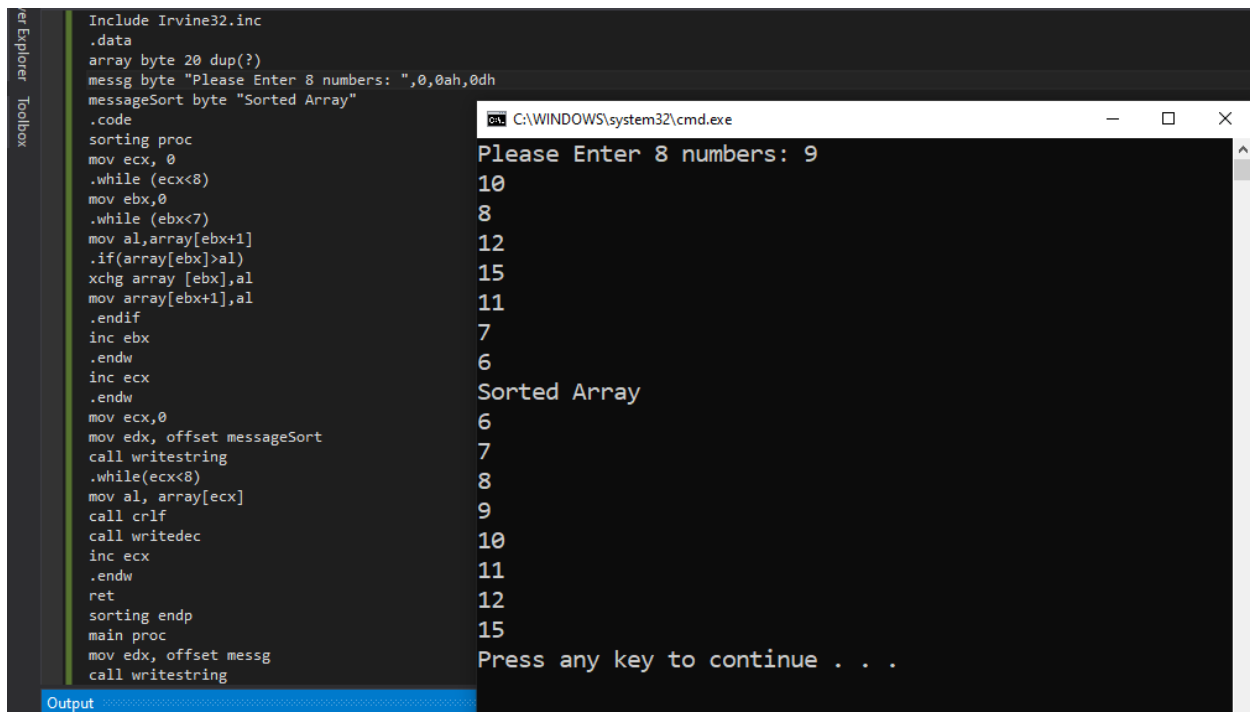


LAB # 08

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Q1-



The screenshot shows a Visual Studio IDE with a file explorer on the left and a command prompt window on the right. The command prompt window displays the output of an assembly program. The assembly code on the left includes Irvine32.inc, defines a 20-byte array, and sets up two messages. The sorting procedure uses a bubble sort algorithm to sort the array. The main procedure prints the sorted array and prompts the user to press any key to continue.

```
Include Irvine32.inc
.data
array byte 20 dup(?)
messg byte "Please Enter 8 numbers: ",0,0ah,0dh
messageSort byte "Sorted Array"
.code
sorting proc
mov ecx, 0
.while (ecx<8)
mov ebx,0
.while (ebx<7)
mov al,array[ebx+1]
.if(array[ebx]>al)
xchg array [ebx],al
mov array[ebx+1],al
.endif
inc ebx
.endw
inc ecx
.endw
mov ecx,0
mov edx, offset messageSort
call writestring
.while(ecx<8)
mov al, array[ecx]
call crlf
call writedec
inc ecx
.endw
ret
sorting endp
main proc
mov edx, offset messg
call writestring
```

Output:

```
C:\WINDOWS\system32\cmd.exe
Please Enter 8 numbers: 9
10
8
12
15
11
7
6
Sorted Array
6
7
8
9
10
11
12
15
Press any key to continue . . .
```

Q2-

```
# Explorer Toolbox
include Irvine32.inc
.data
array DWORD 50 DUP(0)
Oddarray DWORD 50 DUP(0)
Evenarray DWORD 50 DUP(0)
Input byte "Enter numbers: ",0
InputMessage byte "Enter the total numbers you want to Add: ",0
OutputMessage3 byte "The Number You Stored is: ",0
OutputMessage4 byte "This Odd Number Is Stored From Main Array to Odd Array ",0
OutputMessage5 byte "This Even Number Is Stored From Main Array to Even Array ",0
num dword ?
temp dword 0d
.code
main PROC
mov edx,offset InputMessage
call writestring
call readdec
mov num,edx
mov edx,offset Input
call writestring
call crlf

Looper:
mov ecx,1
.while(ecx<=num)
    call crlf
    call readdec
    mov array[ecx*4],eax
    inc ecx
    mov edx,0
    mov ebx,2
    div ebx
    cmp edx,0
    je LabelForEven
    jmp LabelForOdd

.endw
exit
LabelForEven:
call crlf
mov edx,offset OutputMessage5
call writestring
call crlf
```

```
C:\WINDOWS\system32\cmd.exe
Enter the total numbers you want to Add: 2
Enter numbers:
7
This Odd Number Is Stored From Main Array to Odd Array
The Number You Stored is:
7
4
This Even Number Is Stored From Main Array to Even Array
The Number You Stored is:
4
```

```

        mov ecx,1
        .while(ecx <= num)
            mov eax,array[ecx*4]
            mov Evenarray[ecx*4],eax
            inc ecx
            call crlf
            mov edx,offset OutputMessage3
            call writestring
            call crlf
            call writedec
            call crlf
            jmp Looper
        .endw

exit

LabelForOdd:
call crlf
    mov edx,offset OutputMessage4
    call writestring
    call crlf

    mov ecx,1
    .while(ecx <= num)
        mov eax,array[ecx*4]
        mov Oddarray[ecx*4],eax
        inc ecx
        call crlf
        mov edx,offset OutputMessage3
        call writestring
        call crlf
        call writedec
        call crlf
        jmp Looper
    .endw

exit
main endp
end main

```

C:\WINDOWS\system32\cmd.exe

Enter the total numbers you want to Add: 2
Enter numbers:

7

This Odd Number Is Stored From Main Array to Odd Array

The Number You Stored is:

7

4

This Even Number Is Stored From Main Array to Even Array

The Number You Stored is:

4