Lab # 4

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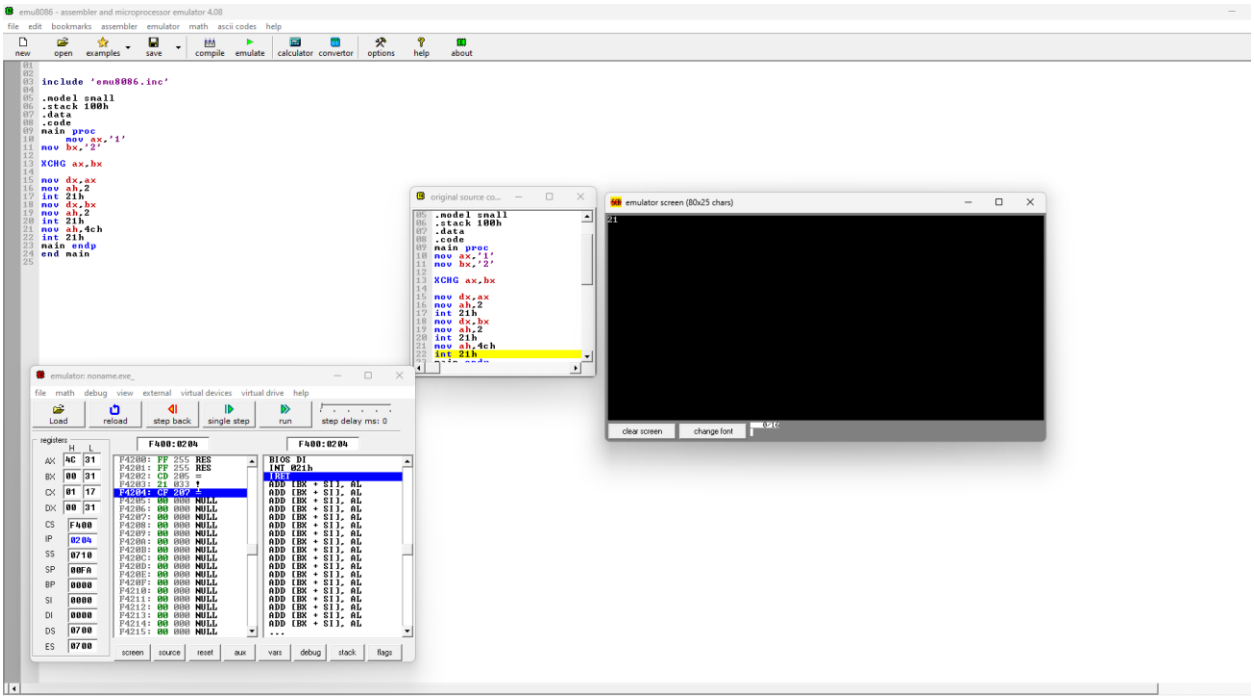
Computer Organization & Assembly Language

Q1. You need to transfer values between registers and swap the contents of two registers using the MOV and XCHG instructions.

```
include 'emu8086.inc'


.model small
.stack 100h
.data
.code
main proc
   mov ax,'1'
mov bx,'2'


XCHG ax,bx


mov dx,ax
mov ah,2
int 21h
mov dx,bx
mov ah,2
int 21h
mov ah,4ch
int 21h
main endp
```

end main



Q2. You want to subtract two numbers stored in registers and store the result in another register using the SUB instruction.

include 'emu8086.inc'

