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LAB TASK # 4

1. Practice code of LOOP

CODE:

```

DOSBox 0.74, Cpu speed: 3000 cycles, Frameskip 0, Program: EDIT
File Edit Search View Options Help
C:\F10.ASM
;program to print capital and small letters from Aa to Zz and numbers from 0-9;
dosseg
.model small
.stack 100h
.data
.code
main proc
mov cx,26
mov dx,65
l1:
mov ah,2
int 21h
inc dx
loop l1
mov dx,10
mov ah,2
int 21h
mov dx,13
mov ah,2
int 21h
mov cx,10
mov dx,48
l2:
mov ah,2
int 21h
inc dx
loop l2
mov dx,10
mov ah,2
int 21h
mov dx,13
mov ah,2
int 21h
mov cx,26
mov dx,97
l3:
mov ah,2
int 21h
inc dx
loop l3
mov ah,4ch
int 21h
main endp
end main
F1=Help | Line:42 Col:40

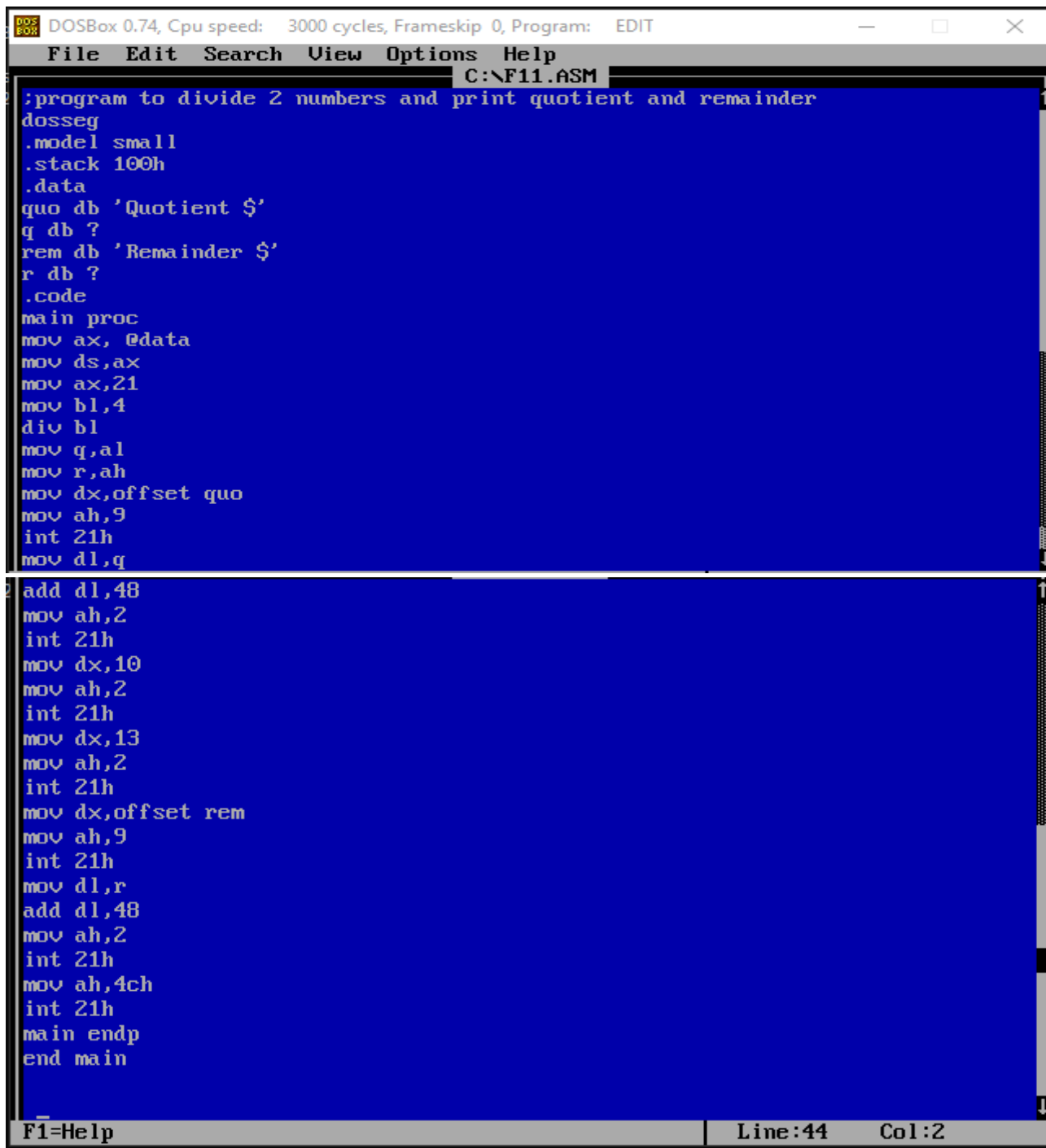
```

