



# SNS COLLEGE OF ENGINEERING

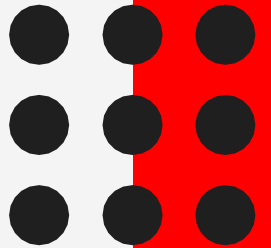
Kurumbapalayam(Po), Coimbatore – 641 107

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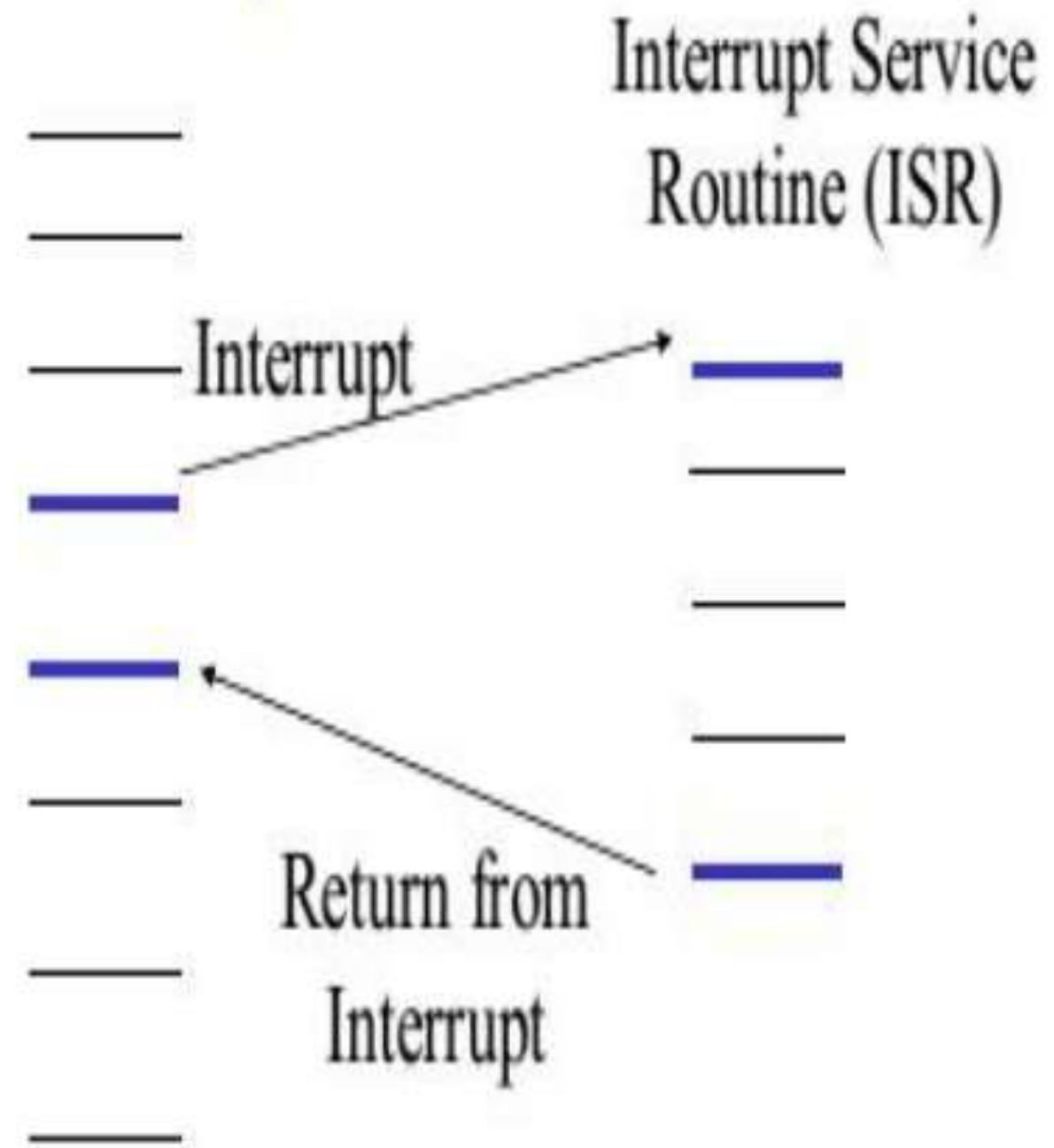
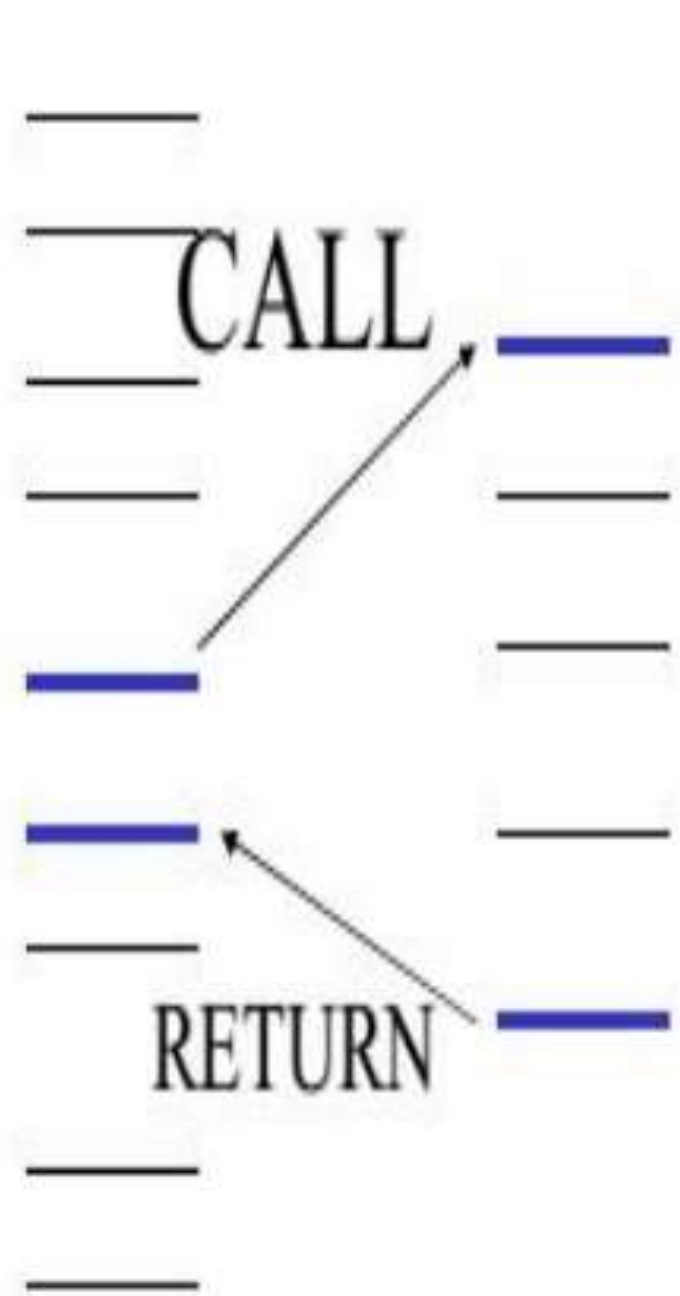
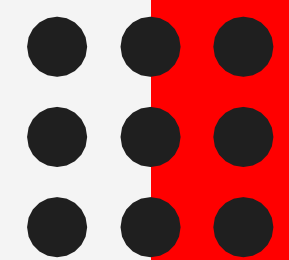