.model small

.stack 100h

.data

.code

main proc

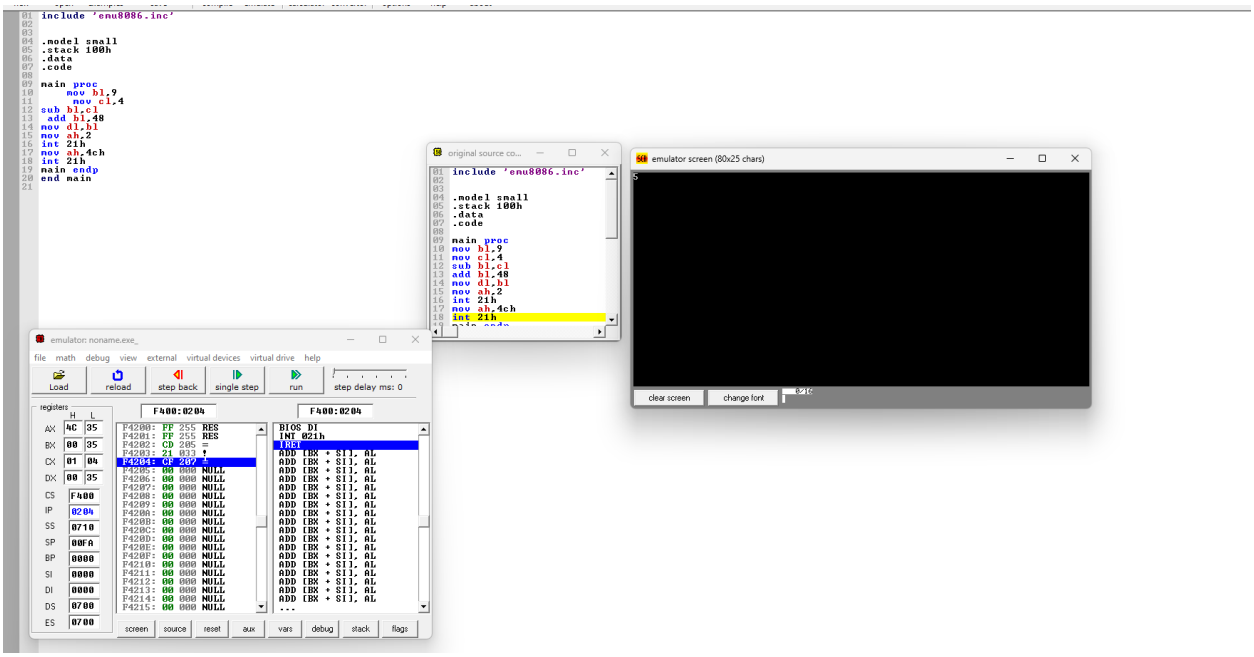
mov bl,9

mov cl,4

sub bl,cl

add bl,48

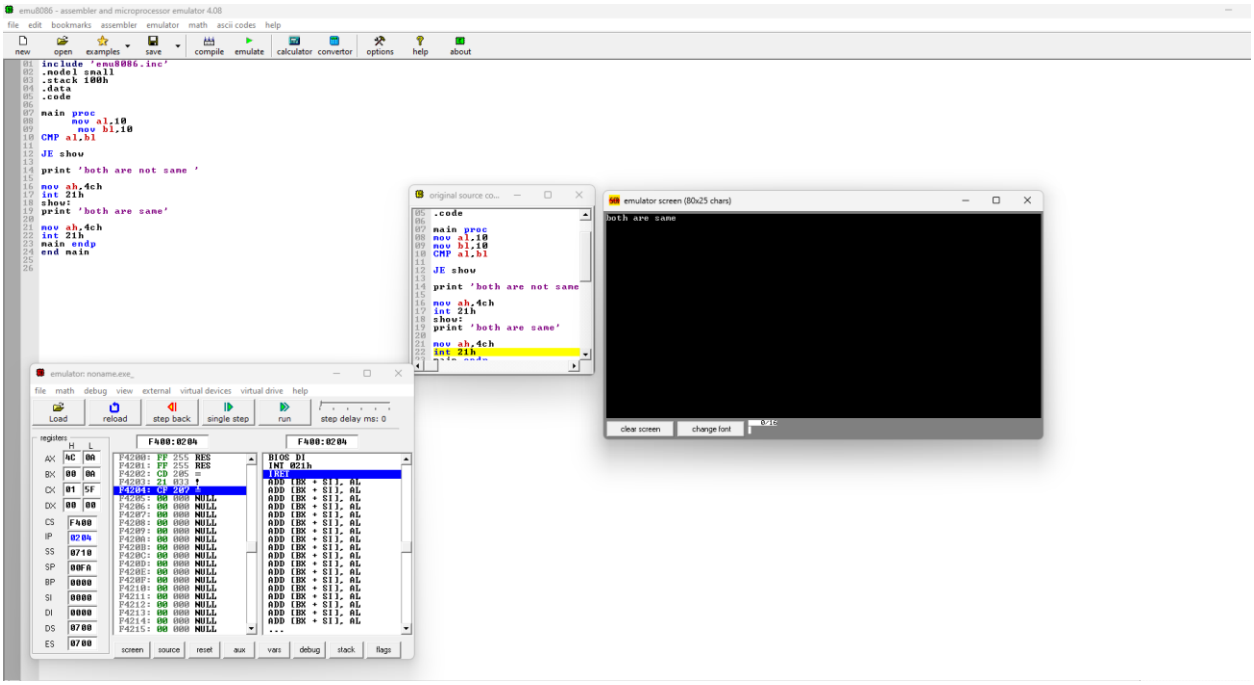
```
mov dl,bl

mov ah,2

int 21h

mov ah,4ch

int 21h

main endp

end main
```



