

Exp No: 10
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Display a string

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Aim: To write assembly program to do Display a string.

Procedure:

1. Install all the required file for executing MASM programs.(Masm, edit, link, debug etc..).
2. Write the assembly program in any editor before mounting the folder to the MASM.
3. Mount the folder that contains the assembly program with any name such as "d".
 - mount d e:\masm
4. Create the object file of the assembly program using masm.
 - masm 16BITADD.asm
5. Use the link to create the executable file of the object file created from the above step.
 - Link 16BITADD.obj
6. Run the executable file using debug.
 - debug 16BITADD.exe
7. By un-assembling the program you can check the code segment of the program
 - u 076b:0100
8. To check the data memory segment, you can use the memory option to view the data stored.
 - d 076a:0000
9. To enter your own values, you can use the enter option which will prompt for new values.
 - e 076a:0000
10. To execute the program, you can use go option
 - G
11. After successful execution and termination of the program, you can check the result by checking the data memory segment
 - d 076a:0000
12. The result can be viewed in the respective address mentioned in the program.

10) Display a string

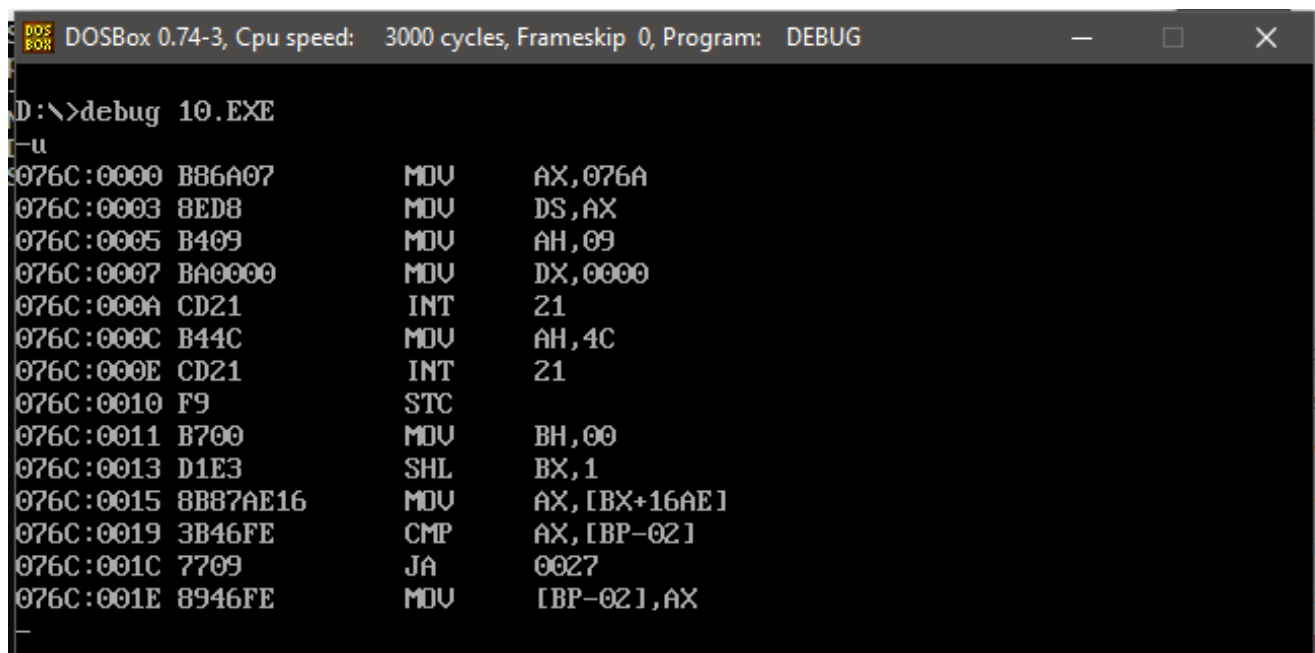
Algorithm:

