LAB TASK # 04

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20K-0477

Examples

Example#01:
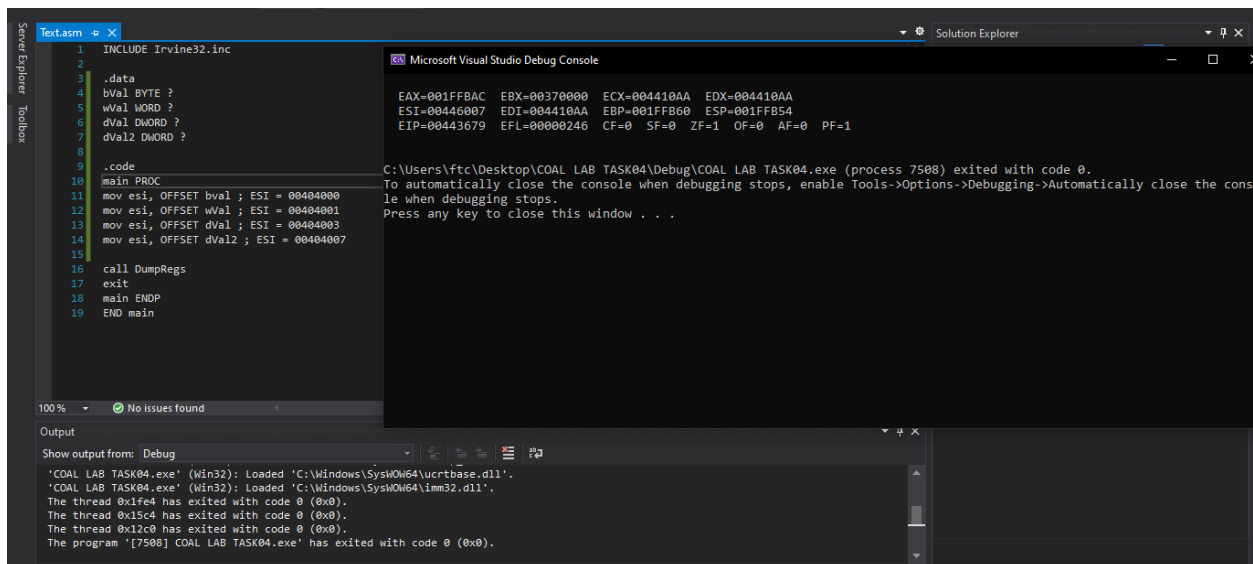

Example#02:

Example#03:


```asm
INCLUDE Irvine32.inc

.data
var1 BYTE 20h
var2 WORD 1000h
var3 DWORD ?
var4 BYTE 10, 20, 30, 40, 50
msg BYTE "File not found", 0

.code
main PROC
mov ax, type var1
mov ax, type var2
mov ax, type var3
mov ax, type var4
mov ax, type msg

call DumpRegs
exit
main ENDP
END main
```

Debug Console output:
```
EAX=003F0001  EBX=0048E000  ECX=007810AA  EDX=007810AA
ESI=007810AA  EDI=007810AA  EBP=003FF878  ESP=003FF86C
EIP=00783679  EFL=00000246  CF=0  SF=0  ZF=1  OF=0  AF=0  PF=1

C:\Users\ftc\Desktop\COAL LAB TASK04\Debug\COAL LAB TASK04.exe (process 8672) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .
```

Output:
```
'COAL LAB TASK04.exe' (Win32): Loaded 'C:\Windows\SysWOW64\ucrtbase.dll'.
'COAL LAB TASK04.exe' (Win32): Loaded 'C:\Windows\SysWOW64\imm32.dll'.
The thread 0x1938 has exited with code 0 (0x0).
The thread 0x43c has exited with code 0 (0x0).
The thread 0x24a4 has exited with code 0 (0x0).
The program '[8672] COAL LAB TASK04.exe' has exited with code 0 (0x0).
```

Example#04:


```asm
INCLUDE Irvine32.inc

.data
arrayW WORD 1000h,2000h,3000h

.code
main PROC
mov eax,0
mov ebx,0
mov ecx,0
mov esi,OFFSET arrayW
mov ax,[esi] ; AX = 1000h
mov bx,[esi+2] ; AX = 2000h
mov cx,[esi+4] ; AX = 3000h

call DumpRegs
exit
main ENDP
END main
```
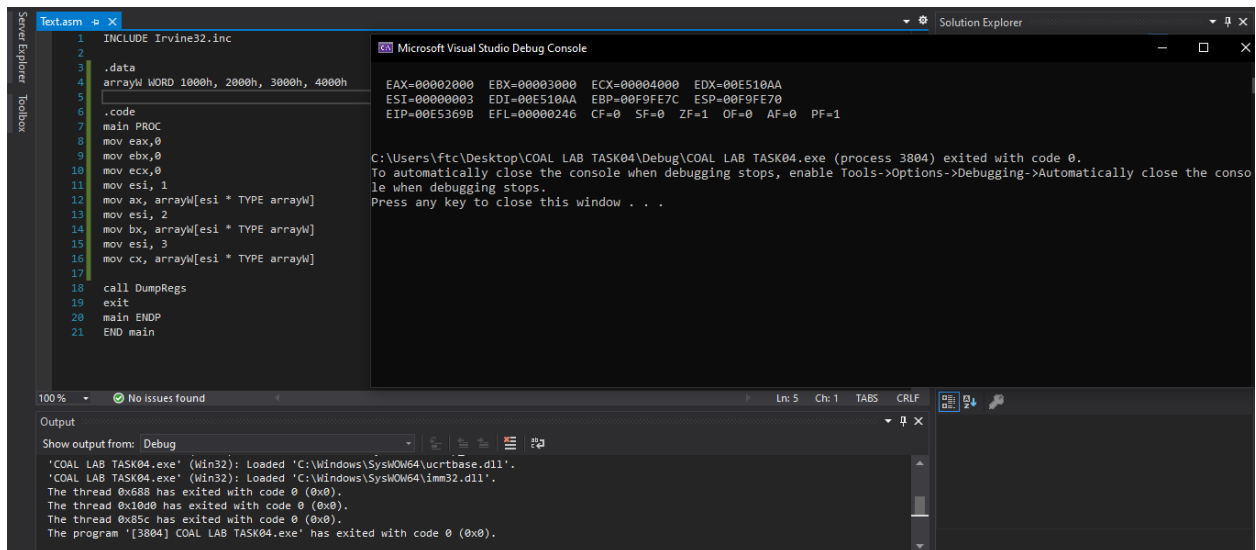
Debug Console output:
```
EAX=00001000  EBX=00002000  ECX=00003000  EDX=003410AA
ESI=00346000  EDI=003410AA  EBP=006FFBA8  ESP=006FFB9C
EIP=00343684  EFL=00000246  CF=0  SF=0  ZF=1  OF=0  AF=0  PF=1

C:\Users\ftc\Desktop\COAL LAB TASK04\Debug\COAL LAB TASK04.exe (process 1512) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .
```