Q3. You need to compare two values and jump to a different part of the program if they are equal using CMP and JE.

```
include 'emu8086.inc'

.model small

.stack 100h

.data

.code


main proc

    mov al,10
```

```
    mov bl,10
CMP al,bl

JE show

print 'both are not same '

mov ah,4ch
int 21h
show:
print 'both are same'

mov ah,4ch
int 21h
main endp
end main
```

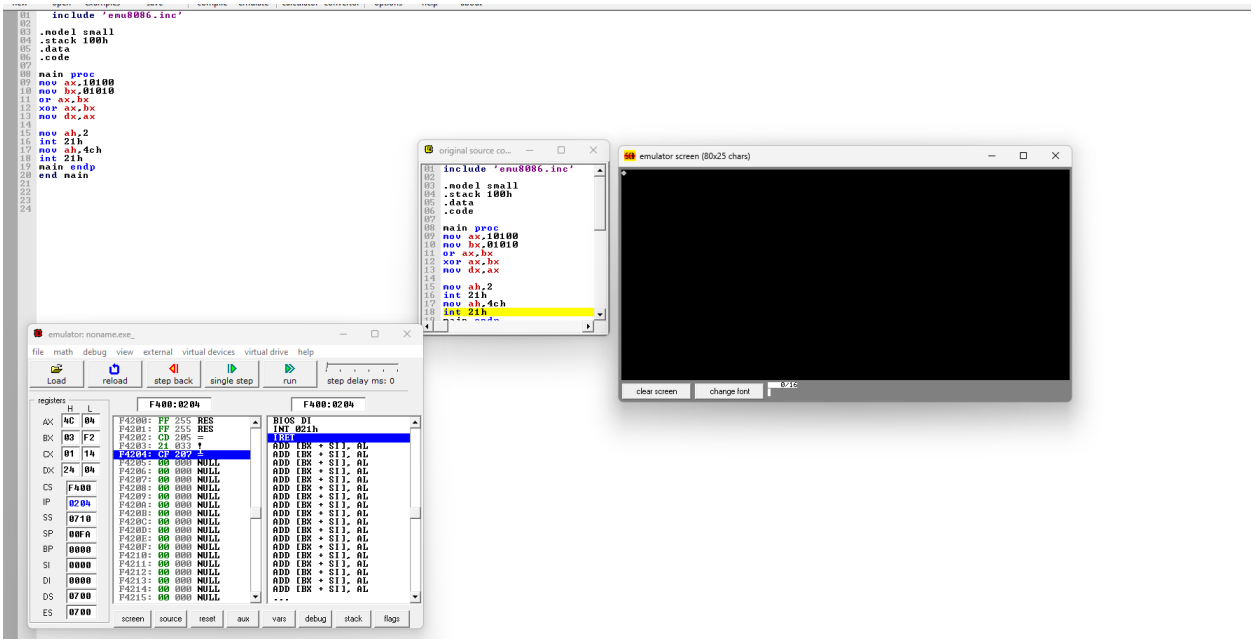


Q4. You need to manipulate bits in two registers. You will:

1. Set specific bits using the ORR instruction.

2. Toggle certain bits using the XOR instruction.

```
include 'emu8086.inc'

.model small
.stack 100h
.data
.code

main proc
mov ax,10100
mov bx,01010
or ax,bx
xor ax,bx
mov dx,ax

mov ah,2
int 21h
mov ah,4ch
int 21h
main endp
end main
```


include 'emu8086.inc'
.model small
.stack 100h
.data
.code
main proc
mov ax,10100
mov bx,01010
or ax,bx
xor ax,bx
mov dx,ax
mov ah,2
int 21h
mov ah,4ch
int 21h
main endp
end main
original source co...
emulator screen (80x25 chars)
clear screen
change font
emulator: noname.exe_
file math debug view external virtual devices virtual drive help
Load
reload
step back
single step
run
step delay ms: 0
registers
F400:0204
F400:0204
screen
source
reset
aux
vars
debug
stack
flags