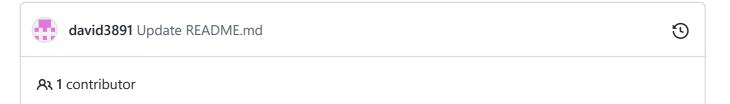
☐ david3891 / Digital-electronic-2 (Public)

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Digital-electronic-2 / Labs / 01-tools / README.md



⋮≣ 66 lines (48 sloc) | 1.77 KB ...

Lab 1: David Sladkowski

Link to your Digital-electronics-2 GitHub repository:

(https://github.com/david3891/Digital-electronic-2)

Blink example

- 1. What is the meaning of the following binary operators in C?
 - logický součet OR
 - & logický součin AND
 - ^ exkluzivní součet XOR
 - ~ negace
 - << bitový posuv doleva</p>
 - >> bitový posuv doprava
- 2. Complete truth table with operators: | , & , ^ , ~

b	a	b or a	b and a	b xor a	not b
0	0	0	0	0	1
0	1	1	0	1	1
1	0	1	0	1	0

b	a	b or a	b and a	b xor a	not b
1	1	1	1	0	0

Morse code

1. Listing of C code with syntax highlighting which repeats one "dot" and one "comma" (BTW, in Morse code it is letter A) on a LED:

```
int main(void)
    // Set pin as output in Data Direction Register
    // DDRB = DDRB or 0010 0000
    DDRB = DDRB | (1<<LED_GREEN);</pre>
    // Set pin LOW in Data Register (LED off)
    // PORTB = PORTB and 1101 1111
    PORTB = PORTB & ~(1<<LED_GREEN);
    // Infinite loop
    while (1)
                    // Pause several milliseconds
                    _delay_ms(SHORT_DELAY);
                    PORTB |= (1<<LED_GREEN);
                                              // LED on
                    _delay_ms(SHORT_DELAY);
                    PORTB &= ~(1<<LED_GREEN); // LED off
                    _delay_ms(SHORT_DELAY);
                    PORTB |= (1<<LED_GREEN);</pre>
                    _delay_ms(1000);
                    PORTB &= ~(1<<LED_GREEN);
    }
    // Will never reach this
    return 0;
}
```

2. Scheme of Morse code application, i.e. connection of AVR device, LED, resistor, and supply voltage. The image can be drawn on a computer or by hand. Always name all components and their values!

