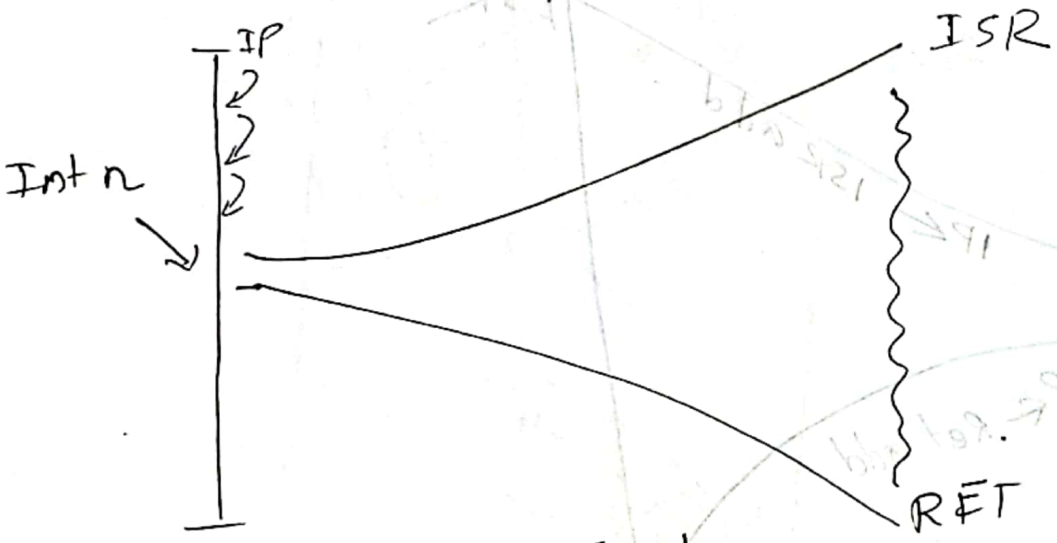
8086 Interrupts

→ there are 256 Interrupts.

→ every activity in MPU is initiated by interrupt.

→ what is int?

A: An interrupt is a condition that makes the MPU execute ISR: Interrupt Service Routine.



→ MP execute instruction seaventially by incrementing IP (Instruction pointer)

CS → seg add

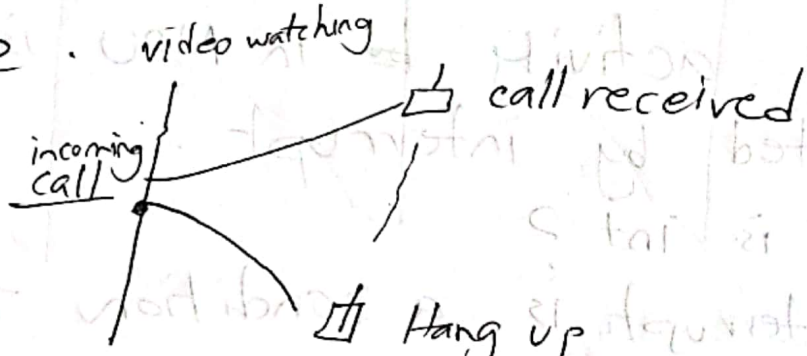
IP → off add

ISR: specially written program to service the interrupts.

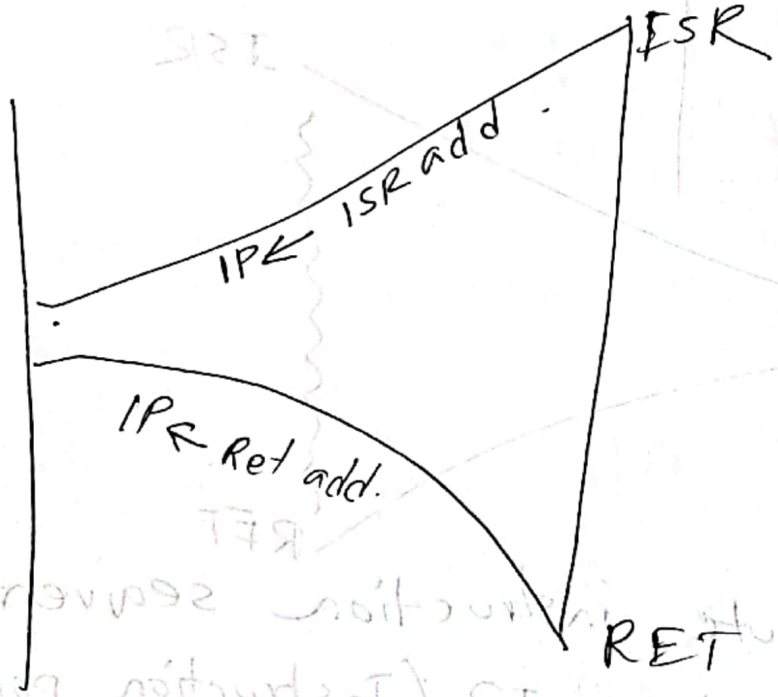
→ Remember

After finishing servicing the interrupts MP comes to the next instruction & continue.

