

PART 1

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1. ANS:

LEA = Load Effective Address

→ This is an indirected instruction.

Offset = This is a segment in memory which can exist in 20 bit address space.

→ This is also referred to the effective address.

2. ANS:

Data segment: This is a register (DS). This points the DS of the memory where the data is stored.

Data: This is the data which contains the memory to store.

So DS is the register and Data is the segment of it.

3 Ans:

ASSUME DS: DATA

DS: Data Segment \leftarrow Data

and CS = Code segment register : Code

By ASSUME we are using to registers DS and CS
one is for Data and another is for code.

So to have DS: DATA point the the location of the
Data
and CS: CODE in the instruction of the code
which need to implement.

ANS:

AX - This register divided in AH and AL to perform 8-bit instruction.

Example: `ADD AX, AX` ($AX = AX + AX$)

BX - This is base register. This is divided in BH and BL. It used to store value of the offset.

Example: `MOV BL, [500]` ($BL = 500H$)

CX - The counter register, divided into CH and CL. It is used in looping and rotation.

Example: `MOV CX, 0005` LOOP.

DX - The Data register, Divided into DH and DL. It is used in multiplication and input/output port address.

Example `MUL BX` ($DX, AX = AX * BX$)

Without this trace we got.

SP - Stake pointer.

BP - Base pointer.

SI - Source index.

DI - Destination index.