Traffic Light

Wednesday, September 30, 2020   2:05 PM

Required components
Breadboard
Arduino Uno (or equivalent)
LEDx8
220ohm resistorx8
Jumper wires
Atmel studio IDE (to flash code onto Arduino)

Code 1 getting the pattern down

```c
// ------ Event loop ------ //
while (1) {
    //EW-red blue, NS-green
    PORTB = 0b00110000;
    PORTD = 0b00010000;
    _delay_ms(20000);
    //EW-red, NS-yellow
    PORTB = 0b00010000;
    PORTD = 0b00100000;
    _delay_ms(20000);
    //EW-Green, NS-red blue
    PORTB = 0b00000100;
    PORTD = 0b11000000;
    _delay_ms(20000);
    //EW-yellow NS red
    PORTB = 0b00001000;
    PORTD = 0b01000000;
    _delay_ms(20000);
```

Same pattern using shift operators

```
// ------ Event loop ------ //
while (1) {
        //EW-red blue, NS-green
        PORTB = 0b00110000;
        PORTD = 0b00010000;
        _delay_ms(20000);
        //EW-red, NS-yellow
        PORTB = 0b00010000;
//      PORTD = 0b00100000;
        PORTD = PORTD<<1;
        _delay_ms(20000);
        //EW-Green, NS-red blue
//      PORTB = 0b00000100;
        PORTB = PORTB>>2;
        PORTD = 0b11000000;
        _delay_ms(20000);
        //EW-yellow NS red
//      PORTB = 0b00001000;
        PORTB = PORTB<<1;
        PORTD = 0b01000000;
        _delay_ms(20000);

        //PORTB = 0;
        //_delay_ms(10000);
        }
        return 0;
```

Video

https://youtu.be/NGMLqvRivOk