CSE 331/L-7/02.03.2024/

⊛ String Data Transfer

⇒ LODS, STOS, MOVS, INS, OUTS

⇒ value of SI/DI must be known

⇒ value of D, cx must be known

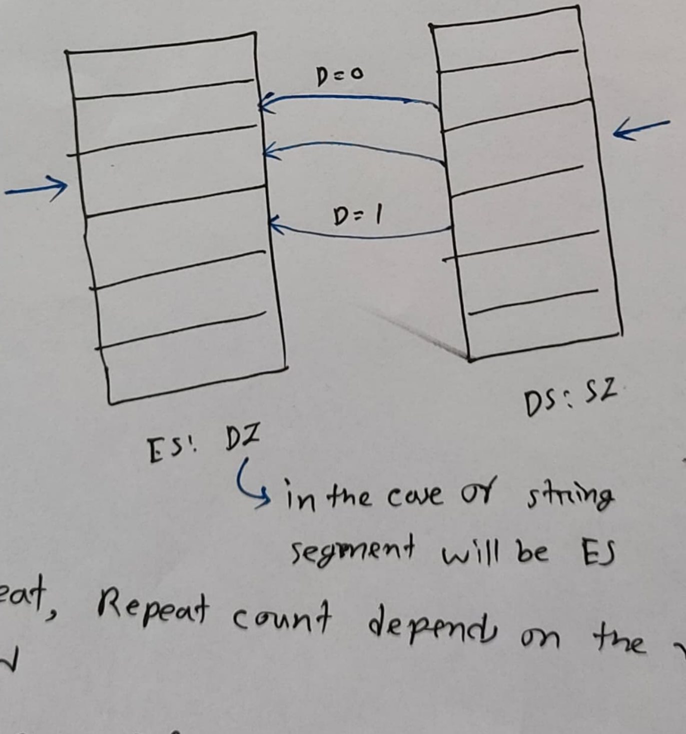
⊛ MOVS B/W/D/Q ⇒ memory to memory transfer

Q → 64 bit

B → Byte W → Word D → Double Word

⇒ Source is fixed, DS: SI

⇒ Destination is fixed, ES: DI



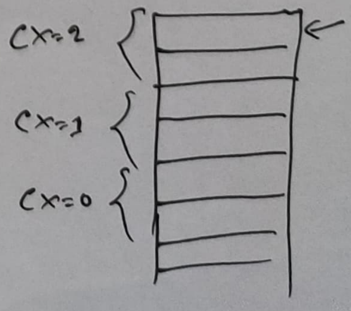
for word size, incre. and decrement depends on the value of D. This applicable for both source & Destn.

ES: DI ↳ in the case of string segment will be ES

⊛ REP MOVSW

REP → Repeat, Repeat count depends on the value of cx

- check value of cx == 0 ?
  - false, execute and decreament value of cx
  - true terminate operation



⊛ CLD = Clear D, set D = 0 (auto increament mode)

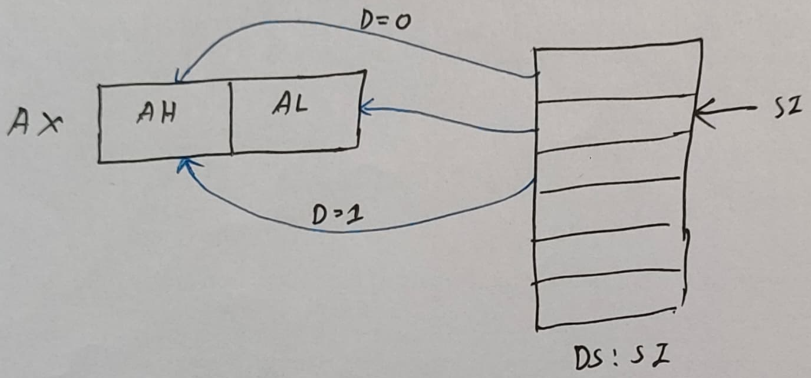
STD = Set D, set D = 1 (auto decreament mode)

