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CLASS: BSSE (4th SEMESTER)
COURSE NAME: ASSEMBLY LANGUAGE
COURSE CODE: 402
DEPARTMENT: COMPUTER SCIENCE

Task 1: Write a program to draw shapes using graphics.

Program 1:

```
DOSBox 0.74, Cpu speed: 3000 cycles, Frameskip 0, Program: EDIT
File Edit Search View Options Help
E:\SQUARE.ASM
;Program to print square in assembly
dosseg
.model small
.stack 100h
.data
.code
main proc
mov ah,06h          ;scroll window up
mov al,5            ;5 line above
mov bh,01000001b    ;set color
mov ch,0            ;above row
mov cl,10           ;left column
mov dh,20           ;below row
mov dl,20           ;right column
int 10h             ;interrupt
mov ah,4ch
int 21h
main endp
end main
```

Output:

```
DOSBox 0.74, Cpu speed: 3000 cycles, Frameskip 0, Program: DOSBOX
quare.asm:
E:\>square(R) Macro A
(C) Microso
E:\>edit s
E:\>masm s464844 Byte
Microsoft      ssembler Version 5.00
Copyright rning Errorft Corp 1981-1985, 1987. All rights reserved.
vere Error

51700 + quare.obj: s symbol space free

0 Wa(R) Overlays
0 Se(C) Microsos
E:\>link s
Microsoft      Linker Version 3.60
Copyright      ft Corp 1983-1987. All rights reserved.

E:\>square.exe
```

Program 2:

```
DOSBox 0.74, Cpu speed: 3000 cycles, Frameskip 0, Program: EDIT
File Edit Search View Options Help
E:\SQUARE.ASM

;Program to print rectangle in assembly
dosseg
.model small
.stack 100h
.data
.code
main proc
mov ah,06h          ;scroll window up
mov al,10           ;10 line above
mov bh,01000001b    ;set color
mov ch,0            ;above row
mov cl,30           ;left column
mov dh,30           ;below row
mov dl,70           ;right column
int 10h             ;interrupt
mov ah,4ch
int 21h
main endp
end main
```

Output:

```
DOSBox 0.74, Cpu speed: 3000 cycles, Frameskip 0, Program: DOSBOX

space free
E:\>square.exe

E:\>edit square.asm

E:\>masm square.asm;
Microsoft (R) Macro Assembler
Copyright (C) Microsoft Corp 1Version 3.60
983-1987. All rights reserved.

51700 + 464844 Bytes symbol

0 Warning Errors
0 Severe Errors

E:\>link square.obj;

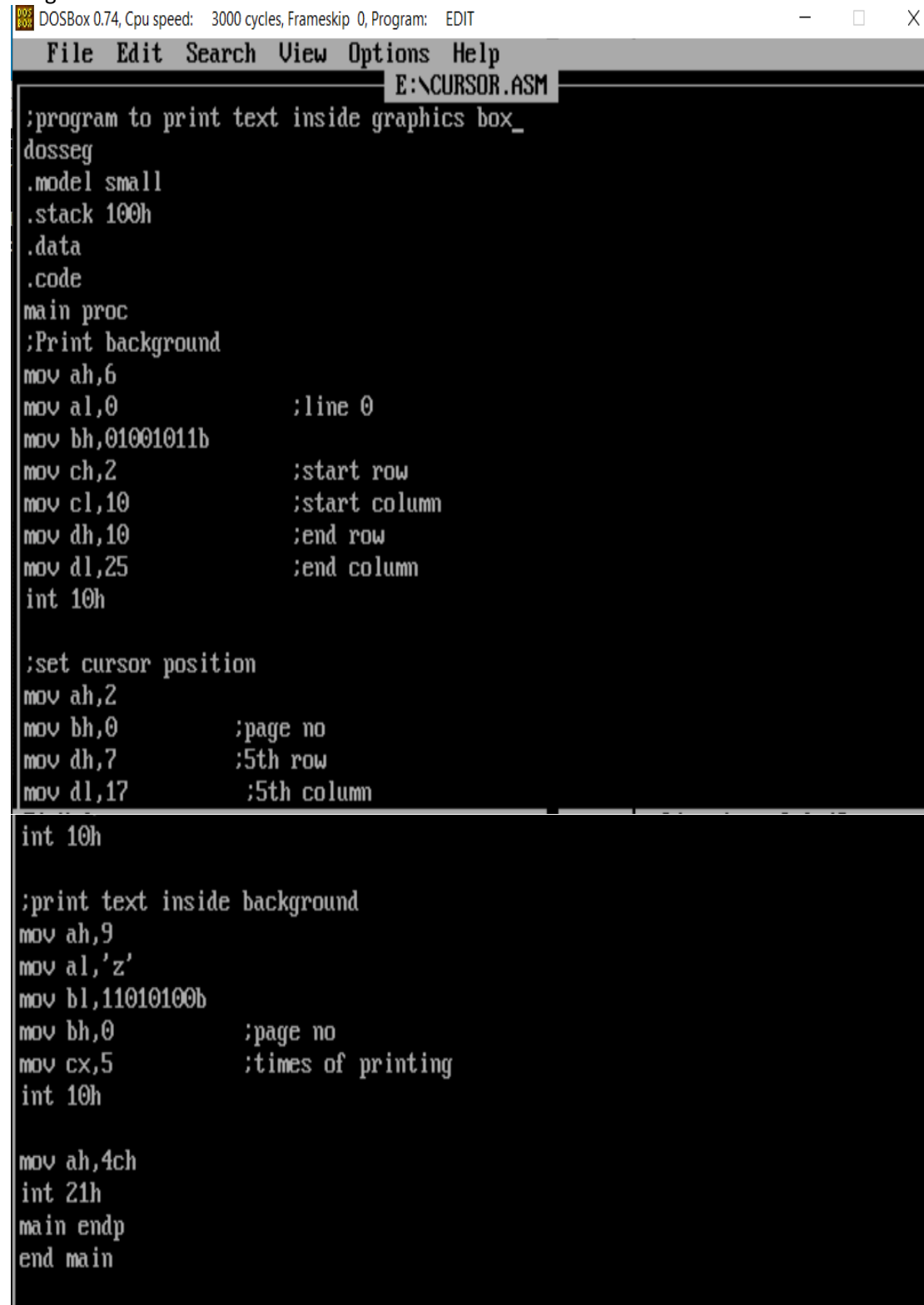
Microsoft (R) Overlay Linker
Copyright (C) Microsoft Corp 1

E:\>square.exe

E:\>masm square.asm;_
```

