# Lab 6: Writing Assembly Programs

Write an assembly program that takes two WORD sized arrays of first 20 even and first 20 odd numbers (arrayE and arrayO) **from the user** and display them on the screen. Place the arrayO in stack. Now **write two procedures** arraySum and arraySub that add (arrayO[stack]+arrayE[mem]) and subtract(arrayO[stack]-arrayE[mem]) the two arrays. Display your results on screen using the strings "sum of two arrays" and "difference of two arrays".

**[10 marks]**

**include irvine32.inc**

**.stack 100h**

**.data**

**st1 byte "Enter the Even numbers: " ,0**

**st2 byte "Enter the Odd numbers: " ,0**

**st3 byte "Display Numbers: " ,0**

**st5 byte "Display Sum: " ,0**

**st6 byte "Display Subtraction: " ,0**

**st4 byte " " ,0**

**arrE word 20 dup(?)**

**arrO word 20 dup(?)**

**arrsum word 20 dup(?)**

**arrsub word 20 dup(?)**

**.code**

**main proc**

**mov ebx,0**

**mov edx, offset st1**

**call writestring**

**call CRLF**

**L1:**

**call readint**

**mov arrE[ebx],ax**

**inc ebx**

**cmp ebx,19**

**jbe L1**

**call crlf**

**mov edx, offset st3**

**call writestring**

**mov eax,0**

**mov ecx,20**

**a1:**

**mov edx,20**

**sub edx,ecx;**

**mov ax,arrE[edx]**

**mov ah,0**

**call writedec**

**mov edx, offset st4**

**call writestring**

**loop a1**

**call crlf**

**call crlf**

**mov ebx,0**

**mov eax,0**

**mov edx, offset st2**

**call writestring**

**call crlf**

**a2:**

**call readint**

**mov arrO[ebx],ax**

**inc ebx**

**cmp ebx,19**

**jbe a2**

**call crlf**

**mov edx, offset st3**

**call writestring**

**mov eax,0**

**mov ecx,20**

**a3:**

**mov edx,20**

**sub edx,ecx;**

**mov ax,arrO[edx]**

**mov ah,0**

**call writedec**

**mov edx, offset st4**

**call writestring**

**loop a3**

**call crlf**

**mov eax,0**

**mov ecx,20**

**Stack\_odd:**

**mov edx,20**

**sub edx,ecx;**

**mov ax,arrO[edx]**

**mov ah,0**

**push ax**

**loop Stack\_odd**

**mov eax,0**

**mov ebx,0**

**mov ecx,20**

**Stack\_sub:**

**mov edx,20**

**sub edx,ecx;**

**pop ax**

**mov bx,ax**

**sub bx,arrE[edx]**

**mov bh,0**

**mov arrsub[edx],bx**

**loop Stack\_sub**

**call crlf**

**mov edx, offset st6**

**call writestring**

**mov eax,0**

**mov ecx,20**

**a4:**

**mov edx,20**

**sub edx,ecx;**

**mov ax,arrsub[edx]**

**mov ah,0**

**call writedec**

**mov edx, offset st4**

**call writestring**

**loop a4**

**call crlf**

**call crlf**

**mov eax,0**

**mov ecx,20**

**Stack\_o:**

**mov edx,20**

**sub edx,ecx;**

**mov ax,arrO[edx]**

**mov ah,0**

**push ax**

**loop Stack\_o**

**mov eax,0**

**mov ebx,0**

**mov ecx,20**

**Stack\_sum:**

**mov edx,20**

**sub edx,ecx;**

**pop ax**

**mov bx,ax**

**add bx,arrE[edx]**

**mov bh,0**

**mov arrsum[edx],bx**

**loop Stack\_sum**

**mov edx, offset st5**

**call writestring**

**mov eax,0**

**mov ecx,20**

**a5:**

**mov edx,20**

**sub edx,ecx;**

**mov ax,arrsum[edx]**

**mov ah,0**

**call writedec**

**mov edx, offset st4**

**call writestring**

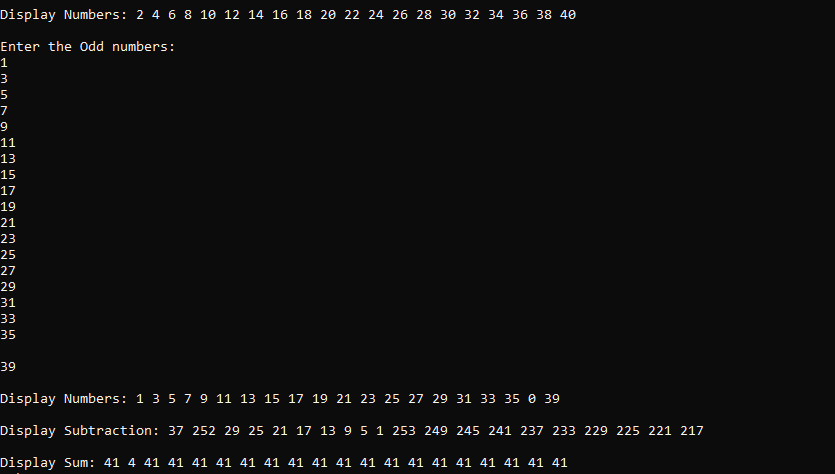
**loop a5**

**exit**

**main endp**

**End main**

## OUTPUT:

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