



RIPHAH
INTERNATIONAL UNIVERSITY

Computer Organization & Assembly Language

LAB 06

Submitted to:

Ma'am Rehana

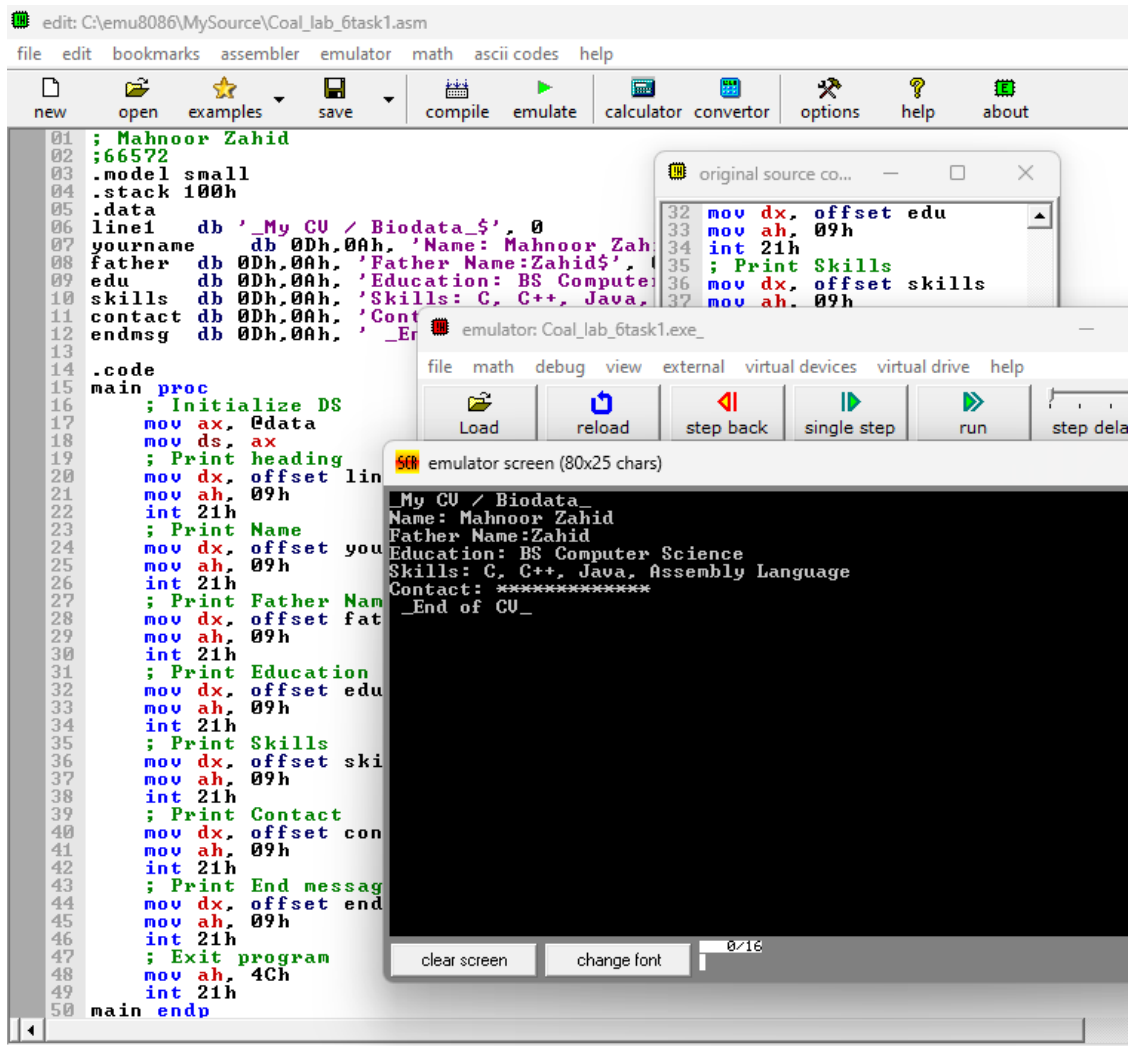
Submitted by:

Mahnoor Zahid

66572

BSCS-3

Task 1



The screenshot displays an assembly development environment. The main window shows the assembly code for a program named 'Mahnoor Zahid'. The code includes data definitions for name, father's name, education, skills, and contact information, followed by a main procedure that prints these details. A smaller window titled 'original source co...' shows a snippet of the code. The emulator window, titled 'emulator: Coal_lab_6task1.exe', shows the output of the program, which prints the personal and contact information of Mahnoor Zahid.

```
01 ; Mahnoor Zahid
02 ;66572
03 .model small
04 .stack 100h
05 .data
06 line1 db 'My CU / Biodata_', 0
07 yourname db 0Dh,0Ah, 'Name: Mahnoor Zahid', 0
08 father db 0Dh,0Ah, 'Father Name:Zahid$', 0
09 edu db 0Dh,0Ah, 'Education: BS Computer Science', 0
10 skills db 0Dh,0Ah, 'Skills: C, C++, Java, Assembly Language', 0
11 contact db 0Dh,0Ah, 'Contact: *****', 0
12 endmsg db 0Dh,0Ah, '_End of CU_', 0
13
14 .code
15 main proc
16 ; Initialize DS
17 mov ax, @data
18 mov ds, ax
19 ; Print heading
20 mov dx, offset line1
21 mov ah, 09h
22 int 21h
23 ; Print Name
24 mov dx, offset yourname
25 mov ah, 09h
26 int 21h
27 ; Print Father Name
28 mov dx, offset father
29 mov ah, 09h
30 int 21h
31 ; Print Education
32 mov dx, offset edu
33 mov ah, 09h
34 int 21h
35 ; Print Skills
36 mov dx, offset skills
37 mov ah, 09h
38 int 21h
39 ; Print Contact
40 mov dx, offset contact
41 mov ah, 09h
42 int 21h
43 ; Print End message
44 mov dx, offset endmsg
45 mov ah, 09h
46 int 21h
47 ; Exit program
48 mov ah, 4Ch
49 int 21h
50 main endp
```

original source co...

```
32 mov dx, offset edu
33 mov ah, 09h
34 int 21h
35 ; Print Skills
36 mov dx, offset skills
37 mov ah, 09h
```

emulator: Coal_lab_6task1.exe

file math debug view external virtual devices virtual drive help

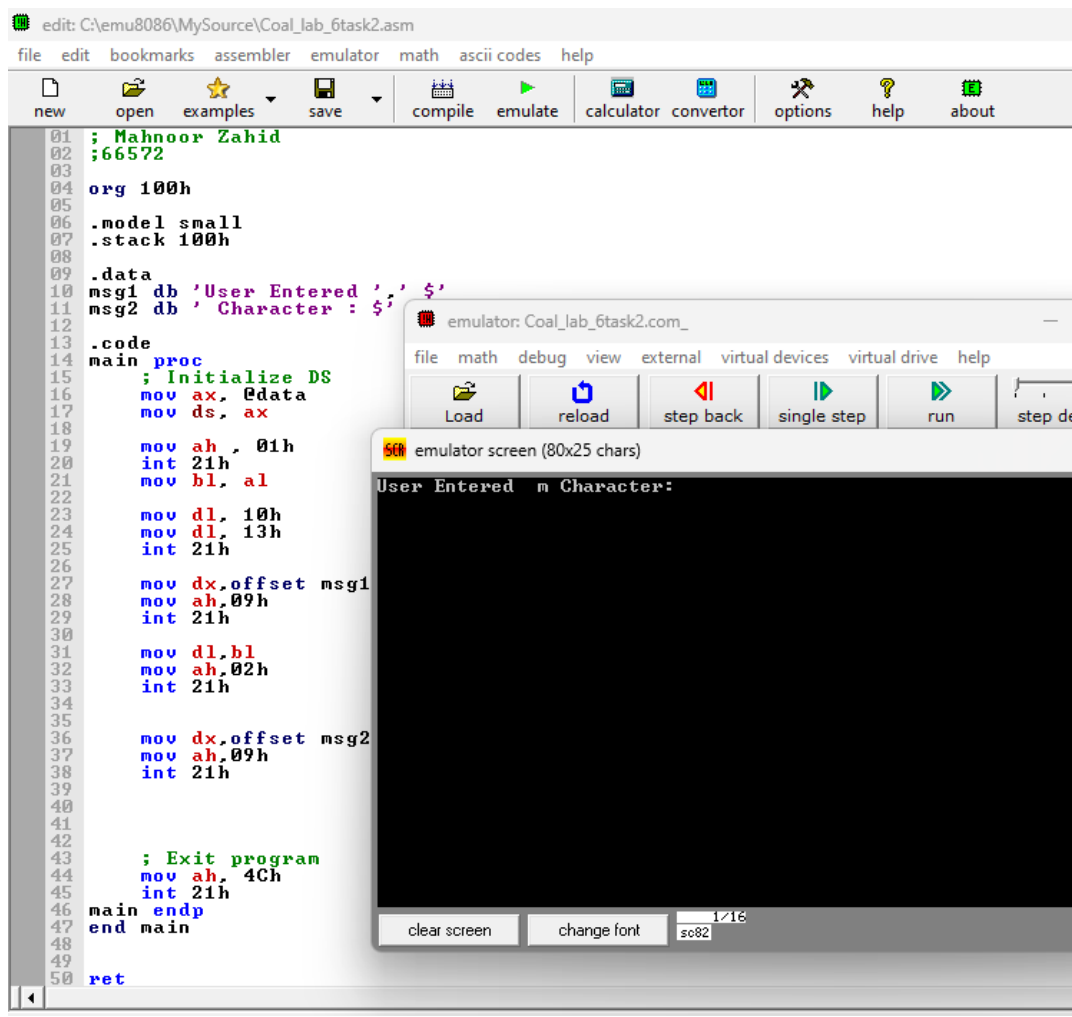
Load reload step back single step run step delay

