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// ***** pwm.c *****

// Project: Keil Labs and Project

// File: pwm.c

// Class: ENEL 351 Lab Works

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// Description: The project is based on the STM32F103RB that is being used in ENEL 351 Labs.

// It will also be used in the Project related to input and output of various sensors.


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// ***** Header Files *****

#include "stm32f10x.h"

#include "header.h"


// ***** Function Defination to control brightness of LCD *****

void brightnessControl(int photoSensorValue)
{
    TIM3 -> CR1 |= TIM_CR1_CEN; // Enable Timer 3

    TIM3 -> EGR |= TIM_EGR_UG; // Setting counter and Reloading Prescaler

    TIM3 -> CCMR1 |= TIM_CCMR1_OC1M_2 | TIM_CCMR1_OC1M_1; // Capture

    TIM3 -> CCMR1 |= TIM_CCMR1_OC1PE | TIM_CCMR1_OC1FE; // Preload Enable, Fast Enable

    TIM3 -> CCER |= TIM_CCER_CC1E; // Enable Channel One

    TIM3 -> PSC = 0x1C1F; // (72 * 100) - 1 = 7199 or 0x1C1F; for 100 kHz

    TIM3 -> ARR = 100.00; // 100 kHz

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    TIM3 -> CCR1 = photoSensorValue; // Duty cycle depended on photo Resistor Value

    TIM3 -> CR1 |= TIM_CR1_ARPE; // ARPE = Auto Reload Preload Enable

    TIM3 -> CR1 |= TIM_CR1_CEN; // Enable Timer3
}

// =====
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// =====

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