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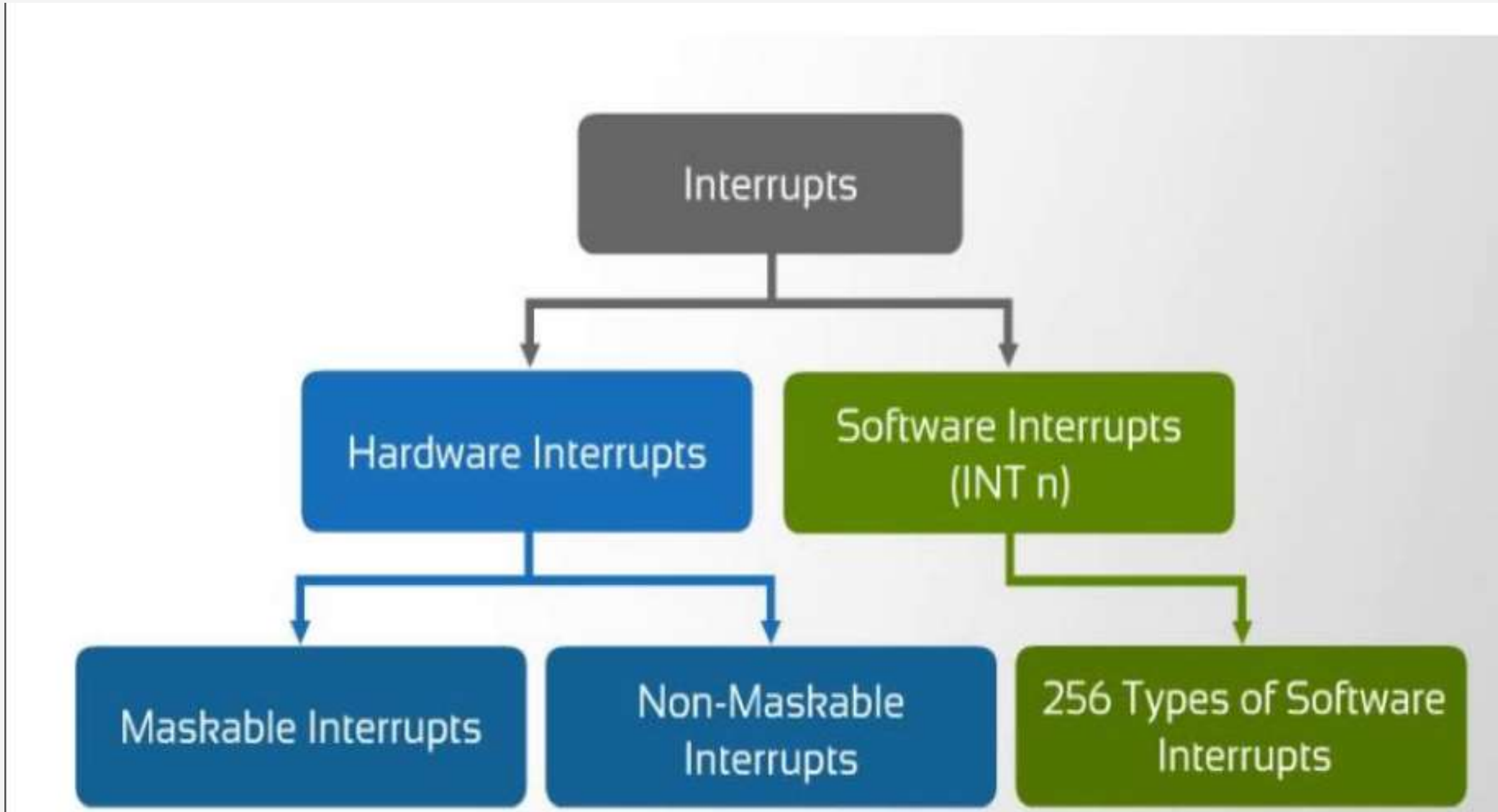
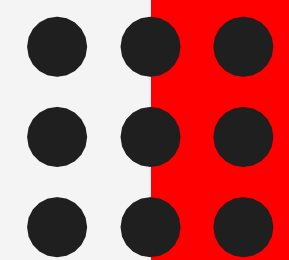
## 8086 Interrupts

