

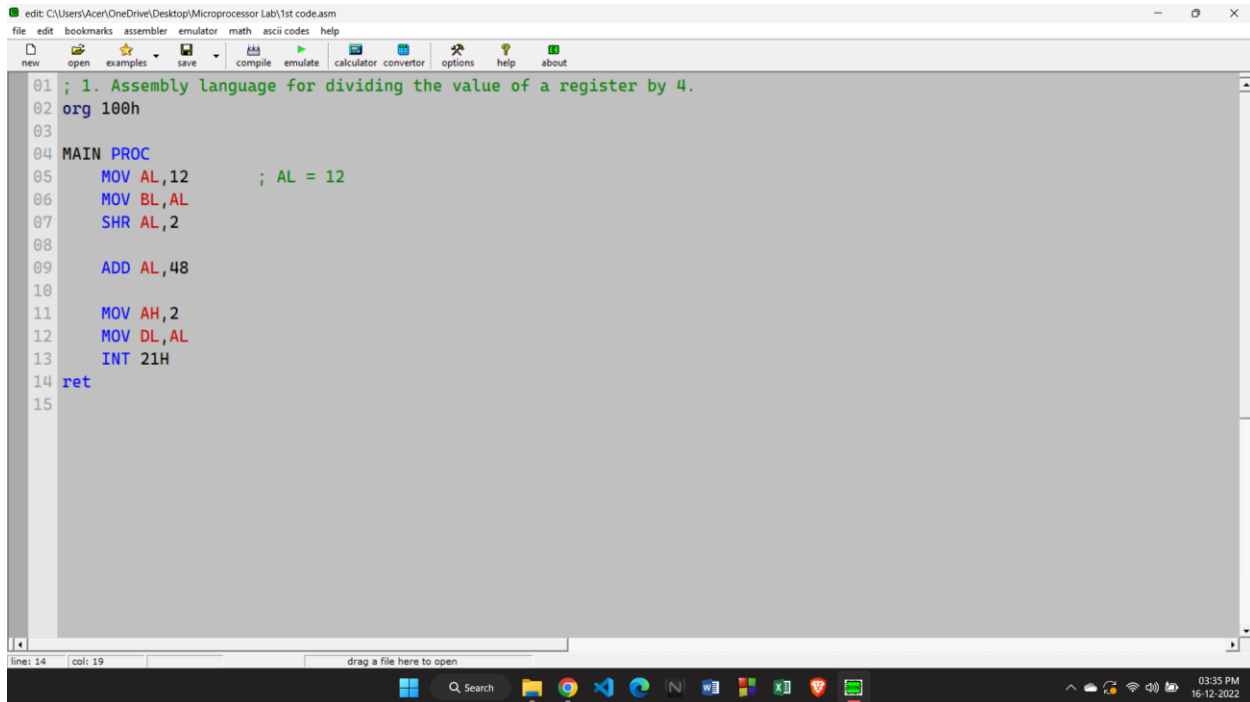
Lab Report 3

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1. Assembly language for dividing the value of a register by 4.

CODE:

