# Some important 8086 Programs

**1. Write a program in 8086 microprocessor to enter and string and display each word of sting in new line.**

```
.MODEL SMALL
.STACK
.DATA
REQ DB 'PLEASE TYPE A SENTENCE $'
MAX DB 80
ACT DB ?
CHAR DB 80 DUP (?)

.CODE
MAIN PROC
MOV AX,@DATA
MOV DS,AX

LEA DX,REQ ;Request user to type sentence
MOV AH,09H
INT 21H

MOV AH,0AH ;Read string
MOV DX,OFFSET MAX
INT 21H

MOV AH,06H ;request scroll ; clears screen
MOV AL,00H ;full screen
MOV BH,43H ; set color attribute,
MOV CX,0000 ;top left corner
MOV DX,184FH ;bottom right corner of box
INT 10H ; interrupt call

LEA DI,CHAR
MOV CL,ACT
MOV CH,00
MOV BH,CH ; PAGE 0
MOV DH,CH ;Set Row Position
MOV DL,10 ;Set Column Position
MOV AH,02H
INT 10H

agn:CMP [DI],' '
JE nextline      ;Jump Equal
MOV DL,[DI]
MOV AH,02H
INT 21H
JMP skip
```

```
nextline: INC DH
MOV DL,10
INT 10H

skip: INC DI
LOOP AGN

MOV AX,4C00H
INT 21H
MAIN ENDP
END MAIN
```

**2. Write a program to convert case of string written in small letter to capital letter.**

```
.model small
.stack 100h
.data
String1 db 'assembly language program$'
Length EQU $-String1-1
.code
Main proc
MOV AX, @data
MOV DS, AX
MOV SI, offset String1
MOV CX, Length
Back:MOV DL,[SI]
CMP DL,'a'
JC Conv
SUB DL,20h;
CONV:MOV AH, 02H
INT 21H
INC SI
LOOP Back
MOV AH, 4CH
INT 21H
Main endp
End Main
```

**3. Write a program to reverse a string**

```
.model small
org 100h
.data
String1 db 'assembly language program$'
Length dw $-String1-1
.code
Main proc
```

```
MOV AX, @data
MOV DS, AX
MOV SI, offset String1
MOV CX, Length
ADD SI, CX
Back: MOV DL, [SI]
MOV AH, 02H
INT 21H
DEC SI
LOOP Back
MOV AH, 4CH
INT 21H
Main endp
End Main
```

**4. Write a program to display a string.**

```
Title display the string
.model small
org 100h
.data
String1 db "Bachelor in science$"
.code
main Disp proc
   mov ax,@data
   mov ds,ax
   mov ah,09h
   mov dx,offset String1
   int 21h

   mov ah,4ch
   mov al,00h
   int 21h
   endp
end main
```

**5. Write a program to display character entered from the keyboard.**

```
.org 100h
.code
start:
mov     ah, 1h   ; keyboard input subprogram
int     21h      ; read character into al
mov     dl, al
mov     ah, 2h   ; display subprogram
int     21h      ; display character in dl
mov     ax, 4c00h ; return to ms-dos
```

```
int     21h
end     start
```

**6. Write a program to multiply two 16 bit numbers in 8086 microprocessor.**

```
org 100h
.model small
.stack 100h
.data
Multiplier dw 1234h
Multiplicant dw 3456
Product dw ?
.code MULT proc
   mov ax,@data
   mov ds,ax
   mov ax, Multiplicant
   mul Multiplier
   mov Product, ax
   mov Product + 2, dx
   mov ah,4ch
   int 21h
    endp
ret
```