

```
.model small
.stack 100h
```

```
disp macro msg
    mov ah,09h
    lea dx,msg
    int 21h
endm
```

```
.data
    str1 db 25, ?, 25 dup ('$')
    str2 db 25, ?, 25 dup (?)

    msg13 db 10,13, '*****$'
    msg14 db 10,13, '**Samiksha Pandit**$'
    msg15 db 10,13, 'SYITB088$'
    msg16 db 10,13, '*****$'

    msg0 db 10,13, '**Menu**$'
    msg1 db 10,13, '1.Accept$'
    msg2 db 10,13, '2.Length$'
    msg3 db 10,13, '3.Reverse$'
    msg4 db 10,13, '4.Palindrome$'
    msg5 db 10,13, '5.Exit$'
    msg6 db 10,13, 'Enter your choice: $'
    msg7 db 10,13, 'Invalid choice!$'

    msg8 db 10,13, 'Enter string'
    msg9 db 10,13, 'String is:$'
    msg10 db 10,13, 'Length is:$'
    msg11 db 10,13, 'The string is a Palindrome$'
    msg12 db 10,13, 'The string is not a Palindrome$'
```

```
.code
begin: mov ax,@data
       mov ds,ax
```

```
menu:  disp msg13
       disp msg14
       disp msg15
       disp msg16
       disp msg0    ;menu
       disp msg1    ;1.accept
       disp msg2    ;2.length
       disp msg3    ;3.reverse
       disp msg4    ;4.palindrome
       disp msg5    ;5.exit
```

```
disp msg6      ;enter your choice
```

```
mov ah,01h  
int 21h
```

```
switch: mov bl,al
```

```
cmp bl,31h  
je case1  
cmp bl,32h  
je case2  
cmp bl,33h  
je case3  
cmp bl,34h  
je case4  
cmp bl,35h  
je case5
```

```
disp msg7  
jmp menu
```

```
case1: call acc  
jmp menu
```

```
case2: call len  
jmp menu
```

```
case3: call rev  
jmp menu
```

```
case4: call palin  
jmp menu
```

```
case5: mov ah,4ch  
int 21h
```

```
acc proc near
```

```
disp msg8      ;enter string  
mov ah,0ah      ;accepts a string in string whose EA is loaded in dx  
lea dx,str1     ;loads effective address of str1 in dx  
int 21h
```

```
ret
```

```
acc endp
```

```
;-----
```

```
len proc near
```

```
disp msg10     ;length is  
mov cl,str1+1  ;increase counter 1 by 1 till end of string  
add cl,30h     ;conversion to ASCII  
mov ah,02h     ;display length  
mov dl,cl      ;as 02h interrupt displays from dl register
```

```
    int 21h
ret
len endp
```

```
;-----
rev proc near
    disp msg9      ;string is
    mov ch,00      ;initialise counter to zero
    mov cl,str1+1  ;set cl so that si can be set
    sub cl,01h     ;sub 1 from cl to set pointer at last character

    lea si,str1+2  ;set si pointer for str1 by loading EA of str1 in si
    lea di,str1+2  ;inform di about position of si

    rep movsb      ;move string byte by byte
    mov cl,str1+1  ;set cl equal to str1 length for count
    lea di,str2+2  ;set counter for destination string

loop1: mov dx,[si]
    mov [di],dx
    mov ah,02h     ;display character in dx register
    int 21h
    dec si
    inc di
    dec cl
    cmp cl,00h     ;loop till counter cl!=0
    jne loop1
ret
rev endp
```

```
;-----
palin proc near
    disp msg9      ;string is
    ;lea dx,str1+2
    call rev
    lea di,str2+2
    lea si,str1+2
    mov cl,str1+1

loop2: ;mov al,byte ptr[si]
    ;mov bl,byte ptr[di]
    mov al,[si]
    mov bl,[di]
    dec cl
    cmp cl,00h     ;keep track of count
    je loop4
    cmp al,bl      ;compare if string characters are equal
```

```
je loop3  
disp msg12    ;string is not palindrome  
jmp loop5
```

```
loop4: disp msg11    ;string is palindrome  
loop5: ret  
loop3: inc si  
      inc di  
      jmp loop2  
ret  
palin endp
```

```
end begin
```

OUTPUT:

```
DOSBox Status Window
DOSBox 0.74-3, Cpu speed: 3000 cycles, Frameskip 0, Program: DEBUG
C:\Invalid choice!
--*****
C:\**Samiksha Pandit**
MILSYITB088
*****
**Menu**
1.Accept
2.Length
3.Reverse
4.Palindrome
5.Exit
Enter your choice: 1
Enter string
String is:1221
*****
**Samiksha Pandit**
SYITB088
*****
**Menu**
1.Accept
2.Length
3.Reverse
4.Palindrome
5.Exit
Enter your choice: _
```

DOSBox Status Window

DOSBox 0.74-3, Cpu speed: 3000 cycles, Frameskip 0, Program: DEBUG

Enter your choice: 2

--Length is:4

Samiksha Pandit

SYITB088

Menu

1.Accept

2.Length

3.Reverse

4.Palindrome

5.Exit

Enter your choice: 3

String is:1221

Samiksha Pandit

SYITB088

Menu

1.Accept

2.Length

3.Reverse

4.Palindrome

5.Exit

Enter your choice: _

```
DOSBox Status Window
DOSBox 0.74-3, Cpu speed: 3000 cycles, Frameskip
SYITB088
-- *****
CON **Menu**
MID 1.Accept
2.Length
3.Reverse
4.Palindrome
5.Exit
Enter your choice: 4
String is:
String is:1221
The string is a Palindrome
*****
**Samiksha Pandit**
SYITB088
*****
**Menu**
1.Accept
2.Length
3.Reverse
4.Palindrome
5.Exit
Enter your choice: 5
Program terminated normally
_
```