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NAAC Accredited with "A" Grade (CGPA : 3.18)



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PROCESSOR ORGANIZATION AND **ARCHITECTURE**

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COMPUTER ENGINEERING | TE – B2 | 60004200132

EXPERIMENT – 8

Aim: Assembly program to find minimum/ maximum no. from a given array

Code:

DATA SEGMENT

STRING1 DB 99H, 12H, 56H, 45H, 36H

DATA ENDS

CODE SEGMENT

ASSUME CS:CODE,DS:DATA

START: MOV AX,DATA

MOV DS,AX

MOV CH,04H

LEA SI,STRING1

MOV CL,[SI]

MOV DL,[SI]

UP:MOV AL,[SI]

CMP AL,CL

JC DOWN

MOV CL,AL

DOWN: CMP AL,DL

JNC GO

MOV DL,AL

GO: INC SI

DEC CH

JNZ UP

CODE ENDS

END START



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Output:

The screenshot displays the emul006 - assembler and microprocessor emulator 4.08 interface. The main window shows the assembly code for a program that finds the minimum and maximum values in an array. The code is as follows:

```
DATA SEGMENT
STRING1 DB 99H, 12H, 56H, 45H, 36H
DATA ENDS

CODE SEGMENT
ASSUME CS:CODE, DS:DATA
START: MOV AX, DATA
        MOV DS, AX
        MOV CH, 04H
        LEA SI, STRING1
        MOV CL, [SI]
        MOV DL, [SI]

UP: MOV AL, [SI]
    CMP AL, CL
    JC DOWN
    MOV CL, AL

DOWN: CMP AL, DL
    JNC GO
    MOV DL, AL

GO: INC SI
    DEC CH
    JNZ UP

CODE ENDS
END START
```

The registers window shows the following values:

Register	Value
AX	0000
BX	0000
CX	0031
DX	0000
SI	0711
DI	0000
SP	0000
BP	0000
IP	0000
CS	0711
DS	0710
SS	0710
ES	0700

The flags window shows the following values:

Flag	Value
CF	0
ZF	0
SF	0
OF	0
PF	0
AF	0
IF	1
DF	0

The variables window shows the following values:

Variable	Value
STRING1	99h, 12h, 56h, 45h, 36h

Conclusion:

Write and emulate assembly program to find minimum/ maximum no. from a given array.