//alp program to print the factorial of a number

%macro write 2

mov eax,4

mov ebx,1

mov ecx,%1

mov edx,%2

int 80h

%endmacro

%macro read 2

mov eax,3

mov ebx,0

mov ecx,%1

mov edx,%2

int 80h

%endmacro

section .data

msg1 db "enter the number",10,13

len1 equ $-msg1

msg2 db "the factorial is: ",10,13

len2 equ $-msg2

newline db 10,13

section .bss

num1 resb 2

num2 resw 1

dispbuff resq 1

section .text

global \_start

\_start:

write msg1,len1

read num1,num2

xor eax,eax

xor ebx,ebx

xor ecx,ecx

xor edx,edx

CALL convert

mov [num2],bx

write msg2,len2

xor eax,eax

xor ebx,ebx

xor ecx,ecx

xor edx,edx

mov bx,[num2]

mov AX,1

CALL proc\_fact

mov ebx,eax

call display

exit: mov eax,1

mov ebx,0

int 80h

;procedure to convert 2 digit number stored in num1 from ascii to hex

convert:

mov esi,num1

mov edi,num2

mov cl,02h

xor eax,eax

xor ebx,ebx

up: rol bl,04h

mov al,[esi]

cmp al,39h

jbe skipc

sub al,07h

skipc: sub al,30h

add bl,al

mov[edi],bl

inc esi

inc edi

loop up

ret

;procedure to display 2-digit number stored on disbuff from hex to ascii

display:

mov ecx,8

mov edi,dispbuff

again: rol ebx,4

mov al,bl

and al,0fh

cmp al,09h

jbe down

add al,07h

down :add al,30h

mov[edi],al

inc edi

loop again

write dispbuff,8

write newline,1

ret

;procedure to find factorial

proc\_fact:

cmp bl,1

jg xyz

ret

xyz:

mul ebx

dec bl

CALL proc\_fact

ret

OUTPUT:

(Displays the result in hex )

