# Lab 4

**Ex.No.4. Program to demonstrate string operation.**

**4.1 Introduction:**

The purpose of this experiment is to find the number of character in a string

**4.2 Hardware Requirement:**

The 8086 Microprocessor kit, Power Supply.

**4.3 Program Logic:**

Addressing the string is done using the SI register, and the DX register is used to store the number of characters. End of the string is detected using FF. Hence each character is fetched from memory and is compared with FF. If the zero flag is set, then it denotes end of string, the count has been stored in DX, by incrementing it after each comparison.

**4.4 Program:**

**Introduction of general purpose registers, indirect addressing, and loop instructions, compare instruction, increment instruction:**

| ADDRESS | LABEL | MNEMONICS | OPCODE | COMMENTS |
|---|---|---|---|---|
| | | MOV SI,1200 | | |
| | | MOV DX,FFFF | | |
| | | MOV AH,FF | | |
| | LOOP | INC DX | | |
| | | MOV AL,[SI] | | |
| | | INC SI | | |
| | | CMP AH,AL | | |
| | | JNZ LOOP | | |
| | | MOV [1100],DX | | |
| | | HLT | | |

**4.5 Pre-Lab Questions:**

1. Does the overlapping of segment possible in 8086?
2. Count the number of times the CMP instruction executed in our program?
3. In our program, List out the instructions which will affect by the flags.
4. Write conditional and control flags functions.
5. Find errors in the following program and write the correct program?

```
        MOV AL, 00H
        MOV BL, 0005H
        MOV CL, 02H
AGAIN:  ADD AL, BL
        JNZ AGAIN
```

```
DEC CL
MOV DI, 1300H
MUV [DI], AL
HLT
```

**4.6 Post-Lab Questions**:

1. Write the program for Fibonacci series and execute in emulator software.
2. List the instructions that can be used to clear the accumulator or any registers?
3. Write the use of pointers and index registers?