emulator screen (80x25 chars)

```
My CU / Biodata_
Name: Mahnoor Zahid
Father Name:Zahid
Education: BS Computer Science
Skills: C, C++, Java, Assembly Language
Contact: *****
_End of CU_
```

clear screen change font 0/16

Task 2



The screenshot displays an x86-64 assembler editor and emulator interface. The editor window shows the assembly code for a program, and the emulator window shows the output of the program.

Assembly Code:

```
01 ; Mahnoor Zahid
02 ;66572
03
04 org 100h
05
06 .model small
07 .stack 100h
08
09 .data
10 msg1 db 'User Entered ','$'
11 msg2 db 'Character :','$'
12
13 .code
14 main proc
15 ; Initialize DS
16 mov ax, 0data
17 mov ds, ax
18
19 mov ah, 01h
20 int 21h
21 mov bl, al
22
23 mov dl, 10h
24 mov dl, 13h
25 int 21h
26
27 mov dx, offset msg1
28 mov ah, 09h
29 int 21h
30
31 mov dl, bl
32 mov ah, 02h
33 int 21h
34
35
36 mov dx, offset msg2
37 mov ah, 09h
38 int 21h
39
40
41
42 ; Exit program
43 mov ah, 4Ch
44 int 21h
45 main endp
46 end main
47
48
49
50 ret
```

Emulator Output:

```
User Entered m Character:
```

Task 3

edit: C:\emu8086\MySource\Coal_lab_6task2.asm

file edit bookmarks assembler emulator math ascii codes help

new open examples save compile emulate calculator convertor options help about

```
01 ; You may customize this and other start-up templates;
02 ; The location of this template is c:\emu8086\inc\0_com_template.txt
03 ; Mahnoor Zahid
04 ;66572
05
06 org 100h
07
08 .model small
09 .stack 100h
10
11 .data
12 msg1 db 'Enter a lowercase character: $'
13 msg2 db 0Dh,0Ah, 'After conversion to uppercase: $'
14
15 .code
16 main proc
17     mov ax,@data
18     mov ds,ax
19
20     mov dx,offset msg1
21     mov ah,09h
22     int 21h
23
24     mov ah,01h
25     int 21h
26     mov bl,al
27
28     sub bl,32
29
30     mov dx,offset msg2
31     mov ah,09h
32     int 21h
33
34     mov dl,bl
35     mov ah,02h
36     int 21h
37
38     mov ah,4Ch
39     int 21h
40 main endp
41 end main
42
43 ret
```

emulator: Coal_lab_6task2.com_

file math debug view external virtu

Load reload step back

registers

	H	L
AX	4C	4D
BX	00	4D

F400:0204

F4200: FF 255
F4201: FF 255
F4202: CD 205
F4203: 21 033

original source co...

```
22 int 21h
23
24 mov ah,01h
25 int 21h
26 mov bl,al
27
```

emulator screen (80x25 chars)

```
Enter a lowercase character: m
After conversion to uppercase: M
```