OUTPUT:

```
C:\>f10.exe
ABCDEFGH IJKLMNOPQRSTUVWXYZ
0123456789
abcdefghijklmnopqrstuvwxyz
C:\>
```

2. Practice code of DIV

CODE:

A screenshot of a DOSBox window titled "DOSBox 0.74, Cpu speed: 3000 cycles, Frameskip 0, Program: EDIT". The window shows an assembly program named "C:\F11.ASM". The program is designed to divide two numbers and print the quotient and remainder. It uses the DOS interrupt 21h for string output. The code is as follows:

```
;program to divide 2 numbers and print quotient and remainder
dosseg
.model small
.stack 100h
.data
quo db 'Quotient $'
q db ?
rem db 'Remainder $'
r db ?
.code
main proc
mov ax, @data
mov ds, ax
mov ax, 21
mov bl, 4
div bl
mov q, al
mov r, ah
mov dx, offset quo
mov ah, 9
int 21h
mov dl, q

add dl, 48
mov ah, 2
int 21h
mov dx, 10
mov ah, 2
int 21h
mov dx, 13
mov ah, 2
int 21h
mov dx, offset rem
mov ah, 9
int 21h
mov dl, r
add dl, 48
mov ah, 2
int 21h
mov ah, 4ch
int 21h
main endp
end main
```

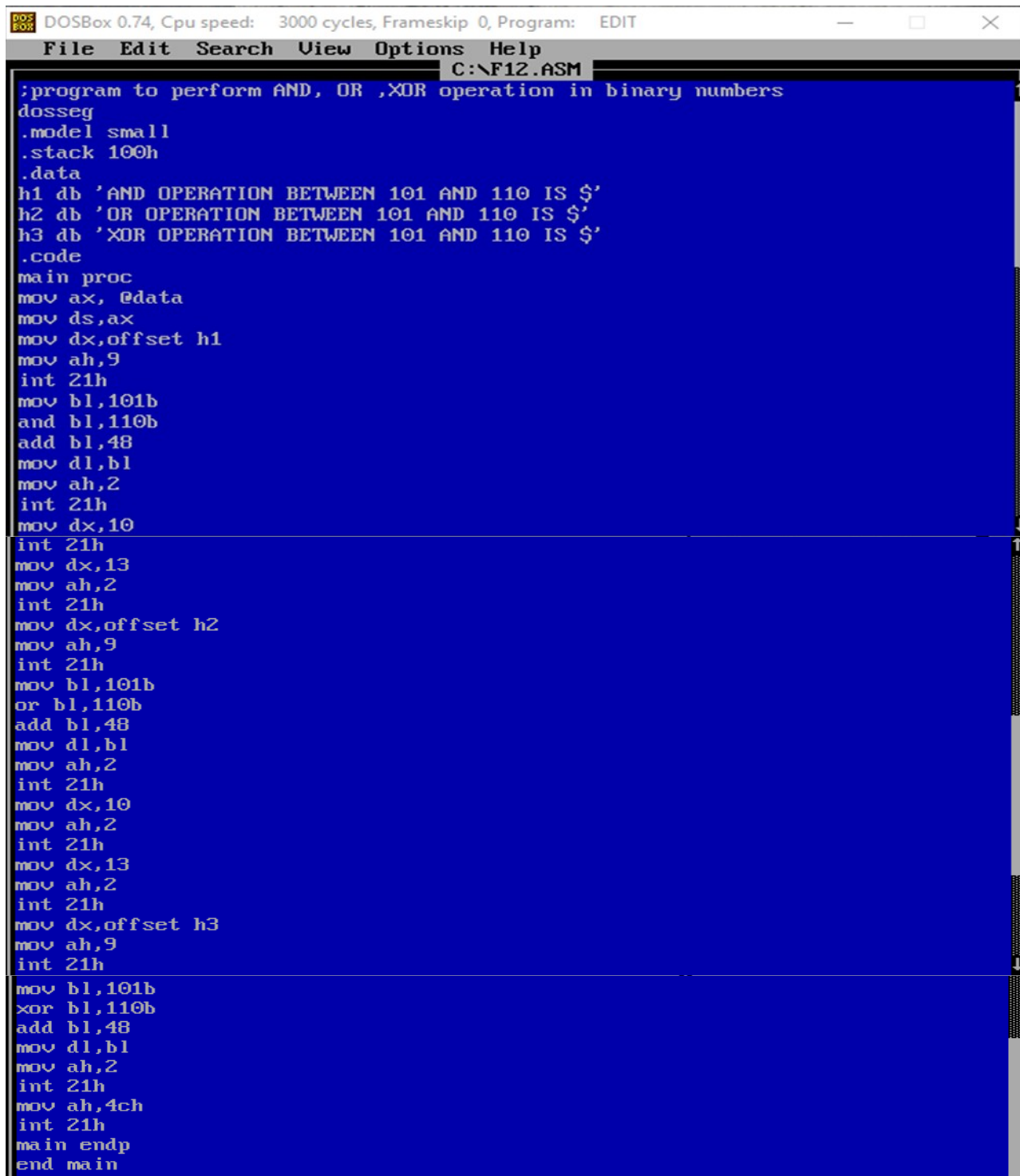
The status bar at the bottom of the window shows "F1=Help", "Line:44", and "Col:2".

