

How to enter a multiple digits number even though you can enter only one digit at a time using the commands:

```
MOV AH, 1  
INT 21h
```

The algorithm is as follows:

For example the number 58(10)

It is the same as $(5 * 10) + 8$.

The first digit entered was 5 we need to multiply it by 10 and add the second digit to its result.

If we continue to enter digits for example 583

Then the new total is $(58 * 10) + 3$

We declared a variable called `disp_number` that will store the multiple digits number that user enter. It starts with the value of zero.

Our first operation shall be $(\text{disp_number} * 10) +$ the value of the key entered. For example for the number 583(10) we do $(\text{disp_number} * 10) + 5 = 5$ since the initial value of `disp_number` is zero. After this operation, `disp_number = 5`.

Afterward we do $(\text{disp_number} * 10) + 8 = (5 * 10) + 8 = 58$ the `disp_number` variable is now 58

Thereafter, we do $\text{disp_number} * 10) + 3 = (58 * 10) + 3$

The value of the variable `dsip_number` is now 583. We can proceed and display it.

The following procedure (function) lets you enter multiple key
If the user press enter (carriage return) which have the ascii value of 13
then the procedure will be terminate and the program will jump back to
the main procedure.

```
m_keyin proc
    mov disp_number, 0 ; disp_number = 0
LP_key: ; location in the program label
    mov eax, disp_number ; the number to display
    mul by_10 ; eax = (eax) * 10 ; multiply command
    add eax, last_key
    mov DISP_NUMBER, eax ; save it to the number to display
    mov ah, 1 ; enables a single key entry
    int 21h
    mov bl, al
    mov eax, 0
    mov al, bl
    cmp al, 13 ; compare the key entered to 13 i.e. ascii of CR
    jz short finkey ; if CR was pressed then exit enter key routine
    sub al, 30h ; remove the ascii from the number entered    MOV
LAST_KEY, EAX ; save the last digit entered
    jmp lp_key ; unconditional jump to the enter key routine loop
finkey:
    ret
m_keyin endp
```

The entire program that lets the user enter multiple digits and thereafter
display them in multiple bases is [Here](#)

Copy, paste and run the program on your computer. Complete the line by
line explanation for each line of code.