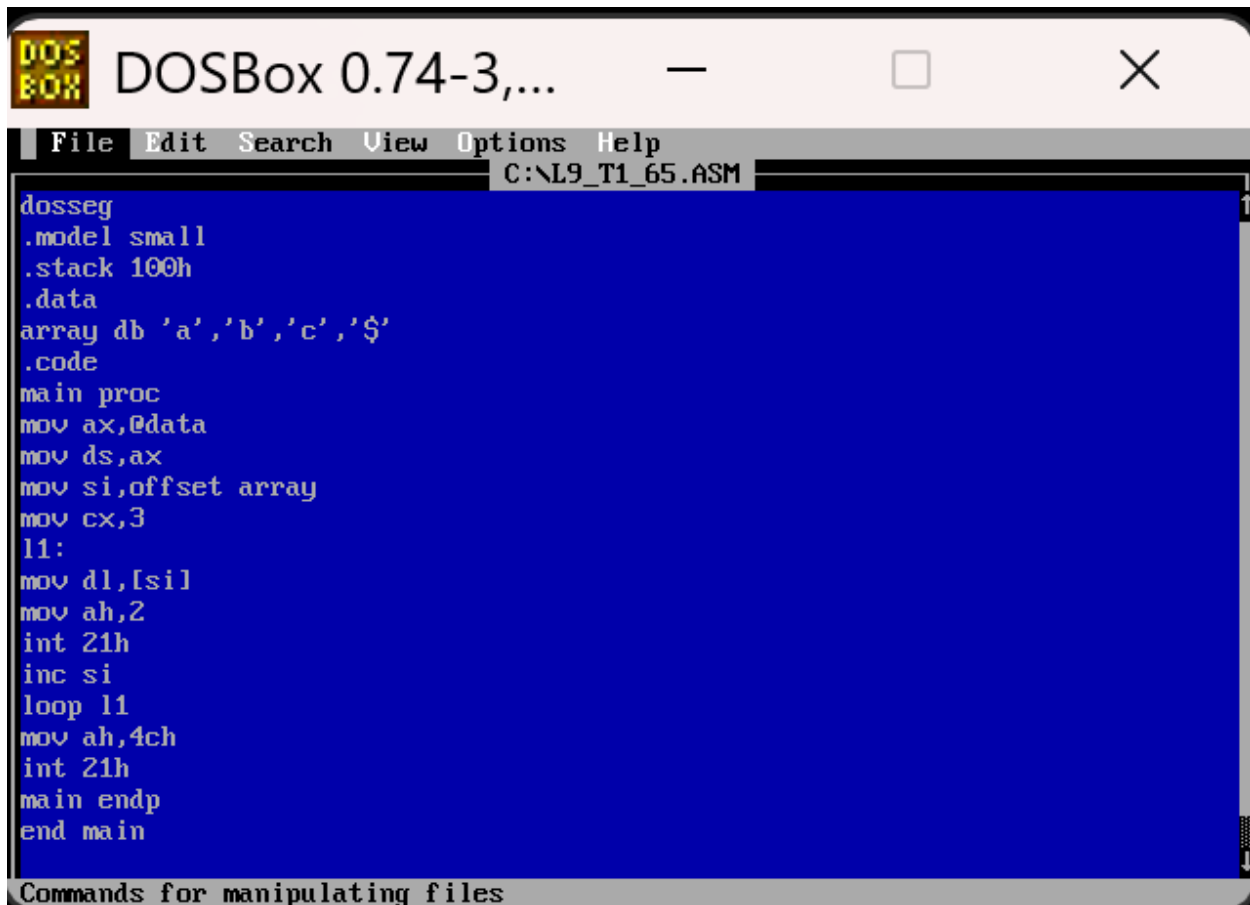


NAME: Babar Ali

SAP ID: 65731

SUBJECT: COAL

LAB9-TASK1

A screenshot of a DOSBox 0.74-3 window. The title bar shows the DOSBox logo and the text "DOSBox 0.74-3,...". The menu bar includes "File", "Edit", "Search", "View", "Options", and "Help". The address bar shows the file path "C:\L9_T1_65.ASM". The main window area has a blue background and displays the following assembly code:

```
dosseg
.model small
.stack 100h
.data
array db 'a','b','c','$'
.code
main proc
mov ax,0data
mov ds,ax
mov si,offset array
mov cx,3
l1:
mov dl,[si]
mov ah,2
int 21h
inc si
loop l1
mov ah,4ch
int 21h
main endp
end main
```

At the bottom of the window, there is a status bar with the text "Commands for manipulating files".

:



DOSBox 0.74-3,...



