** REPUBLIC OF CAMEROON REPUBLIQUE DU CAMEROUN**

**PEACE-WORK- FATHERLAND PAIX- TRAVAIL-PATRIE**

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**MINISTRY OF HIGHER EDUCATION MINISTERE DE L’ENSEIGNMENT**

**SECONDAIRE**

**UNIVERSITY OF BUEA UNIVERSITE DE BUEA**

**FACULTY OF ENGINEERING AND FACULTE DE L’INGENIERE ET**

**TECHNOLOGY TECHNOLOGIE**

COURSE NAME AND CODE: **MICROCONTROLLER LAB\_EEF 368**

***REPORT ON THE COUNTER***

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1. **A counter**

**Aim:** Build a counter with a LED connected to a microcontroller with MikroC compiler

**Requirement:**

* PIC16F84A microcontroller
* LED
* 8MHz crystal oscillator
* Capacitor
* Resistor
* MikroC compiler
* Proteus
* Push button
* DEDGE

**Procedure:**

* The LED is connected with RA0 pin of PORTA of the microcontroller through a resistor and a push button with a DEDGE.
* We build the circuit using proteus.
* Instruct the MCU that the PORTB pins are used as output.
* Connect a Push button to MCLR with another resistor.
* Connect three LEDs through three resistors to RB0, RB1 and RB2.
* Connect the crystal oscillator with two capacitors to OSC1/CLKIN and OSC2/CLKOUT.
* Write the code of the blinking LED using MikroC compiler.
* We run the code and a hex file is generated named led-blinking.hex
* After generating running the code and hex file generated, we go to circuit and load the hex file into the PIC.
* We stimulate the program using proteus software and observe.

**Results and Observation:**

The counter counts down when the button is pressed and held and counts up when released.

**Circuit:** 

**Conclusion:**

The counter counts down when the button is pressed and held and counts up when released.

Appendix:

Code:

void main() {

TRISB=0; //port b is the output

while(1){

while(PORTA==1){ //setting porta as input and press button

PORTB.B0=1;//set to 1 keeps led on

PORTB.B1=1;

PORTB.B2=1;

delay\_ms(500); //delay for 0.5 second

PORTB.B0=0; //set 0 to keep led off

PORTB.B1=1;

PORTB.B2=1;

delay\_ms(500);

PORTB.B0=1;

PORTB.B1=0;

PORTB.B2=1;

delay\_ms(500);

PORTB.B0=0;

PORTB.B1=0;

PORTB.B2=1;

delay\_ms(500);

PORTB.B0=1;

PORTB.B1=1;

PORTB.B2=0;

delay\_ms(500);

PORTB.B0=0;

PORTB.B1=1;

PORTB.B2=0;

delay\_ms(500);

PORTB.B0=1;

PORTB.B1=0;

PORTB.B2=0;

delay\_ms(500)

PORTB.B0=0;

PORTB.B1=0;

PORTB.B2=0;

delay\_ms(500);

}

while(PORTA==0){

PORTB.B0=0;

PORTB.B1=0;

PORTB.B2=0;

delay\_ms(500);

PORTB.B0=1;

PORTB.B1=0;

PORTB.B2=0;

delay\_ms(500);

PORTB.B0=0;

PORTB.B1=1;

PORTB.B2=0;

delay\_ms(500);

PORTB.B0=1;

PORTB.B1=1;

PORTB.B2=0;

delay\_ms(500);

PORTB.B0=0;

PORTB.B1=0;

PORTB.B2=1;

delay\_ms(500);

PORTB.B0=1;

PORTB.B1=0;

PORTB.B2=1;

delay\_ms(500);

PORTB.B0=0;

PORTB.B1=1;

PORTB.B2=1;

delay\_ms(500);

PORTB.B0=1;

PORTB.B1=1;

PORTB.B2=1;

delay\_ms(500);

}

}

}