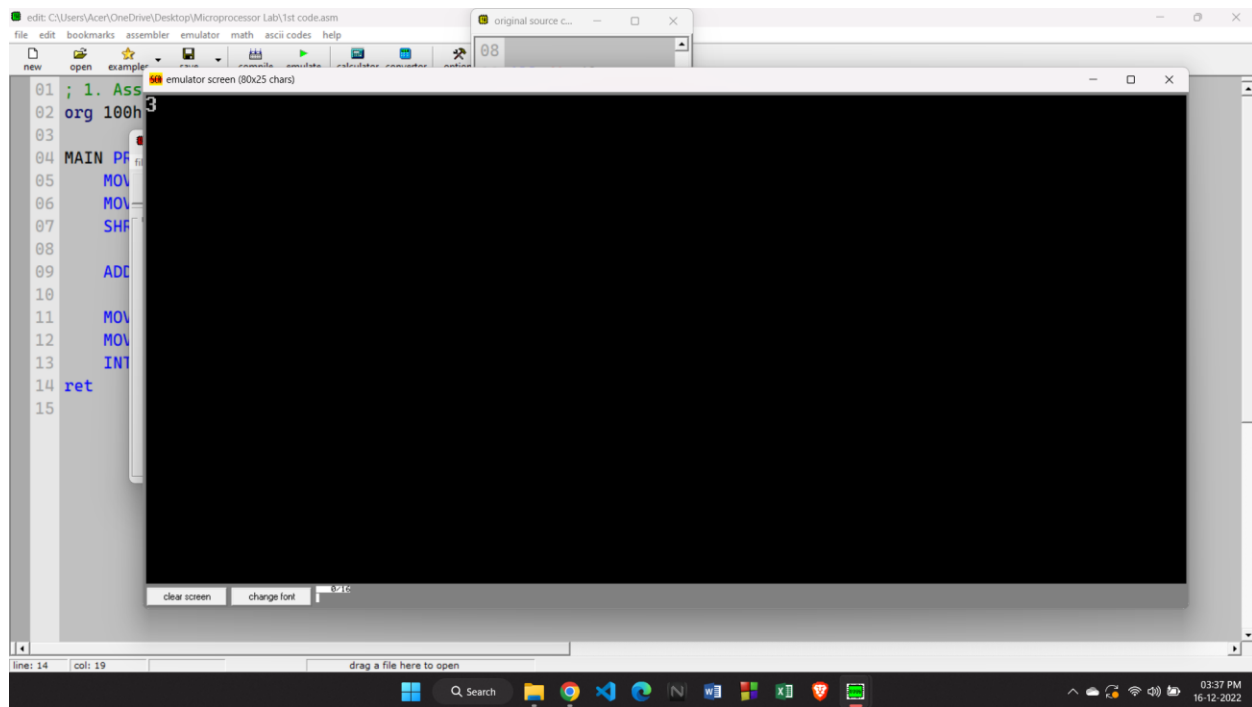


The screenshot shows a text-based assembly code editor window. The title bar indicates the file path: "edit: C:\Users\Acer\OneDrive\Desktop\Microprocessor Lab\1st code.asm". The menu bar includes "file", "edit", "bookmarks", "assembler", "emulator", "math", "ascii codes", and "help". The toolbar contains icons for "new", "open", "examples", "save", "compile", "emulate", "calculator", "converter", "options", "help", and "about". The main text area displays the following assembly code:

```
01 ; 1. Assembly language for dividing the value of a register by 4.
02 org 100h
03
04 MAIN PROC
05     MOV AL,12      ; AL = 12
06     MOV BL,AL
07     SHR AL,2
08
09     ADD AL,48
10
11     MOV AH,2
12     MOV DL,AL
13     INT 21H
14 ret
15
```

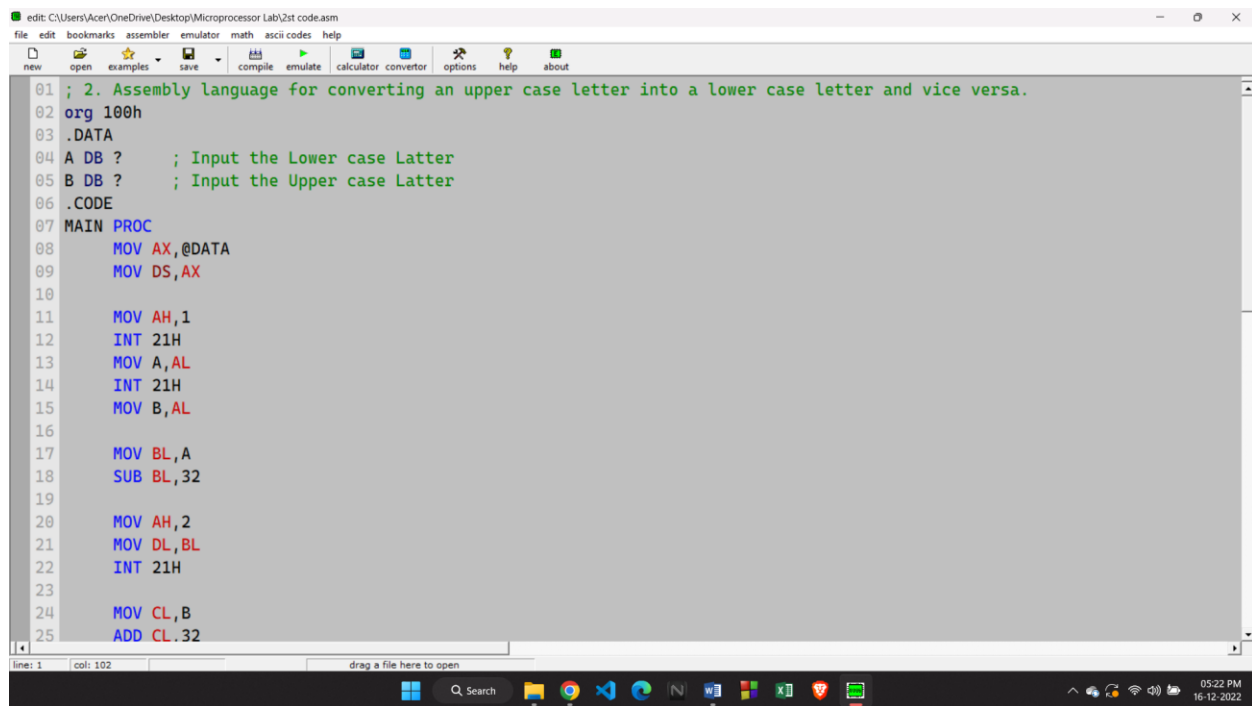
The status bar at the bottom shows "line: 14", "col: 19", and a "drag a file here to open" prompt. The Windows taskbar is visible at the very bottom, showing the Start button, Search bar, and various application icons.

