Program

```
ASSUME CS:CODE, DS:DATA

DISPLAY MACRO MSG ; Macro to display messages
LEA DX, MSG
MOV AH, 09H
INT 21H
ENDM

DATA SEGMENT
MSG1 DB 0AH, 0DH, "Enter the String: $"
MSG2 DB 0AH, 0DH, "Converted String is: $"
STR DB 20 DUP("$")
DATA ENDS

CODE SEGMENT
START: MOV AX, DATA
       MOV DS, AX

       DISPLAY MSG1; Call macro

       MOV AH, 0AH ; Read string
       LEA DX, STR
       INT 21H

       MOV CH, 00
       MOV CL, BYTE PTR [STR+1]
       LEA SI, STR+2
L1:    MOV AH, BYTE PTR [SI]
       CMP AH, "A"
       JL EXIT; Jump to EXIT if less than
                                  A
       CMP AH, "Z"
       JG L2; Jump to L2 if greater than
                                  Z
       ADD BYTE PTR [SI], 32; Convert
                              uppercase to
                              lowercase

       JMP L3; Jump to L3

L2:    CMP AH, "a"
       JL EXIT; Jump to EXIT if less than a
       CMP AH, "z"
       JG EXIT; Jump to EXIT if greater than
                                  z
L3:    INC SI
       LOOP L1; Loop L1 until CL is 0

       DISPLAY MSG2; Call macro

       DISPLAY STR+2; Call macro

EXIT:  MOV AH, 4CH; To terminate program
       INT 21H
CODE ENDS
END START
```

Output

```
Enter the String: ABCDabcd
Converted String is: abcdabcd
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Experiment Name / No.: 7. UPPERCASE TO LOWERCASE

Camlin / Page No. 23
Date 18 / 02 / 2020

Aim

To convert a given string from uppercase to lowercase.

Logic

The input string is read into a variable STR. CL contains the length of the input string. The effective address of the 1st character of the string is loaded into SI. The 1st character of the string is loaded into AH & it is compared to A & Z. If it is less than A, then the program is exited. If it is greater than Z, it is compared with a & z. If it is less than a or greater than z, the program is exited. If the character lies between A & Z, it is converted to lowercase by adding the value 32. SI in incremented & CL is decremented. This process is repeated until the string ends i.e. CL becomes 0. The output is displayed as a string.

Result

Converted a given string from uppercase to lowercase.

Teacher's Signature: