上海大学计算机学院

《汇编语言程序设计》报告

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实验名称: _____建立并查找电话号码表_____

一、 实验任务

通过子程序设计要求编程建立一个电话号码表（含人名与电话号码两部分），并进行查找

二、实验内容

1. 编写程序，程序代码如下：

```
assume ds:data,cs:code,ss:stacks
data segment
    sum dw 0;记录当前电话簿中有多少联系人
    namemax db 20
    _length db ?
    _name db 20 dup(' ')
    tel_tab db 80 dup(20,?,20 dup(' '),32,12,?,12 dup(0),32);存储人名和电
话号码
    menu db 13,10,"---------------menu---------------",13,10,'$'
    menu1 db "Add a people to the table--------1",13,10,'$'
    menu2 db "Delete a people from table-------2",13,10,'$'
    menu3 db "Search a people from table-------3",13,10,'$'
    menu4 db "return------------------------0",13,10,'$'
    menu5 db "Please input num to choose: ",'$'
    temp db "Please input name: ","$"
    tel_num db 13,10,"Please input the phone_num: ","$"
    CRLF db 13,10,'$'
    method db "Please input name:",'$'
    temp6 db 13,10,"The table is empty!",'$'
    temp7 db 13,10,"Failed to find the people!",'$'
data ends
stacks segment stack
    dw 20 dup(?)
stacks ends

code segment
```

```
start:
    mov ax,data
    mov ds,ax
    mov ax,stacks
    mov ss,ax
main_loop:
    call show_men
    mov ah,1
    int 21H;从键盘输入数字选择
    push ax
    mov dx,offset CRLF
    mov ah,09h
    int 21H
    pop ax
    xor ah,ah
    cmp ax,0030h
    je return;如果输入的是 0，则结束程序
    cmp ax,0031h
    je loop1;如果输入的是 1，2，3，则进入子程序
    cmp ax,0032h
    je loop2
    cmp ax,0033h
    je loop3
    jmp main_loop
return:
    mov ah,4CH
    int 21H
loop1:
    call add_man
    jmp main_loop
loop2:
    call del_man
    jmp main_loop
loop3:
    call sear_man
    jmp main_loop

;输出菜单
show_men proc near
    mov dx,offset menu
    mov ah,09h
    int 21H
    mov dx,offset menu1
    mov ah,09h
```

```asm
        int 21H
        mov dx,offset menu2
        mov ah,09h
        int 21H
        mov dx,offset menu3
        mov ah,09h
        int 21H
        mov dx,offset menu4
        mov ah,09h
        int 21H
        mov dx,offset menu5
        mov ah,09h
        int 21H
        ret
show_men endp

;添加联系人
add_man proc near
        lea dx,temp
        mov ah,09h
        int 21H
        mov dx,offset tel_tab
        push sum
