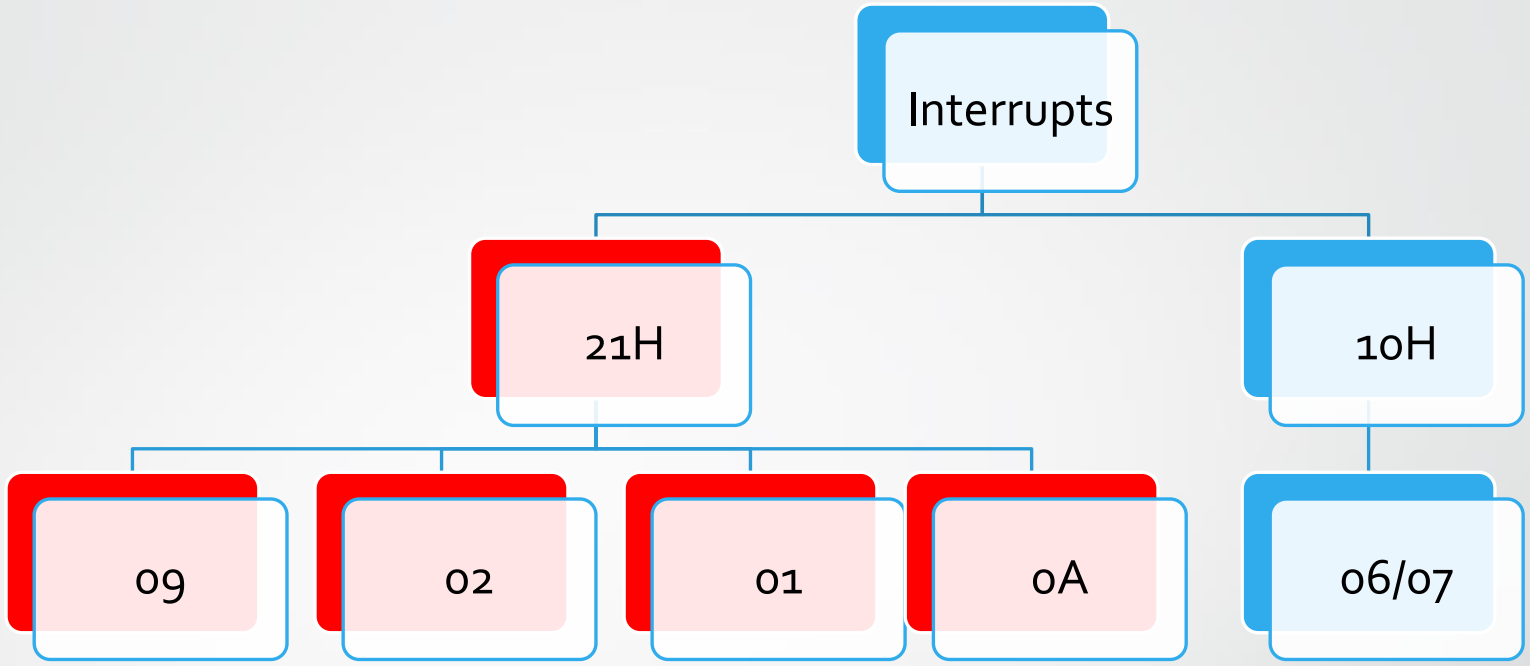
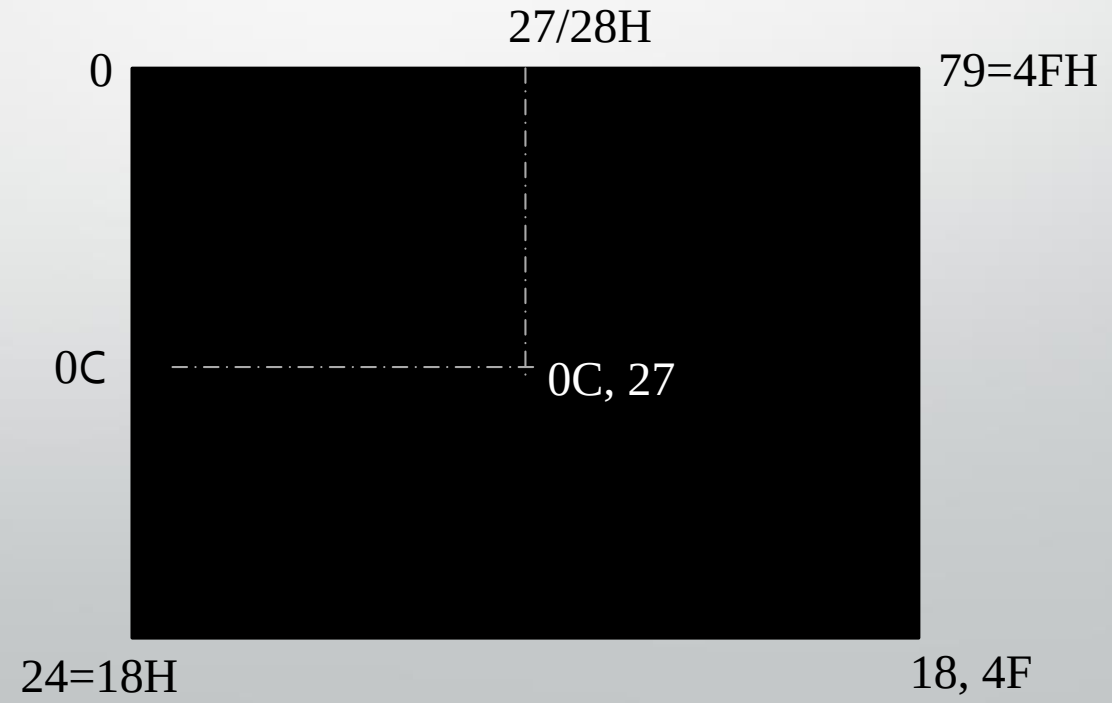
Review of assembly language –Part01

Interrupts

Interrupts



No. Of Rows= 25
No. of Columns=80
No. of Pages = 8(0➔7)



Interrupts

Int 10H/ 2H (Set cursor position)

- Few things need to be shown
  - AH= function no.
  - DH = row.
  - DL = column.
  - BH = page number (0..7).