→ suppose,



Int n: n = 0 --- 255



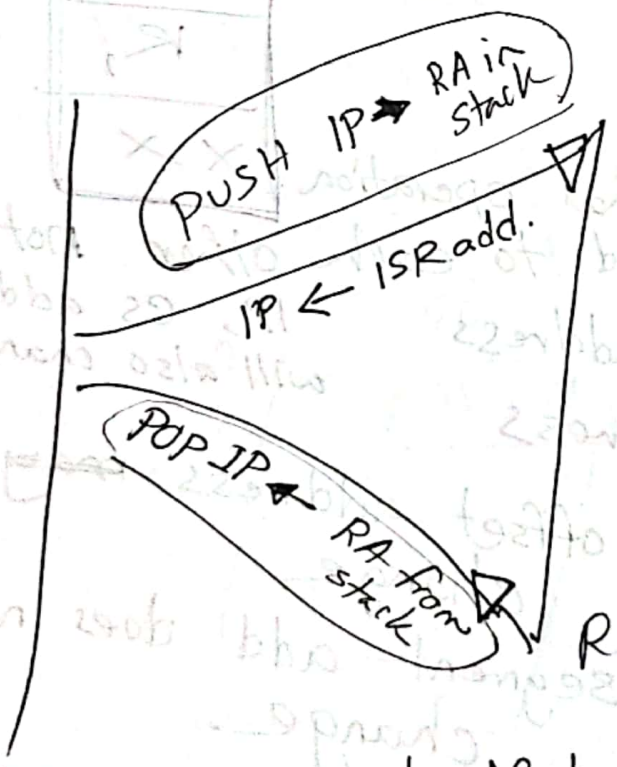
Return address is not fixed, it is flexible, since, it is not aknown when gonna interrop t occur.

→ IP contains address of the next instruction; so as soon as it service the interrupts, chance is µP will lose the address of next instruction,