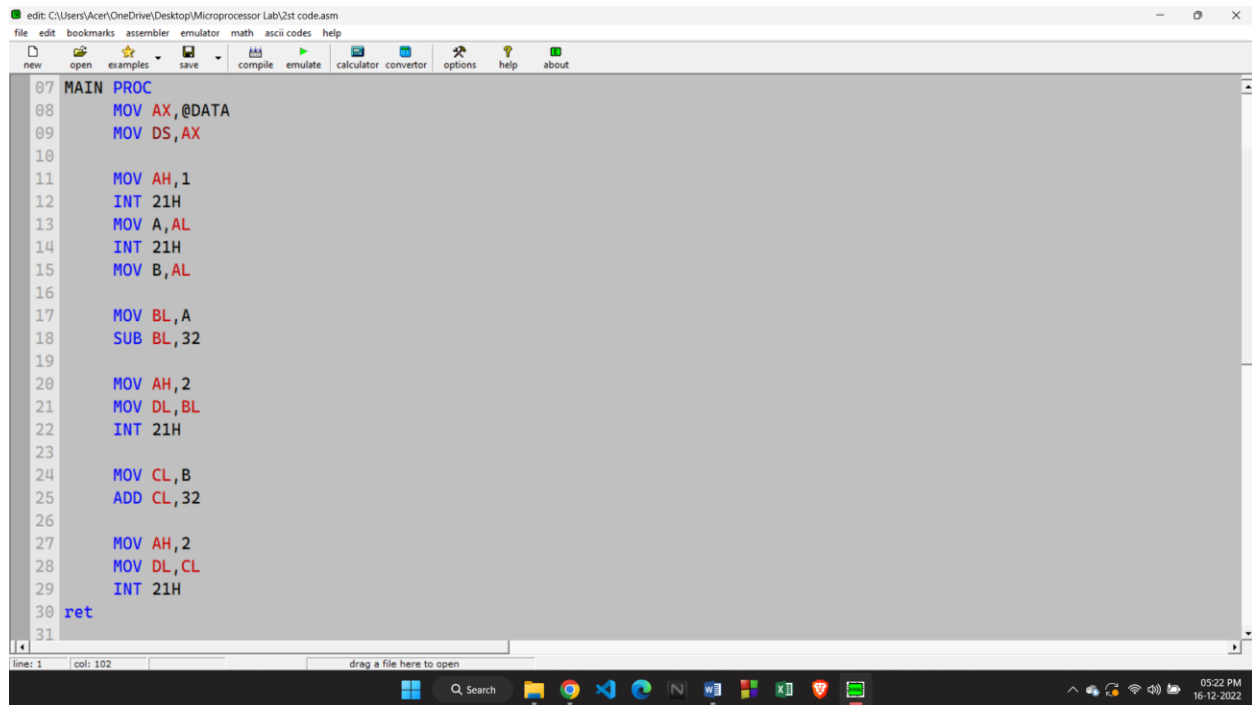
OUTPUT:



2. Assembly language for converting an upper case letter into a lower case letter and vice versa.

CODE:

