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/*
Uses the display to illustrate conversion between 8 bit binary and decimal numbers
*/

#include "Char_to_binary_header.h"

char digit=1, op, mode;

int main (void){

op=0;
mode = 'u'; //mode: signed or unsigned
setup_HW;
I2C_Tx_display_char(digit,mode);

set_up_PCI;
enable_pci;

sei();

while(1){
switch(op){
case 0: break; //Static display
case 1: I2C_Tx_display_char(++digit,mode);break; //Increment "digit" before calling "I2C_Tx....."
case 2: I2C_Tx_display_char(--digit, mode);break; //Decrement "digit" before calling "I2C_Tx....."

Timer_T0_10mS_delay_x_m(15);}}

/*****/
ISR(PCINT0_vect){ //sw3 interrupt service routine
if(switch_2_up)return; //Ignore sw3 key release
if((switch_1_down) || (switch_3_down))return; //Ignore if sw1 or 2 are still down
if (mode == 's')
{mode = 'u'; I2C_Tx_display_char(digit,mode);return;} //toggle display from signed to unsigned
if (mode == 'u')
{mode = 's'; I2C_Tx_display_char(digit,mode);return;}} //and visa-versa

ISR(PCINT2_vect) { //sw1 and sw3 interrupt
if(switch_2_down)return; //Ignore if sw3 is still down
if((switch_1_up) && (switch_3_up)){op = 0; return;} //Both switches up

if(switch_1_down) {op = 1; return;} //Digits increment
if(switch_3_down) {op = 2; return;}} //Digits decrement

/*****/
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