Experiment No: 08 **Date :**

Roll No: _____

Aim : **To perform string instruction of 8086.**

Theory :

String Instructions : **A String Instruction in 8086 is a series of the same type of data items in sequential memory locations. Following are the string instruction of 8086 :**

1. **MOVS**
2. **LODS**
3. **STOS**
4. **CMPS**
5. **SCANS**

Key Points for string instructions:

1. SI - Index offset for source string

2. DI - Index offset for destination string

3. CX - Default counter register

4. AL/AX – Register which required to stored data for string instructions.

5. CLD - clear direction flag (DF = 0) **DF = 0 : Auto increment SI,DI pointers**

6. SLD – Set direction flag. (DF= 1) **DF = 1 : Auto decrement SI,DI pointers**

1. MOVS B/W/D :

This instruction is used to transfer the contents of source to destination.

Operation : ES: [DI] ← DS: [SI]

2. LODS B/W/D :

This instruction is used to load string byte into AL and string word into AX register. This instruction copies a byte or word from a string location pointed by SI into the AL/AX register.

Operation : AL ← DS: [SI]

3. STOS B/W/D :

This instruction is used to load string byte from AL and string word from AX register. This instruction copies a byte or word from a AL/AX reg into string location pointed by DI in extra segment.

Operation : AL → ES: [DI]

4. SCAS B/W/D :

This instruction is used to compare a byte/word into AL/AX with a byte pointed by DI in ES.

Operation : Compare AL/AX with ES: [DI]

5. CMPS B/W/D :

This instruction is used to compare a byte/word into source string of DS pointed by SI with a byte/word pointed by DI in ES.

Operation : Compare DS:[SI] with ES: [DI]

Program 1: WAP to create an array of and find the displacement at which given data is present
Name of an array : StrArr
Size of an array : 07
Elements of an array : 04,03,09,05,02,01,15
No and displacement to be search: 02H

Algorithm :

Flowchart :

Program :

Steps to display Output :

Output:

Conclusion :