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Object filename [L9_T1_65731.OBJ]:

Source listing [NUL.LST]:

Cross-reference [NUL.CRF]:

51602 + 464942 Bytes symbol space free

0 Warning Errors

0 Severe Errors

C:\>link L9_T1_65731.obj

Microsoft (R) Overlay Linker Version 3.60

Copyright (C) Microsoft Corp 1983-1987. All rights reserved.

Run File [L9_T1_65731.EXE]:

List File [NUL.MAP]:

Libraries [L.LIB]:

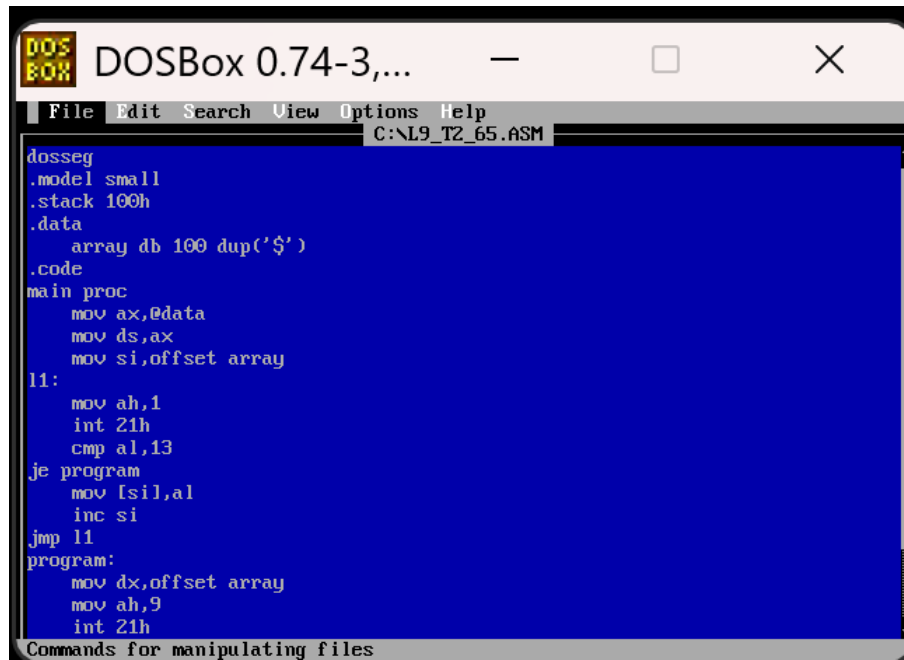
C:\>L9_T1_65731.exe

abc

C:\>edit L9_T1_65731.asm

C:\>

LAB9-TASK2



DOSBox 0.74-3,...

File Edit Search View Options Help

C:\L9_T2_65.ASM

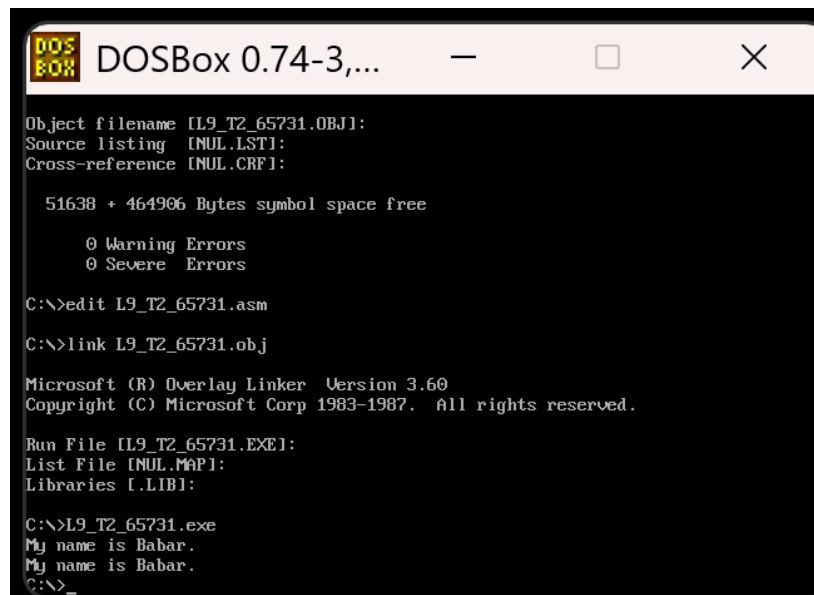
```
dosseg
.model small
.stack 100h
.data
    array db 100 dup('$')
.code
main proc
    mov ax,@data
    mov ds,ax
    mov si,offset array
l1:
    mov ah,1
    int 21h
    cmp al,13
    je program
    mov [si],al
    inc si
    jmp l1
program:
    mov dx,offset array
    mov ah,9
    int 21h
```

