; MIL Assignment No. : 4B

; Assignment Name : Write X86/64 ALP to perform multiplication of two 8-bit hexadecimal numbers. Use successive addition

; and add and shift method. Accept input from the user.

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; Follwing code is of Add and Shift Method

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section .data

welmsg db 10,'Multiplication using add and shift method',10

welmsg\_len equ $-welmsg

nummsg db 10,'Enter two digits of Number::'

nummsg\_len equ $-nummsg

resmsg db 10,'Multiplication of elements::'

resmsg\_len equ $-resmsg

nline db 10,'',10

nline\_len equ $-nline

section .bss

numascii resb 03

multi1 resb 02

multi2 resb 02

resl resb 02

dispbuff resb 04

%macro dispmsg 2

mov eax,04

mov ebx,01

mov ecx,%1

mov edx,%2

int 80h

%endmacro

%macro accept 2

mov eax,03

mov ebx,0

mov ecx,%1

mov edx,%2

int 80h

%endmacro

section .text

global \_start

\_start:

dispmsg welmsg,welmsg\_len

dispmsg nummsg,nummsg\_len

accept numascii,3

call atoh

mov [multi1],bl

dispmsg nummsg,nummsg\_len

accept numascii,3

call atoh

mov [multi2],bl

mov ah,00h

mov al,[multi1]

mov bl,[multi2]

mov cl,08h

addup:

rcr bl,01

jnc next1

add [resl],ax

next1: shl ax,01

loop addup

dispmsg resmsg,resmsg\_len

mov bx,[resl]

call htoa

dispmsg nline,nline\_len

mov eax,01 ;Exit

mov ebx,00

int 80h

atoh: ;i/p proc

mov bl,0

mov ecx,02

mov esi,numascii

up1:

rol bl,04

mov al,[esi]

cmp al,39h

jbe skip1

sub al,07h

skip1: sub al,30h

add bl,al

inc esi

loop up1

ret

htoa: ;o/p proc

mov ecx,4

mov edi,dispbuff

dup1:

rol bx,4

mov al,bl

and al,0fh

cmp al,09

jbe skip

add al,07h

skip: add al,30h

mov [edi],al

inc edi

loop dup1

dispmsg dispbuff,4

ret