Task2: Write a program to draw shape using graphics and write any name or word inside shape.

Program:



```
;program to print text inside graphics box_
dosseg
.model small
.stack 100h
.data
.code
main proc
;Print background
mov ah,6
mov al,0           ;line 0
mov bh,01001011b
mov ch,2           ;start row
mov cl,10          ;start column
mov dh,10          ;end row
mov dl,25          ;end column
int 10h

;set cursor position
mov ah,2
mov bh,0           ;page no
mov dh,7           ;5th row
mov dl,17          ;5th column

int 10h

;print text inside background
mov ah,9
mov al,'z'
mov bl,11010100b
mov bh,0           ;page no
mov cx,5           ;times of printing
int 10h

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

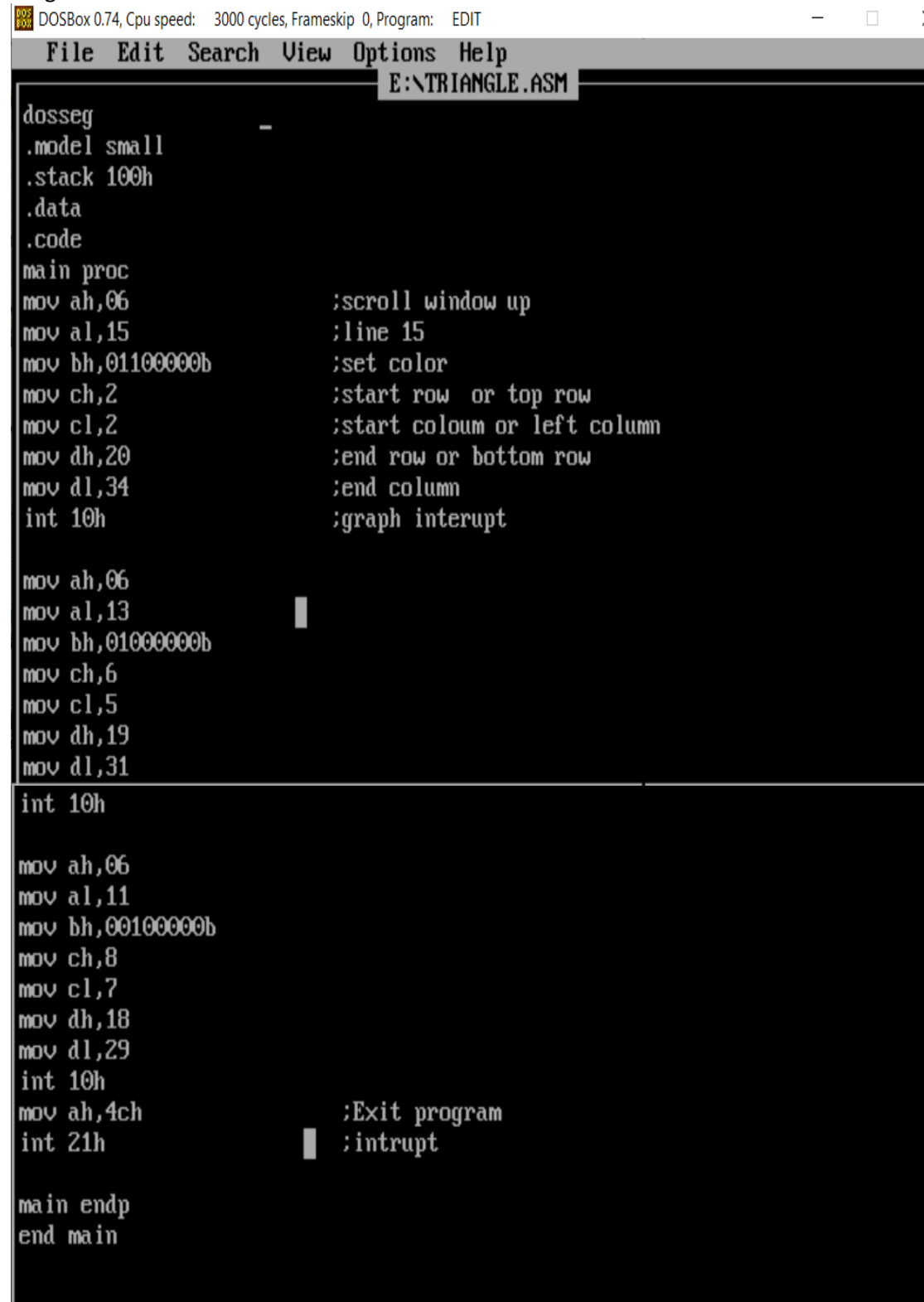
OUTPUT:

