Lab-03: Solution

Write an ALP to read a character from user and display it.

```
.MODEL SMALL
.STACK 64

.DATA

.CODE
MAIN PROC FAR

MOV AX, @DATA
MOV DS, AX

MOV AH, 01H ;(Input will be assigned to AL)
INT 21H

MOV DL, AL
MOV AH, 02H
INT 21H

MOV AX, 4C00H
INT 21H

MAIN ENDP
END
```

Write an ALP to read a character from user and display in upper case.

```
.MODEL SMALL
.STACK 64

.DATA

.CODE

MAIN PROC FAR

MOV AX, @DATA
MOV DS, AX

MOV AH, 01H ;(Input will be assigned to AL)
INT 21H

SUB AL, 32

MOV DL, AL
MOV AH, 02H
INT 21H

MOV AX, 4C00H
INT 21H

MAIN ENDP
END
```

Write an ALP to read a character from user and display in toggled case

```
.MODEL SMALL
.STACK 64
.DATA

.CODE
MAIN PROC FAR
MOV AX, @DATA
MOV DS, AX

MOV AH, 01H
INT 21H

CMP AL, 90
JB MAKELOWER

SUB AL, 32
JMP SKIP

MAKELOWER: ADD AL, 32

SKIP: MOV DL, AL
MOV AH, 02H
INT 21H

MOV AX, 4C00H
INT 21H

MAIN ENDP
END
```

Write an ALP to read a string from user and display it

```
.MODEL SMALL
.STACK 64

.DATA
MAXLEN DB 255
ACTLEN DB ?
INPUT DB 255 DUP ('$')

.CODE
MAIN PROC FAR
MOV AX, @DATA
MOV DS, AX

MOV AH, 0AH
LEA DX, MAXLEN
INT 21H

MOV AH, 09H
LEA DX, INPUT
INT 21H

MOV AX, 4C00H
INT 21H

MAIN ENDP
END
```

Write an ALP to read a string from user and count the number of words.

```
.MODEL SMALL
.STACK 64

.DATA
MAXLEN DB 255
ACTLEN DB ?
INPUT DB 255 DUP (‘$‘)

.CODE
MAIN PROC FAR
MOV AX, @DATA
MOV DS, AX

MOV AH, 0AH
LEA DX, MAXLEN
INT 21H

LEA SI, INPUT
MOV BL, 01H ;Word Counter
MOV CX, 0000H
MOV CL, ACTLEN ;Total number of characters for iteration

CHECKSPACE: MOV AL, [SI]
CMP AL, 32
JNE SKIPCOUNT
INC BX
SKIPCOUNT: INC SI
LOOP CHECKSPACE

ADD BL, 48
```

```
MOV DL, BL
MOV AH, 02H
INT 21H

MOV AX, 4C00H
INT 21H

MAIN ENDP
END
```

Write an ALP to read a string and display each word in a separate line in a cleared screen.

```
.MODEL SMALL
.STACK 64
.DATA
MAXLEN DB 255
ACTLEN DB ?
INPUT DB 255 DUP ('$')

NEW_LINE MACRO
MOV AH, 02H
MOV DL, 0AH ;newline character
INT 21H
MOV DL, 0DH ;carriage return character
INT 21H
NEW_LINE ENDM

.CODE
MAIN PROC FAR
MOV AX, @DATA
MOV DS, AX

MOV AH, 0AH
LEA DX, MAXLEN
INT 21H

CALL SCR_CLEAR

LEA SI, INPUT
MOV CX, 0000H
MOV CL, ACTLEN ;Total number of characters for iteration
```

```
NEW_LINE

CHECKSPACE: MOV AL, [SI]
CMP AL, 32
JNE SKIP_N_L

NEW_LINE
JMP SKIP

SKIP_N_L: MOV DL, AL
MOV AH, 02H
INT 21H

SKIP: INC SI
LOOP CHECKSPACE

MOV AX, 4C00H
INT 21H
MAIN ENDP

SCR_CLEAR PROC NEAR
MOV AX, 0600H ;Request scroll
MOV BH, 61H ;blue on brown for attribute on pixel(generally (07H) white on black
MOV CX, 0000H
MOV DX, 1950H
INT 10H
RET
SCR_CLEAR ENDP

END
```