

**《微型计算机技术及应用》**

**课程设计报告**

专业班级 电子171

小组组别 第10组

小组成员 李伟锋 王兴茂 李阳

2018 年 7 月 5日

1. **功能简介**

A-Z通过键盘输入 backspace回退 按下shift键并同时按下A-Z为小写 定时清屏

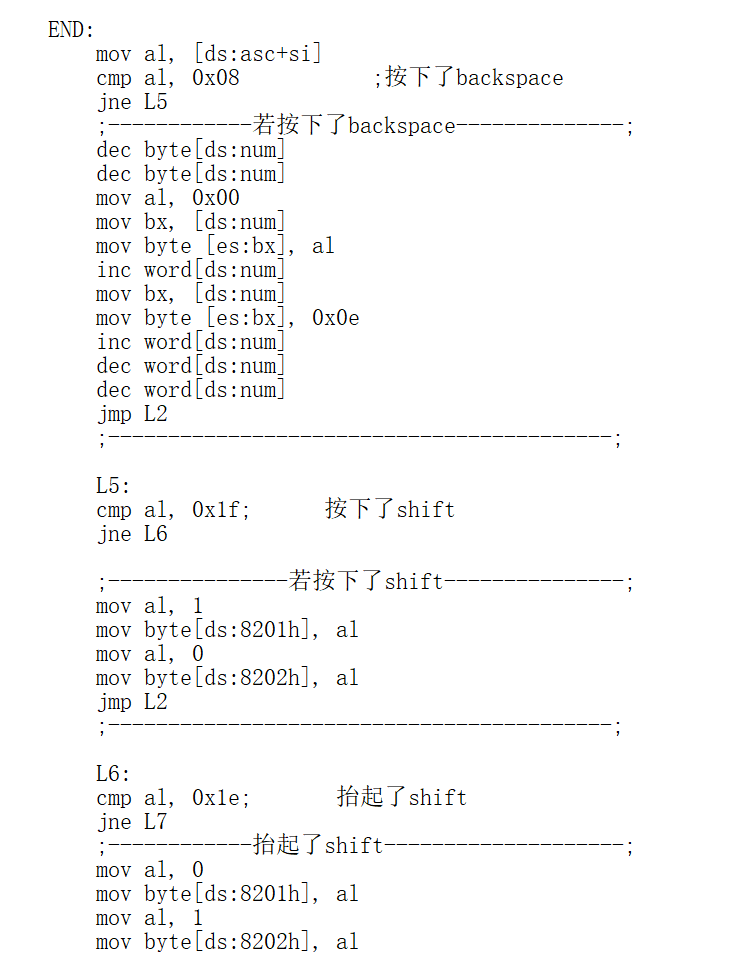
1. **代码简介**

**设置中断及键盘输入**

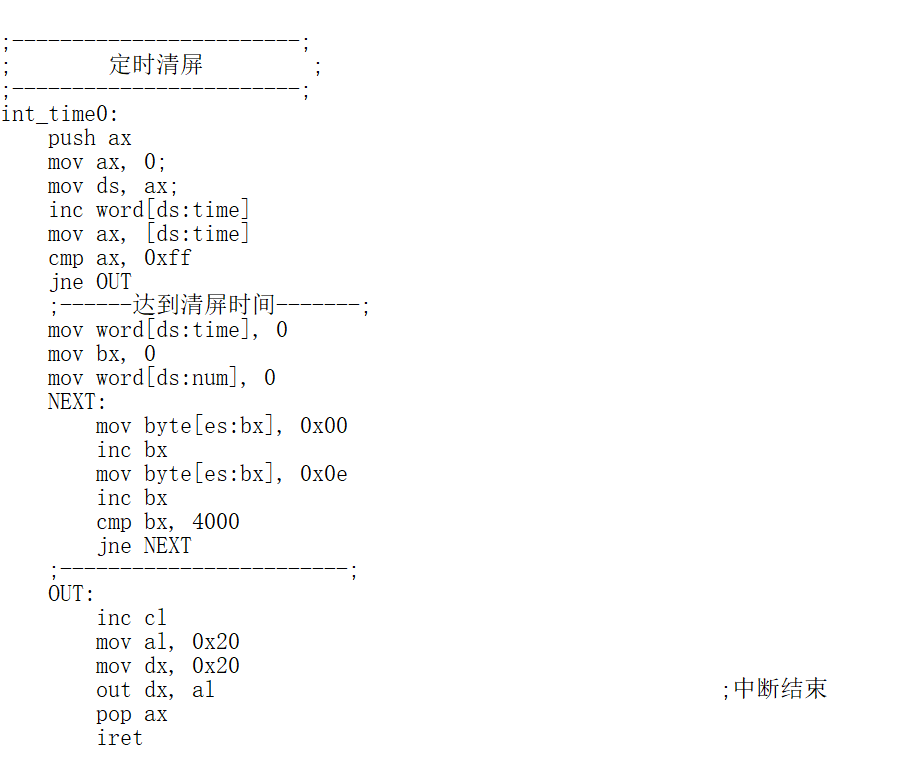
![C:\Users\66\Documents\Tencent Files\2806104637\Image\C2C\7A}%G](TK)%[$JR_6[O)1{B.png](data:image/png;base64,)