Commands for manipulating files



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

Commands for manipulating files



DOSBox 0.74-3,...

```
Object filename [L9_T2_65731.OBJ]:
Source listing [NUL.LST]:
Cross-reference [NUL.CRF]:

51638 + 464906 Bytes symbol space free

0 Warning Errors
0 Severe Errors

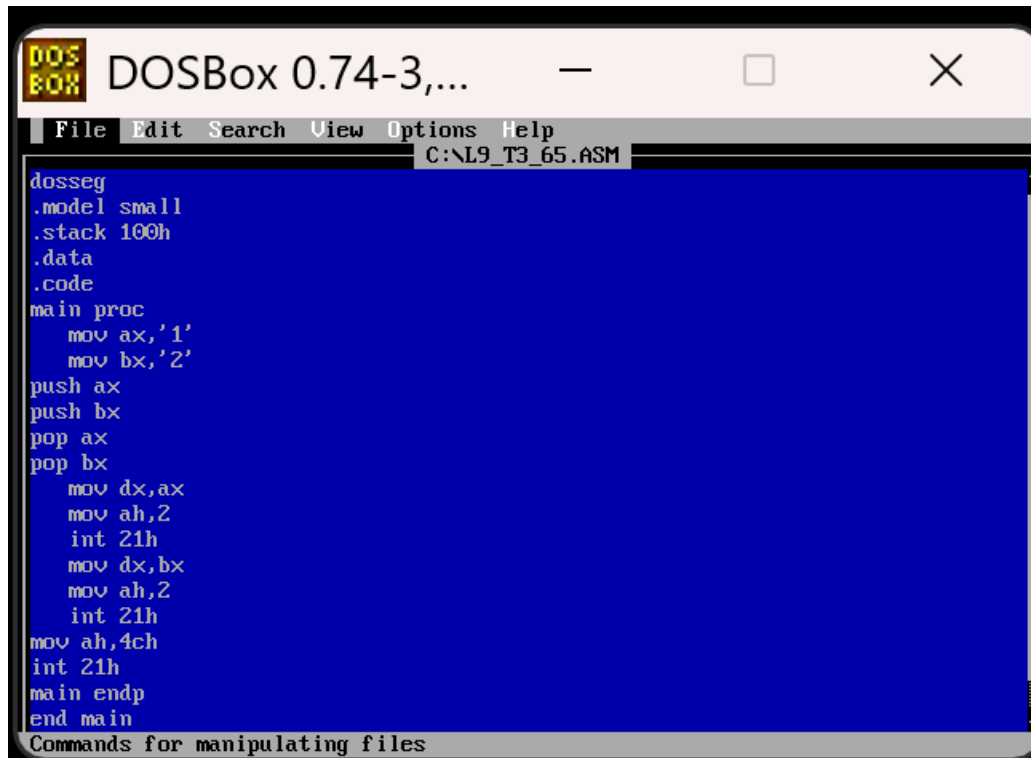
C:\>edit L9_T2_65731.asm
C:\>link L9_T2_65731.obj

Microsoft (R) Overlay Linker Version 3.60
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Run File [L9_T2_65731.EXE]:
List File [NUL.MAP]:
Libraries [LIB]:

C:\>L9_T2_65731.exe
My name is Babar.
My name is Babar.
C:\>_
```

LAB9-TASK3



DOSBox 0.74-3,...

