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Roll No:	65
Class/Sem:	SE/IV
Experiment No.:	7
Title:	Program to find whether given string is palindrome or not
Date of Performance:	06/03/24
Date of Submission:	06/03/24
Marks:	
Sign of Faculty:	

Aim: Assembly Language Program to find given string is Palindrome or not.

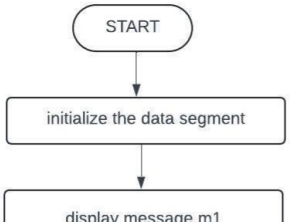
Theory:

A palindrome string is a string when read in a forward or backward direction remains the same. One of the approach to check this is iterate through the string till middle of the string and compare the character from back and forth.

Algorithm:

1. Initialize the data segment.
2. Display the message M1
3. Input the string
4. Get the string address of the string
5. Get the right most character
6. Get the left most character
7. Check for palindrome.
8. If not Goto step 14
9. Decrement the end pointer
10. Increment the starting pointer.
11. Decrement the counter
12. If count not equal to zero go to step 5
13. Display the message m2
14. Display the message m3
15. To terminate the program using DOS interrupt
    a. Initialize AH with 4ch
    b. Call interrupt INT 21h
16. Stop

Flowchart:



Code :

```
org 100h

.data
m2 db 10,13,'Enter the string :$'
m1 db 10,13,'It is a palindrome.$'
m3 db 10,13,'It is not a palindrome.$'
buff db 80

.code
lea dx,m1

mov ah, 09h
int 21h

lea dx,buff

mov ah,0ah
int 21h


lea bx, buff+1
mov si,01h

mov ch,00h
mov cl,[buff+1]
mov di,cx
sar cl,1

pal:mov ah,[buff+si]
   mov al,[buff+di]
   cmp al,ah
   JC L1
```

```
  inc si
  dec di
  loop pal

  lea dx,m3

  mov ah,09h
  int 21h

  JMP L2

L1:lea dx,m2

   mov ah,09h
   int 21h

   JMP L2

L2:mov ah,4ch
   int 21h
```

Output :

```
org 100h

.data
m2 db 10,13,'Enter the string :$'
m1 db 10,13,'It is a palindrome.$'
m3 db 10,13,'It is not a palindrome.$'
buff db 80

.code
lea dx,m1

mov ah, 09h
int 21h

lea dx,buff

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int 21h


lea bx, buff+1
mov si,01h

mov ch,00h
mov cl,[buff+1]
mov di,cx
sar cl,1

pal:mov ah,[buff+si]
    mov al,[buff+di]
    cmp al,ah
    JC L1
    inc si
    dec di
    loop pal

    lea dx,m3

    mov ah,09h
    int 21h

    JMP L2

  L1:lea dx,m2

     mov ah,09h
     int 21h

     JMP L2

  L2:mov ah,4ch
     int 21h
```

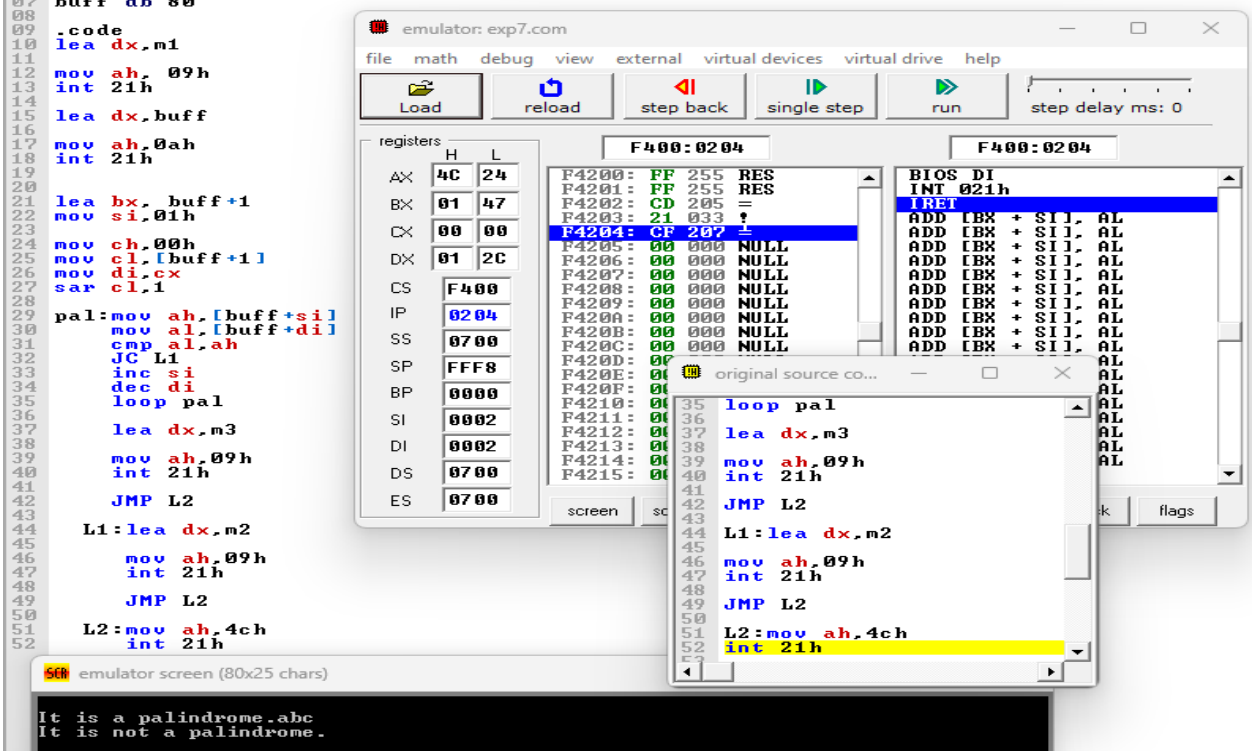

Conclusion :

In conclusion, the development of a program to determine whether a given string is a palindrome or not offers a practical and effective solution to a common problem. Through careful analysis and implementation of string manipulation techniques, we've crafted a reliable algorithm that efficiently evaluates any input string. Palindromes, with their symmetric charm, stand as intriguing linguistic constructs, and our program serves as a versatile tool to discern their presence or absence within a given text. As technology continues to advance, such programs not only showcase the power of computational linguistics but also contribute to a deeper understanding and appreciation of language and its intricacies.