```
DOSBox 0.74, Cpu speed: 3000 cycles, Frameskip 0, Program: DOSBOX
Z:\>mount e E:\MP
Drive E is mounted as local directory E:\MP\

Z:\>e:
E:\>edit c
E:\>masm c
E:\>gsoft
Copyright
51700 + 464844 Bytes symbol space free
0 Warning Errors
0 Severe Errors
E:\>link cursor.obj;
Microsoft (R) Overlay Linker Version 3.60
Copyright (C) Microsoft Corp 1983-1987. All rights reserved.
E:\>cursor.exe
```

Task 3: Write a program to draw pattern using graphics

Program:



```
dosseg
.model small
.stack 100h
.data
.code
main proc
mov ah,06          ;scroll window up
mov al,15          ;line 15
mov bh,01100000bh  ;set color
mov ch,2           ;start row or top row
mov cl,2           ;start coloum or left column
mov dh,20          ;end row or bottom row
mov dl,34          ;end column
int 10h            ;graph interupt

mov ah,06
mov al,13
mov bh,01000000bh
mov ch,6
mov cl,5
mov dh,19
mov dl,31

int 10h

mov ah,06
mov al,11
mov bh,00100000bh
mov ch,8
mov cl,7
mov dh,18
mov dl,29
int 10h
mov ah,4ch         ;Exit program
int 21h            ;intrupt

main endp
end main
```

Output:

```
DOSBox 0.74, Cpu speed: 3000 cycles, Frameskip 0, Program: DOSBOX
E:
Microsoft (R) Overlay Linker Version 5.00
Copyright (C) Microsoft Corp 1983-1985, 1987. All rights reserved.
free
E:
Microsoft (R) Overlay Linker Version 3.60
Copyright (C) Microsoft Corp 1983-1987. All rights reserved.
E:\>triangle.exe
E:\>edit triangle.asm
```

Task 4: Write a program to draw triangle using graphics.

Program:

```
File Edit Search View Options Help
E:\IMP.ASM

dosseg
.model small
.stack 100h
.data
color db 11110000b
.code
main proc
mov ah,00h           ;set video mode
int 10h
;draw a triangle
mov cx,160           ;x-coordinate of first vertex
mov dx,100           ;y-coordinate of second vertex

;draw first side of triangle
mov si,240           ;x-coordinate of first vertex
mov di,20            ;y-coordinate of second vertex
call drawline

;draw second side of triangle
mov si,180           ;x-coordinate of first vertex
mov di,90            ;y-coordinate of second vertex
call drawline

