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Due Date: Next Lab Hour

HOMEWORK 2

Button and LED Application by Using Timer0 Interrupt and External Interrupt

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In this homework, **KEY1(RB0)**, **KEY2(RB1), LED1(RC1)** will be used.

Create a Timer0 Interrupt which occurs every 10ms by using formula in example project. When Timer0 Interrupt occurs read from KEY1. If KEY1 is pressed, trap the program in Timer0 Interrupt by using while loop. If KEY2 is released, increase the value of variable named "counter" by 1. The initial value of variable "counter" must be 0.

Create an External Interrupt at pin which KEY2 is connected to. External Interrupt must occur on rising edge. In this way, when you release KEY2, LED1 must toogle as much as the value of variable "counter" and counter should be 0 again.

As a result, "counter" will be 0 at beginning. When you release KEY1, "counter" will increase by 1. When you release KEY2, LED1 will toogle as much as the value of "counter" and "counter" will be 0 again.

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.