



University of Central Punjab

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FACULTY OF INFORMATION TECHNOLOGY

Computer Organization and Assembly Language

Lab 13	
Topic	1. Interrupts

PART 1

Example 1: Printing Character Using Interrupt

```
start: mov ah, 0
      int 16h; wait for any key....

      cmp al, 27 ; if key is 'esc' then exit.
      je stop
      ;al contains ascii of pressed key
      mov ah, 0Eh ; print it.
      int 10h

      jmp start

stop:

      mov ax, 0x4c00
      int 21h
```

Example 2: Printing String Using Interrupt

```
mov al, 1;update curser after every character printing
mov bh, 0;page 0, means first page
mov bl, 00111011b;attribules
mov cx, 15 ; message size
mov dl, 10 ;row
mov dh, 7 ;col
push cs
pop es
mov bp, msg1
```



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```
mov ah, 13h
int 10h
mov ax, 0x4c00
int 21h
msg1db " hello, world! "
```

Example 3: (Taking Input from User and display)

```
MOV AX, 0xB800
MOV ES, AX          ; Initializing ES with video memory address

MOV AH, 0           ; service number
INT 0x16             ; calling interrupt number 16h

; When you call interrupt 16h with service number 0, processor waits for keyboard input. When a key is pressed,
its ASCII value is stored in AL register.

; Printing the character on screen.

MOV DI, 0           ; screen location di=0 top left.
MOV AH, 07h         ; attribute byte
STOSW               ; displaying on screen

Mov ax, 0x4c00
Int 21h
```



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Example 4: (Take input from User until they press Esc)

```
MOV AX, 0xB800
```

```
MOV ES, AX          ; Initializing ES with video memory address
```

```
XOR DI, DI          ; screen location di=0 top left.
```

again:

```
MOV AH, 0           ; service number
```

```
INT 0x16            ; calling interrupt number 16h
```

; When you call interrupt 16h with service number 0, processor waits for keyboard input. When a key is pressed, its ASCII value is stored in AL register.

; Printing the character on screen.

```
MOV AH, 07h         ; attribute byte
```

```
STOSW               ; displaying on screen
```

```
cmp al, 0x1b
```

```
jne again
```

```
mov ax, 0x4c00
```

```
int 21h
```



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Example 5: (Taking Input from User advance the cursor position and then display the character at that location)

;total 3 interrupts are used to perform the task.

[org 100h]

;input interrupt

mov ah,0

int 16h

;setting cursor position interrupt

mov dh, 12

mov dl, 40

mov bh, 0

mov ah, 2

int 10h

;display character interrupt

;we have character in al pressed by the user

mov ah, 0eh

int 10h

mov ax,0x4c00

int 21h