Q1. WAP to read a string from the user, convert it to uppercase, count the number of words and display each word in each line.

```
.model small

.stack 64

.data
maxchar db 255
actlen db ?
input db 255 dup(?)

.code

newline macro
mov ah, 02h
mov dl, 0ah
int 21h
mov dl, 0dh
int 21h
endm


mov ax, @data
mov ds, ax

main proc far

mov ah, 0ah
lea dx, maxchar
int 21h

lea si, input
mov cl, actlen
mov ch, 0
mov bl, 1

newline
newline

again: mov dl, [si]

cmp dl, 32
jne skipnewline
newline
inc bl
jmp skip

skipnewline: cmp dl, 91
jb skipupper
sub dl, 32

skipupper: mov ah, 02h
int 21h
skip: inc si
loop again

newline
newline

add bl, 30h
mov dl, bl
mov ah, 02h
int 21h

mov ax, 4c00h
int 21h

main endp
end
```

Q2. Write an ALP in 8086 to read a word and display all the alphabets in alternate case (first alphabet in lower case, second in upper case, third in lower case and soon) in a clear window.

```
.model small

.stack 64

.data
maxchar db 255
actlen db ?
input db 255 dup(?)

.code

clr macro
mov ax, 0600h
mov cx, 0000h
mov dx, 1950h
mov bh, 4fh
int 10h
endm

mov ax, @data
mov ds, ax

main proc far

mov ah, 0ah
lea dx, maxchar
int 21h

clr

lea si, input
mov cl, actlen
mov ch, 0
mov ah, 02h
mov bl, 0 ;alternate flag


again: mov dl, [si]
cmp dl, 32
je space

cmp bl, 0
je makelower
sub dl, 32
int 21h
mov bl, 0
jmp skip

makelower: mov bl, 1
space: int 21h
skip: inc si
loop again

mov ax, 4c00h
int 21h

main endp
end
```

Q3. Write an assembly program to read a string from the user and display vowels and consonants separately.

```
.model small

.stack 64

.data
maxchar db 255
actlen db ?
input db 255 dup(?)

vowel db 255 dup('$')
cons db 255 dup('$')

.code

newline macro
mov ah, 02h
mov dl, 0ah
int 21h
mov dl, 0dh
int 21h
endm


mov ax, @data
mov ds, ax

main proc far

mov ah, 0ah
lea dx, maxchar
int 21h

lea si, input
lea di, vowel
lea bx, cons

mov cl, actlen
mov ch, 0

newline
newline

again: mov dl, [si]
cmp dl, 32
je skip
cmp dl, 'a'
je s_vowel
cmp dl, 'e'
je s_vowel
cmp dl, 'i'
je s_vowel
cmp dl, 'o'
je s_vowel
cmp dl, 'u'
je s_vowel
mov [bx], dl
inc bx
jmp skip

s_vowel: mov [di], dl
inc di

skip: inc si
loop again

newline
newline

mov ah, 09h
lea dx, vowel
int 21h
newline
mov ah, 09h
lea dx, cons
int 21h

mov ax, 4c00h
int 21h

main endp
end
```

Q3. Write a program to read a string and display only the alphabetic characters from the string in a clear screen. **[*2071 Magh*]**

```
.MODEL SMALL
.STACK 64
.DATA
maxchar db 255
actlen db ?
input db dup('$')

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

;input string
mov ah, 0ah
lea dx, maxchar
int 21h

lea si, input
mov cl, actlen
mov ch,0

mov ah, 02h

again: mov dl, [si]
cmp dl, 65
jl skip
cmp dl, 122
jg skip

cmp dl, 90
jl okay
cmp dl, 97
jl skip

okay: int 21h
skip: inc si
loop again

MOV AX, 4C00H
INT 21H
MAIN ENDP
END
```