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This program was created by the CodeWizardAVR V3.39

Automatic Program Generator

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Project :

Version :

Date : 19-02-2020

Author :

Company :

Comments:

Chip type : ATmega16

Program type : Application

AVR Core Clock frequency: 16.000000 MHz

Memory model : Small

External RAM size : 0

Data Stack size : 256

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#include <mega16.h>

#include <delay.h>

// Alphanumeric LCD functions

#include <alcd.h>

// Declare your global variables here

// Voltage Reference: AREF pin

#define ADC\_VREF\_TYPE ((0<<REFS1) | (0<<REFS0) | (0<<ADLAR))

// Read the AD conversion result

unsigned int read\_adc(unsigned char adc\_input)

{

ADMUX=adc\_input | ADC\_VREF\_TYPE;

// Delay needed for the stabilization of the ADC input voltage

delay\_us(10);

// Start the AD conversion

ADCSRA|=(1<<ADSC);

// Wait for the AD conversion to complete

while ((ADCSRA & (1<<ADIF))==0);

ADCSRA|=(1<<ADIF);

return ADCW;

}

void main(void)

{

// Declare your local variables here

int i=0;

// Input/Output Ports initialization

// Port A initialization

// Function: Bit7=In Bit6=In Bit5=In Bit4=In Bit3=In Bit2=In Bit1=In Bit0=In

DDRA=(0<<DDA7) | (0<<DDA6) | (0<<DDA5) | (0<<DDA4) | (0<<DDA3) | (0<<DDA2) | (0<<DDA1) | (0<<DDA0);

// State: Bit7=T Bit6=T Bit5=T Bit4=T Bit3=T Bit2=T Bit1=T Bit0=T

PORTA=(0<<PORTA7) | (0<<PORTA6) | (0<<PORTA5) | (0<<PORTA4) | (0<<PORTA3) | (0<<PORTA2) | (0<<PORTA1) | (0<<PORTA0);

// Port B initialization

// Function: Bit7=In Bit6=In Bit5=In Bit4=In Bit3=Out Bit2=In Bit1=In Bit0=In

DDRB=(0<<DDB7) | (0<<DDB6) | (0<<DDB5) | (0<<DDB4) | (1<<DDB3) | (0<<DDB2) | (0<<DDB1) | (0<<DDB0);

// State: Bit7=T Bit6=T Bit5=T Bit4=T Bit3=0 Bit2=T Bit1=T Bit0=T

PORTB=(0<<PORTB7) | (0<<PORTB6) | (0<<PORTB5) | (0<<PORTB4) | (0<<PORTB3) | (0<<PORTB2) | (0<<PORTB1) | (0<<PORTB0);

// Port C initialization

// Function: Bit7=In Bit6=In Bit5=In Bit4=In Bit3=In Bit2=In Bit1=In Bit0=In

DDRC=(0<<DDC7) | (0<<DDC6) | (0<<DDC5) | (0<<DDC4) | (0<<DDC3) | (0<<DDC2) | (0<<DDC1) | (0<<DDC0);

// State: Bit7=T Bit6=T Bit5=T Bit4=T Bit3=T Bit2=T Bit1=T Bit0=T

PORTC=(0<<PORTC7) | (0<<PORTC6) | (0<<PORTC5) | (0<<PORTC4) | (0<<PORTC3) | (0<<PORTC2) | (0<<PORTC1) | (0<<PORTC0);

// Port D initialization

// Function: Bit7=In Bit6=In Bit5=In Bit4=In Bit3=In Bit2=In Bit1=In Bit0=In

DDRD=(0<<DDD7) | (0<<DDD6) | (0<<DDD5) | (0<<DDD4) | (0<<DDD3) | (0<<DDD2) | (0<<DDD1) | (0<<DDD0);

// State: Bit7=T Bit6=T Bit5=T Bit4=T Bit3=T Bit2=T Bit1=T Bit0=T

PORTD=(0<<PORTD7) | (0<<PORTD6) | (0<<PORTD5) | (0<<PORTD4) | (0<<PORTD3) | (0<<PORTD2) | (0<<PORTD1) | (0<<PORTD0);

// Timer/Counter 0 initialization

// Clock source: System Clock

// Clock value: 250.000 kHz

// Mode: Fast PWM top=0xFF

// OC0 output: Non-Inverted PWM

// Timer Period: 1.024 ms

// Output Pulse(s):

// OC0 Period: 1.024 ms Width: 0 us

TCCR0=(1<<WGM00) | (1<<COM01) | (0<<COM00) | (1<<WGM01) | (0<<CS02) | (1<<CS01) | (1<<CS00);

TCNT0=0x00;

OCR0=0x00;

