```asm
        ;NAME:: LUNGADE KIRAN SANJAY
        ;ROLL NO.:: 39
        ;BATCH:: S2
        ;PROGRAM TO REVERSE THE STRING AND CONVERT UPPER CASE LETTER TO
LOWER CASE LETTER

        EXTRN LOWER_UPPER:FAR
        PUBLIC P5,STR1BUFF,STR1,STR3


INCLUDE MACRO.ASM

DATASEG1        SEGMENT
     STR1BUFF DB 20,0
     STR1  DB 20 DUP(0),'$'
     STR2  DB 20 DUP(0),'$'
     STR3  DB 20 DUP(0),'$'

     P1    DB 10,13,'ENTER THE STRING                       :      $'
       P2 DB 10,13,'REVERSE OF THE STRING IS                 :       $'
     P3    DB 10,13,'STRING CONVERTED IS                     :       $'
     P4    DB 10,13,'REVERSING THE STRING                    :       $'
     P5    DB 10,13,'CONVERTED STRING FROM LOWER TO UPPER IS       :
$'

DATASEG1   ENDS
STACKSEG1  SEGMENT STACK
        DW 100 DUP(0)
     ST_PTR  DW 0
STACKSEG1  ENDS
CODESEG1   SEGMENT
        ASSUME DS:DATASEG1,CS:CODESEG1,SS:STACKSEG1
     BEGIN:     MOV AX,DATASEG1
        MOV DS,AX
        MOV AX,STACKSEG1
        MOV SS,AX
        MOV SP,OFFSET ST_PTR

        DISPSTR P1
        INPUTSTR STR1BUFF
        ;MANIPULATE STRINGS

        CALL REVERSE_STR

        DISPSTR P2
        DISPSTR STR2
        ;CALL SECOND PROCEDURE

        CALL LOWER_UPPER

        DISPSTR P3
```

```
            DISPSTR STR3

            MOV AX,4C00H
            INT 21H          ;END OF MAIN PROGRAM

REVERSE_STR      PROC NEAR
            DISPSTR P4
            MOV SI,OFFSET STR1
            MOV DI,OFFSET STR2
            MOV CX,0000H
            MOV CL,STR1BUFF+1
            ADD SI,CX

      BACK:   DEC SI
            MOV AL,[SI]
            MOV [DI],AL
            INC DI
            LOOP BACK
            RET
REVERSE_STR      ENDP
CODESEG1   ENDS
            END BEGIN
```

```
;UPPER TO LOWER CASE  FILE
          INCLUDE MACRO.ASM
          PUBLIC LOWER_UPPER
          EXTRN P5:BYTE,STR1BUFF:BYTE,STR1:BYTE,STR3:BYTE

DATASEG1   SEGMENT
          DB 10 DUP(0)
DATASEG1   ENDS
CODESEG2   SEGMENT
          ASSUME CS:CODESEG2,DS:DATASEG1

  LOWER_UPPER    PROC FAR
          DISPSTR P5
          MOV SI,OFFSET STR1
          MOV DI,OFFSET STR3
          MOV CX,0000H
          MOV CL,STR1BUFF+1
    BACK: MOV AL,[SI]
          CMP AL,'a'
          JB SKIP
          CMP AL,'z'
          JA SKIP
          SUB AL,20H
    SKIP: MOV [DI],AL
          INC SI
          INC DI
          LOOP BACK


          RET
  LOWER_UPPER    ENDP
CODESEG2   ENDS
          END
```
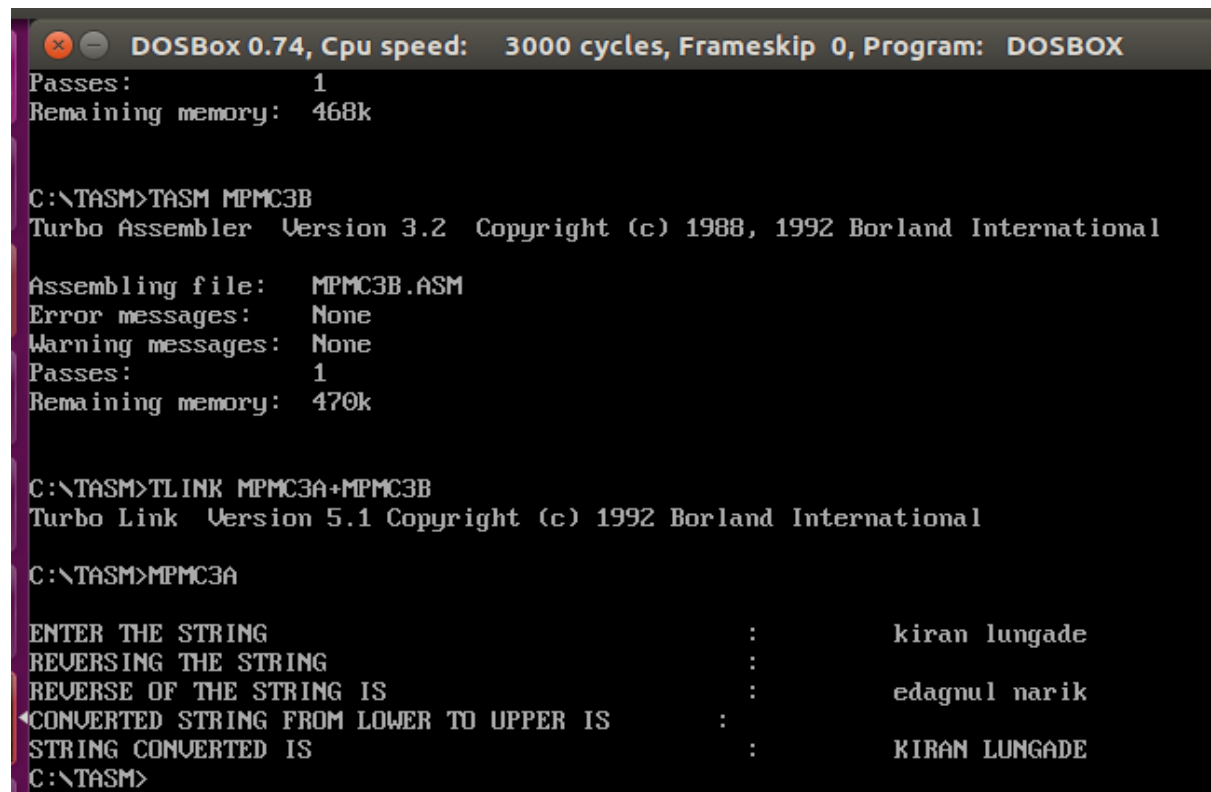
```
;MACRO FILE
INPUTSTR MACRO BUFFADDR
        MOV AH,0AH
        MOV DX,OFFSET BUFFADDR
        INT 21H
        ENDM


    DISPSTR MACRO STRADDR
        MOV AH,09H
        MOV DX,OFFSET STRADDR
        INT 21H
        ENDM
```