File Edit Search View Options Help

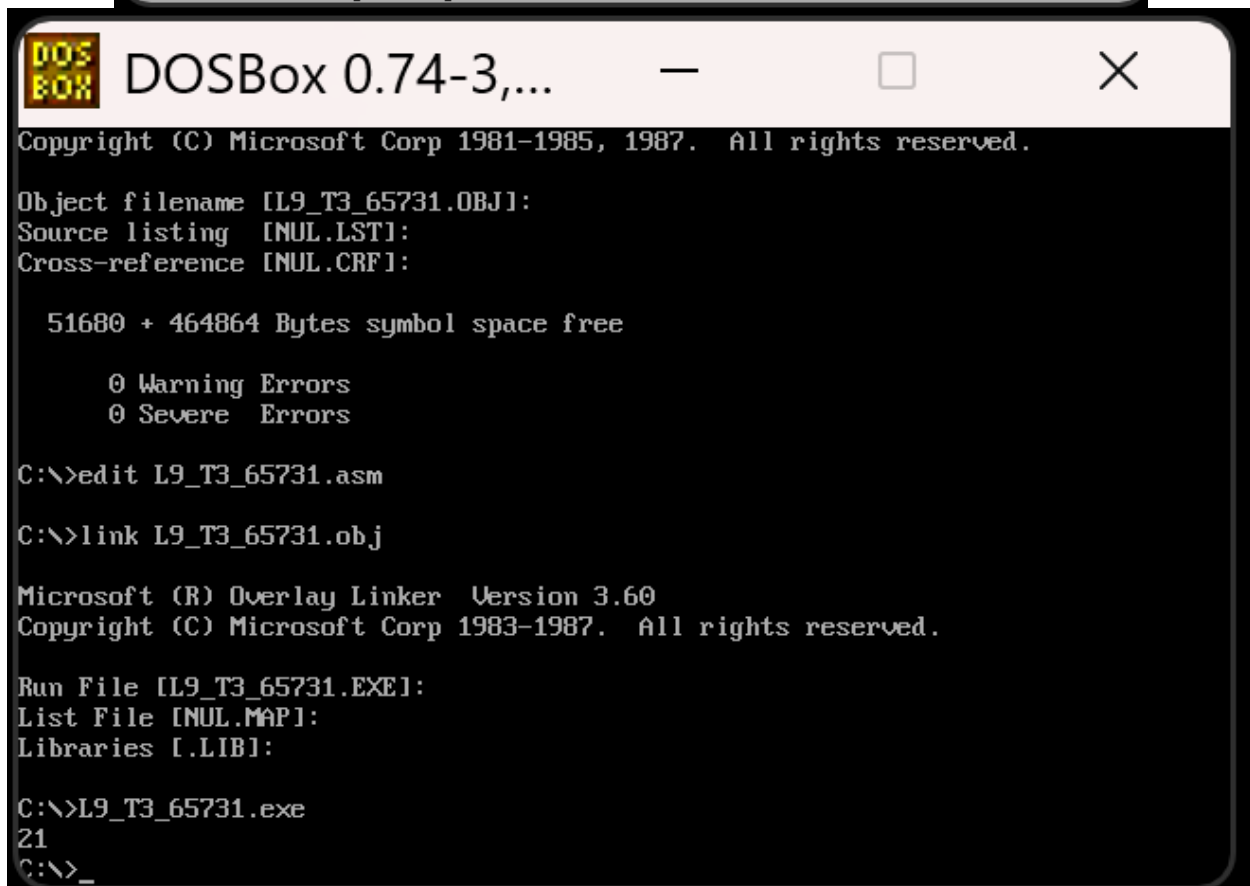
C:\L9_T3_65.ASM

```

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

```

Commands for manipulating files



DOSBox 0.74-3,...

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Object filename [L9_T3_65731.OBJ]:
Source listing [NUL.LST]:
Cross-reference [NUL.CRF]:

51680 + 464864 Bytes symbol space free

0 Warning Errors
0 Severe Errors

C:\>edit L9_T3_65731.asm

C:\>link L9_T3_65731.obj

Microsoft (R) Overlay Linker Version 3.60
Copyright (C) Microsoft Corp 1983-1987. All rights reserved.

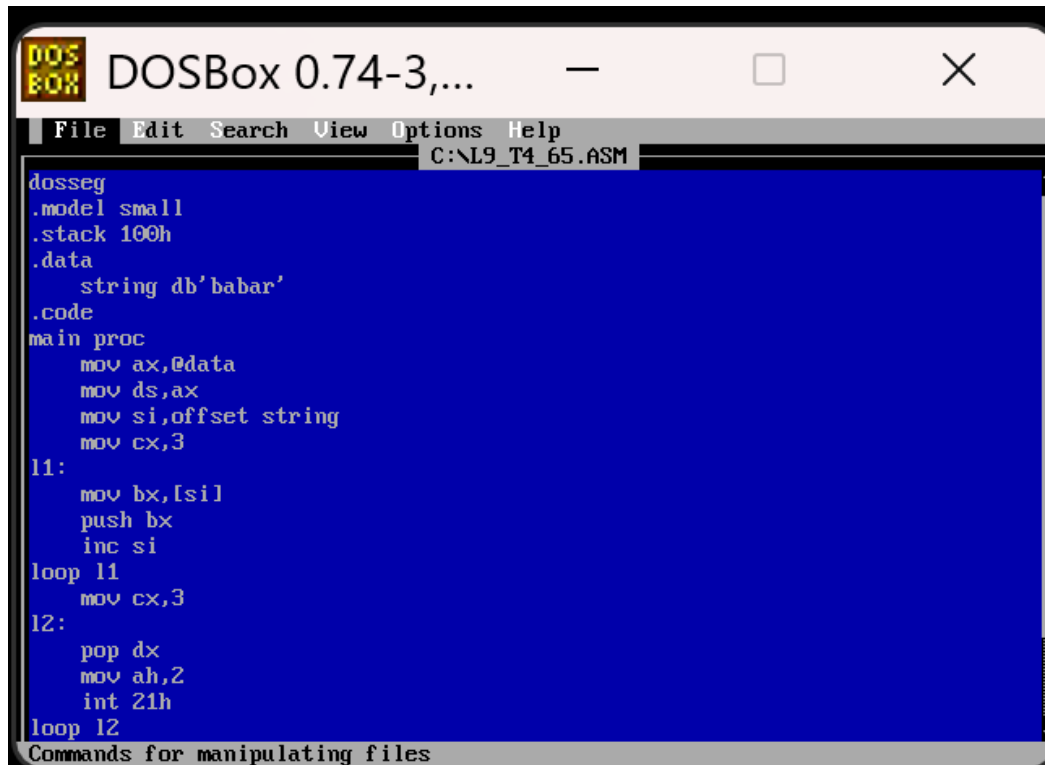
Run File [L9_T3_65731.EXE]:
List File [NUL.MAP]:
Libraries [.LIB]:

C:\>L9_T3_65731.exe

21

C:\>_

LAB9-TASK4



DOSBox 0.74-3,...

File Edit Search View Options Help

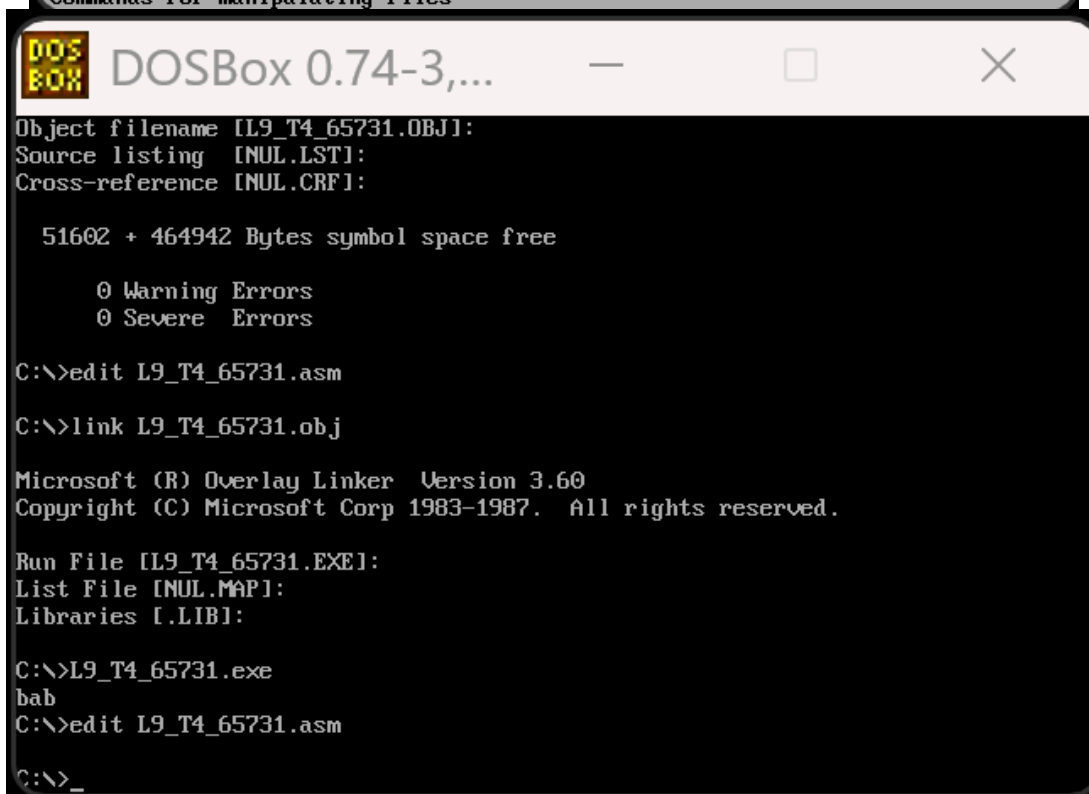
C:\L9_T4_65.ASM

```

dosseg
.model small
.stack 100h
.data
    string db 'babar'
.code
main proc
    mov ax,@data
    mov ds,ax
    mov si,offset string
    mov cx,3
l1:
    mov bx,[si]
    push bx
    inc si
loop l1
    mov cx,3
l2:
    pop dx
    mov ah,2
    int 21h
loop l2

```

Commands for manipulating files



DOSBox 0.74-3,...