**shift键控制大小写**



**定时清屏模块**：



1. **程序代码**

**org 0x8400**

**num dw 0x00 ;记录键盘中断次数**

**time dw 0x00**

**key\_code db 0x1e,0x30,0x2e,0x20,0x12,0x21,0x22,0x23,0x17,0x24,0x25,0x26,0x32,0x31,0x18,0x19,0x10,0x13,0x1f,0x14,0x16,0x2f,0x11,0x2d,0x15,0x2c,0x0b,0x02,0x03,0x04,0x05,0x06,0x07,0x08,0x09,0x0a,0x29,0x0c,0x0d,0x2b,0x0e,0x39,0x2a,0xaa**

**asc db 0x41,0x42,0x43,0x44,0x45,0x46,0x47,0x48,0x49,0x4a,0x4b,0x4c,0x4d,0x4e,0x4f,0x50,0x51,0x52,0x53,0x54,0x55,0x56,0x57,0x58,0x59,0x5a,0x30,0x31,0x32,0x33,0x34,0x35,0x36,0x37,0x38,0x39,0x60,0x2d,0x3d,0x5c,0x08,0x20,0x1f,0x1e**

**key\_num db 44**

**i db 0x00**

**shif db 0x00**

**shifup db 0x00**

**jmp start**

**start:**

**sti ;开启中断**

**mov ax, 0xb800 ;显示起地址**

**mov es, ax**

**mov ax, 0**

**mov ds, ax**

**mov byte[ds:num], 0**

**mov word [ds:0x24], key\_scan ;键盘中断**

**mov word [ds:0x26], 0**

**mov word [ds:0x20], int\_time0**

**mov word [ds:0x22], 0**

**mov bx, 0**

**mov cl, 0x41**

**jmp $**

**key\_scan:**

**push ax**

**push bx**

**push dx**

**push ds**

**mov ax, 0**

**mov ds, ax**

**mov dx, 0x60 ;键盘控制器获得编码**

**in al, dx**

**mov [ds:8200h], al**

**CALL key\_cmp**

**L3:**

**mov dx, 0x20**

**mov al, 0x61**

**out dx, al**

**pop ds**

**pop dx**

**pop bx**

**pop ax**

**iret**

**key\_cmp:**

**mov ax, 0**

**mov ds, ax**

**mov [ds:i], ax**

**L1:**

**mov al, [ds:8200h]**

**mov si, [ds:i]**

**mov bl, [ds:key\_code+si]**

**cmp al, bl**

**je END**

**inc si**

**mov [ds:i], si**

**mov al, [ds:i]**

**mov bl, [ds:key\_num]**

**cmp al, bl**

**je L2**

**jne L1**

**END:**

**mov al, [ds:asc+si]**

**cmp al, 0x08 ;按下了backspace**

**jne L5**

**;------------若按下了backspace--------------;**

**dec byte[ds:num]**

**dec byte[ds:num]**

**mov al, 0x00**

**mov bx, [ds:num]**

**mov