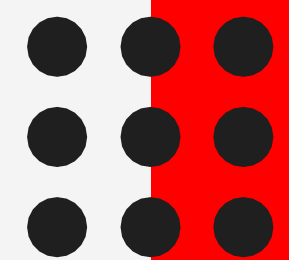


# INTERRUPT & ISR

- ❑ ‘Interrupts’ is to break the sequence of operation. •  
While the CPU is executing a program, on ‘interrupt’ breaks the normal sequence of execution of instructions, diverts its execution to some other program called Interrupt Service Routine (ISR)







# Hardware Interrupts

Used to handle external hardware peripherals, such as keyboards, mouse, hard disks, floppy disks, DVD drives, and printers



Keyboard



Mouse



Hard disk

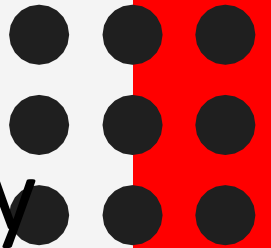


Floppy disk

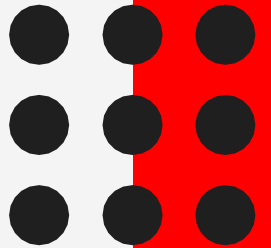


DVD drive





- Maskable Interrupt: An Interrupt that can be disabled or ignored by the instructions of CPU are called as Maskable Interrupt.
- Non- Maskable Interrupt: An interrupt that cannot be disabled or ignored by the instructions of CPU are called as Non- Maskable Interrupt
- Software interrupts are machine instructions that amount to a call to the designated interrupt subroutine, usually identified by interrupt number. Ex: INT0 - INT255



# INTERRUPT VECTOR TABLE

256 INTERRUPTS OF 8086 ARE DIVIDED IN TO 3 GROUPS

❑ 1. TYPE 0 TO TYPE 4 INTERRUPTS

These Are Used For Fixed Operations And Hence Are Called Dedicated Interrupts

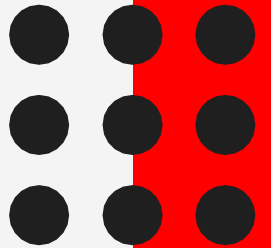
❑ 2. TYPE 5 TO TYPE 31 INTERRUPTS

Not Used By 8086, reserved For Higher Processors Like 80286 80386 Etc

❑ 3. TYPE 32 TO 255 INTERRUPTS

Available For User, called User Defined Interrupts These Can Be H/W

Interrupts And Activated Through Intr Line Or Can Be S/W Interrupts



Type – 0 Divide Error Interrupt Quotient is too large cant be fit in AL/AX or Divide By Zero { $AX/0=\infty$ }

Type –1 Single Step Interrupt used for executing the program in single step mode by setting Trap Flag

To Set Trap Flag

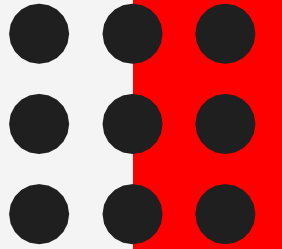
PUSHF

MOV BP,SP

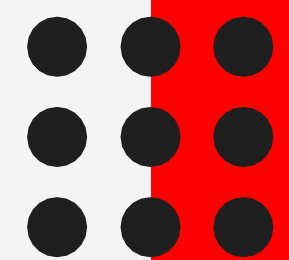
OR [BP+0],0100H; SET BIT8

POPF



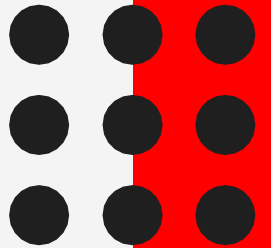


- Type – 2 Non Maskable Interrupt This Interrupt is used for executing ISR of NMI Pin (Positive Edge Signal). NMI cant be masked by S/W
- Type – 3 Break Point Interrupt used for providing BREAK POINTS in the program
- Type – 4 Over Flow Interrupt used to handle any Overflow Error after signed arithmetic



# PRIORITY OF INTERRUPTS

Interrupt Type	Priority
INT0, INT3-INT 255,	Highest
NMI(INT2)	↓
INTR	↓
SINGLE STEP	Lowest



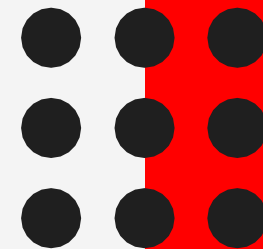
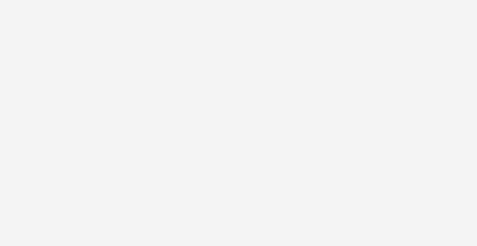
1.Example of an external interrupt is

- a) divide by zero interrupt
- b) keyboard interrupt
- c) overflow interrupt
- d) type2 interrupt

2. Example of an internal interrupt is

- a) divide by zero interrupt
- b) overflow interrupt
- c) interrupt due to INT
- d) all of the mentioned

[View Answer](#)



# THANK YOU