

# UNIVERSITY OF KARACHI



## ASSEMBLY LANGUAGE PROGRAMMING

BSCS-403

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Section: A

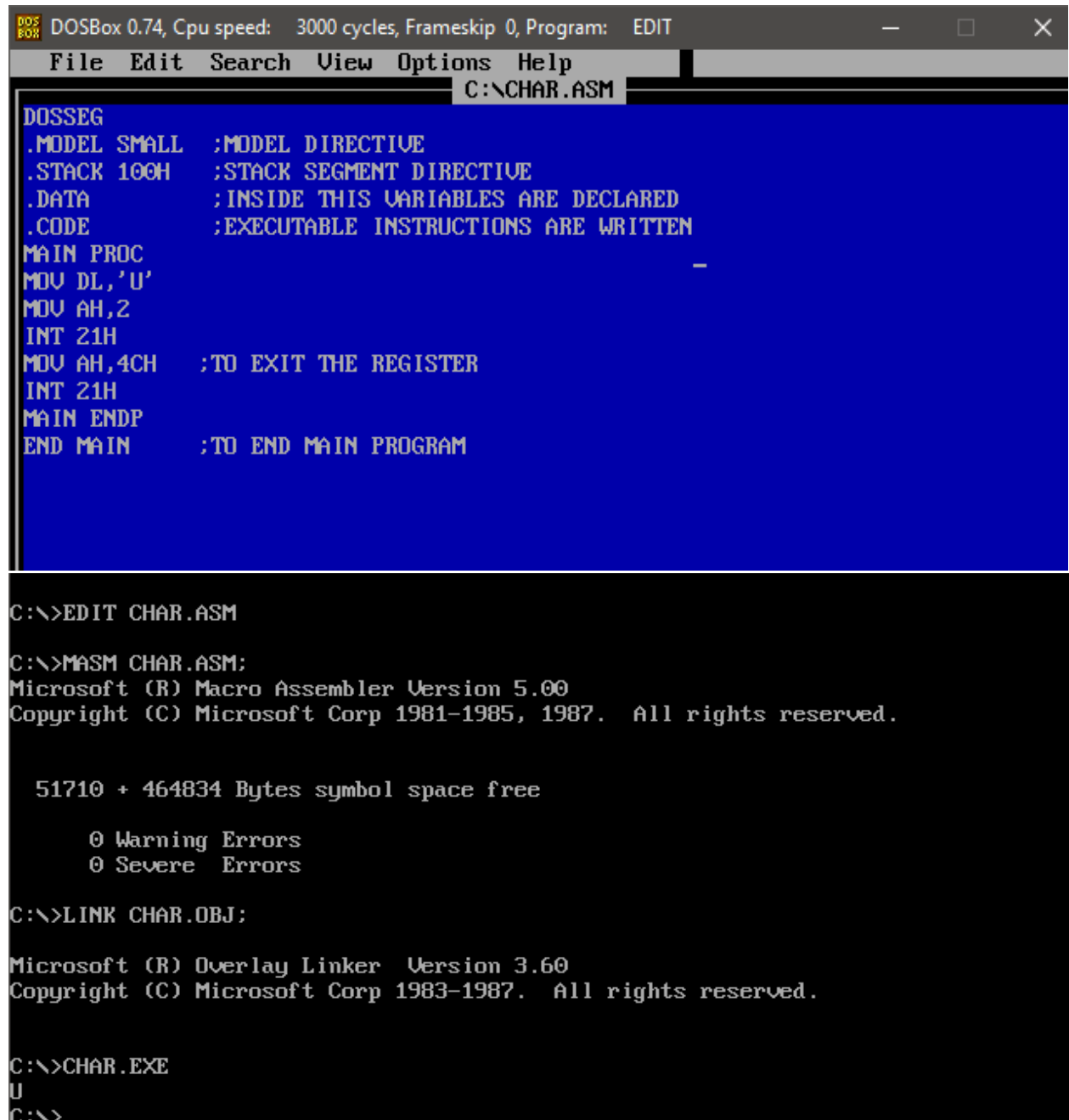
Semester No: 3<sup>rd</sup>

Submitted to: MS FARHEEN FAISAL SIDDIQUI

DEPARTMENT OF COMPUTER SCIENCE

UNIVERSITY OF KARACHI

## 1. PROGRAM TO PRINT A SINGLE CHARACTER ON SCREEN:



The screenshot shows a DOSBox window with the title bar "DOSBox 0.74, Cpu speed: 3000 cycles, Frameskip 0, Program: EDIT". The menu bar includes "File", "Edit", "Search", "View", "Options", and "Help". The active window is titled "C:\CHAR.ASM" and contains the following assembly code:

```
DOSSEG
.MODEL SMALL ;MODEL DIRECTIVE
