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\* reader.c

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#include <avr/io.h>

#include <avr/pgmspace.h>

#include <util/delay.h>

#include "lcd.h"

void InitADC()

{

ADMUX=(1<<REFS0); // For Aref=AVcc;

ADCSRA=(1<<ADEN)|(1<<ADPS2)|(1<<ADPS1)|(1<<ADPS0); // div factor =128

}

int ReadADC0( int ch0)

{

//Select ADC Channel ch must be 0-7

ch0=ch0&0b00000000;

ADMUX&=0b11100000;

ADMUX|=ch0;

//Start Single conversion

ADCSRA|=(1<<ADSC);

//Wait for conversion to complete

while(!(ADCSRA & (1<<ADIF)));

ADCSRA|=(1<<ADIF);

return(ADC);

}

int ReadADC1( int ch1) // uint8\_t

{

//Select ADC Channel ch must be 0-7

ch1=ch1&0b00000001;

ADMUX&=0b11100000;

ADMUX|=ch1;

//Start Single conversion

ADCSRA|=(1<<ADSC);

//Wait for conversion to complete

while(!(ADCSRA & (1<<ADIF)));

ADCSRA|=(1<<ADIF);

return(ADC);

}

int ReadADC2(int ch2)

{

//Select ADC Channel ch must be 0-7

ch2=ch2&0b00000010;

ADMUX&=0b11100000;

ADMUX|=ch2;

//Start Single conversion

ADCSRA|=(1<<ADSC);

//Wait for conversion to complete

while(!(ADCSRA & (1<<ADIF)));

ADCSRA|=(1<<ADIF);

return(ADC);

}

int ReadADC3( int ch3)

{

//Select ADC Channel ch must be 0-7

ch3=ch3&0b00000011;

ADMUX&=0b11100000;

ADMUX|=ch3;

//Start Single conversion

ADCSRA|=(1<<ADSC);

//Wait for conversion to complete

while(!(ADCSRA & (1<<ADIF)));

ADCSRA|=(1<<ADIF);

return(ADC);

}

int ReadADC4( int ch4)

{

//Select ADC Channel ch must be 0-7

ch4=ch4&0b00000100;

ADMUX&=0b11100000;

ADMUX|=ch4;

//Start Single conversion

ADCSRA|=(1<<ADSC);

//Wait for conversion to complete

while(!(ADCSRA & (1<<ADIF)));

ADCSRA|=(1<<ADIF);

return(ADC);

}

int ReadADC5( int ch5)

{

//Select ADC Channel ch must be 0-7

ch5=ch5&0b00000101;

ADMUX&=0b11100000;

ADMUX|=ch5;

//Start Single conversion

ADCSRA|=(1<<ADSC);

//Wait for conversion to complete

while(!(ADCSRA & (1<<ADIF)));

ADCSRA|=(1<<ADIF);

return(ADC);

}

int ReadADC6( int ch6) // uint8\_t

{

//Select ADC Channel ch must be 0-7

ch6=ch6&0b00000110;

ADMUX&=0b11100000;

ADMUX|=ch6;

//Start Single conversion

ADCSRA|=(1<<ADSC);

//Wait for conversion to complete

while(!(ADCSRA & (1<<ADIF)));

ADCSRA|=(1<<ADIF);

return(ADC);

}

int ReadADC7( int ch7)

{

//Select ADC Channel ch must be 0-7

ch7=ch7&0b00000111;

ADMUX&=0b11100000;

ADMUX|=ch7;

//Start Single conversion

ADCSRA|=(1<<ADSC);

//Wait for conversion to complete

while(!(ADCSRA & (1<<ADIF)));

ADCSRA|=(1<<ADIF);

return(ADC);

}

void main()

{

LCD\_Init();

//Initialize ADC

InitADC();

//LCDClear();

LCD\_Clear();

LCD\_String\_xy( 0,0 ,"\* Enter your \*");

LCD\_String\_xy( 1,0 ,"\*\* Card \*\*");

*\_delay\_ms*(500);