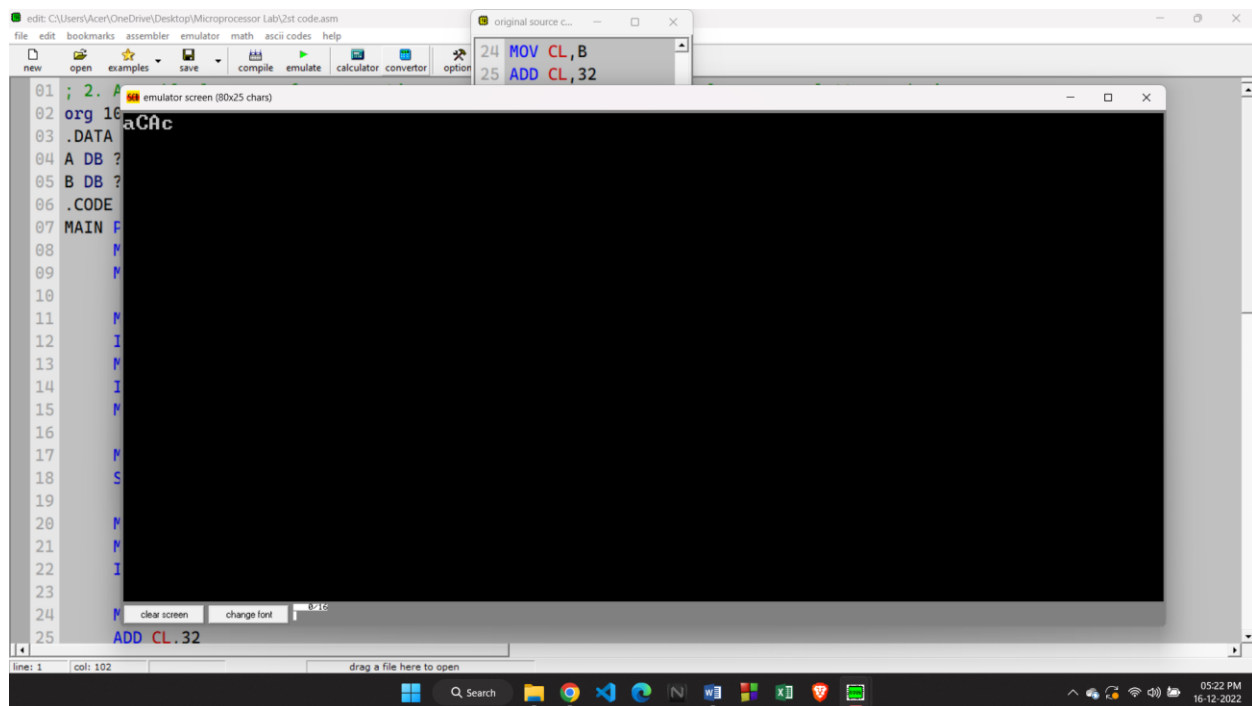




```
edit: C:\Users\Acer\OneDrive\Desktop\Microprocessor Lab\2st code.asm
file edit bookmarks assembler emulator math ascii codes help
new open examples save compile emulate calculator convertor options help about

07 MAIN PROC
08     MOV AX,@DATA
09     MOV DS,AX
10
11     MOV AH,1
12     INT 21H
13     MOV A,AL
14     INT 21H
15     MOV B,AL
16
17     MOV BL,A
18     SUB BL,32
19
20     MOV AH,2
21     MOV DL,BL
22     INT 21H
23
24     MOV CL,B
25     ADD CL,32
26
27     MOV AH,2
28     MOV DL,CL
29     INT 21H
30     ret
31
```

OUTPUT:



```
edit: C:\Users\Acer\OneDrive\Desktop\Microprocessor Lab\2st code.asm
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new open examples save compile emulate calculator convertor options help about

01 ; 2. A
02 org 16
03 .DATA
04 A DB ?
05 B DB ?
06 .CODE
07 MAIN P
08 M
09 M
10 M
11 M
12 I
13 M
14 I
15 M
16 M
17 M
18 S
19 M
20 M
21 M
22 I
23 M
24 M
25 ADD CL,32
```