byte [es:bx], al**

**inc word[ds:num]**

**mov bx, [ds:num]**

**mov byte [es:bx], 0x0e**

**inc word[ds:num]**

**dec word[ds:num]**

**dec word[ds:num]**

**jmp L2**

**;------------------------------------------;**

**L5:**

**cmp al, 0x1f; 按下了shift**

**jne L6**

**;---------------若按下了shift---------------;**

**mov al, 1**

**mov byte[ds:8201h], al**

**mov al, 0**

**mov byte[ds:8202h], al**

**jmp L2**

**;------------------------------------------;**

**L6:**

**cmp al, 0x1e; 抬起了shift**

**jne L7**

**;------------抬起了shift--------------------;**

**mov al, 0**

**mov byte[ds:8201h], al**

**mov al, 1**

**mov byte[ds:8202h], al**

**jmp L2**

**;------------------------------------------;**

**L7:**

**cmp al, 0x41**

**jb L8 ;小于'A'**

**cmp al, 0x5A;**

**ja L8 ;高于'A'**

**mov bl, byte[ds:8201h]**

**cmp bl, 1**

**jne L8**

**add al, 32**

**L8:**

**mov bx, [ds:num]**

**mov byte[es:bx], al**

**inc word[ds:num]**

**mov bx, [ds:num]**

**mov byte[es:bx], 0x0e**

**inc word[ds:num]**

**L2:**

**ret**

**;------------------------;**

**; 定时清屏 ;**

**;------------------------;**

**int\_time0:**

**push ax**

**mov ax, 0;**

**mov ds, ax;**

**inc word[ds:time]**

**mov ax, [ds:time]**

**cmp ax, 0xff**

**jne OUT**

**;------达到清屏时间-------;**

**mov word[ds:time], 0**

**mov bx, 0**

**mov word[ds:num], 0**

**NEXT:**

**mov byte[es:bx], 0x00**

**inc bx**

**mov byte[es:bx], 0x0e**

**inc bx**

**cmp bx, 4000**

**jne NEXT**

**;------------------------;**

**OUT:**

**inc cl**

**mov al, 0x20**

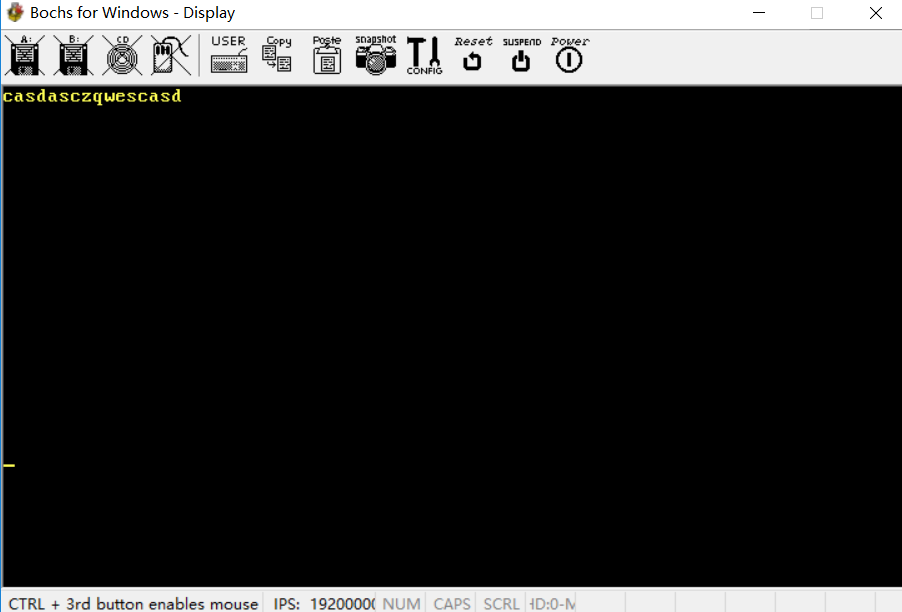
**mov dx, 0x20**

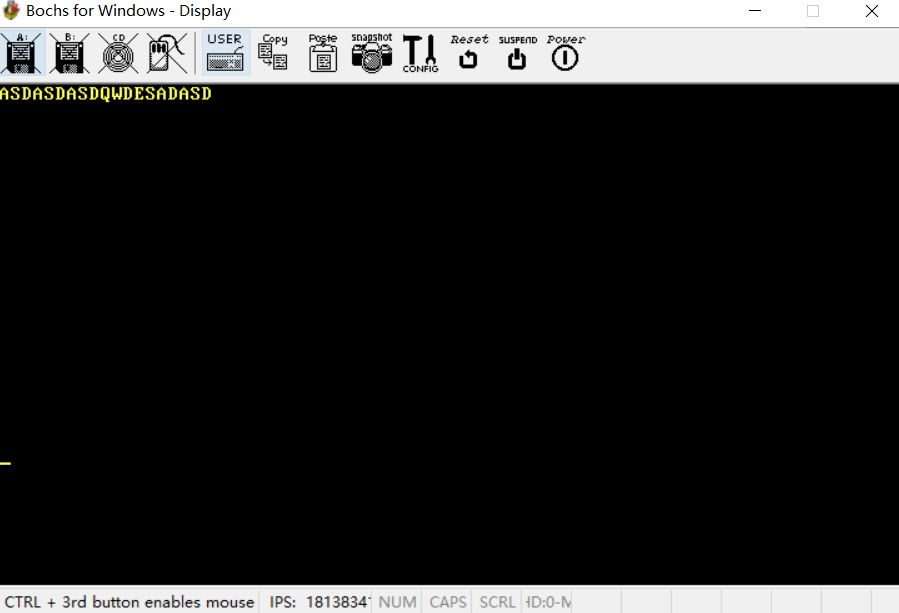
**out dx, al ;中断结束**

**pop ax**

**iret**

1. **测试结果**

****

****

1. **心得体会**

此次实践让我们对简单系统有了更多更深入的了解，让我们了解了中断，输入，输出，调色等知识。除此之外，提高了我们的合作能力和培养了对系统研究的兴趣。