Object filename [L9_T4_65731.OBJ]:
Source listing [NUL.LST]:
Cross-reference [NUL.CRF]:

51602 + 464942 Bytes symbol space free

0 Warning Errors
0 Severe Errors

C:\>edit L9_T4_65731.asm

C:\>link L9_T4_65731.obj

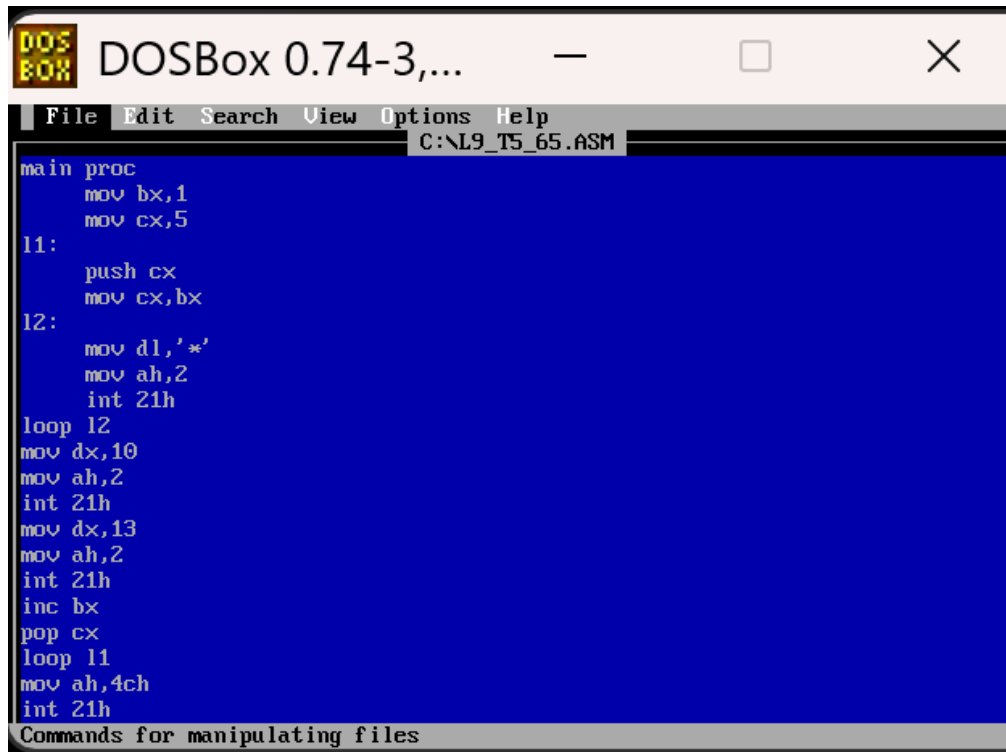
Microsoft (R) Overlay Linker Version 3.60
Copyright (C) Microsoft Corp 1983-1987. All rights reserved.

Run File [L9_T4_65731.EXE]:
List File [NUL.MAP]:
Libraries [.LIB]:

C:\>L9_T4_65731.exe
bab
C:\>edit L9_T4_65731.asm

C:\>_

LAB9-TASK5



DOSBox 0.74-3,...