→ So, µP will save the address of next instruction in stack

→ INPUT = PUSH function

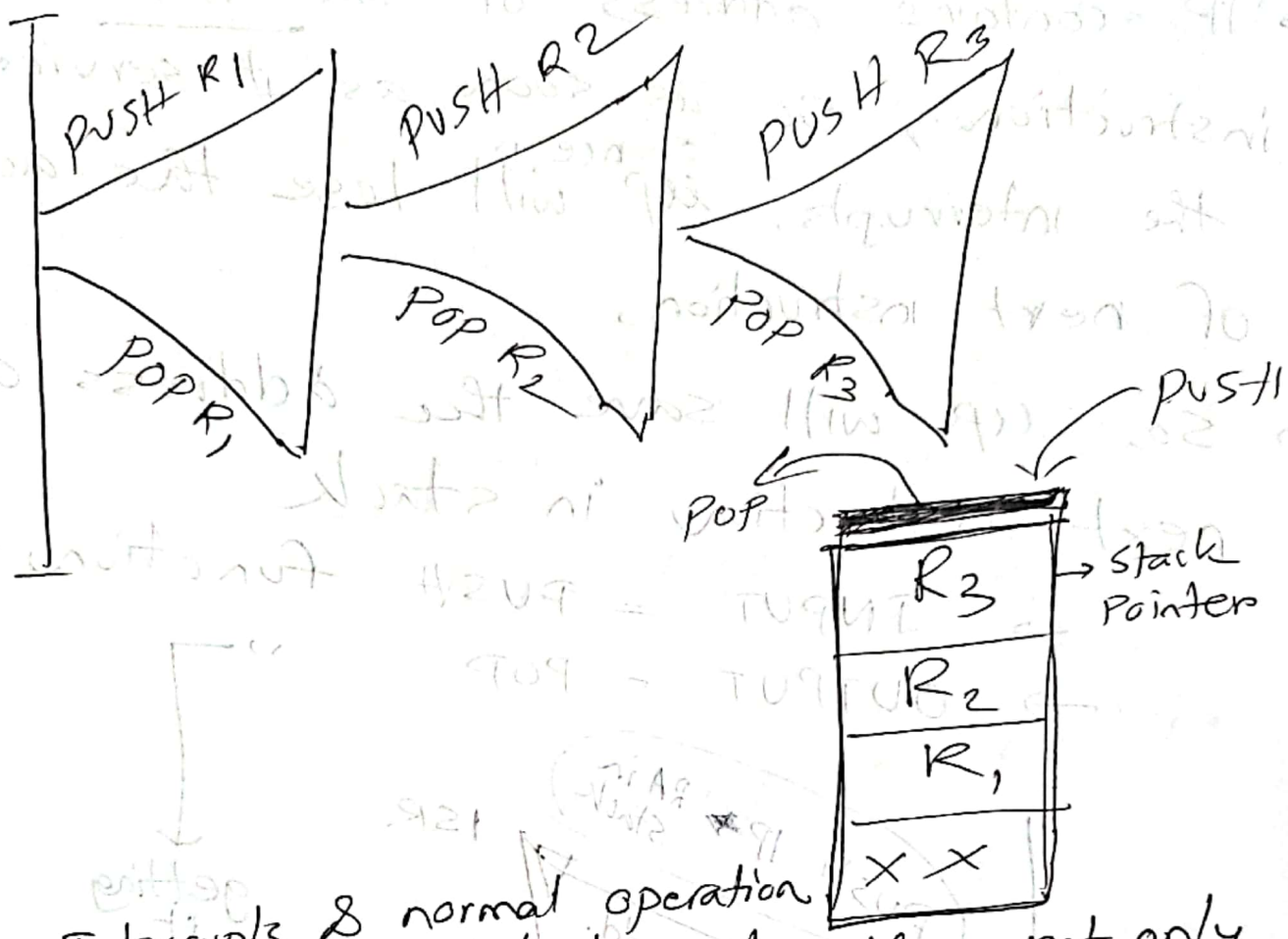
→ OUTPUT = POP



" getting it back POP.

putting it in PUSH

since, MPU needs that instruction after servicing the interrupts. The moment ISR address is put into IP, the address of next instruction is lost.



Since, Interrupts & normal operation are not related to each other not only IP, CS address will also change.

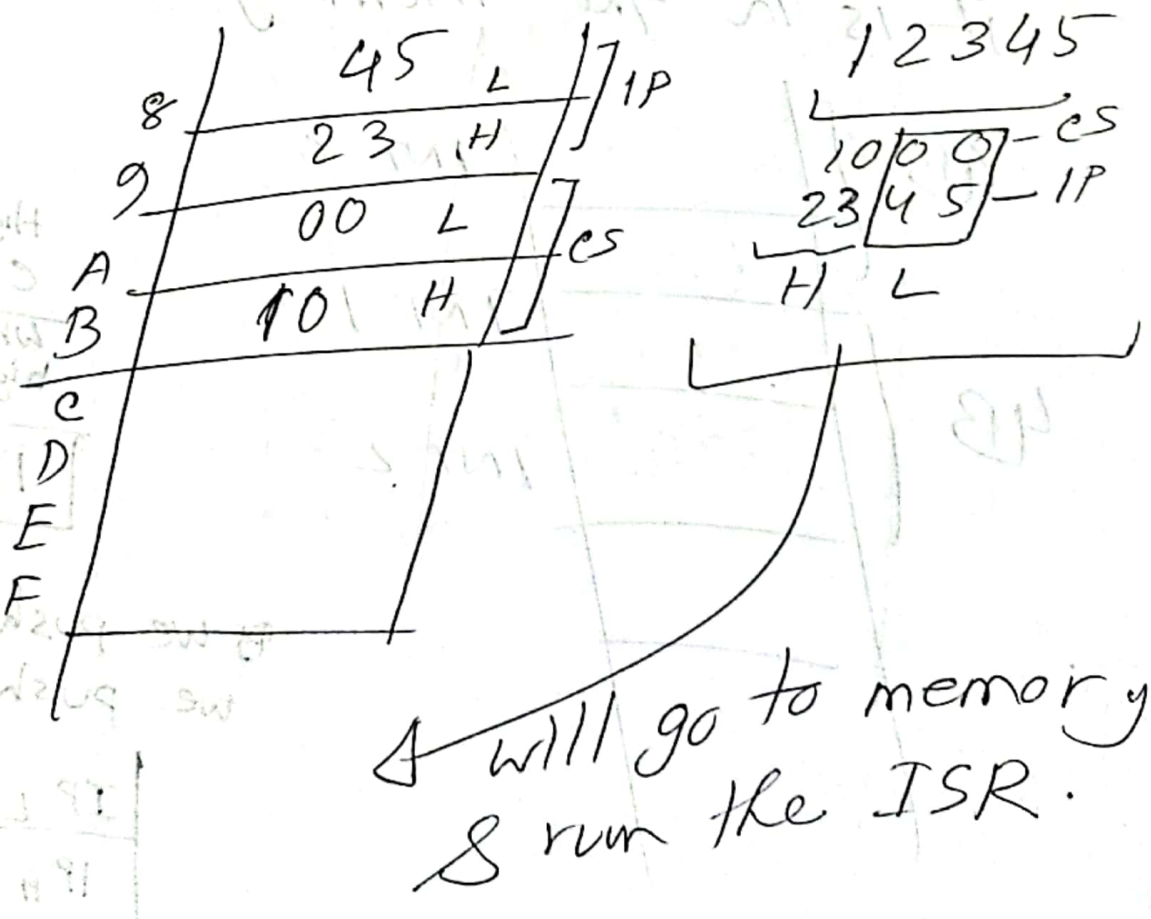
* IP = is the offset address
* CS = segment address
* Intra segment → offset address ~~may~~ change
  → segment add does not change
* Inter segment → offset add + segment add changes (both)

