



AHSANULLAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

Department of Computer Science and Engineering

Course No : CSE 2214
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Assignment no : 11

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Question no: 01

Question: Write a program that (a) lets the user input a string, (b) prints it forward and backward without punctuation and blanks on successive lines, and (c) decides whether it is palindrome and prints the conclusion.

Solution:

```
.MODEL SMALL

.STACK 100H

.DATA
M1 DB 0AH,0DH,'Enter a string : ','$'
M2 DB 0AH,0DH,'Reversed string : ','$'
M3 DB 0AH,0DH,'Forward string : ','$'
M4 DB 0AH,0DH,'Backward string : ','$'
M5 DB 0AH,0DH,'The string is palindrome$'
M6 DB 0AH,0DH,'The string is not palindrome$'
T1 DB 100 DUP('$')
T2 DB 100 DUP('$')

.CODE

MAIN PROC

    MOV AX,@DATA
    MOV DS,AX
    MOV ES,AX

    CLD

    MOV AH,9
    LEA DX,M1
    INT 21H
```

XOR CX,CX

MOV AH,1

LEA SI,T1

WHILE_:

INT 21H

CMP AL,0DH

JE END_WHILE

CMP AL,33D

JE WHILE_:

CMP AL,34D

JE WHILE_:

CMP AL,39D

JE WHILE_:

CMP AL,' '

JE WHILE_:

CMP AL,44D

JE WHILE_:

CMP AL,45D

JE WHILE_:

CMP AL,46D

JE WHILE_:

CMP AL,58D

JE WHILE_:

CMP AL,59D

JE WHILE_:

CMP AL,95D

JE WHILE_:

CMP AL,96D

JE WHILE_:

PUSH AX

INC CX

MOV [SI], AL

INC SI

JMP WHILE_

END_WHILE:

MOV AH,9

LEA DX,M2

INT 21H

JCZ EXIT

LEA DI,T2

MOV BX,CX

MOV AH,2

TOP:

POP DX

MOV [DI],DL

INC DI

INT 21H

LOOP TOP

MOV AH,9

LEA DX,M3

INT 21H

MOV AH,9

LEA DX,T1

INT 21H

MOV AH,9

LEA DX,M4

INT 21H

MOV AH,9

LEA DX,T2

INT 21H

CALL NEWLINE

LEA SI,T1

LEA DI,T2

MOV CX,BX

REPE CMPSW

JZ CHECK_PALINDROME

MOV AH,9

LEA DX,M6

INT 21H

JMP EXIT

CHECK_PALINDROME:

MOV AH,9

LEA DX,M5

INT 21H

EXIT:

MOV AH,4CH

INT 21H

MAIN ENDP

PROC NEWLINE

PUSH AX

PUSH DX

MOV AH,2

MOV DL,0DH

INT 21H

MOV DL,0AH

INT 21H

POP DX

POP AX

RET

NEWLINE ENDP

END MAIN

Question no: 02

Question: Write a program that reads a string STRING, a decimal integer S that represents a position in STRING, a decimal integer N that represents the number of bytes to be removed (both integers between 0 and 80), calls DELETE to remove N bytes at position S, and prints the resulting string.

Solution:

```
.MODEL SMALL
```

```
.STACK 100H
```

```
.DATA
```

```
M1 DB 0AH,0DH,'Enter a string : ','$'
```

```
M2 DB 0AH,0DH,'The resulting string is : ','$'
```

```
M3 DB 0AH,0DH,'Enter a decimal number S : ','$'
```

```
M4 DB 0AH,0DH,'Enter a decimal number N : ','$'
```

```
T1 DB 100 DUP('$')
```

```
.CODE
```

```
MAIN PROC
```

```
    MOV AX,@DATA
```

```
    MOV DS,AX
```

```
    MOV ES,AX
```

```
    CLD
```

```
    MOV AH,9
```

```
    LEA DX,M1
```


INT 21H

XOR CX,CX

MOV AH,1

LEA SI,T1

WHILE:

INT 21H

CMP AL,0DH

JE END_WHILE

MOV [SI], AL

INC SI

INC CX

JMP WHILE

END_WHILE:

MOV AH,9

LEA DX,M3

INT 21H

CALL INDEC

MOV BX,AX

SUB BX,1

MOV AH,9

LEA DX,M4

INT 21H

CALL INDEC

CALL NEWLINE

LEA DI,T1

ADD DI,BX

SUB CX,BX

SUB CX,AX

LEA SI,T1

ADD SI,BX

ADD SI,AX

REP MOVSB

MOV [DI],'\$'

MOV AH,9

LEA DX,T1

INT 21H

MOV AH,4CH

INT 21H

MAIN ENDP

PROC NEWLINE

PUSH AX

PUSH DX

MOV AH,2

MOV DL,0DH

INT 21H

MOV DL,0AH

INT 21H

POP DX

POP AX

RET

NEWLINE ENDP

INDEC PROC

PUSH BX

PUSH CX

PUSH DX

BEGIN:

XOR BX,BX

XOR CX,CX

MOV AH,1

INT 21H

REPEAT:

CMP AL,'0'

JNGE NOT_DIGIT

CMP AL,'9'

JNLE NOT_DIGIT

AND AX,000FH

PUSH AX

MOV AX,10

MUL BX

POP BX

ADD BX,AX

MOV AH,1

INT 21H

CMP AL,0DH

JNE REPEAT

MOV AX,BX

EXIT:

POP DX

POP CX

POP BX

RET

```
NOT_DIGIT:
MOV AH,2
MOV DL,0DH
INT 21H
MOV DL,0AH
INT 21H
JMP BEGIN

RET
INDEC ENDP
END MAIN
```