init:;初始化该联系人存放的内存位置
        cmp sum,0
        je add_loop
        add dx,38
        sub sum,1
        jmp init
add_loop:
        pop sum
        mov ah,0ah
        int 21H
        push dx
        mov dx,offset tel_num
        mov ah,09h
        int 21H
        pop dx
        add dx,23
        mov ah,0ah
        int 21h

        inc sum;计数器加一
        ret
```

```asm
add_man endp

;删除联系人
del_man proc near


    ret
del_man endp

;寻找联系人
sear_man proc near
    push sum;暂存联系人的人数
    mov dx,offset method
    mov ah,09h
    int 21H
    ;输入要寻找的联系人
    mov dx,offset namemax
    mov ah,0ah
    int 21H
    ;取出比较的次数
    mov cl,_length
    xor ch,ch
    ;初始化电话簿的地址
    mov si,offset tel_tab
    add si,2
    mov di,seg _name
    mov es,di
    mov di,offset _name
    mov bx,0
    cmp sum,0
    je sear_empty;如果sum一开始就为0，即为空的，肯定找不到
loop4:
    cmp sum,0;此时肯定不会满足条件，所以开始寻找
    je sear_fail
    inc bx
sear_cmp:
    push bx
    mov al,ds:[si]
    mov bl,es:[di]
    cmp al,bl
    pop bx
    jne nomatch
    inc si
    inc di
    loop sear_cmp
```

```asm
        jmp sear_suce
nomatch:
        add si,38
        mov di,offset _name
        sub sum,1
        jmp loop4

;查找成功
sear_suce:
        mov cx,bx
        sub cx,1
        mov si,offset tel_tab
_init:
        cmp cx,0
        je _output
        add si,38
        loop _init
_output:
        add si,25
        push si
        mov si,offset _name
        mov cl,_length
        xor ch,ch

        mov dx,offset CRLF
        mov ah,09h
        int 21H

_out_name:
        mov dl,ds:[si]
        mov ah,02h
        int 21H
        inc si
        loop _out_name

        pop si
        mov cx,11
        mov dl,' '
        mov ah,02h
        int 21H
_out_number:
        mov dl,ds:[si]
        mov ah,02h
        int 21H
```
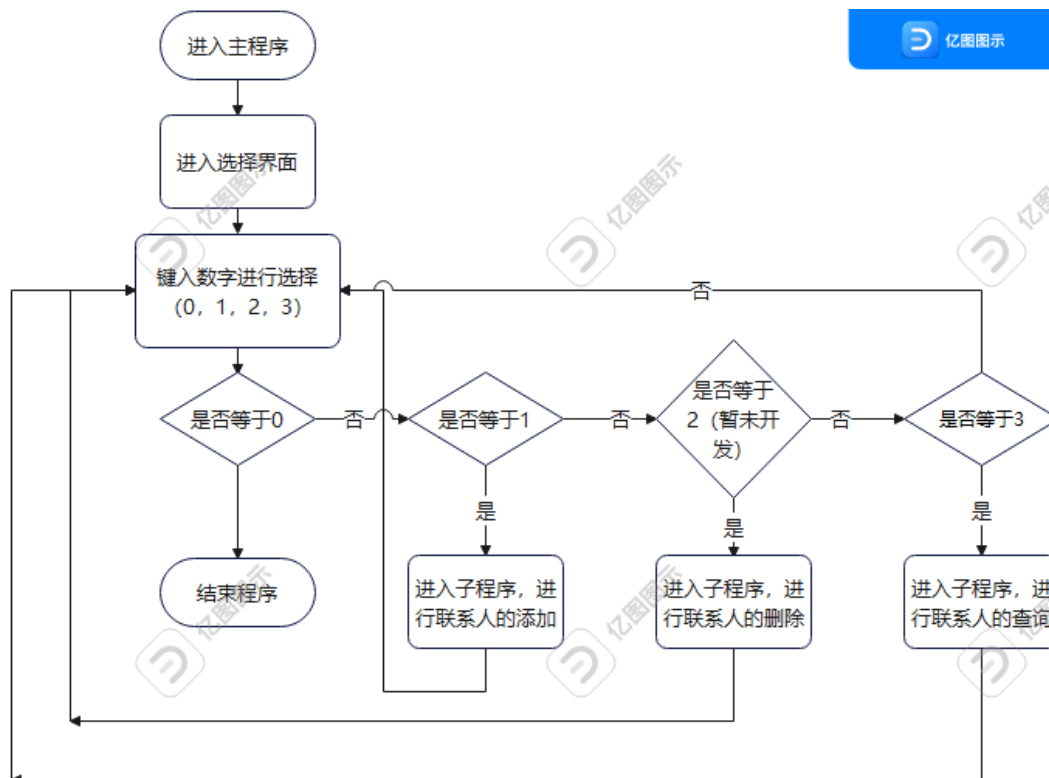
```
        inc si
        loop _out_number
sear_exit:
        pop sum
        ret
;查找失败
sear_fail:
        mov dx,offset temp7
        mov ah,09h
        int 21H
        jmp sear_exit
;表为空
sear_empty:
        mov dx,offset temp6
        mov ah,09h
        int 21H
        jmp sear_exit
sear_man endp
code ends
end start
```
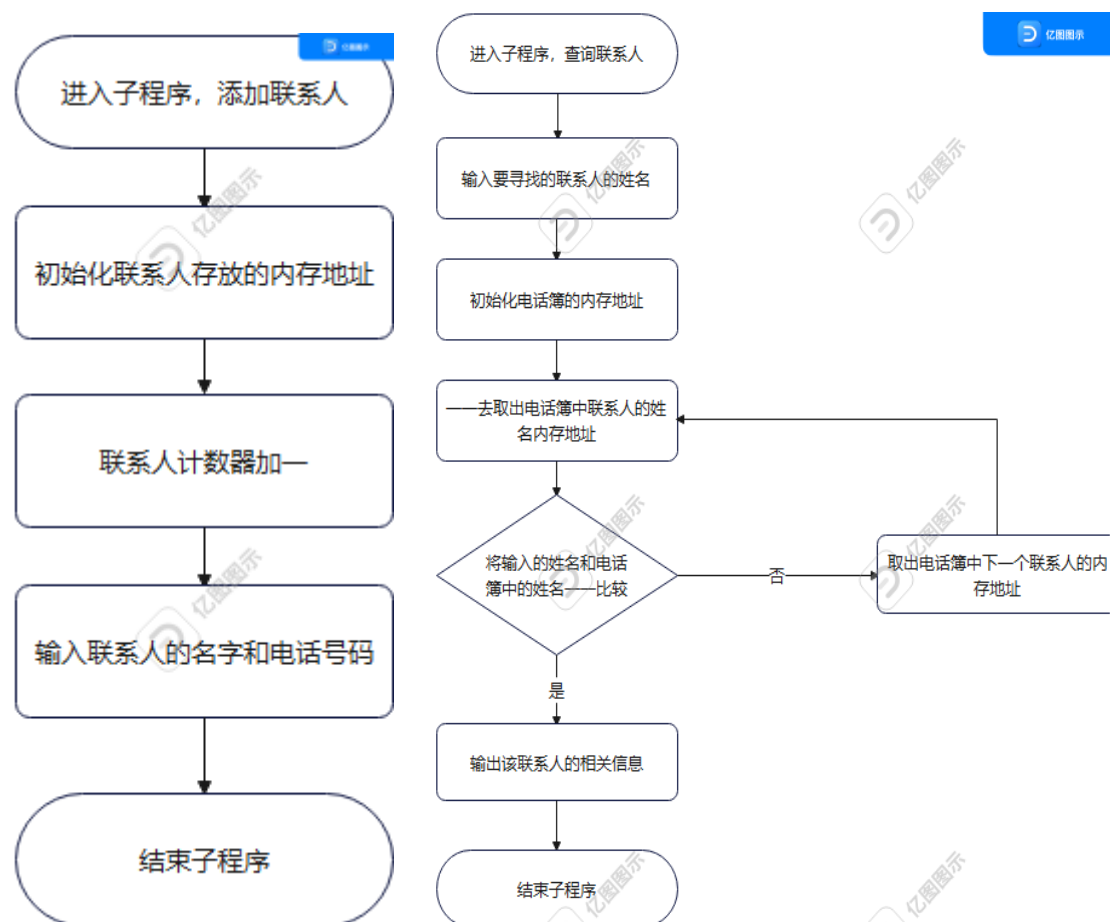
2. 画出代码的流程图