File Edit Search View Options Help

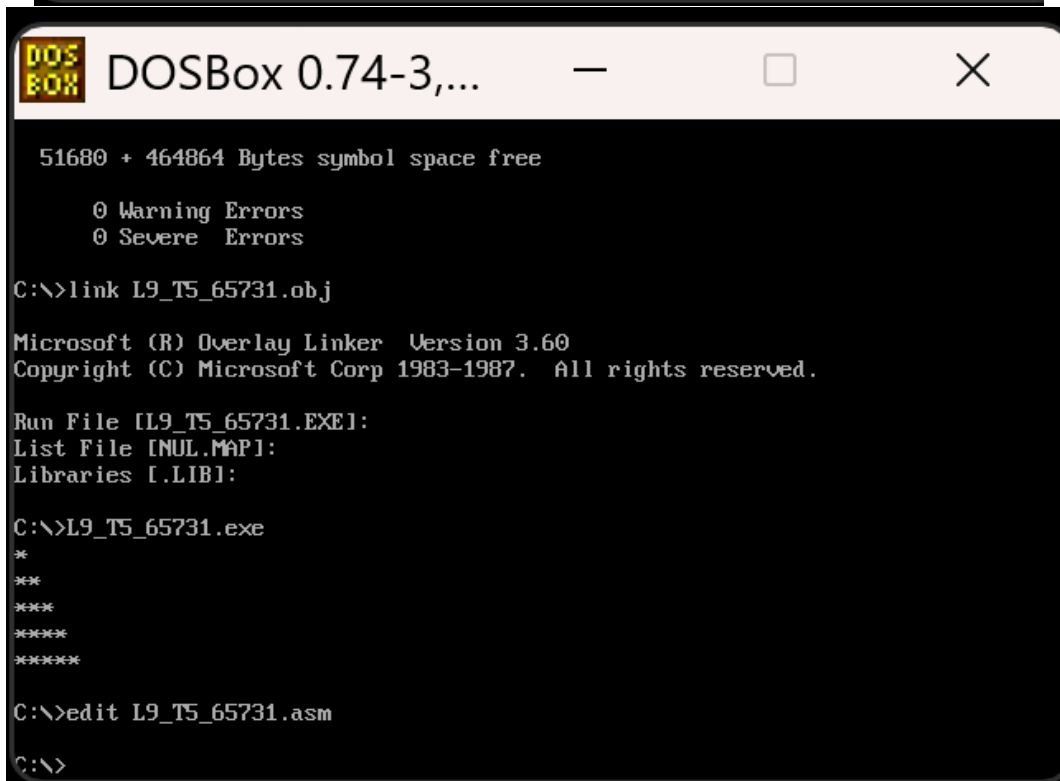
C:\L9_T5_65.ASM

```

main proc
    mov bx,1
    mov cx,5
l1:
    push cx
    mov cx,bx
l2:
    mov dl,'*'
    mov ah,2
    int 21h
loop l2
mov dx,10
mov ah,2
int 21h
mov dx,13
mov ah,2
int 21h
inc bx
pop cx
loop l1
mov ah,4ch
int 21h

```

Commands for manipulating files



DOSBox 0.74-3,...

51680 + 464864 Bytes symbol space free

0 Warning Errors

0 Severe Errors

C:\>link L9_T5_65731.obj

Microsoft (R) Overlay Linker Version 3.60

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Run File [L9_T5_65731.EXE]:

List File [INUL.MAP]:

Libraries [.LIB]:

C:\>L9_T5_65731.exe

*

**

C:\>edit L9_T5_65731.asm

C:\>

LAB9-TASK6

The image consists of two screenshots of a DOSBox 0.74-3 window. The top screenshot shows an assembly file being edited, and the bottom screenshot shows the linker and linker loader output.

Top Screenshot: Assembly Editor

File Edit Search View Options Help
C:\L9_T6_65.ASM

```
main proc
    mov bx,5
    mov cx,5
l1:
    push cx
    mov cx,bx
l2:
    mov dl,'*'
    mov ah,2
    int 21h
loop l2
mov dx,10
mov ah,2
int 21h
mov dx,13
mov ah,2
int 21h
dec bl
pop cx
loop l1
mov ah,4ch
int 21h
```

Commands for manipulating files

Bottom Screenshot: Linker and Linker Loader Output

```
51680 + 464864 Bytes symbol space free

0 Warning Errors
0 Severe Errors

C:\>link L9_T6_65731.obj

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Run File [L9_T6_65731.EXE]:
List File [NUL.MAP]:
Libraries [.LIB]:

C:\>L9_T6_65731.exe
*****
****
***
**
*

C:\>edit L9_T6_65731.asm

C:\>
```

LAB9-TASK7



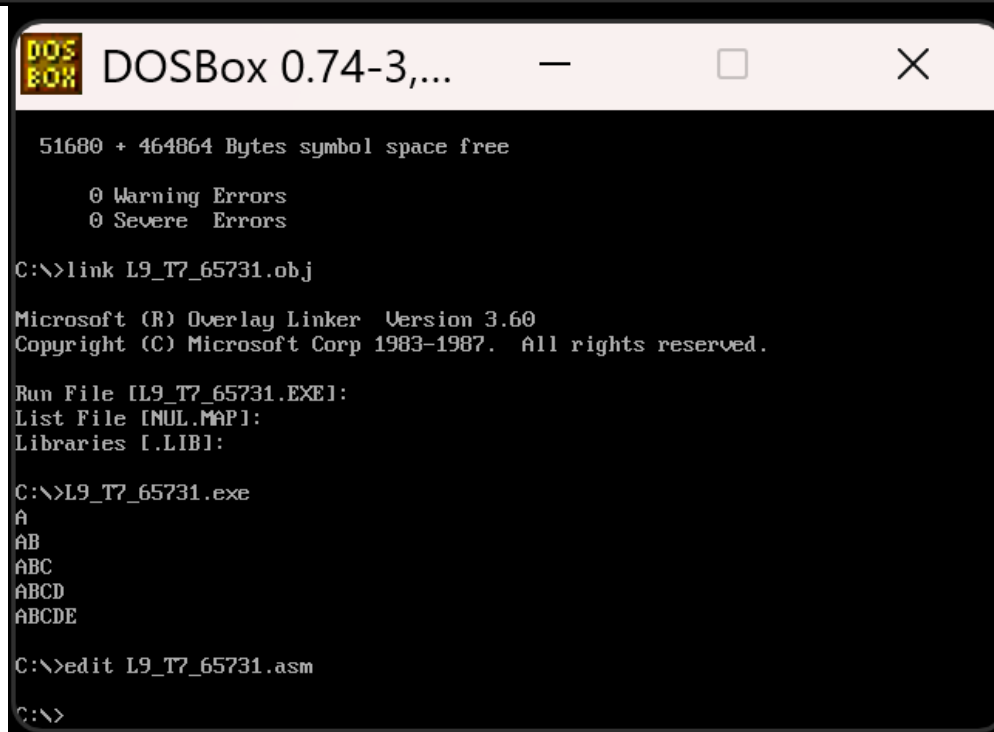
DOSBox 0.74-3,...

