MOV [ABCD],BX ((DS)0+ABCD)← (BX)

MOV DI,A2F4H (DI) ← A2F4

MOV [BP],453AH ((SS)0+(BP))← 453A

MOV AX,DS (AX)← (DS)

NOTE

Cs and IP reg cannot to be used as a destination operands with MOV source they store address of the next instruction .

Ex:- if the DS reg contains 1234H ,what is the effect of executing the instruction give the following memory contents MOV CX,[0ABCDH]

SOL/

(12340+ABCD)CL

(12340+ABCD+1)CH

In other word the contents of memory location $1CF0D_{16}$

Is loaded into CL and the contents of $1CF0H_{16}$

Is loaded into CH

The XCHG instruction

In some application ,it is required to interchange the contents of tow register or between a register and a memory location contents the 8086 XCHG instruction perform this operation the forms of the XCHG instruction and its allowed operands are shown below:-

mnemonic	meaning	format	operation	Flag affected

XCHG	exchange	XCHG D,S	(D) ↔ (S)	none

Source/ destination operands

Reg ↔ reg

Reg ↔ memory

Ex:-

XCHG AX,DX (AX) ↔ (DX)

XCHG [043F2H],BX ((DS)0+43F2$_{16}$) ↔ BX

The LEA (load effective address) instruction

The LEA instruction loads a 16bit register with offset address of the data specified by the operand it's basic format is:-

[LEA reg16 , offset address]

The destination operand can be any one of the 16bit general purpose registers or segment registers while the source operand is an offset address that can be specified as follows.

LEA AX ,[DXI] AX=1000H

LEA SI , Data load SI with the offset address of data (data is a variable that specify a memory location contents)

LEA BX , [DI] BX=DI ,Similar to (MOV BX,DI)

LEA SI , [BX=DI] SI=BX+DI

The LDS & LES instruction

The LDS and LES instruction load any 16 bit register with an offset address ,and the DS or ES segment registers with a segment address

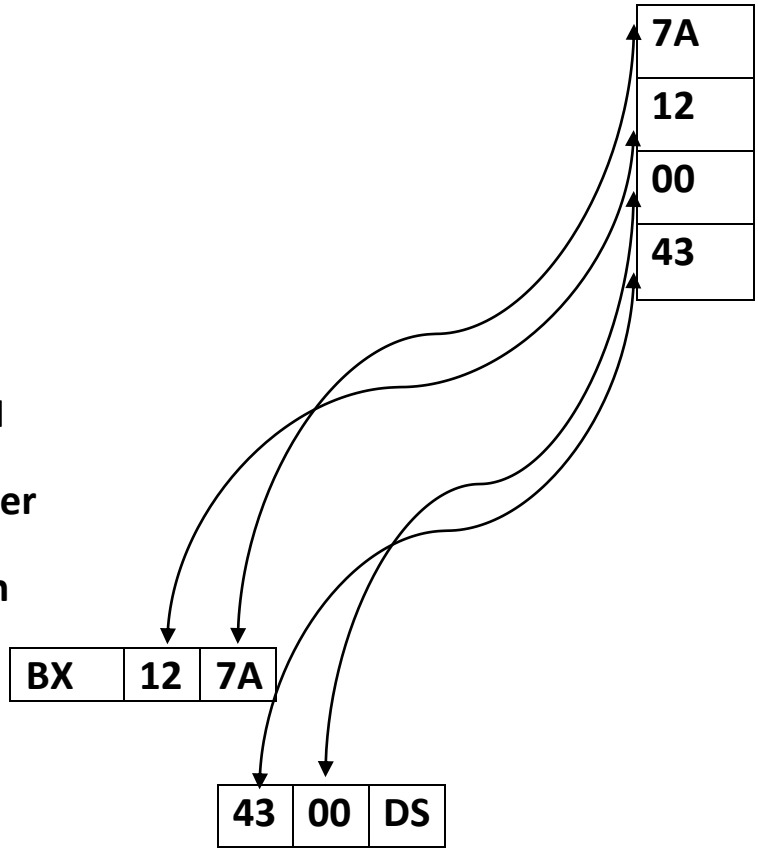
For example:- LDS BX ,[DI] transfer the32- bit numbers addressed by DI in the data segment in to the BX and DS registers .

The LES is similar to the DS except it loads the extra segment register ES instead of DS

Example:-assume that DS=1000H , BX= 6f2AH , DI=1000H,what are the new values of DS and BX after executing the LDS BX,[DI] instruction? Given that memory locations 11000_11003 are as shown below:-

The physical address of the instruction is

PA=(DS)0+DI



10000+1000=11000H

Register contents after

Instruction execution

BX=127AH,DS=4300H