

## BÀI THỰC HÀNH 3

### 1. Xử lý phím . (Int 16h).

In mã ASCII, mã Scan code của 1 phím, các mã này cách nhau 1 khoảng trống. Chương trình kết thúc bằng phím ESC.

### 2. Xử lý màn hình. (Int 10h).

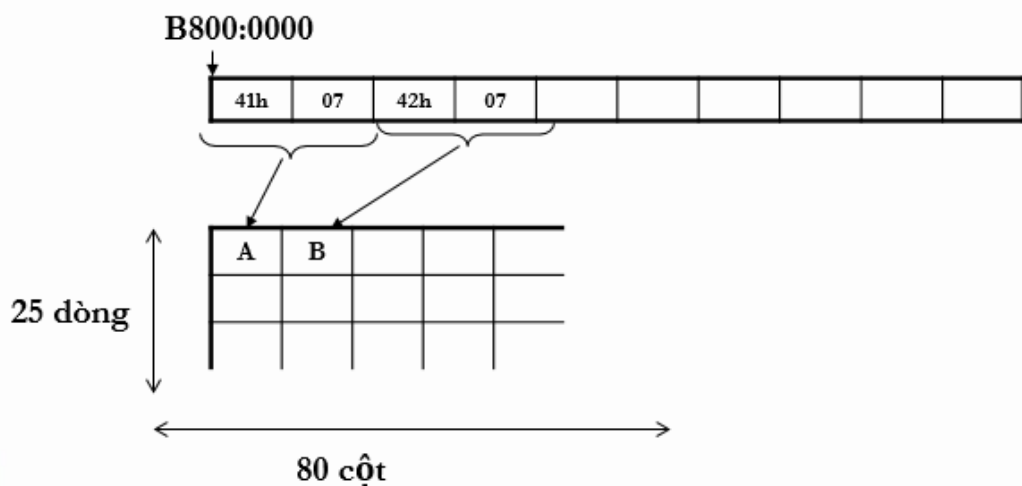
a. Xóa màn hình (không đổi màu, có đổi màu).

b. Nhập 1 câu ở tọa độ màn hình (10,40) theo thập phân. In câu vừa nhập ở góc trên phải. Màn hình lấy theo chuẩn HxV = 25x80 (tính theo thập phân). Chương trình kết thúc khi bấm phím ESC.

HD:

- Tham khảo Int 21h (AH=1, 8); Int 16h (AH=0)
- Tham khảo Int 10h (AH=2, 3, 6, 7)
- Đ/c bộ nhớ màn hình B800:0000

**Tổ chức màn hình và bộ nhớ màn hình : 1kt→2byte; B800:0000-địa chỉ bắt đầu**



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## INT 16 00-- - KEYBOARD - GET KEYSTROKE

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Category: B - BIOS

**Inv.:**

AH = 00h

**Return:** AH = BIOS scan code

AL = ASCII character

**Notes:** on extended keyboards, this function discards any extended keystrokes, returning only when a non-extended keystroke is available  
the BIOS scan code is usually, but not always, the same as the hardware scan code processed by INT 09. It is the same for ASCII keystrokes and most unshifted special keys (F-keys, arrow keys, etc.), but differs for shifted special keys  
some (older) clone BIOSes do not discard extended keystrokes and manage function AH=00h and AH=10h the same  
the K3PLUS v6.00+ INT 16 BIOS replacement doesn't discard extended keystrokes (same as with functions 10h and 20h), but will always translate prefix E0h to 00h. This allows old programs to use extended keystrokes and should not cause compatibility problems

**SeeAlso:** AH=01h,AH=05h,AH=10h,AH=20h,AX=AF4Dh"K3PLUS",INT 18/AH=00h

**SeeAlso:** INT 09,INT 15/AH=4Fh

INT 16

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## INT 10 02-- - VIDEO - SET CURSOR POSITION

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Category: V - video

**Inv.:**

AH = 02h

BH = page number

0-3 in modes 2&3

0-7 in modes 0&1

0 in graphics modes

DH = row (00h is top)

DL = column (00h is left)

**Return:** nothing

**SeeAlso:** AH=03h,AH=05h,INT 60/DI=030Bh,MEM 0040h:0050h

INT 10

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## INT 10 03-- - VIDEO - GET CURSOR POSITION AND SIZE

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Category: V - video

**Imp.:**

AH = 03h  
BH = page number  
    0-3 in modes 2&3  
    0-7 in modes 0&1  
    0 in graphics modes

**Return:** AX = 0000h (Phoenix BIOS)

CH = start scan line  
CL = end scan line  
DH = row (00h is top)  
DL = column (00h is left)

**Notes:** a separate cursor is maintained for each of up to 8 display pages  
many ROM BIOSes incorrectly return the default size for a color display  
(start 06h, end 07h) when a monochrome display is attached  
With PhysTechSoft's PTS ROM-DOS the  value is ignored on entry.

**SeeAlso:** AH=01h,AH=02h,AH=12h/BL=34h,MEM 0040h:0050h,MEM 0040h:0060h

INT 10


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## INT 10 06-- - VIDEO - SCROLL UP WINDOW

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Category: V - video

**Imp.:**

AH = 06h  
AL = number of lines by which to scroll up (00h = clear entire window)  
BH = attribute used to write blank lines at bottom of window  
CH,CL = row,column of window's upper left corner  
 DH,DL = row,column of window's lower right corner

**Return:** nothing

**Note:** affects only the currently active page (see AH=05h)

**BUGS:** some implementations (including the original IBM PC) have a bug which  
destroys BP

the Trident TVGA8900CL (BIOS dated 1992/9/8) clears DS to 0000h when  
scrolling in an SVGA mode (800x600 or higher)

**SeeAlso:** AH=07h,AH=12h"Tandy 2000",AH=72h,AH=73h,AX=7F07h,INT 50/AX=0014h

INT 10

## INT 10 07-- - VIDEO - SCROLL DOWN WINDOW

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Category: V - video

**Imp.:**

AH = 07h  
AL = number of lines by which to scroll down (00h=clear entire window)  
BH = attribute used to write blank lines at top of window  
CH,CL = row,column of window's upper left corner  
DH,DL = row,column of window's lower right corner

**Return:** nothing

**Note:** affects only the currently active page (see AH=05h)

**BUGS:** some implementations (including the original IBM PC) have a bug which destroys BP

the Trident TVGA8900CL (BIOS dated 1992/9/8) clears DS to 0000h when scrolling in an SVGA mode (800x600 or higher)

**SeeAlso:** AH=06h,AH=12h"Tandy 2000",AH=72h,AH=73h,INT 50/AX=0014h

INT 10