# CLASS: S.E. COMP SUBJECT: MPL

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**TITLE:** Data block Transfer

**Problem statement :**

Write x86 ALP to perform non-overlapped and overlapped block transfer (with and without string specific instructions). Block containing data can be defined in the data segment.

**OBJECTIVE :**

To learn

• Overlapped / Non – overlapped data transfer in segments

• Block transfer instruction of 8086

• Data storage in the memory and segments

**OUTCOME:**

Students will study different block transfer instructions and also understood block transfer within different segments.

**Prerequisites:** Instruction set of 80386

**THEORY :**

One of the frequent operations used in programming is shifting transferring the data form one memory location to another memory location. These operations can be with simple mov instructions which may result in more number of operations. We can make use of instructions like MOVSB to transfer the data. The relevant instructions are LOOP / MOVSB.

The data can be transferred either in overlapped fashion or non overlapped Fashion. In case of overlapped address the two possible situations are for the Source address to be greater than the destination address in which case the first element in the source is to be moved first or for the source address to be less than the destination address which requires the last element of the source to be moved first.

**Algorithm:**

**A] Overlapping**

1. Study system call to read and display character on the screen.

2. Accept the Value of „N‟ i.e. how many numbers to add

3. initialize Sum =0 4. Read a number (two digit)

5. add it to sum

6. repeat the steps 4 and 5 to add all N numbers

7. Print the result /Sum

8. End.

**B] Non-Overlapping**

1. Declare a source array.

2. Load the address of source array in one of the registers. (Index register)

3. Read the first byte from the source array.

4. Increment the pointer/SI by length of array which becomes the starting Address of destination array.

5. Move the source element to the destination address.

6. In case of overlapping mode based on the destination address either move the first Element or last element in beginning of transfer operation.

**Test Cases Executed:**

**CONCLUSION:**

We have studied different block transfer instructions and also understood block transfer within different segments