.STACK 100H ;STACK SEGMENT DIRECTIVE
.DATA ;INSIDE THIS VARIABLES ARE DECLARED
.CODE ;EXECUTABLE INSTRUCTIONS ARE WRITTEN
MAIN PROC
MOV DL,'U'
MOV AH,2
INT 21H
MOV AH,4CH ;TO EXIT THE REGISTER
INT 21H
MAIN ENDP
END MAIN ;TO END MAIN PROGRAM
```

Below the code editor, the command prompt shows the following sequence of commands and output:

```
C:\>EDIT CHAR.ASM

C:\>MASM CHAR.ASM;
Microsoft (R) Macro Assembler Version 5.00
Copyright (C) Microsoft Corp 1981-1985, 1987. All rights reserved.

51710 + 464834 Bytes symbol space free

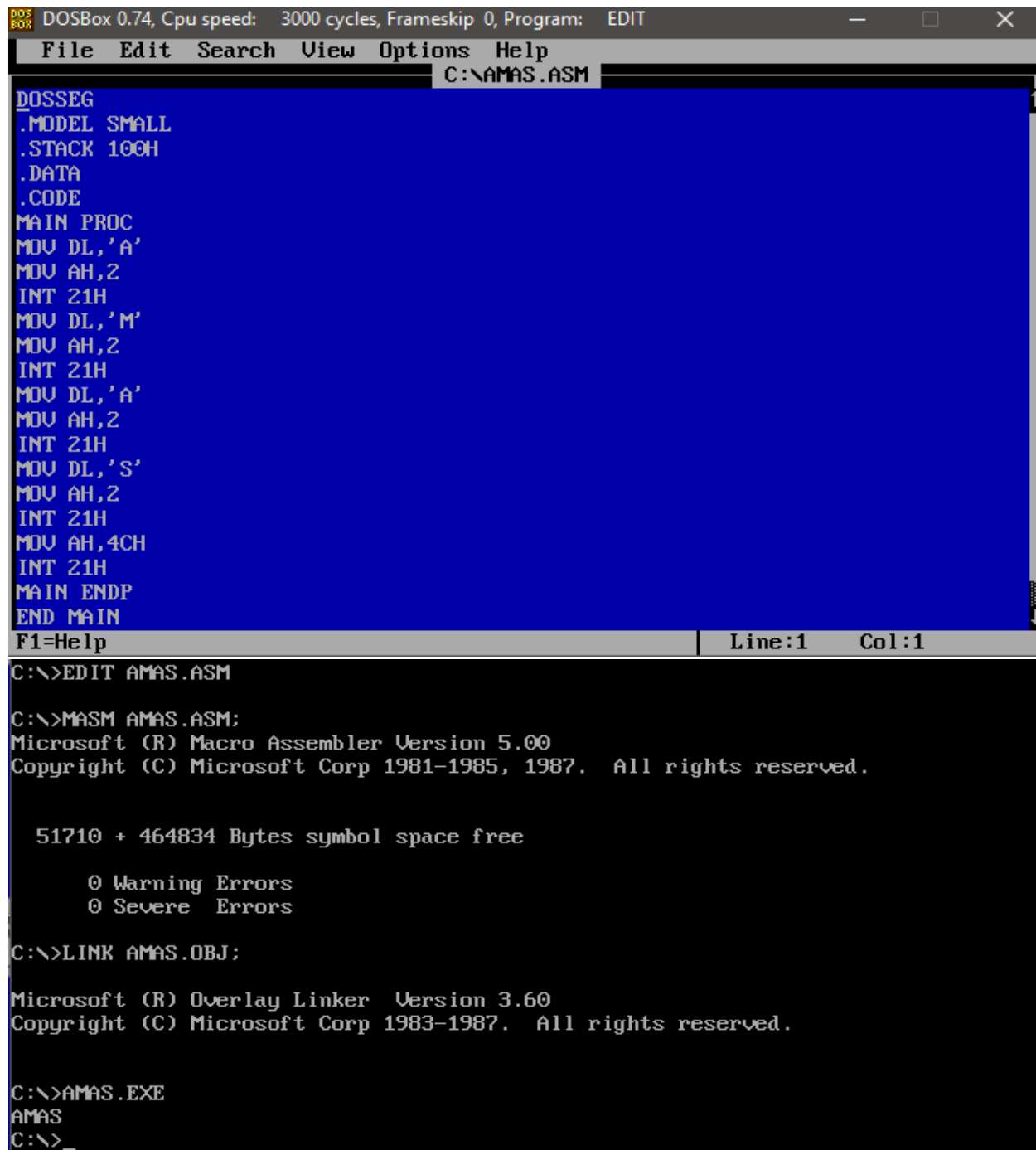
0 Warning Errors
0 Severe Errors

C:\>LINK CHAR.OBJ;

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

C:\>CHAR.EXE
U
C:\>
```

