/\* Ultrasonic Sensor Interfacing with firebird v Robot using 8051 \*/

\* Done by SVIETIANS\*/

#include<reg51.h>

#include<intrins.h>

#define lcd\_data P2

sfr16 DPTR=0x82;

sbit trig=P3^5;

sbit echo=P3^2;

unsigned int range=0;

sbit rs=P0^0;

sbit rw=P0^1;

sbit en=P0^2;

void lcd\_init();

void cmd(unsigned char a);

void dat(unsigned char b);

void show(unsigned char \*s);

void lcd\_delay();

void lcd\_init()

{

cmd(0x38);

cmd(0x0e);

cmd(0x06);

cmd(0x0c);

cmd(0x80);

}

void cmd(unsigned char a)

{

lcd\_data=a;

rs=0;

rw=0;

en=1;

lcd\_delay();

en=0;

}

void dat(unsigned char b)

{

lcd\_data=b;

rs=1;

rw=0;

en=1;

lcd\_delay();

en=0;

}

void show(unsigned char \*s)

{

while(\*s)

{

dat(\*s++);

}

}

void lcd\_delay()

{

unsigned int i;

for(i=0;i<=1000;i++);

}

void send\_pulse(void)

{

TH0=0x00;TL0=0x00;

trig=1;

\_nop\_();\_nop\_();\_nop\_();\_nop\_();\_nop\_();

\_nop\_();\_nop\_();\_nop\_();\_nop\_();\_nop\_();

trig=0;

}

unsigned char ultrasonic()

{

unsigned char get;

send\_pulse();

while(!echo);

while(echo);

DPH=TH0;

DPL=TL0;

TH0=TL0=0xff;

if(DPTR<38000)

get=DPTR/59;

else

get=0;

return get;

}

void main()

{

TMOD=0x09;

TH0=TL0=0;

TR0=1;

lcd\_init();

show("DIS");

P3|=(1<<2);

while(1) {

cmd(0x84);

range=ultrasonic();

dat((range/100)+48);

dat(((range/10)%10)+48);

dat((range%10)+48);

}

}