1.

|  |
| --- |
|  |
| **Data type** | **Number of bits** | **Range** | **Description** |
| uint8\_t | 8 | 0, 1, ..., 255 | Unsigned 8-bit integer |
| int8\_t | 8 | -127..127 | Signed 8-bit integer |
| uint16\_t | 16 | 0…65535 | Unsigned 16-bit |
| int16\_t | 16 | -32534:32534 | Signel 16bit |
| float | 32 | -3.4e+38, ..., 3.4e+38 | Single-precision floating-point |
| void | 8 | - | Void (nothing pointer) |

**Doplněný zdrojový kód**



**GPIO.c**

****

**Main.c**

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

#defin BTN PD0 // AVR pin where green LED is connected

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

#define LED\_RED PC0 // AVR pin where red LED is connected

#define BLINK\_DELAY 500

#ifndef *F\_CPU*

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

#endif

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

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

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

#include "gpio.h" // GPIO library for AVR-GCC

/\* Function definitions ----------------------------------------------\*/

/\*\*

\* Main function where the program execution begins. Toggle two LEDs

\* when a push button is pressed. Functions from user-defined GPIO

\* library is used instead of low-level logic operations.

\*/

int main(void)

{

/\* GREEN LED \*/

GPIO\_config\_output(&DDRB, LED\_GREEN);

GPIO\_write\_low(&PORTB, LED\_GREEN);

/\* second LED \*/

// WRITE YOUR CODE HERE

GPIO\_config\_output(&DDRC, LED\_RED);

GPIO\_write\_high(&PORTC, LED\_RED);

/\* push button \*/

// WRITE YOUR CODE HERE

GPIO\_config\_input\_pullup(&DDRD,BTN);

// Infinite loop

while (1)

{

// Pause several milliseconds

*\_delay\_ms*(BLINK\_DELAY);

if(GPIO\_read(&PIND,BTN)==0)

{

GPIO\_toggle(&DDRB,LED\_GREEN); //toggle green led

GPIO\_toggle(&DDRC,LED\_RED); // toggle red led

}

}

// Will never reach this

return 0;

}

Deklarace funkce dává o existenci určité funkce s konkrétními vstupními argumenty a výstupním argumentem. Definice je už konkrétní popis (prováděcí kód) předem deklarované funkce.

Příklad:

Deklarace:

*uint8\_t* soucet(*uint8\_t* a,*uint8\_t* b);

Definice:

*uint8\_t* soucet(*uint8\_t* a,*uint8\_t* b)

{

return a+b;

}