Displaying String

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Aim:

To write and execute 8086 programs for displaying a string.

Procedure:

- Mount masm folder to a drive on DOSBOX.

- Navigate to mounted drive using 'dir' .

- Save 8086 program with the extension **'.asm'** in the same folder using the command **'edit'**.

- Assemble the **.asm** file using the command **'masm filename.asm'**.

- Link the assmebled **.obj** file using the command **'link filename.obj'**.

- Debug the executable file **.exe** with the **'debug filename.exe'** command.

    i. **U:** To view the un-assembled code.
    ii. **D:** Used as 'D segment:offset' to see the content of memory locations starting from segment:offset address.
    iii. **E:** To change the values in memory.
    iv. **G:** Execute the program using command.
    v. **Q** exits from the debug session.

Algorithm:

∗ START: Move the starting address of data segment to AX register and move the data from AX register to DS register.

∗ Move 9H to AH register.

∗ Calling int 21H with AH = 9 will display the contents from the offset stored in DX register.

∗ Move the hexadecimal value 4C into AH register. INT 21H means invoke the interrupt identified by the hexadecimal number 21. In MS-DOS, invoking interrupt 21h while AH = 4Ch causes the current process to terminate and uses the value of register AL as the exit code of the process.

Program:

	Program	Comments
start:	MOV AX,data	Move data segment address contents to AX register
	MOV AH,9	DOS function 9
	MOV DX, OFFSET MESSAGE	load offset address of message into DX.
	INT 21h	When AH = 09, string is printed onto the screen
	MOV ah,4ch	
	INT 21h	Request interrupt routine

Unassembled Code:

```
D:\>debug 10.EXE
-U
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
```

Input and Output:

```
-g
THIS IS THE STRING
Program terminated normally
```

Result:

8086 ASL programs for displaying string has been executed successfully using MS - DOSBox.