National University of Computer and Emerging Sciences



Lab 07

COAL

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| Semester | Fall 2020 |

Task 1

# **Source Code:**

*;Author :Muhammad Zain*

;Task :Task 1

;Name :Error Finding

include Irvine32.inc

.data

val1 QWORD 20403004362047A1h

val2 QWORD 055210304A2000B2h

result QWORD 0

.code

main proc

mov eax, white + (lightred \* 16)

call SetTextColor

mov ecx,8 ; loop counter ;------------------> Error 1 cx,8 replaced by ecx

mov esi, offset val1 ; set index to start ;------------------> Error 2 esi,val1

mov edi, offset val2 ;------------------> Error 3 edi,val2

clc ; clear Carry flag

top:

mov al,BYTE PTR[esi] ; get first number

sbb al,BYTE PTR[edi] ; subtract second

mov BYTE PTR[esi],al ; store the result

inc esi ;------------------> Error 4 dec esi

inc edi ;------------------> Error 5 dec edi

loop top

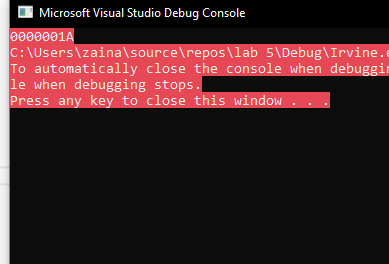
call writehexb

exit

main endp

end main

# **Snip:**



Task 2

# **Source Code:**

*;Author :Muhammad Zain*

;Program Name :addition extended 32 bit

;lab task :lab 07 ,task 02

INCLUDE Irvine32.inc

.data

Array\_32\_1 byte 34h,12h,98h,74h,06h,0A4h,0B2h,0A2h,34h,12h,98h,74h,06h,0A4h,0B2h,0A2h,34h,12h,98h,74h,06h,0A4h,0B2h,0A2h,34h,12h,98h,74h,06h,0A4h,0B2h,0A2h

Array\_32\_2 byte 02h,045h,23h,00h,00h,87h,10h,80h,34h,12h,98h,74h,06h,0A4h,0B2h,0A2h,34h,12h,98h,74h,06h,0A4h,0B2h,0A2h,34h,12h,98h,74h,06h,0A4h,0B2h,0A2h

Array\_sum byte 33 dup (0)

;hamesha ek ziada rakhni hay ta k for carry scene

.code

main PROC

mov esi ,offset Array\_32\_1 ;pahla index pahli array ka

mov edi ,offset Array\_32\_2 ;pahla index dosri array ka

mov ebx ,offset Array\_sum ;sum ke array ko point kr ha

mov ecx , LENGTHOF Array\_32\_1 ;Total byte kitnay hain

call addition

mov esi ,offset Array\_sum

mov ecx,LENGTHOF Array\_sum

mov eax, white + (lightred \* 16)

call SetTextColor

call Display

call crlf

exit

main ENDP

Display proc

pushad ;akhri index ko point kray ga for the purpose of little indian

add esi,ecx

sub esi, TYPE byte

mov ebx, TYPE byte

Loop1:

mov al,[esi] ;byte ke array ko get kea h

call writeHexB ;hex byte

sub esi,TYPE byte ;pointer ko mov krwanay k lea minus kea h

LOOP Loop1

popad ;is pop sa stack pointer khud mov hojay ga

ret

Display endp

;==============================================================

;==============================================================

;2 arrays lain ga 32 bytes ke

;or 3rd array for sum un k size sa 1 bari

;2 pointer lain ga esi and edi jo unko point kr rahay hon ga respectively

;ek pointer ebx sum ke array ko point kray ga

;ecx ma kitna byte add hn ga i.e 32

;===============================================================

;===============================================================

addition proc

pushad

clc ;clear carry flag

Loop1:

mov al ,[esi] ;pahla integer

adc al, [edi] ;dosra add with carry

pushfd ;carry flag ko push krdea stack pa

mov [ebx],al ;store kea partial sum ko carry k bgair

add esi,1 ;har pointer agay move krwa dea

add edi,1

add ebx,1

popfd ;carry flag ko pop krdea stack pa

loop Loop1

mov byte ptr[ebx],0 ;sum ka high byte jo hoga usko clear krdea

adc byte ptr[ebx],0 ;agr koi carry rah gea to add with carry

popad

ret

addition ENDP

END MAIN

# **Snip:**

Text

Description automatically generated