⊛ ~~LODS~~ ⇒

⊛ LODS B/W/D/Q ⇒ Load String

⇒ Source is fixed as DS : SI

⇒ Destination is fixed as AL, AX, EAX, RAX



⇒ LODS LIST,

transfer size depends on the size of LIST

- in the position of B/W/D/Q → LIST

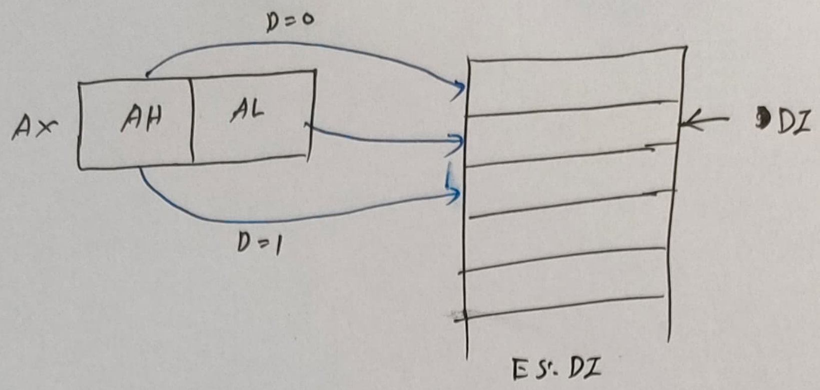
⇒ REP LODS ✗ not possible

⇒ As destination is fixed, repeating operation will override the previous data.

⊛ STOS B/W/D/Q ⇒ Store String

⇒ Source is fixed as AL, AX, EAX, RAX

⇒ Destination is fixed as ES : DI



⇒ REP STOSB

- Possible as it is not overriding the destination data
- But it will copy the same string to multiple location of Extra Segment.

⊛ REP ⇒ Repeat

⇒ used only for string instruction

⇒ not applicable for LODS

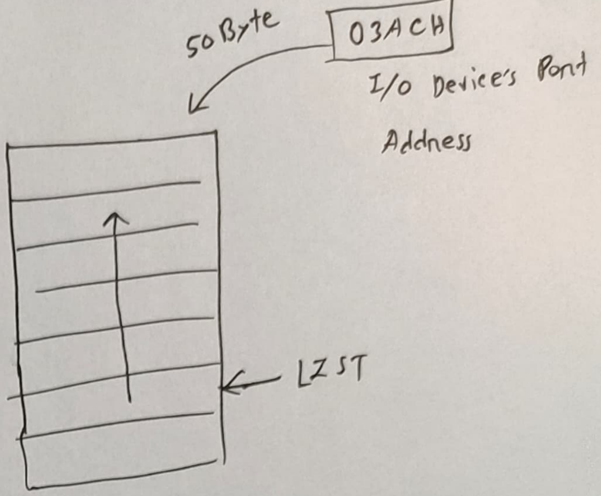
⊛ INS B/W/D/Q ⇒ Store string in ES:DI came from I/O Devices

address of the device ~~store~~ need to be store in Dx, before execution of INS

⊛ OUTS B/W/D/Q ⇒ transfer string data from DS: SI to I/O Devices.

↳ need to load in Dx first.

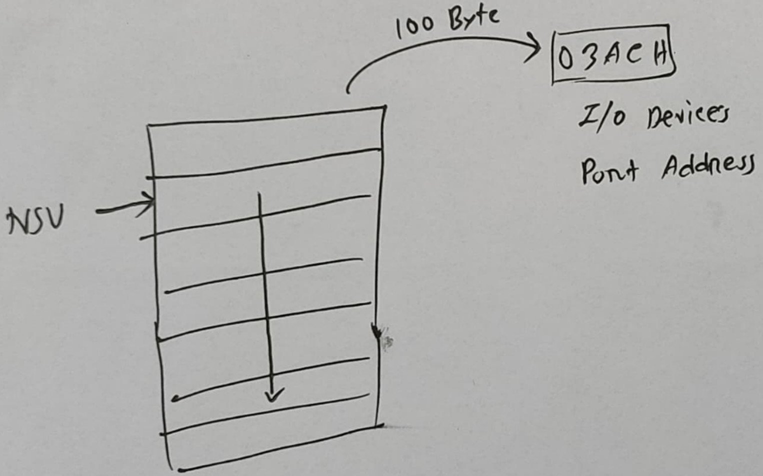
Example 4-9:



Can be written in any sequence

```
LEA  DI, LIST
CLD
MOV  CX, 50
MOV  DX, 03ACH
REP  INSB
```

; comment must in exam



```
⇒   LEA  SI, NSU
    STD
    MOV  DX, 03ACH
    MOV  CX, 100/50
    REP  OUTSB/W
```

; Comment Must

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