//testng i2c.h

#include<reg51.h>

#include<intrins.h>

sbit scl = P3^2;

sbit sda = P3^3;

void delay\_1ms(int);

void i2c\_start(void)

{

scl =1;

sda =1;

sda =0;

}

void i2c\_stop(void)

{

sda =0;

scl =1;

sda =1;

}

void i2c\_bytewrite(unsigned char d)

{

unsigned char j;

for(j=0;j<8;j++)

{

scl = 0;

sda = d&(0x80>>j)?1:0;

scl = 1;

}

}

unsigned char i2c\_byteread(void)

{

unsigned char j,buf=0;

for(j=0;j<8;j++)

{

scl =0;

\_nop\_();//due to clock stretching

scl =1;

if(sda)

buf|=(0x80>>j);

}

return buf;

}

void i2c\_ack(void)

{

scl =0;

sda =1;

scl =1;

//while(sda==1);//waiting for acknowledgement

scl =0;

}

void i2c\_noack(void)

{

scl =0;

sda =1;

scl =1;

scl =0;

}

/\*

void i2c\_slave\_write(unsigned char sa,

unsigned char r\_addr,

unsigned char dat)

{

i2c\_start();

i2c\_bytewrite(sa);

i2c\_ack();

i2c\_bytewrite(r\_addr);

i2c\_ack();

i2c\_bytewrite(dat);

i2c\_ack();

i2c\_stop();

delay\_1ms(10);

}

\*/

unsigned char i2c\_slave\_read(unsigned char sa,

unsigned char r\_addr)

{

unsigned char buff;

//dummy write

i2c\_start();

i2c\_bytewrite(sa);

i2c\_ack();

i2c\_bytewrite(r\_addr);

i2c\_ack();

//read operation

i2c\_start();

i2c\_bytewrite(sa|1);

i2c\_ack();

buff=i2c\_byteread();

i2c\_noack();

i2c\_stop();

return buff;

}