*change your section (seg) your ID (off)

Number of
⇒ PUSH should be eaual to
number of POPS

☐ INT 2

INT 2 x 4 = 8 where ~~ESR~~
address is store.
of ISR
you will obtain from there. 4 locations



& will go to memory
& run the ISR.

&

Intersegment

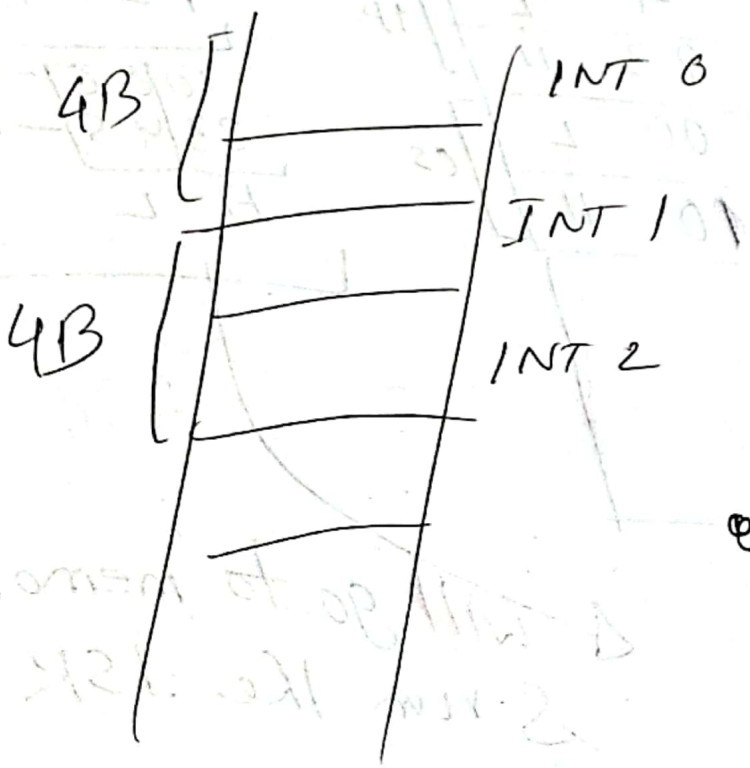
(1) When MP gets an interrupt INT N it will 1st store the return Add

PUSH CS
PUSH IP
} RA in stack

(2) It will then search the ISR address from IVT.

Where it is?

It is in the memory of IV Table



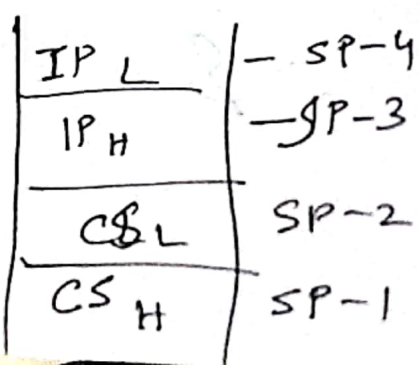
High ! lower.

CS : IP

Which one is higher?

12	34

we push CS 1st
we push IP 2nd.



size of IVT is 1 kB

$256 \times 4 = 1024$

Q. what does it contain (IVT)?

A: Segment & offset address of every interrupts.

for every interrupts there are 4 locations