



BHARATIYA VIDYA BHAVAN'S SARDAR PATEL INSTITUTE OF TECHNOLOGY

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Department of Computer Engineering

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AIM:	To implement various String Operations in 8086 through the utilities provided by DOS interrupts (MASM)
Program 1	
PROBLEM STATEMENT :	Comparing a pre-defined string.
PROGRAM:	<pre>Assume cs:code, ds:data, es:extra Data Segment str1 db "Strings are equal", "\$" str2 db "Strings are not equal", "\$" str3 db "Teacher", "\$" Data ends extra segment str4 db "Teacher", "\$" extra ends CODE SEGMENT START: mov ax, DATA mov ds, ax mov ax, EXTRA mov es, ax lea si, str3 lea di, str4 mov cx, 06h cld repe cmpsb</pre>



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	<pre>jz equal lea dx, str2 mov ah, 09h int 21h jmp NO equal: lea dx, str1 mov ah, 09h int 21h NO: mov ah, 4ch int 21h code ends end start</pre>
RESULT:	



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```
DOSBox 0.74-3, Cpu speed: 3000 c ies, Frameskip 0, Program: DEBUG -

Microsoft (R) Segmented Executable Linker Version 5.31.009 Jul 13 1992
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Run File [CMPSTR.exe]:
List File Inul.map]:
Libraries [.lib]:
Definitions File [nul.def]:
LIME : warning L4021: no stack segment

C:\>debug CMPSTR.exe
-d 076A:0000

076A:0000  53 74 72 69 6E 67 73 20-61 72 65 20 65 71 75 61  strings are equa
076A:0010  6C 24 53 74 72 69 bE 67-73 20 61 72 65 20 bE 6F  l$strings are no
076A:0020  74 20 65 71 75 61 6C 24-4D 61 64 69 75 6B 61 72  t equal$Teacher
076A:0030  24 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00  $.
076A:0040  4D 61 64 68 75 6B 61 72-24 00 00 00 00 00 00 00  Teacher$.
076A:0050  B8 6A 07 BE D8 B8 6E 07-8E CO D8 24 74 00 8D 3E  .j....n....6(>
076A:0060  00 00 B9 06 00 FC F3 A6-74 0B D8 21 12 00 B4 09  .....t
076A:0070  CD 21 EB 09 90 EID 16 00-00 B4 07 CD 21 B4 4C CD  !.....!..L.

Strings are equal
Program terminated normally
```

Program 2	
PROBLEM STATEMENT :	Comparing a string by taking input from user.
PROGRAM:	<pre>DATA SEGMENT STRING1 DB 256 DUP (0) STRING2 DB 256 DUP (0) RESULT DB 'Strings are equal\$', 0 RESULT_DIFF DB 'Strings are different\$', 0 DATA ENDS CODE SEGMENT ASSUME CS:CODE, DS:DATA START:</pre>



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```
MOV AX, DATA
MOV DS, AX

LEA SI, STRING1
LEA DI, STRING2

COMPARE_LOOP:
MOV AL, [SI]
MOV BL, [DI]

CMP AL, BL
JNE STR_DIFF

CMP AL, 0
JE STR_EQUAL

INC SI
INC DI
JMP COMPARE_LOOP

STR_EQUAL:
MOV DX, OFFSET RESULT
MOV AH, 09H
INT 21H
JMP TERMINATE

STR_DIFF:
MOV DX, OFFSET RESULT_DIFF
MOV AH, 09H
INT 21H

TERMINATE:
MOV AH, 4CH
INT 21H

CODE ENDS
END START
```



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RESULT:

```
DOSBox 0.74-3, Cpu speed: 3000 cycles, Frameskip 0, Program: DEBUG -
Microsoft (R) Segmented Executable Linker Version 5.31.009 Jul 13 1992
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Run File [CMPSTR.exe]:
List File [nul.map]:
Libraries [.lib]:
Definitions File [nul.def]:
LINK : warning L4021: no stack segment

C:\>debug CMPSTR.exe
-d 076A:0000
076A:0000  00 00 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00  .....
076A:0010  00 00 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00  .....
076A:0020  00 00 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00  .....
076A:0030  00 00 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00  .....
076A:0040  00 00 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00  .....
076A:0050  00 00 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00  .....
076A:0060  00 00 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00  .....
076A:0070  00 00 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00  .....
-e 076A:0000 "Hello"
-e 076A:0100 "Hello"
-g
Strings are equal
Program terminated normally
-
```

CONCLUSION:

In this experiment, I was able to learn the concept of comparing strings in assembly language program by hard coding as well as taking input from user.