

**Example:**

```

01
02 .MODEL SMALL
03 .STACK 100H
04 .DATA
05     NAME DB '3'
06 .CODE
07     MOV AH, 2
08     MOV DL, '?'
09     INT 21H
10
11     MOV AH, 4CH
12     INT 21H
13

```

.MODEL is the directive to specify the the size of the memory (code and data) the program needs

.STACK is the directive used to declare the stack segment. It sets aside a block of memory (in stack segment) to store the stack.

.DATA is the directive used to declare the data segment

.CODE is the directive used to declare the code segment

INT (Interrupt):

Interrupt-number **21h** used to invoke DOS functions.

Functions

Function #	Routine	Function Execution
1	Single-key input	<ul style="list-style-type: none"> ➤ Choose the function # as required ➤ Place the function number in AH register (input) ➤ Invoke the instruction for interrupt where the function needs to be executed: INT 21H
2	Single-key output	
9	Character string output	
4CH	DOS exit function	

Function# 1: Single-key input

Input: AH = 1

Output: AL = ASCII code if character
key is pressed
AL = 0 if non-character key is
pressed

```
01  
02 .MODEL SMALL  
03 .STACK 100h  
04  
05 .CODE  
06     MOV AH, 1  
07     INT 21H  
08  
09     EXIT:  
10     MOV AH, 4CH  
11     INT 21H  
12
```

Function# 2: Single-key output

Input: AH = 2
DL = ASCII Code of the
display character

Output: AL = ASCII Code of the
display character

```
01  
02 .MODEL SMALL  
03 .STACK 100h  
04  
05 .CODE  
06     MOV AH, 2  
07     MOV DL, '?'  
08     INT 21H  
09  
10     EXIT:  
11     MOV AH, 4CH  
12     INT 21H  
13
```

Single-key Input/Output

```
01  
02 .MODEL SMALL  
03 .STACK 100h  
04  
05 .CODE  
06     MOV AH, 1  
07     INT 21H           ;input in AL  
08     MOV BL, AL       ;input moved to BL  
09  
10     MOV AH, 2  
11     MOV DL, BL  
12     INT 21H  
13  
14     EXIT:  
15     MOV AH, 4CH  
16     INT 21H  
17
```

Insert newline:

```
01  
02 .MODEL SMALL  
03 .STACK 100h  
04  
05 .CODE  
06     MOV AH, 1  
07     INT 21H      ;input in AL  
08     MOV BL, AL   ;input moved to B1  
09  
10     MOV AH, 2  
11     MOV DL, 10  
12     INT 21H  
13     MOV DL, 0DH  
14     INT 21H  
15  
16     MOV AH, 2  
17     MOV DL, BL  
18     INT 21H  
19  
20     EXIT:  
21     MOV AH, 4CH  
22     INT 21H  
23
```

Multiple key Input

1. Take 3 single-key inputs and display the second input taken using the output function in a separate line.

Sample input & output
hk3 k

```

01
02 .MODEL SMALL
03 .STACK 100h
04
05 .CODE
06     MOV AH, 1    ;function# 1
07
08     INPUT:
09     INT 21H
10     MOV BH, AL    ;1st input in BH
11
12     INT 21H
13     MOV CH, AL    ;2nd input in CH
14
15     INT 21H
16     MOV DH, AL    ;3rd input in DH
17
18     OUTPUT:
19     MOV AH, 2    ;function# 2
20
21     MOV DL, 0AH  ;ascii of newline
22     INT 21H
23     MOV DL, 0DH  ;ascii of cret
24     INT 21H
25
26     MOV DL, CH    ;display the 2nd input
27     INT 21H
28
29     EXIT:
30     MOV AH, 4CH
31     INT 21H
32

```