1. <https://github.com/Martass-code/Digital-electronics-2>
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3.

/\* Defines -----------------------------------------------------------\*/

#define DOT 200

#define DASH 600

#define SPACE\_S 200

#define SPACE\_L 1000

#define LED\_GREEN PB5 // AVR pin where green LED is connected

#define SHORT\_DELAY 500 // Delay in miliseconds

#ifndef *F\_CPU*

#define *F\_CPU* 16000000 // CPU frequency in Hz required for delay func

#endif

/\* Includes ----------------------------------------------------------\*/

#include <util/delay.h> // Functions for busy-wait delay loops

#include <avr/io.h> // AVR device-specific IO definitions

/\* Variables ---------------------------------------------------------\*/

/\* Function prototypes -----------------------------------------------\*/

/\* Functions ---------------------------------------------------------\*/

/\*\*

\* Toggle one LED and use the function from the delay library.

\*/

int main(void)

{

// Set pin as output in Data Direction Register

// DDRB = DDRB or 0010 0000

DDRB = DDRB | (1<<LED\_GREEN);

// Set pin LOW in Data Register (LED off)

// PORTB = PORTB and 1101 1111

PORTB = PORTB & ~(1<<LED\_GREEN);

// Infinite loop

while (1)

{

// D

PORTB = PORTB ^ (1<<LED\_GREEN);

*\_delay\_ms*(DASH);

PORTB = PORTB ^ (1<<LED\_GREEN);

*\_delay\_ms*(SPACE\_S);

PORTB = PORTB ^ (1<<LED\_GREEN);

*\_delay\_ms*(DOT);

PORTB = PORTB ^ (1<<LED\_GREEN);

*\_delay\_ms*(SPACE\_S);

PORTB = PORTB ^ (1<<LED\_GREEN);

*\_delay\_ms*(DOT);

PORTB = PORTB ^ (1<<LED\_GREEN);

*\_delay\_ms*(SPACE\_L);

//E

PORTB = PORTB ^ (1<<LED\_GREEN);

*\_delay\_ms*(DOT);

PORTB = PORTB ^ (1<<LED\_GREEN);

*\_delay\_ms*(SPACE\_L);

//2

PORTB = PORTB ^ (1<<LED\_GREEN);

*\_delay\_ms*(DOT);

PORTB = PORTB ^ (1<<LED\_GREEN);

*\_delay\_ms*(SPACE\_S);

PORTB = PORTB ^ (1<<LED\_GREEN);

*\_delay\_ms*(DOT);

PORTB = PORTB ^ (1<<LED\_GREEN);

*\_delay\_ms*(SPACE\_S);

PORTB = PORTB ^ (1<<LED\_GREEN);

*\_delay\_ms*(DASH);

PORTB = PORTB ^ (1<<LED\_GREEN);

*\_delay\_ms*(SPACE\_S);

PORTB = PORTB ^ (1<<LED\_GREEN);

*\_delay\_ms*(DASH);

PORTB = PORTB ^ (1<<LED\_GREEN);

*\_delay\_ms*(SPACE\_S);

PORTB = PORTB ^ (1<<LED\_GREEN);

*\_delay\_ms*(DASH);

PORTB = PORTB ^ (1<<LED\_GREEN);

*\_delay\_ms*(SPACE\_L);

PORTB = PORTB ^ (1<<LED\_GREEN);

//end

PORTB = PORTB & ~(1<<LED\_GREEN);

}

// Will never reach this

return 0;

}

/\* Interrupt routines ------------------------------------------------\*/