- a) Assign data to ax register
- b) Load contents of memory location ax in register ds
- c) Load content 09h Display A Character String code to ah register
- d) Load contents of memory location offset message in register dx
- e) Display the string using the 21h display code
- f) Load content 4ch termination code to ah register
- g) Stops execution of the program

Program:

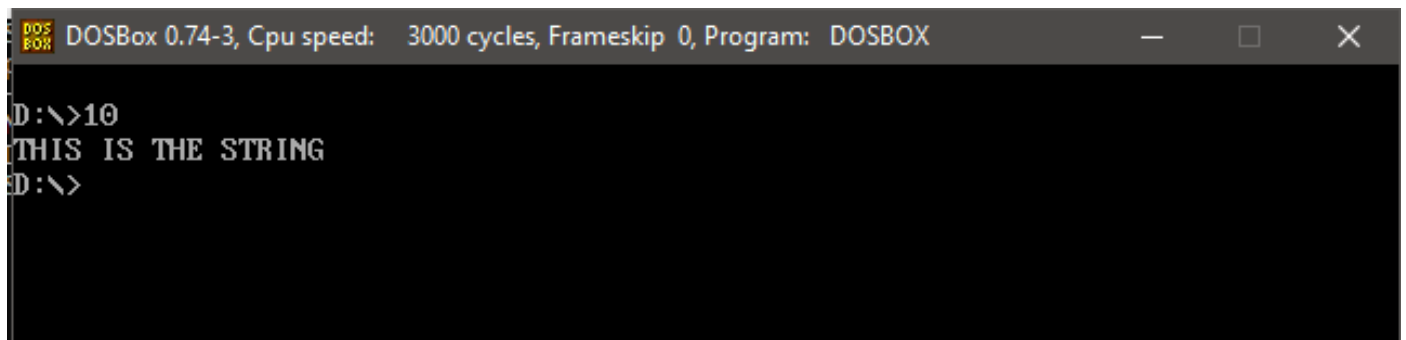
Program	Comments
ASSUME CS:CODE,DS:data	Initializing the code, data and extra segments to assembler
DATA SEGMENT	Data segment
MESSAGE DB "THIS IS THE STRING\$"	MESSAGE is declared and initialized a string
DATA ENDS	
CODE SEGMENT	Code segment
START:MOV AX, DATA	Transferring the data from memory location data to ax
MOV DS,AX	Transferring the data from memory location ax to ds
MOV AH,9	Transferring the 09h Display A Character String code to ah register
MOV DX,OFFSET MESSAGE	Transferring the data from memory location offset message in register dx
INT 21H	Display the string using the 21h display code
MOV Ah,4CH	Transferring the termination code 4ch to ah
INT 21H	Termination
CODE ENDS	Code ends
end start	

Unassembled code:



```
DOS BOX DOSBox 0.74-3, Cpu speed: 3000 cycles, Frameskip 0, Program: DEBUG
D:\>debug 10.EXE
-
076C:0000 B86A07      MOV     AX,076A
076C:0003 8ED8          MOV     DS,AX
076C:0005 B409          MOV     AH,09
076C:0007 BA0000    MOV     DX,0000
076C:000A CD21          INT     21
076C:000C B44C          MOV     AH,4C
076C:000E CD21          INT     21
076C:0010 F9          STC
076C:0011 B700          MOV     BH,00
076C:0013 D1E3          SHL     BX,1
076C:0015 8B87AE16    MOV     AX,[BX+16AE]
076C:0019 3B46FE          CMP     AX,[BP-02]
076C:001C 7709          JA      0027
076C:001E 8946FE          MOV     [BP-02],AX
-
```

Sample Input and output:



```
DOS BOX DOSBox 0.74-3, Cpu speed: 3000 cycles, Frameskip 0, Program: DOSBOX
D:\>10
THIS IS THE STRING
D:\>
```

Result:

Thus, the assembly program to display a string is written and executed.