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/*
 * ShiftEx.c
 *
 * Created: 7/10/2015 7:01:07 pm
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 */

#include <avr/io.h>
#include <util/delay.h>

//#define F_CPU 8000000UL

unsigned char i1; //set up register i1
unsigned char i2; //set up register i2

int main(void) //starts main program
{
    DDRA = 0b11111111; //port A all outputs
    DDRB = 0b00000000; //port B all inputs
    PORTB = 0b11111111; //enable pull up resistors to port B

    while (1) //starts main loop
    {
        i2 = 0b00000001; //set up initial value to i2
        PORTA = 0b11111110; //set up initial value to PORTA
        _delay_ms(100); //delay 100ms

        if (bit_is_set(PINB,0)) //if bit 0 of PORTB is 1 (switch 1 not pressed) execute loop
        {
            for (i1=0; i1<8; i1++) //register i1 counts from 0 to 7 in order to execute loop 8
            { //times
                i2=i2<<1; //i2 shift left
                PORTA =~i2; //PORTA not i2
                _delay_ms(100); //delay 100ms
            }
        }
        while ((PINB == 0b11111100) || (PINB == 0b11111101) || (PINB == 0b11111011) || (PINB ==
0b11110111)) //switch 1-4 loop
        {
            PORTA = 0b01111110; //set up initial value to PORTA
            _delay_ms(1); //delay 100ms

            while (PINB == 0b11111100); //switch 1 & 2 pressed -> stay in this loop

            while (PINB == 0b11111101) //switch 2 pressed
            PORTA = (3<<<PORTA2); //set up decimal No 3 to PORTA bit2 (00001100)

            while (PINB == 0b11111011) //switch 3 pressed
            PORTA = (PORTA & 0b11110000); //clear 4 LSB (filter with AND)

            while (PINB == 0b11110111) //switch 4 pressed
            PORTA = (PORTA | 0b11111111); //set PORTA (filter with OR)
        }
    }
}

```