# 源程序代码

#include<reg51.h>

#include<stdlib.h> /\*字符转数字\*/

#include<stdio.h> /\*goto语句需要用到\*/

#define uint unsigned int

#define uchar unsigned char

uint num,A\_num,x=0;

uint h,m,s;

uint h1=0,m1=0,s1=0,sign=1;

uchar code Zifu[]="0123456789";

sbit beep = P2^3;/\*蜂鸣器\*/

sbit LCD\_EN = P3^4;/\*LCD的E引脚\*/

sbit LCD\_RS = P3^5;/\*LCD的RS引脚\*/

sbit key\_A = P3^6;

sbit key\_B = P3^7;

/\*设置延时函数

\*/

void delay(uint i)

{

uchar j;

while(i--)

for(j=0;j<125;j++);

}

/\*下面的写命令和写数据都要求RW=0，所以将RW接地\*/

/\*写入命令

\*/

void write\_command(uchar command)

{

LCD\_RS = 0;

LCD\_EN = 0;/\*按规定RS和EN同时为0时才可以写入命令\*/

P0 = command;/\*将命令command写入P0口\*/

LCD\_EN = 1; /\*按规定写命令时，E应为正脉冲，即正跳变，所以前面先置E=0\*/

delay(2);/\*延迟，等待硬件反应\*/

LCD\_EN = 0; /\*E由高电平变为低电平，LCD开始执行命令\*/

/\*以上为\*常规操作\*/

}

/\*写数据

\*/

void write\_data(uchar shuju)

{

LCD\_RS = 1;/\*按规定RS=1和RW=0时可以写入数据\*/

LCD\_EN = 0;/\*规定写数据时，E应为正脉冲，所以先置E=0\*/

P0 = shuju;/\*将数据从P0口输出，即写入LCD\*/

LCD\_EN = 1; /\*E产生正跳变\*/

delay(2);/\*给硬件反应时间\*/

LCD\_EN = 0; /\*E由高电平变为低电平，写数据操作结束\*/

}

void lcd\_post(int X,int Y)

{

write\_command(0x80+X\*(0x40)+Y);

}

/\*液晶显示器初始化函数，设置开始文字：第一行“几点几时几分”；第二行“alarm clock”

选用方式二

晶振为11.0592M，每次中断时间为12/11.0592\*250,循环次数为3686,一共为1秒;如果晶振为12M，则循环次数为4000

\*/

void init()

{

h=m=s=0;

num=A\_num=0;

LCD\_EN=0;

write\_command(0x38); /\*显示模式设置（16\*2显示，5\*7点阵，）\*/

write\_command(0x0c); /\*写入命令0x0c:开整体显示，光标关，无黑块\*/

write\_command(0x06); /\*写入命令0x06:光标右移\*/

write\_command(0x01); /\*写入命令0x01:清屏\*/

TMOD = 0x02;/\*定时器T0工作方式2，最长定时256微秒，不用重新置数\*/

TH0 = 6;

TL0 = 6;

EA = 1;

ET0 = 1;

TR0 = 1;

/\*第一行\*/

/\*时\*/

lcd\_post(0,0); write\_data(Zifu[h/10]);

lcd\_post(0,1); write\_data(Zifu[h%10]);

lcd\_post(0,2); write\_data(':');

/\*分\*/

lcd\_post(0,3); write\_data(Zifu[m/10]);

lcd\_post(0,4); write\_data(Zifu[m%10]);

lcd\_post(0,5); write\_data(':');

/\*秒\*/

lcd\_post(0,6); write\_data(Zifu[s/10]);

lcd\_post(0,7); write\_data(Zifu[s%10]);

/\*第二行\*/

lcd\_post(1,5); write\_data('a');

lcd\_post(1,6); write\_data('l');

lcd\_post(1,7); write\_data('a');

lcd\_post(1,8); write\_data('r');

lcd\_post(1,9); write\_data('m');

lcd\_post(1,10); write\_data(' ');

lcd\_post(1,11); write\_data('c');

lcd\_post(1,12); write\_data('l');

lcd\_post(1,13); write\_data('o');

lcd\_post(1,14); write\_data('c');

lcd\_post(1,15); write\_data('k');

}

/\*铃响时

\*/

void ling()

{

unsigned char a;

for(a=0;a<60;a++) /\*响铃持续一分钟(蜂鸣器响停60次)\*/

{

if((P1&0x80)==0)/\*若第三个键被按下，停止响铃\*/

break;

