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IDEAL
MODEL small
STACK 100h
DATASEG
msg db 'ABC$'
key1 db 11001100b
CODESEG
start:
    mov ax, @data
    mov ds, ax
; Print original message
    mov dx, offset msg
    mov ah,9h
    int 21h
; print new line
    mov ah,2
    mov dl,10
    int 21h
;-----
; Encoding the message (overriding the original)
;-----
    mov bx, offset msg
    mov al, [bx]
    xor al,[key1]
    mov [byte ptr bx],al
    inc bx
    mov al, [bx]
    xor al,[key1]
    mov [byte ptr bx],al
    inc bx
    mov al, [bx]
    xor al,[key1]
    mov [byte ptr bx],al
; Printing the encoded message
prtmmsg:
    mov dx, offset msg
    mov ah,9h
    int 21h
; print new line
    mov ah,2
    mov dl,10
    int 21h
;-----
;Decoding the encoded message (overriding it)
;-----
    mov bx, offset msg
    mov al,[bx]
    xor al,[key1]
    mov [byte ptr bx],al
    inc bx
    mov al,[bx]
    xor al,[key1]
    mov [byte ptr bx],al
    inc bx
    mov al,[bx]
    xor al,[key1]

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    mov [byte ptr bx],al
; Printing the decoded message
prtmsg1:
    mov dx, offset msg
    mov ah,9h
    int 21h
;-----
exit:
    mov ax, 4c00h
    int 21h
END start
```