Report Title: Traffic Light Control System

Unit Code - EMT 3104: Mechatronic Systems Programming I

Group No: 1

Group Members:

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Submission Data: 20th May 2019

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Formatting Requirements:

1. Font: Cambria
2. Size: 10
3. Page Spacing: 1.15
4. Text should be justified



Try as much as possible to adhere to the above formatting requirements as this will affect your assignment marks.

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Report Content:

Chapter 1: Introduction: Conduct research and give a brief overview to ensure the reader has enough background knowledge in order to understand the topic.

Chapter 2: Methodology: Discuss how you will implement the system and explain its components and their functionality.

Circuit Diagrams: Insert circuit diagrams where necessary. You can print screen or use the snipping tool to create an image of a Proteus circuit and include it in your report.

Code Flowchart: Use flowcharts to illustrate how your code will work

Code Implementation: Copy your code in a section of the report like the code below and include adequate comments in your code. Good comments contribute to your marks

/\*Embedded Hello World\*/

#define F\_CPU 8000000UL // Defining the clock speed which we will use for the uC

#include <avr/io.h> // including header file for input and output definitions

#include <util/delay.h> // including header file for the delay function

**int** main(**void**)

{

/\* Setting all pins in PORTB to OUTPUTs\*/

DDRB = 0xFF; // we generally use binary or hexadecimal i.e. 0xFF = 0b11111111

/\*

    In order to make only PB3 as output while keeping the other pins unchanged.

    DDRB = DDRB | (1<<PB3); NB: PB3 = 3

    \*/

**while**(1)

{

PORTB = PORTB | (1<<PB3); /\* Making PB3 high. This will make LED ON \*/

\_delay\_ms(100);

PORTB = PORTB & (~(1<<PB3));/\* Making PB3 low. This will make LED OFF \*/

\_delay\_ms(100);

}

**return** 0;

}

Use an online code highlighter to format your code appropriately.

Example of code highlighter; <https://tohtml.com/c/>

**while**(1)

{

PORTB = PORTB | (1<<PB3);

\_delay\_ms(100);

PORTB = PORTB & (~(1<<PB3));

\_delay\_ms(100);

}

while (1)

{

PORTB = PORTB | (1<<PB3);

\_delay\_ms(100);

PORTB = PORTB & (~(1<<PB3))

\_delay\_ms(100);

}

A B

*Version A is preferred due to the font and color coding which makes it easier to understand the code and spot errors plus it will contribute positively to your overall marks;*

Chapter 3: Discussion: Explain how your code works and the results that you obtain from your simulation

Chapter 4: Conclusion: Write a short description about the project.

References: Include the sources that you used in your research. Use APA format for your references. Use google scholar or other resources to format your references in APA.

1. Sanchez, J., & Canton, M. P. (2006). *Microcontroller programming: the microchip PIC*. CRC press.
2. Predko, M. (1999). *Programming and customizing the 8051 microcontroller*. McGraw-Hill, Inc..