OUTPUT:

```
C:\>f11.exe
Quotient 5
Remainder 1
C:\>
```

3. Practice of OR, AND, XOR

CODE:

The image shows a DOSBox window titled "DOSBox 0.74, Cpu speed: 3000 cycles, Frameskip 0, Program: EDIT". The window contains a text editor with a blue background and white text. The text is an assembly program for performing AND, OR, and XOR operations on binary numbers. The program starts with a comment: ";program to perform AND, OR ,XOR operation in binary numbers". It then defines a data segment with three strings: h1 for AND, h2 for OR, and h3 for XOR. The code section contains three procedures: main, and, or, and xor. Each procedure uses the INT 21h instruction to display the result of the operation. The main procedure calls the and, or, and xor procedures in sequence. The and procedure takes 101b and 110b as input and displays the result. The or procedure takes 101b and 110b as input and displays the result. The xor procedure takes 101b and 110b as input and displays the result. The program ends with the main endp and end main instructions.

```
DOSBox 0.74, Cpu speed: 3000 cycles, Frameskip 0, Program: EDIT
File Edit Search View Options Help
C:\NF12.ASM
;program to perform AND, OR ,XOR operation in binary numbers
dosseg
.model small
.stack 100h
.data
h1 db 'AND OPERATION BETWEEN 101 AND 110 IS $'
h2 db 'OR OPERATION BETWEEN 101 AND 110 IS $'
h3 db 'XOR OPERATION BETWEEN 101 AND 110 IS $'
.code
main proc
mov ax, @data
mov ds, ax
mov dx, offset h1
mov ah, 9
int 21h
mov bl, 101b
and bl, 110b
add bl, 48
mov dl, bl
mov ah, 2
int 21h
mov dx, 10
int 21h
mov dx, 13
mov ah, 2
int 21h
mov dx, offset h2
mov ah, 9
int 21h
mov bl, 101b
or bl, 110b
add bl, 48
mov dl, bl
mov ah, 2
int 21h
mov dx, 10
mov ah, 2
int 21h
mov dx, 13
mov ah, 2
int 21h
mov dx, offset h3
mov ah, 9
int 21h
mov bl, 101b
xor bl, 110b
add bl, 48
mov dl, bl
mov ah, 2
int 21h
mov ah, 4ch
int 21h
main endp
end main
```

OUTPUT:

```
C:\>f12.exe
AND OPERATION BETWEEN 101 AND 110 IS 4
OR OPERATION BETWEEN 101 AND 110 IS 7
XOR OPERATION BETWEEN 101 AND 110 IS 3
C:\>
```

4. Your code as discussed in today class

CODE:

```
DOSBox 0.74, Cpu speed: 3000 cycles, Frameskip 0, Program: EDIT
File Edit Search View Options Help
C:\NF14.ASM
dosseg
.model small
.stack 100h
.data
q db ?
r db ?
.code
main proc
mov ax, @data
mov ds, ax
mov cx, 4
l1:
mov ax, 9
mov bl, 2
div bl
mov q, al
mov r, ah
mov dl, q
add dl, 48
mov ah, 2
int 21h
mov dl, r
add dl, 48
mov ah, 2
int 21h
loop l1
mov dx, 10
mov ah, 2
int 21h
mov dx, 13
mov ah, 2
int 21h
mov cx, 3
l2:
mov bl, 111b
and bl, 101b
add bl, 48
mov dl, bl
mov ah, 2
int 21h
loop l2
mov ah, 4ch
int 21h
main endp
end main
F1=Help Line:46 Col:1
```

OUTPUT:

```
C:\>f14.exe  
41414141  
555  
C:\>_
```