主程序流程图：

子程序流程图：

进入子程序，添加联系人

↓

初始化联系人存放的内存地址

↓

联系人计数器加一

↓

输入联系人的名字和电话号码

↓

结束子程序

进入子程序，查询联系人

↓

输入要寻找的联系人的姓名

↓

初始化电话簿的内存地址

↓

——去取出电话簿中联系人的姓名内存地址

↓

将输入的姓名和电话簿中的姓名——比较

否 → 取出电话簿中下一个联系人的内存地址

是 ↓

输出该联系人的相关信息

↓

结束子程序

3. 执行结果


```
-----------------menu-----------------
Add a people to the table--------1
Delete a people from table-------2
Search a people from table-------3
return---------------------------0
Please input num to choose: _
```

```
return----------------------------0
Please input num to choose: 1
Please input name: Tom
Please input the phone_num: 12345454567
------------------menu----------------
Add a people to the table--------1
Delete a people from table-------2
Search a people from table-------3
return----------------------------0
Please input num to choose: 1
Please input name: Jack
Please input the phone_num: 23412342132
------------------menu----------------
Add a people to the table--------1
Delete a people from table-------2
Search a people from table-------3
return----------------------------0
```

```
return                            0
Please input num to choose: 3
Please input name:asd
Failed to find the people!
------------------menu----------------
Add a people to the table--------1
Delete a people from table-------2
Search a people from table-------3
return----------------------------0
```

```
------------------menu----------------
Add a people to the table--------1
Delete a people from table-------2
Search a people from table-------3
return---------------------------0
Please input num to choose: 3
Please input name:kirito
kirito 17698266260
------------------menu----------------
Add a people to the table--------1
Delete a people from table-------2
Search a people from table-------3
return---------------------------0
```