File Edit Search View Options Help

C:\L9_T7_65.ASM

```
main proc
    mov bx,1
    mov cx,5
l1:
    push cx
    mov cx,bx
    mov dl,65
l2:
    mov ah,2
    int 21h
    inc dl
loop l2
mov dx,10
mov ah,2
int 21h
mov dx,13
mov ah,2
int 21h
inc bl
pop cx
loop l1
mov ah,4ch
```

Commands for manipulating files



DOSBox 0.74-3,...

51680 + 464864 Bytes symbol space free

0 Warning Errors
0 Severe Errors

C:\>link L9_T7_65731.obj

Microsoft (R) Overlay Linker Version 3.60
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Run File [L9_T7_65731.EXE]:
List File [NUL.MAP]:
Libraries [LIB]:

C:\>L9_T7_65731.exe

A
AB
ABC
ABCD
ABCDE

C:\>edit L9_T7_65731.asm

C:\>

LAB9-TASK8

emu8086 - assembler and microprocessor emulator 4.08

file edit bookmarks assembler emulator math ascii codes help

new open examples save compile emulate calculator convertor options help about

```
01 mov ax, '1'
02 mov bx, '2'
03 push ax
04 push bx
05 pop ax
06 pop bx|
```

original source co...

```
01 mov ax, '1'
02 mov bx, '2'
03 push ax
04 push bx
05 pop ax
06 pop bx
07
08
```

emulator: noname.bin_

file math debug view external virtual devices virtual drive help

Load reload step back single step run step delay ms: 0

registers

| | H | L |
|----|------|----|
| AX | 00 | 32 |
| BX | 00 | 31 |
| CX | 00 | 00 |
| DX | 00 | 00 |
| CS | 0100 | |
| IP | 000A | |
| SS | 0100 | |
| SP | FFFE | |
| BP | 0000 | |
| SI | 0000 | |
| DI | 0000 | |
| DS | 0100 | |
| ES | 0100 | |

0100:000A

| | | | |
|--------|----|-----|------|
| 01000: | B8 | 184 | 3 |
| 01001: | 31 | 049 | 1 |
| 01002: | 00 | 000 | NULL |
| 01003: | BB | 187 | 1 |
| 01004: | 32 | 050 | 2 |
| 01005: | 00 | 000 | NULL |
| 01006: | 50 | 080 | P |
| 01007: | 53 | 083 | S |
| 01008: | 58 | 088 | X |
| 01009: | 5B | 091 | I |
| 0100A: | 90 | 144 | E |
| 0100B: | 90 | 144 | E |
| 0100C: | 90 | 144 | E |
| 0100D: | 90 | 144 | E |
| 0100E: | 90 | 144 | E |
| 0100F: | 90 | 144 | E |
| 01010: | 90 | 144 | E |
| 01011: | 90 | 144 | E |
| 01012: | 90 | 144 | E |
| 01013: | 90 | 144 | E |
| 01014: | 90 | 144 | E |

0100:000A

| |
|----------------|
| MOV AX, 00031h |
| MOV BX, 00032h |
| PUSH AX |
| PUSH BX |
| POP AX |
| POP BX |
| NOP |
| NOP |
| NOP |
| NOP |
| NOP |
| NOP |
| NOP |
| NOP |
| NOP |
| NOP |
| NOP |
| NOP |
| ... |

screen source reset aux vars debug stack flags

line: 6 col: 7 drag a file here to open

