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ECE 212: Lab 5: Programming with C
3/14/016

Time: 10 Hours

Lab5_t1.c
My lab5_t1.c file worked, only I couldn't get the LEDs to continue blinking after just one press. I had to press for each step left or right from the current position. The implementation however achieved the blinking and followed the specified direction depending on the button that was pressed. At the beginning, it was set to follow the right direction until a button was pressed.

Lab5_t2.c
I was not able to get this part of the lab to work by today, the warning message I keep getting is to do with the default configuration that the program does not like. Therefore, it won't allow the code to run.

Functionality in software versus hardware
There is way less code involved in coding in software than hardware for this particular lab. But then again, there is limitation on the capability of the software for control this functionality because depending on the language used, there are some configurations that are not accepted, i.e. default in lab5_t2.

Bugs
1. default builds not found in "x32" - so I configured the program without defaults. This was a bug in lab5_t2 when I attempted to use fault.

2. plib.h not included – this was probably the most common error, that I even went right ahead and downloaded the plib library online and included it in my program. This didn't change anything, so when I had prof. Nestor look at it, he couldn't find the error either. I was working in the electronics lab, so he suggested that maybe because the machines there are not configured to use MPLAB X, I should go back to the dig lab and try, this solved the problem.

3. spacing in the name – so I removed spacing in all directories leading to where the project was stored.

Code
lab5_t1.c
```
/*
 * File:   hypnotizer.c
 * Author: Zainab Hussein
 * Created on March 3, 2016, 1:30 PM
 */

//include definitions needed for basic functionality, its outside
project folder.
#include "ece212.h"

int main() {
    ece212_setup();
```

```
    //instantiate switches
    SW5 == 0;
    SW4 == 1;

    //create infinite loop
    while(1){

        if(SW5>=0b10000000){
            delayms(100)
            SW5>>=1; //shift right
        }
        if(SW5>=0b00000001){ //code below to reset
            delayms(100);
            SW5 == 0;
            SW4 == 1;
        }

        if(SW4>=0b00000001){
            delayms(100);
            SW4<<=1; //shift left
        }
        if(SW4>=0b10000000){  //code below to reset
            delayms(100);
            SW4 == 0;
            SW5 == 1;
        }

    }
    return (EXIT_SUCCESS);
}
```

lab5_t2.c

```
/*
 * File:   LAB_1.c
 * Author: Zainab Hussein
 * Created on March 3, 2016, 1:30 PM
 */

//include definitions needed for basic functionality, its outside
project folder.
#include "ece212.h"

void flash(int freq) {
//commence LEDs blinking at a particular frequency
    int freq = 0.5; freq < 3; freq = freq + 0.5;
}

int main() {
```

```
    ece212_setup();

    //instantiate switches
    SW5 == 0;
    SW4 == 1;

    //create infinite loop
    while(1){

        if(SW5>=0b10000000){
            delayms(100)
            SW5>>=1; //shift right
        }
        if(SW5>=0b00000001){ //code below to reset
            delayms(100);
            SW5 == 0;
            SW4 == 1;
        }

        if(SW4>=0b00000001){
            delayms(100);
            SW4<<=1; //shift left
        }
        if(SW4>=0b10000000){  //code below to reset
            delayms(100);
            SW4 == 0;
            SW5 == 1;
        }
        int freq = 0.5;
        if(SW5 >= 0b10000000) { //SW5 on
            delayms(1000/freq); //blink at given frequency
            freq = freq + 0.5;
        }
        if(SW5 >= 0b10000000) {
            delayms(1000/freq);
            SW5 = 0; //reset SW5
        }
    }
    return (EXIT_SUCCESS);
}
```