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, "Enter the String: $"
MSG2 DB 0AH, 0DH, "The Length is: $"
DATA ENDS

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

       DISPLAY MSG1; Call macro

       MOV BX, 0

START1: MOV AH, 01H; Read 1 character
        INT 21H

        CMP AL, 0DH
        JZ NEXT; Jump to NEXT if zero

        INC BX
        JMP START1; Jump to START1

NEXT:  DISPLAY MSG2; Call macro

       MOV AX, BX
       MOV CX, 0
       MOV DX, 0
       MOV BX, 10D

       BREAK: DIV BX
              PUSH DX; Push to Stack
              MOV DX, 0
              INC CX
              OR AX, AX
              JNZ BREAK; Jump to
                        BREAK if not
                        zero

       PRINT: POP DX; Pop from Stack
              ADD DL, 30H; Convert to ASCII
              MOV AH, 02H; Display output
              INT 21H
              LOOP PRINT

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

Output

```
Enter the String: hello
The Length is: 5
```

Experiment Name / No.: 5. LENGTH OF A STRING

Camlin / Page No. 19
Date 06 / 02 / 2020

Aim

To find the length of a given input string.

Logic

BX is initialized to 0. 1st character of the input string is read into AL. If ENTER key is pressed, it goes to the label NEXT. Otherwise BX is incremented. This process is repeated for each character of the string, until the ENTER key is pressed. Now BX contains the length of the input string. It is moved to AX. CX & DX are both initialized to 0. The value 10 in decimal is moved to BX. DX:AX is divided by BX & quotient is in AX & remainder is in DX. DX is pushed to the stack & then made 0. CX is incremented & AX is ORed with AX. This process is repeated until AX becomes 0. Each digit is popped from the stack into DX & added with 30H to make it ASCII. The output is displayed digit-by-digit.

Result

Found the length of a given input string.

Teacher's Signature: