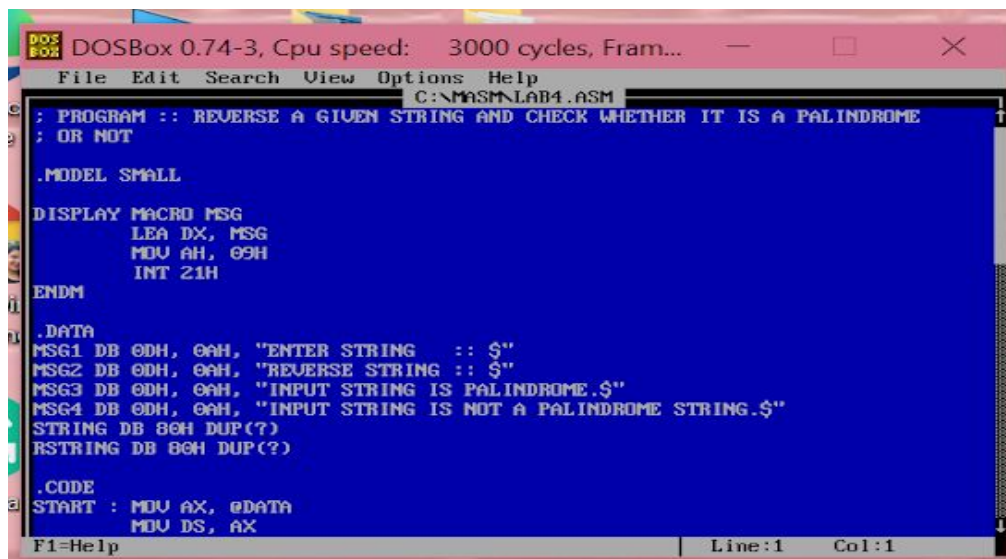


## LAB4: REVERSE A GIVEN STRING AND CHECK WHETHER IT IS A PALINDROME OR NOT



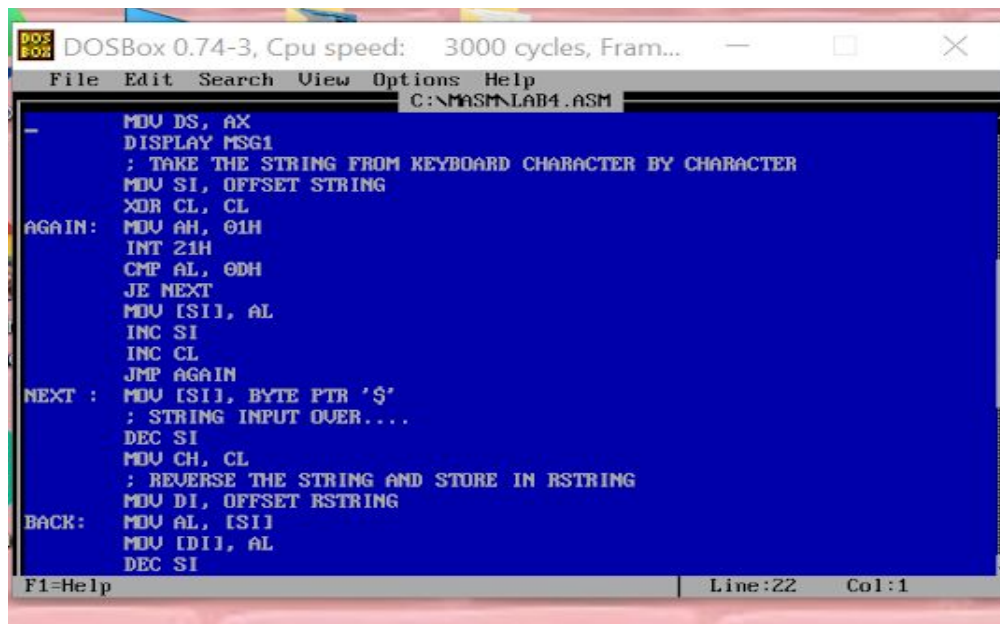
```
DOSBox 0.74-3, Cpu speed: 3000 cycles, Fram...
File Edit Search View Options Help
C:\MASM\LAB4.ASM
; PROGRAM :: REVERSE A GIVEN STRING AND CHECK WHETHER IT IS A PALINDROME
; OR NOT

.MODEL SMALL

DISPLAY MACRO MSG
    LEA DX, MSG
    MOV AH, 09H
    INT 21H
ENDM

.DATA
MSG1 DB 0DH, 0AH, "ENTER STRING :: $"
MSG2 DB 0DH, 0AH, "REVERSE STRING :: $"
MSG3 DB 0DH, 0AH, "INPUT STRING IS PALINDROME.$"
MSG4 DB 0DH, 0AH, "INPUT STRING IS NOT A PALINDROME STRING.$"
STRING DB 80H DUP(?)
RSTRING DB 80H DUP(?)

.CODE
START : MOV AX, @DATA
        MOV DS, AX
F1=Help | Line:1 Col:1
```



```
DOSBox 0.74-3, Cpu speed: 3000 cycles, Fram...
File Edit Search View Options Help
C:\MASM\LAB4.ASM
MOV DS, AX
DISPLAY MSG1
; TAKE THE STRING FROM KEYBOARD CHARACTER BY CHARACTER
MOV SI, OFFSET STRING
XOR CL, CL
AGAIN: MOV AH, 01H
        INT 21H
        CMP AL, 0DH
        JE NEXT
        MOV [SI], AL
        INC SI
        INC CL
        JMP AGAIN
NEXT : MOV [SI], BYTE PTR '$'
        ; STRING INPUT OVER....
        DEC SI
        MOV CH, CL
        ; REVERSE THE STRING AND STORE IN RSTRING
        MOV DI, OFFSET RSTRING
BACK:  MOV AL, [SI]
        MOV [DI], AL
        DEC SI
F1=Help | Line:22 Col:1
```

```
DOSBox 0.74-3, Cpu speed: 3000 cycles, Fram...
File Edit Search View Options Help
C:\MASM\LAB4.ASM

    MOV CH, CL
    ; REVERSE THE STRING AND STORE IN RSTRING
    MOV DI, OFFSET RSTRING
BACK: MOV AL, [SI]
      MOV [DI], AL
      DEC SI
      INC DI
      DEC CH
      JNZ BACK
      MOV DI, BYTE PTR '$'
      DISPLAY MSG2
      DISPLAY RSTRING
      MOV SI, OFFSET STRING
      MOV DI, OFFSET RSTRING
AG:   MOV AL, [SI]
      CMP AL, [DI]
      JNE FAIL
      INC SI
      INC DI
      DEC CX
      JZ SUCCESS
      JMP AG
      F1=Help
Line:38 Col:1
```

```
DOSBox 0.74-3, Cpu speed: 3000 cycles, Fram...
File Edit Search View Options Help
C:\MASM\LAB4.ASM

    MOV DI, BYTE PTR '$'
    DISPLAY MSG2
    DISPLAY RSTRING
    MOV SI, OFFSET STRING
    MOV DI, OFFSET RSTRING
AG:   MOV AL, [SI]
      CMP AL, [DI]
      JNE FAIL
      INC SI
      INC DI
      DEC CX
      JZ SUCCESS
      JMP AG
      F1=Help
Line:47 Col:1
FAIL: DISPLAY MSG4
      JMP FINAL
SUCCESS: DISPLAY MSG3
FINAL: MOV AH, 4CH
      INT 21H
END
```

.MODEL SMALL

DISPLAY MACRO MSG

LEA DX, MSG

MOV AH, 09H

INT 21H

ENDM

.DATA

MSG1 DB 0DH, 0AH, "ENTER STRING :: \$"

MSG2 DB 0DH, 0AH, "REVERSE STRING :: \$"

MSG3 DB 0DH, 0AH, "INPUT STRING IS PALINDROME.\$"

MSG4 DB 0DH, 0AH, "INPUT STRING IS NOT A PALINDROME STRING.\$"

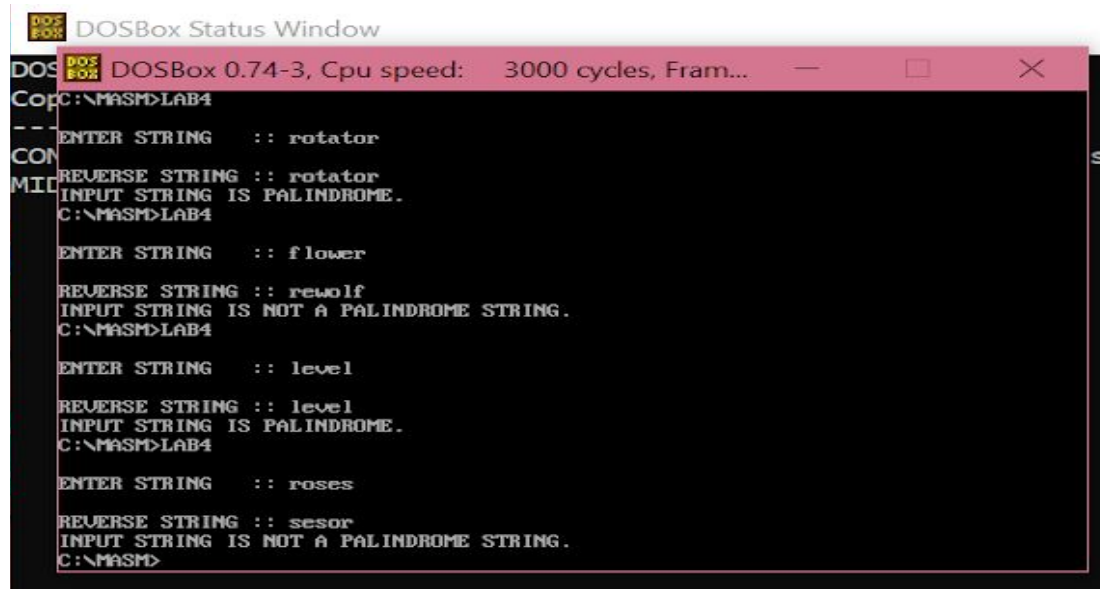
```

STRING DB 80H DUP(?)
RSTRING DB 80H DUP(?)

.CODE
START : MOV AX, @DATA
        MOV DS, AX
        DISPLAY MSG1
        ; TAKE THE STRING FROM KEYBOARD CHARACTER BY CHARACTER
        MOV SI, OFFSET STRING
        XOR CL, CL
AGAIN:  MOV AH, 01H
        INT 21H
        CMP AL, 0DH
        JE NEXT
        MOV [SI], AL
        INC SI
        INC CL
        JMP AGAIN
NEXT :  MOV [SI], BYTE PTR '$'
        ; STRING INPUT OVER....
        DEC SI
        MOV CH, CL
        ; REVERSE THE STRING AND STORE IN RSTRING
        MOV DI, OFFSET RSTRING
BACK:   MOV AL, [SI]
        MOV [DI], AL
        DEC SI
        INC DI
        DEC CH
        JNZ BACK
        MOV [DI], BYTE PTR '$'
        DISPLAY MSG2
        DISPLAY RSTRING
        MOV SI, OFFSET STRING
        MOV DI, OFFSET RSTRING
AG:     MOV AL, [SI]
        CMP AL, [DI]
        JNE FAIL
        INC SI
        INC DI
        DEC CX
        JZ SUCCESS
        JMP AG
FAIL:   DISPLAY MSG4
        JMP FINAL
SUCCESS: DISPLAY MSG3
FINAL:  MOV AH, 4CH
        INT 21H
END

```

## OUTPUT:



```
DOSBox Status Window
DOSBox 0.74-3, Cpu speed: 3000 cycles, Fram...
C:\MASM>LAB4
--
CON ENTER STRING :: rotator
MID REVERSE STRING :: rotator
INPUT STRING IS PALINDROME.
C:\MASM>LAB4
ENTER STRING :: flower
REVERSE STRING :: rewolf
INPUT STRING IS NOT A PALINDROME STRING.
C:\MASM>LAB4
ENTER STRING :: level
REVERSE STRING :: level
INPUT STRING IS PALINDROME.
C:\MASM>LAB4
ENTER STRING :: roses
REVERSE STRING :: sesor
INPUT STRING IS NOT A PALINDROME STRING.
C:\MASM>
```

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