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CPE301

Design Assignment 2C

PART: 1

#define *F\_CPU* 8000000UL

#include <avr/io.h>

#include <util/delay.h>

int main(void)

{

int n = 0;

DDRB = (1<<DDB3);

TCCR0A = 0;

TCNT0 = 0x00;

TCCR0B |= (1<<CS02) | (1<<CS00);

while (1)

{

while(n<100)

{

while ((TIFR0 & 0x01) == 0);

TCNT0 = 0x00;

TIFR0 = 0x01;

PORTB ^= (0<<3);

}

PORTB ^= (1<<3);

}

}

PART 2:

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\* Harrin2\_DA\_2C\_P2.c

\*

\* Created: 10/11/2019 10:54:51 PM

\* Author : Nick

\*/

#define *F\_CPU* 8000000UL

#include <avr/io.h>

#include <avr/interrupt.h>

#include <util/delay.h>

int main(void)

{

DDRB = 1<<3; //Normal operation

TCCR0A = 0;

TCNT0 = 124;

TIMSK0 |= (1<<TOIE0);

TCCR0B |= (1<<CS02) | (1<<CS00); //set prescalar

sei();

while (1)

{

while((TIFR0 & 0x01) == 0);

TCNT0 = 0x00;

TIFR0 = 0x01;

PORTB ^= (0<<3);

}

}

ISR(TIMER0\_OVF\_vect)

{

TCNT0 = 124;

PORTB ^= (1<<3); //toggle PB.3

}

PART 3:

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\* GccApplication1.c

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\* Created: 10/16/2019 12:30:39 PM

\* Author : Nick

\*/

#include <avr/io.h>

#define *F\_CPU* 8000000UL

#include <avr/interrupt.h>

int main(void)

{

DDRB = 1<<3; //set PB6 as output

TCCR0A |= (1<<WGM01) | (1<<COM1A0); //Set timer to CTC

OCR0A = 0xF0; //count to this value

TCNT0 = 0; //initialize counter

TCCR0B |= (1<<CS02) | (1<<CS00); //set pre-scaler

sei(); //enable interrupts

while (1)

{

PORTB ^= (0<<3); //untoggle pb3

}

}

ISR (TIMER0\_COMPA\_vect)

{

PORTB ^= (1<<3); //toggle pb3

}

}