## 2. PROGRAM TO PRINT THE NAME WITH CHARACTER:



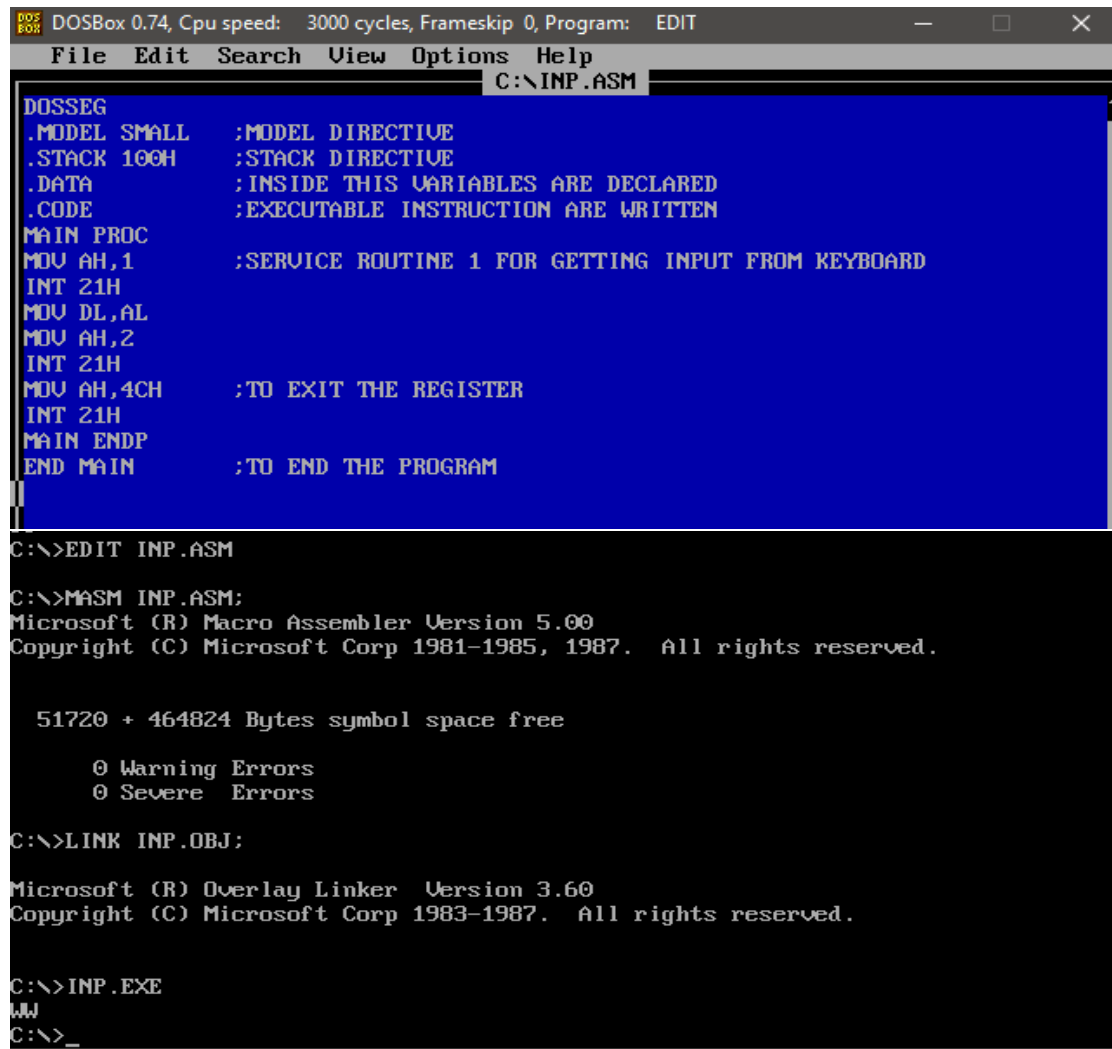
```
DOSBox 0.74, Cpu speed: 3000 cycles, Frameskip 0, Program: EDIT
File Edit Search View Options Help
C:\AMAS.ASM
DOSSEG
.MODEL SMALL
.STACK 100H
.DATA
.CODE
MAIN PROC
MOV DL,'A'
MOV AH,2
INT 21H
MOV DL,'M'
MOV AH,2
INT 21H
MOV DL,'A'
MOV AH,2
INT 21H
MOV DL,'S'
MOV AH,2
INT 21H
MOV AH,4CH
INT 21H
MAIN ENDP
END MAIN
F1=Help Line:1 Col:1
C:\>EDIT AMAS.ASM
C:\>MASM AMAS.ASM;
Microsoft (R) Macro Assembler Version 5.00
Copyright (C) Microsoft Corp 1981-1985, 1987. All rights reserved.

51710 + 464834 Bytes symbol space free

0 Warning Errors
0 Severe Errors
C:\>LINK AMAS.OBJ;
Microsoft (R) Overlay Linker Version 3.60
Copyright (C) Microsoft Corp 1983-1987. All rights reserved.

C:\>AMAS.EXE
AMAS
C:\>_
```