// Timer/Counter 1 initialization

// Clock source: System Clock

// Clock value: Timer1 Stopped

// Mode: Normal top=0xFFFF

// OC1A output: Disconnected

// OC1B output: Disconnected

// Noise Canceler: Off

// Input Capture on Falling Edge

// Timer1 Overflow Interrupt: Off

// Input Capture Interrupt: Off

// Compare A Match Interrupt: Off

// Compare B Match Interrupt: Off

TCCR1A=(0<<COM1A1) | (0<<COM1A0) | (0<<COM1B1) | (0<<COM1B0) | (0<<WGM11) | (0<<WGM10);

TCCR1B=(0<<ICNC1) | (0<<ICES1) | (0<<WGM13) | (0<<WGM12) | (0<<CS12) | (0<<CS11) | (0<<CS10);

TCNT1H=0x00;

TCNT1L=0x00;

ICR1H=0x00;

ICR1L=0x00;

OCR1AH=0x00;

OCR1AL=0x00;

OCR1BH=0x00;

OCR1BL=0x00;

// Timer/Counter 2 initialization

// Clock source: System Clock

// Clock value: Timer2 Stopped

// Mode: Normal top=0xFF

// OC2 output: Disconnected

ASSR=0<<AS2;

TCCR2=(0<<PWM2) | (0<<COM21) | (0<<COM20) | (0<<CTC2) | (0<<CS22) | (0<<CS21) | (0<<CS20);

TCNT2=0x00;

OCR2=0x00;

// Timer(s)/Counter(s) Interrupt(s) initialization

TIMSK=(0<<OCIE2) | (0<<TOIE2) | (0<<TICIE1) | (0<<OCIE1A) | (0<<OCIE1B) | (0<<TOIE1) | (0<<OCIE0) | (0<<TOIE0);

// External Interrupt(s) initialization

// INT0: Off

// INT1: Off

// INT2: Off

MCUCR=(0<<ISC11) | (0<<ISC10) | (0<<ISC01) | (0<<ISC00);

MCUCSR=(0<<ISC2);

// USART initialization

// USART disabled

UCSRB=(0<<RXCIE) | (0<<TXCIE) | (0<<UDRIE) | (0<<RXEN) | (0<<TXEN) | (0<<UCSZ2) | (0<<RXB8) | (0<<TXB8);

// Analog Comparator initialization

// Analog Comparator: Off

// The Analog Comparator's positive input is

// connected to the AIN0 pin

// The Analog Comparator's negative input is

// connected to the AIN1 pin

ACSR=(1<<ACD) | (0<<ACBG) | (0<<ACO) | (0<<ACI) | (0<<ACIE) | (0<<ACIC) | (0<<ACIS1) | (0<<ACIS0);

// ADC initialization

// ADC Clock frequency: 250.000 kHz

// ADC Voltage Reference: AREF pin

// ADC Auto Trigger Source: ADC Stopped

ADMUX=ADC\_VREF\_TYPE;

ADCSRA=(1<<ADEN) | (0<<ADSC) | (0<<ADATE) | (0<<ADIF) | (0<<ADIE) | (1<<ADPS2) | (1<<ADPS1) | (0<<ADPS0);

SFIOR=(0<<ADTS2) | (0<<ADTS1) | (0<<ADTS0);

// SPI initialization

// SPI disabled

SPCR=(0<<SPIE) | (0<<SPE) | (0<<DORD) | (0<<MSTR) | (0<<CPOL) | (0<<CPHA) | (0<<SPR1) | (0<<SPR0);

// TWI initialization

// TWI disabled

TWCR=(0<<TWEA) | (0<<TWSTA) | (0<<TWSTO) | (0<<TWEN) | (0<<TWIE);

// Alphanumeric LCD initialization

// Connections are specified in the

// Project|Configure|C Compiler|Libraries|Alphanumeric LCD menu:

// RS - PORTC Bit 0

// RD - PORTC Bit 1

// EN - PORTC Bit 2

// D4 - PORTC Bit 4

// D5 - PORTC Bit 5

// D6 - PORTC Bit 6

// D7 - PORTC Bit 7

// Characters/line: 16

lcd\_init(16);

while (1)

{

DDRA=0;

DDRD.6=1;

DDRD.0=1;

DDRD.7=0;

// i=read\_adc(0);

// lcd\_clear();

//lcd\_gotoxy(2,0);

// lcd\_puts("NOT RAINING");

if(PINA.0){

lcd\_clear();

lcd\_gotoxy(3,0);

lcd\_puts("BE ALERT!");

PORTB.3=1;

//if(i<100)

//OCR0= 50;

//else if(i<200)

//OCR0=150;

//else

//OCR0=255;

}

else if(!PINA.0){

PORTB.3=0;

lcd\_clear();

lcd\_gotoxy(2,0);

lcd\_puts("NOT RAINING");

}

if(PINB.0==1){

PORTD.0=1;

//OCR0=255;

}

else{

PORTD.0=0;

}

//PORTB.3=0;

i=0;

}

}