;draw third side of triangle
mov si,160
mov di,100
call drawline

;Wait to press exit key
mov ah,0
int 16h

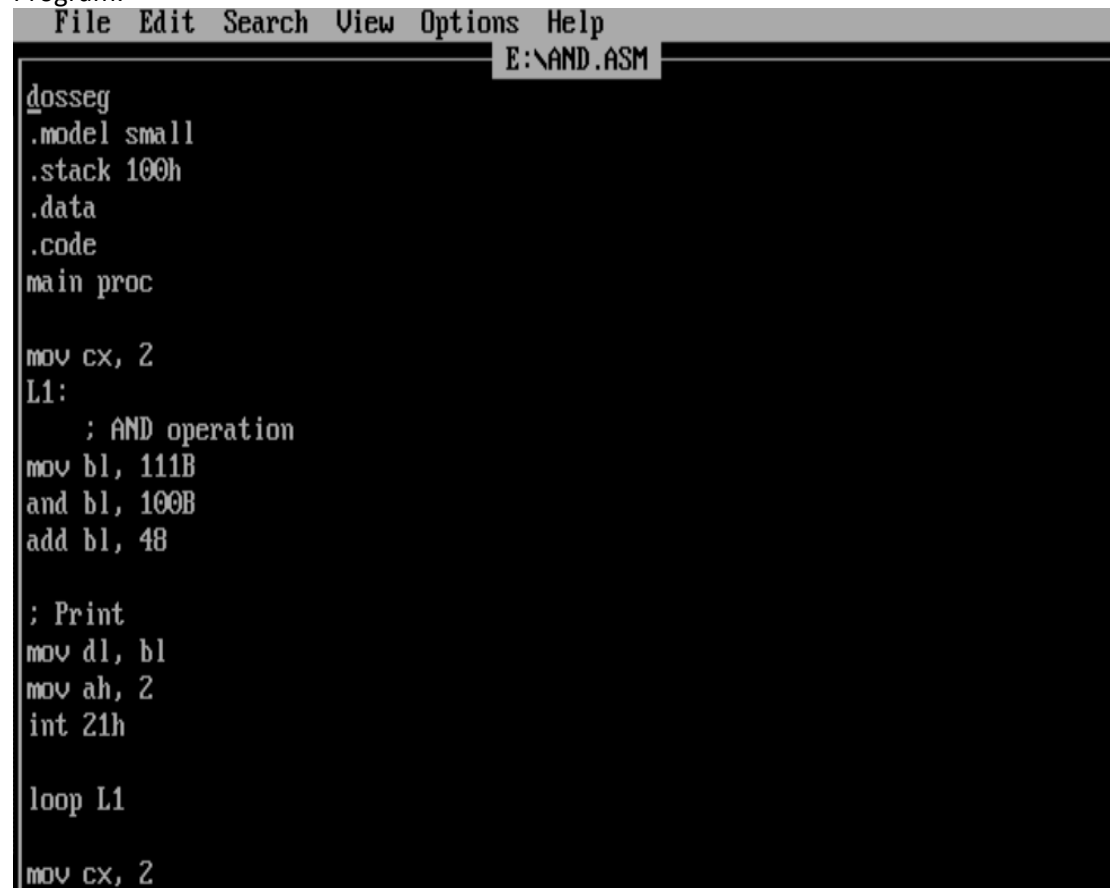
;back to text mode
mov ax,3
int 10h

;Exit
mov ah,4ch
int 21h
main endp
drawline:
pusha
mov ah,0ch           ;plot mode
mov al,[color]
int 10h
popa
ret
end main
```


Assalam Alaikum Miss on task 4 on 23rd August I submitted program no 3 (or or and xor) operation but there was problem in the output which I said at the end of task 4 that I will discuss the problem with you in class and also mentioned at the end of this task. thank you very much. Now I present this program.

task 4: perform AND,OR,XOR operation using three different loop.

Program:



```
File Edit Search View Options Help
E:\AND.ASM
dosseg
.model small
.stack 100h
.data
.code
main proc

mov cx, 2
L1:
    ; AND operation
    mov bl, 111B
    and bl, 100B
    add bl, 48

    ; Print
    mov dl, bl
    mov ah, 2
    int 21h

    loop L1

mov cx, 2
```

```
L2:  
; OR operation  
mov bl, 111B  
or bl, 100B  
add bl, 48
```

```
; Print  
mov dl, bl  
mov ah, 2  
int 21h
```

```
loop L2
```

```
mov cx, 2
```

```
L3:  
; XOR Operation  
mov bl, 111B  
xor bl, 100B  
add bl, 48
```

```
; Print  
mov dl, bl
```

```
mov dl, bl  
mov ah, 2  
int 21h
```

```
loop L3
```

```
mov ah, 4ch  
int 21h
```

```
main endp  
end main
```