CASE CONVERSION

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AIM:

To write assembly language programs to perform alphabetical case conversion on the fly from standard input to standard output.

PROGRAM - 1: CASE CONVERSION:

ALGORITHM:

1. Begin.

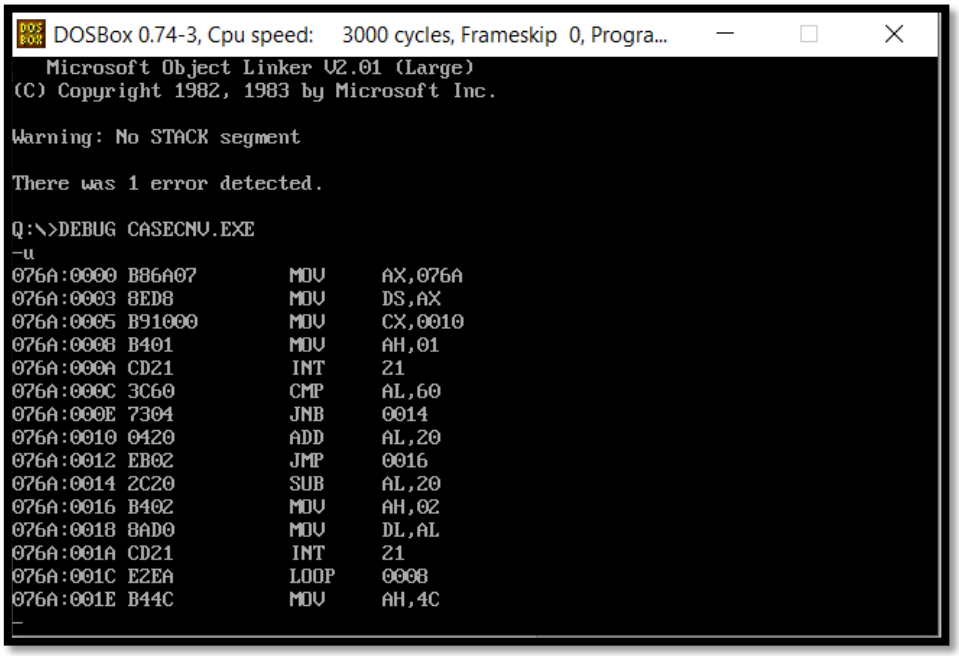
2. Declare the data segment.
3. Initialize data segment with the count (number of input characters)
4. Close the data segment.

5. Declare the code segment.
6. Load the data segment content into AX register.
7. Transfer the contents of AX register to DS register.
8. Move the count into CX register.
9. Loop through count C1:
    a. Move 01h to AH, to input a character.
    b. Interrupt to get input.
    c. If input > 60
        i. Subtract the ASCII value by 20h.
    d. Else
        i. Add the ASCII value by 20h.
    e. Print the output through DOS's standard output by moving it into DL register.
10. Introduce an interrupt for safe exit. (INT 21h)
11. Close the code segment.

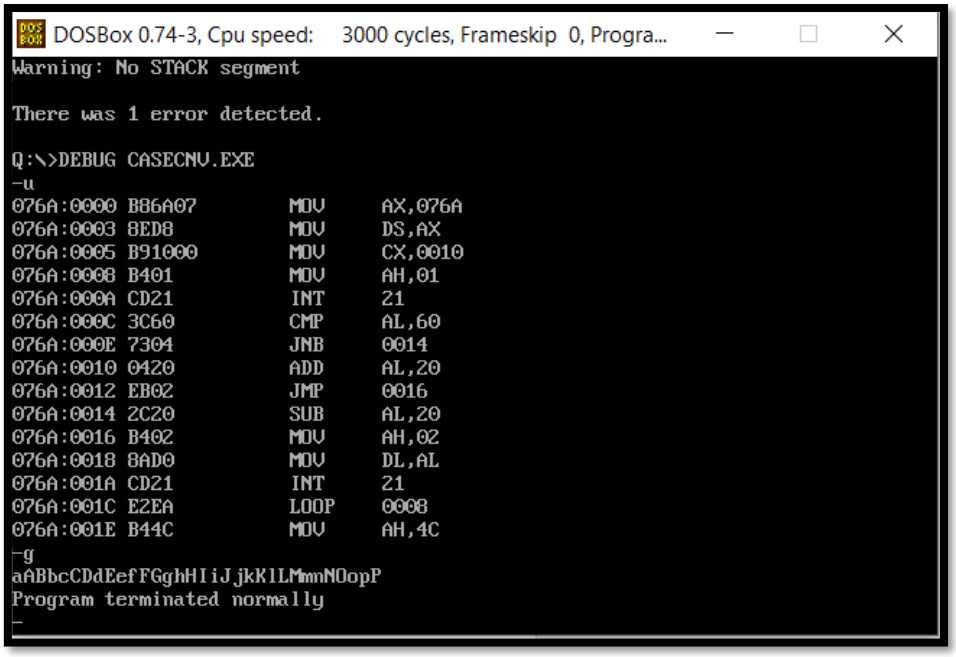
12. End.

PROGRAM	COMMENTS
assume cs:code, ds:data	Declare code and data segment.
data segment	Initialize data segment with values.
count equ 10h	Number of input characters to be taken.
data ends	
code segment	Start the code segment.
org 0100h	Initialize an offset address.
start: mov ax, data	Transfer data from “data” to AX.
mov ds, ax	Transfer data from memory location AX to DS.
mov cx, count	Loads the value in count to CX register.
L1: mov ah, 1	To input a character.
int 21h	
	ASCII (hex): A-Z= 41-5A, a-z= 61-7A.
cmp al, 60h	If AL > 60, then jump to ‘upper’.
jnc upper	
add al, 20h	To convert the character to lowercase.
jmp skip	
upper: sub al, 20h	To convert the character to uppercase.
skip: mov ah, 2	To output a character.
mov dl,al	Transfers the contents in AL to DL to support printing.
int 21h	
loop L1	Loops till CX = 0.
mov ah, 4ch	
int 21h	Interrupt the process with return code and exit.
code ends	
end start	

UNASSEMBLED CODE:



SAMPLE I/O SNAPSHOT:



RESULT:

The assembly level program was written to perform the above specified case conversion and the output was verified.