3. Assembly language for checking if values of two registers are equal or not.

CODE:

```
edit: C:\Users\Acer\OneDrive\Desktop\Microprocessor Lab\3rd Code.asm
file edit bookmarks assembler emulator math ascii codes help
new open examples save compile emulate calculator convertor options help about

01 ; 3. Assembly language for checking if values of two registers are equal or not.
02 org 100h
03 .DATA
04 A DB 'EQUAL$'
05 B DB 'NOT EQUAL$'
06 .CODE
07 MAIN PROC
08     MOV AX,@DATA
09     MOV DS,AX
10
11     MOV AH,1
12     INT 21H
13     MOV BL,AL
14     INT 21H
15     MOV CL,AL
16
17     CMP BL,CL
18     JE LABEL1
19     JNE LABEL2
20
21     LABEL2:
22     LEA DX,B
23     MOV AH,9
24     INT 21H
25     JMP
```

```
edit: C:\Users\Acer\OneDrive\Desktop\Microprocessor Lab\3rd Code.asm
file edit bookmarks assembler emulator math ascii codes help
new open examples save compile emulate calculator convertor options help about

10
11     MOV AH,1
12     INT 21H
13     MOV BL,AL
14     INT 21H
15     MOV CL,AL
16
17     CMP BL,CL
18     JE LABEL1
19     JNE LABEL2
20
21     LABEL2:
22     LEA DX,B
23     MOV AH,9
24     INT 21H
25     JMP
26
27     LABEL1:
28     LEA DX,A
29     MOV AH,9
30     INT 21H
31     ret
32
33
34
```

OUTPUT:

```
edit: C:\Users\Acer\OneDrive\Desktop\Microprocessor Lab\3rd Code.asm
file edit bookmarks assembler emulator math ascii codes help
new open examples save compile emulate calculator convertor option
19 JNE LABEL2
20
01 ; 3. A
02 org 10
03 .DATA
04 A DB '1'
05 B DB '1'
06 .CODE
07 MAIN PROC
08 MOV AX, A
09 MOV BX, B
10
11 MOV CX, AX
12 INC CX
13 MOV DX, BX
14 INC DX
15 MOV EAX, CX
16
17 CLC
18 JNC J1
19 JNE LABEL2
20
21 LABEL1:
22 MOV SI, AX
23 MOV DI, BX
24 INC SI
25 JMP
```

```
edit: C:\Users\Acer\OneDrive\Desktop\Microprocessor Lab\3rd Code.asm
file edit bookmarks assembler emulator math ascii codes help
new open examples save compile emulate calculator convertor option
25 JMP
26
01 ; 3. A
02 org 10
03 .DATA
04 A DB '1'
05 B DB '1'
06 .CODE
07 MAIN PROC
08 MOV AX, A
09 MOV BX, B
10
11 MOV CX, AX
12 INC CX
13 MOV DX, BX
14 INC DX
15 MOV EAX, CX
16
17 CLC
18 JNC J1
19 JNE LABEL2
20
21 LABEL1:
22 MOV SI, AX
23 MOV DI, BX
24 INC SI
25 JMP
```

4. Assembly language for multiplying the value of a register by 5.

CODE:

```
edit: C:\Users\Acer\OneDrive\Desktop\Microprocessor Lab\4rd Code.asm
file edit bookmarks assembler emulator math ascii codes help
new open examples save compile emulate calculator convertor options help about

01 ; 4. Assembly language for multiplying the value of a register by 5.
02 org 100h
03
04 MAIN PROC
05     MOV AL,1
06     MOV BL,AL
07     SHL AL,2
08
09     ADD AL,48
10     ADD AL,BL
11
12     MOV AH,2
13     MOV DL,AL
14     INT 21H
15 ret
16
17
18
19
20
```

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OUTPUT:

```
edit: C:\Users\Acer\OneDrive\Desktop\Microprocessor Lab\4rd Code.asm
file edit bookmarks assembler emulator math ascii codes help
new open examples save compile emulate calculator convertor options help about
original source c...
09 ADD AL,48
10 ADD AL,BL

01 ; 4. Assembly language for multiplying the value of a register by 5.
02 org 100h
03
04 MAIN PROC
05     MOV AL,1
06     MOV BL,AL
07     SHL AL,2
08
09     ADD AL,48
10     ADD AL,BL
11
12     MOV AH,2
13     MOV DL,AL
14     INT 21H
15 ret
16
17
18
19
20
```

emulator screen (80x25 chars)

clear screen change font

line: 1 col: 71 drag a file here to open

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