### 3. PROGRAM TO TAKE INPUT A CHARACTER AND PRINT ON THE SCREEN:



The screenshot shows a DOSBox window with the CPU speed at 3000 cycles and Frameskip at 0. The program being edited is INP.ASM. The assembly code is as follows:

```
DOSSEG
.MODEL SMALL      ;MODEL DIRECTIVE
.STACK 100H       ;STACK DIRECTIVE
.DATA             ;INSIDE THIS VARIABLES ARE DECLARED
.CODE             ;EXECUTABLE INSTRUCTION ARE WRITTEN
MAIN PROC
MOV AH,1          ;SERVICE ROUTINE 1 FOR GETTING INPUT FROM KEYBOARD
INT 21H
MOV DL,AL
MOV AH,2
INT 21H
MOV AH,4CH        ;TO EXIT THE REGISTER
INT 21H
MAIN ENDP
END MAIN          ;TO END THE PROGRAM
```

The command prompt shows the following sequence of commands and output:

```
C:\>EDIT INP.ASM

C:\>MASM INP.ASM:
Microsoft (R) Macro Assembler Version 5.00
Copyright (C) Microsoft Corp 1981-1985, 1987. All rights reserved.

51720 + 464824 Bytes symbol space free

0 Warning Errors
0 Severe Errors

C:\>LINK INP.OBJ;

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

C:\>INP.EXE
^M
C:\>_
```