C++" in Languages, Click Show Highlighted button. New webpage will be opened and your code will be regenerated with line numbers. Copy everything in this page to Word to use in your report.

You need to put comments to necessary parts of your code by using **"//" and "/* */"**. Bring to laboratory a hard copy of your homework which includes the **names and numbers of group members** and **"main.c"** file that you used in your project which must consist **comments** in it.

You can do this homework as a group. However, while homework is controlling, code related questions going to be asked to all of the members of the group. The ones do not have any effort in the project will not be getting any grade. **Tolerance to the cheating is zero.** Both groups will take zero as grade if they cheat.

At the laboratory time, your code must be uploaded to your microprocessor and it must be ready to run while homework control process. When your turn comes, you need to show your working system first.