/\*“ling ling”闪烁，蜂鸣器嘟嘟响

\*/

lcd\_post(1,5); write\_data('l');

lcd\_post(1,6); write\_data('i');

lcd\_post(1,7); write\_data('n');

lcd\_post(1,8); write\_data('g');

lcd\_post(1,9); write\_data('!');

lcd\_post(1,10); write\_data(' ');

lcd\_post(1,11); write\_data('l');

lcd\_post(1,12); write\_data('i');

lcd\_post(1,13); write\_data('n');

lcd\_post(1,14); write\_data('g');

lcd\_post(1,15); write\_data('!');

beep=0;

delay(500);

lcd\_post(1,5); write\_data(' ');

lcd\_post(1,6); write\_data(' ');

lcd\_post(1,7); write\_data(' ');

lcd\_post(1,8); write\_data(' ');

lcd\_post(1,9); write\_data(' ');

lcd\_post(1,10); write\_data(' ');

lcd\_post(1,11); write\_data(' ');

lcd\_post(1,12); write\_data(' ');

lcd\_post(1,13); write\_data(' ');

lcd\_post(1,14); write\_data(' ');

lcd\_post(1,15); write\_data(' ');

beep=1;

delay(500);

}

/\*响铃停止，第二行变成显示“alarm clock”

\*/

lcd\_post(1,5); write\_data('a');

lcd\_post(1,6); write\_data('l');

lcd\_post(1,7); write\_data('a');

lcd\_post(1,8); write\_data('r');

lcd\_post(1,9); write\_data('m');

lcd\_post(1,10); write\_data(' ');

lcd\_post(1,11); write\_data('c');

lcd\_post(1,12); write\_data('l');

lcd\_post(1,13); write\_data('o');

lcd\_post(1,14); write\_data('c');

lcd\_post(1,15); write\_data('k');

}

/\*按键扫描识别、延时消抖

\*/

void keyscan()

{

if(key\_A==0)

{

delay(3);

if(key\_A==0)

{

A\_num++;

switch(A\_num)

{

case 1:

TR0=0;

lcd\_post(0,1);

write\_command(0x0f);/\*显示光标\*/

break;

case 2:lcd\_post(0,4);break;

case 3:lcd\_post(0,7);break;

case 4:

A\_num=0;

write\_command(0x0c);/\*设置开显示，不显示光标\*/

TR0=1;

sign = 0;

break;

}

}

while(!key\_A);

}

if(A\_num!=0)

{

if(key\_B==0)

{

delay(3);

if(key\_B==0)

{

switch(A\_num)

{

case 1:

h1=(++h1)%24;

lcd\_post(0,0); write\_data(Zifu[h1/10]);

lcd\_post(0,1); write\_data(Zifu[h1%10]);

break;

case 2:

m1=(++m1)%60;

lcd\_post(0,3); write\_data(Zifu[m1/10]);

lcd\_post(0,4); write\_data(Zifu[m1%10]);

break;

case 3:

s1=(++s1)%60;

lcd\_post(0,6); write\_data(Zifu[s1/10]);

lcd\_post(0,7); write\_data(Zifu[s1%10]);

break;

case 4:sign = 0;break;

}write\_command(0x10);

}

while(!key\_B);

}

}

}

/\*主函数

\*/

void main()

{

int clk1 =0;

int clk2 =0;

there:

beep=0;

init();

h1=m1=s1=0;

while(sign)

{

keyscan();

}

clk1 = 0;

clk2 = h1\*3600+m1\*60+s1;

init();

while(1)

{

if(num==3686)/\*1秒\*/

{

num=0;

s++;

clk1++;

if(clk1 == clk2)

{

ling();

sign = 1;

goto there; /\*if条件成立时，程序中断，回到there标号语句\*/

}

if(s==60)

{

s=0;

m++;

if(m==60)

{

m=0;

h++;

if(h==24)h=0;

lcd\_post(0,0); write\_data(Zifu[h/10]);

lcd\_post(0,1); write\_data(Zifu[h%10]);

}

lcd\_post(0,3); write\_data(Zifu[m/10]);

lcd\_post(0,4); write\_data(Zifu[m%10]);

}

lcd\_post(0,6); write\_data(Zifu[s/10]);

lcd\_post(0,7); write\_data(Zifu[s%10]);

}

}

}

/\*中断函数

\*/

void T0\_time() interrupt 1

{

num++;}