SIT315 – Programming Paradigms

M1.T5HD - RIOT OS

For this task I re implemented M1.T2 via the RIOT OS. I had to make significant changes to the T2 program as it used a lot of Arduino functions but I reimplemented it with bit code.

https://github.com/gregorymcintyre/ProgrammingParadigms.git

The source code can be found as an .ino in the M1.T2 folder, .sketch in the M1.T5 folder. The changes between should be minimal.

A video demonstration can be found at:

https://youtu.be/UDzzAdTPg5Y

Source Code

```
/*  Interrupt-driven Board                                                    2/2
 *  14/3/19
 *  Greg McIntyre
 *
 *  Bitwise interrupt implementation of T1 for T5
 *
 *  https://github.com/gregorymcintyre/ProgrammingParadigms.git
 *
 */

#define PIR 2
#define LED_PIN 5

int input = 0;
volatile bool LEDstate = false;

ISR(INT0_vect)
{
 //LEDstate = !LEDstate;
 //digitalWrite(LED_BUILTIN, LEDstate);
 PORTD ^= (1 << LED_PIN);

 //Serial.println("Interrupt has occured");
 puts("Interrupt has occured");
}

void setup() {
 //Serial.begin(9600);
 //Serial.println("Program Running...");
 puts("Interrupt Program Running...");

 //pinMode(LED_BUILTIN, OUTPUT);     //built in LED
 DDRD |= (1<<LED_PIN);

 //pinMode(PIR, INPUT);
 DDRD &= ~(1 << PIR);    //PIR Input

 //attachInterrupt(digitalPinToInterrupt(PIR), change, CHANGE);
 //CHANGE in state
 EICRA |= (1 << ISC00);
 EICRA &= ~(1 << ISC01);

 //ENABLE interrupts on INT0
 EIMSK |= (1 << INT0);

 //set Global interrupts
 sei();


}

void loop() {
 delay(1000);

}
```