EX:

```
mov ah, 2h
mov dh, 10h
mov dl, 20h
mov bh, 0h
int 10h
```

Interrupts

Int 21H/ 9H (Print on Screen)

- Few things need to be shown
  - AH=Function # I.e.= 9H
  - DX= Offset of Message

(String must be terminated by '$‘)

EX: Write HELLO WORLD

```
org 100h
MOV dx, offset msg
MOV ah, 9h
int 21h
  ret
msg dB "hello world $"
```

Interrupts

Int 10H/ 2H (Set cursor position)

- Few things need to be shown
  - AH= function no. i.e=2h
  - DH = row.
  - DL = column.
  - BH = page number (0..7).

Int 21H/ 09H (Print on Screen)

- Few things need to be unveiled
  - AH=Function #)I.e.= 2H
  - DX= Offset of Message

(String must be terminated by '$‘)

EX: Print at the middle of the screen ‘HELLO’

```
org 100h
MOV ah, 2h
MOV bh, 0h
MOV dx, 0C27h
int 10h
MOV ah, 9h
MOV dx, offset msg
int 21h
  ret
msg dB 'HELLO$'
```

Interrupts

Int 21H/ 1H (Input 1B from Keyboard)

- Read character from standard input, with echo, result is stored in AL.
- If there is no character in the keyboard buffer, the function waits until any key is pressed.

EX:

```
mov ah, 1
int 21h
```

As an example, insert 4, the **al=34**

Don’t forget that ah=1 as being saved as a function no.

Interrupts

Int 21H/ 2H (Display 1B on Screen)

- Write character to standard output.
- Entry: DL = character to write, after execution AL = DL.

EX: Insert ‘a’ and check out the result

```
mov ah, 2
mov dl, 'a'
int 21h
```

```
mov ah, 2h
mov dl, 34H
int 21h
```

EX: Insert ‘a’ and display on screen 3 times

```
mov ah, 2
mov dl, 'a'
int 21h
int 21h
int 21h
```

EX: Insert ‘a’ and display on screen 8 times

```
mov ah,2
mov dl,'a'
mov cx,8        ; cx is  the number of iterations
   AAA:
   int 21h
loop AAA
 ret
```

Interrupts

EX: Write a program to print all the letters of the English alphabet.

```
mov ah, 2
mov dl, 'a'
mov cx,26
    AAA:
    int 21h
    Inc dl
    loop AAA
    ret
```

Interrupts

FYI:

09H ➔ tab

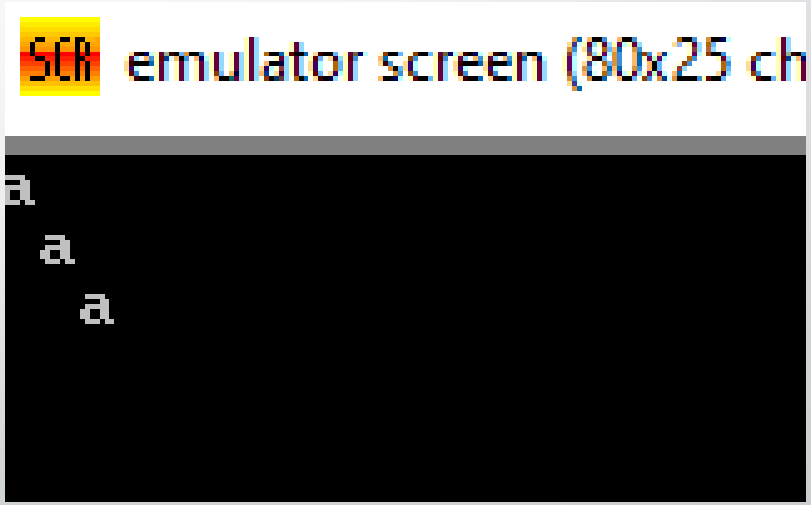
0AH ➔ New Line

0DH ➔ Curser return

```
09: tab
0A: newl
0D: cret
```

EX: Write a program to show this on the screen.

```
        org 100h
         MOV CX,3
         MOV ah, 2h
L1:  MOV dl, 'a'
           int 21h
           MOV dl,0AH
           int 21h
          loop L1
```



Interrupts

EX: Write ALP to enter two digits from the keyboard, add them, and put the result on the screen

```
org 100h
MOV ah, 01H     ; input from keyboard
Int 21h
Mov cl, al      ; to keep the first input at cl
Int 21h
AND cl, 0FH     ;remove ascii bias
AND al, 0FH
ADD al, cl      ;add operand al and operand cl
OR al, 30H      ;add ascii bias to sum
Mov dl,al
Mov ah,2H
 Int 21h
```

Thank you