LCD\_Clear();

LCD\_String\_xy( 0,0 ,"\*\* Prescription \*\*");

while(1){

int x1 = ReadADC0(1) ;

int x2 = ReadADC1(2);

int x3 = ReadADC2(3);

int x4 = ReadADC3(4);

int q1 = ReadADC4(5);

int q2 = ReadADC5(6);

int q3 = ReadADC6(7);

int d = ReadADC7(0); //d is considered as the start bit

if(d>800)

{

//\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*getting the Correct medicine\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

if(x4<800 && x3<800 && x2<800 && x1<800) //0000

{

LCD\_String\_xy( 1,0 ," ");

}

else if(x4<800 && x3<800 && x2<800 && x1>800) //0001

{

LCD\_String\_xy( 1,0, " Panadol ");

}else if(x4<800 && x3<800 && x2>800 && x1<800) //0010

{

LCD\_String\_xy( 1,0 ," Nizoral ");

}else if(x4<800 && x3<800 && x2>800 && x1>800) //0011

{

LCD\_String\_xy( 1,0 ," Amoxicillin ");

}else if(x4<800 && x3>800 && x2<800 && x1<800) //0100

{

LCD\_String\_xy( 1,0 ," Cetirizine ");

}else if(x4<800 && x3>800 && x2<800 && x1>800) //0101

{

LCD\_String\_xy( 1,0 ," Thyroxine ");

}else if(x4<800 && x3>800 && x2>800 && x1<800) //0110

{

LCD\_String\_xy( 1,0 ," Losartan ");

}else if(x4<800 && x3>800 && x2>800 && x1>800) //0111

{

LCD\_String\_xy( 1,0 ," Atorvastatin ");

}else if(x4>800 && x3<800 && x2<800 && x1<800) //1000

{

LCD\_String\_xy( 1,0 ," Piriton ");

}else if(x4>800 && x3<800 && x2<800 && x1>800) //1001

{

LCD\_String\_xy( 1,0 ," Vitamin C ");

}else if(x4>800 && x3<800 && x2>800 && x1<800) //1010

{

LCD\_String\_xy( 1,0 ," Zincovit ");

}else if(x4>800 && x3<800 && x2>800 && x1>800) //1011

{

LCD\_String\_xy( 1,0 ," Digene ");

}else if(x4>800 && x3>800 && x2<800 && x1<800) //1100

{

LCD\_String\_xy( 1,0 ," Gaviscon ");

}else if(x4>800 && x3>800 && x2<800 && x1>800) //1101

{

LCD\_String\_xy( 1,0 ," Imodium ");

}else if(x4>800 && x3>800 && x2>800 && x1<800) //1110

{

LCD\_String\_xy( 1,0 ," Mefenamic Acid ");

}else

{

LCD\_String\_xy( 1,0 ," "); //1111

}

//\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Getting the quantity\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

if(q3<800 && q2<800 && q1<800 ) //000

{

LCD\_String\_xy( 16,0 ," ");

}

else if(q3<800 && q2<800 && q1>800 ) //001

{

LCD\_String\_xy( 16,0 ," Qty 5mg ");

}else if(q3<800 && q2>800 && q1<800 ) //010 Qty 100mg

{

LCD\_String\_xy( 16,0 ," Qty 100mg ");

}else if(q3<800 && q2>800 && q1>800 )

{

LCD\_String\_xy( 16,0 ," Qty 200mg "); //011 Qty 200mg

}else if(q3>800 && q2<800 && q1<800 )

{

LCD\_String\_xy( 16,0 ," Qty 500mg "); //100 Qty 500mg

}else if(q3>800 && q2<800 && q1>800 )

{

LCD\_String\_xy( 16,0 ," Qty 150mg "); //101 Qty 150mg

}else if(q3>800 && q2>800 && q1<800 )

{

LCD\_String\_xy( 16,0 ," Qty 250mg ");; //110 Qty 250mg

}else

{

LCDWriteFStringXY(16,1,PSTR(" "));

}

}

}

}