CSE 331/L-16/04.04.2024/

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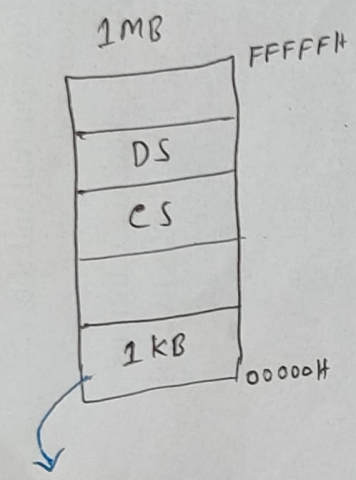
Chapter - 15

BIOS & DOS Interrupts



* There are $2^8 = 256$ interrupt in 8086

The code on service routine can be stone anywhere in the memory, but we need call by address to execute these. These address are saved in vector table. In the memory first 1kB, 00000H → 000FFH are reserved for the vector table.

So, vector ~~number~~ number range 00 → FF H

* There are two part in physical address

Segment address ⇒ 16 bit = 2 byte

Offset address ⇒ 16 bit = 2 byte

So, for saving one physical address we need 2+2 = 4 byte of memory

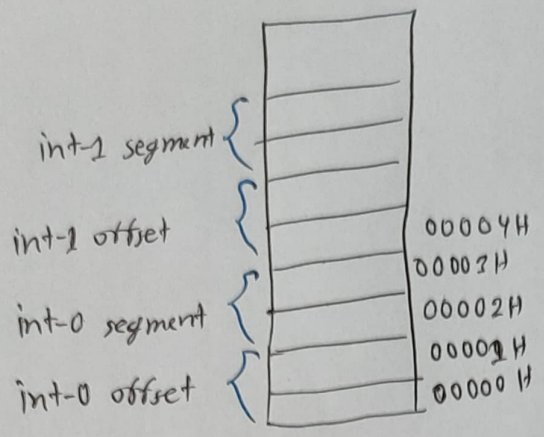
So, for saving 256 vector, we need

= 256 × 4

= 1024 byte

= 1 kB

That's why 1kB memory reserved for vector table



1st two byte for offset then 2nd two byte for segment

- We can easily calculate physical address ~~of~~ of vector or interrupt by multiplying by 4.

- int 21h ⇒ Calculate the physical address

  ⇒ 21h × 4h = 0084H ⇒ So the int 21h is located in 00084H address

  ~~84~~

  84, 85 ⇒ offset

  86, 87 ⇒ segment

- There are three types of interrupts:

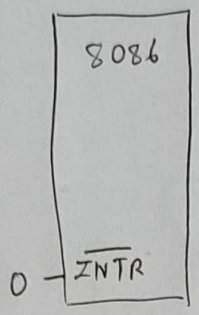
  (i) Hardware ⇒ I/O Device interrupt

  (ii) Software ⇒ interrupt occurs through software

  (iii) Procession Exception ⇒ Out of procession capacity.

  – divide overflow, divid by 0.

(*) interrupt request pin – active low

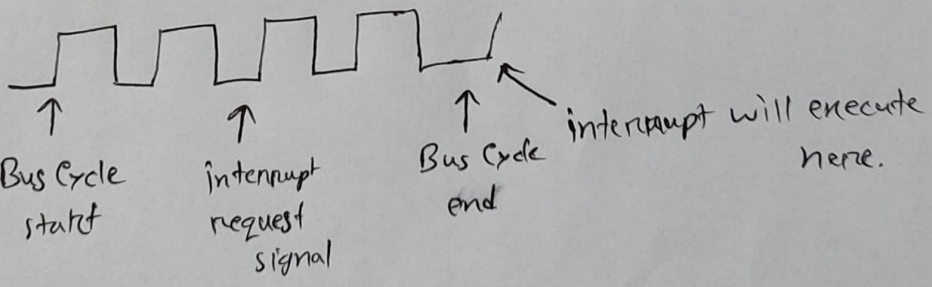


⇒ when handware connected, it will give 0 signal and pin will activated and interrupts the CPU.

(*) 4 step of interrupt request line:

(i) Handwant that need service, send an interrupt request signal

(ii) procesor suspends the current task it is executing and transfer the control to the interrupt routine.



(iii) Interrupt routine will give the services

(iv) control is back to the original executing task at the point where it was suspended.

* For interrupt types and names:

- we don't need to memorize all interrupt name and index
- We just need to take the idea of each interrupt.

Midterm Syllabus
Upto This
25.04.2024