Output:
```
'COAL LAB TASK04.exe' (Win32): Loaded 'C:\Windows\SysWOW64\ucrtbase.dll'.
'COAL LAB TASK04.exe' (Win32): Loaded 'C:\Windows\SysWOW64\imm32.dll'.
The thread 0x1948 has exited with code 0 (0x0).
The thread 0x1e5c has exited with code 0 (0x0).
The thread 0x85c has exited with code 0 (0x0).
The program '[1512] COAL LAB TASK04.exe' has exited with code 0 (0x0).
```

Example#05:


```asm
INCLUDE Irvine32.inc

.data
arrayW WORD 1000h, 2000h, 3000h, 4000h

.code
main PROC
    mov eax,0
    mov ebx,0
    mov ecx,0
    mov esi, 1
    mov ax, arrayW[esi * TYPE arrayW]
    mov esi, 2
    mov bx, arrayW[esi * TYPE arrayW]
    mov esi, 3
    mov cx, arrayW[esi * TYPE arrayW]

    call DumpRegs
    exit
main ENDP
END main
```
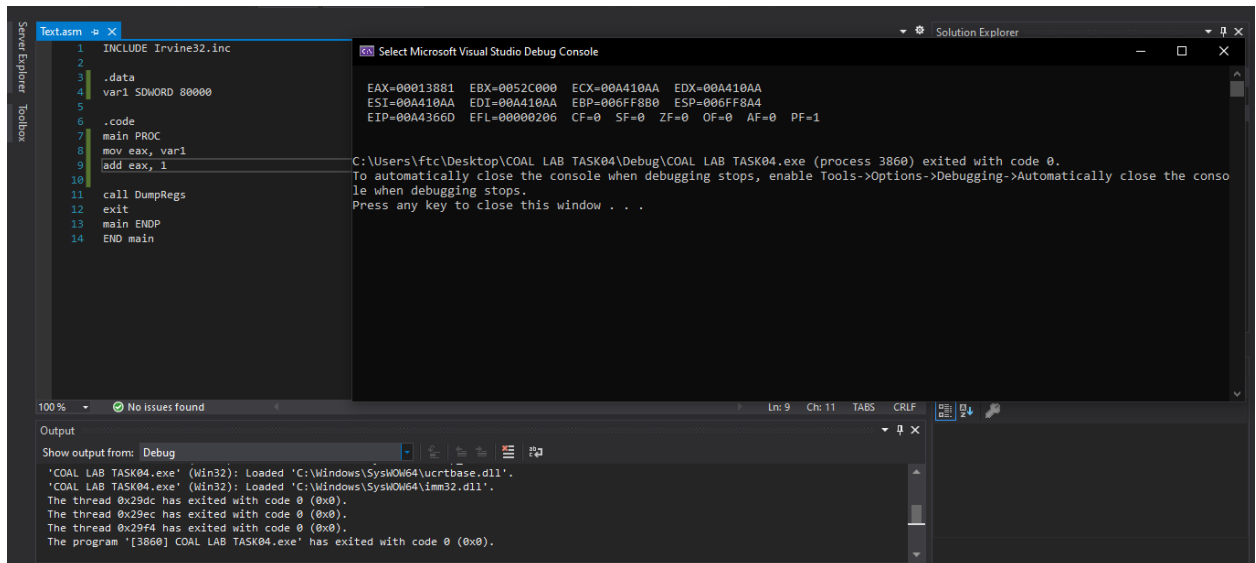
```
EAX=00002000  EBX=00003000  ECX=00004000  EDX=00E510AA
ESI=00000003  EDI=00E510AA  EBP=00F9FE7C  ESP=00F9FE70
EIP=00E5369B  EFL=00000246  CF=0  SF=0  ZF=1  OF=0  AF=0  PF=1

C:\Users\ftc\Desktop\COAL LAB TASK04\Debug\COAL LAB TASK04.exe (process 3804) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the conso
le when debugging stops.
Press any key to close this window . . .
```

Tasks

Task#01:


```asm
INCLUDE Irvine32.inc

.data
var1 SDWORD 80000

.code
main PROC
    mov eax, var1
    add eax, 1

    call DumpRegs
    exit
main ENDP
END main
```
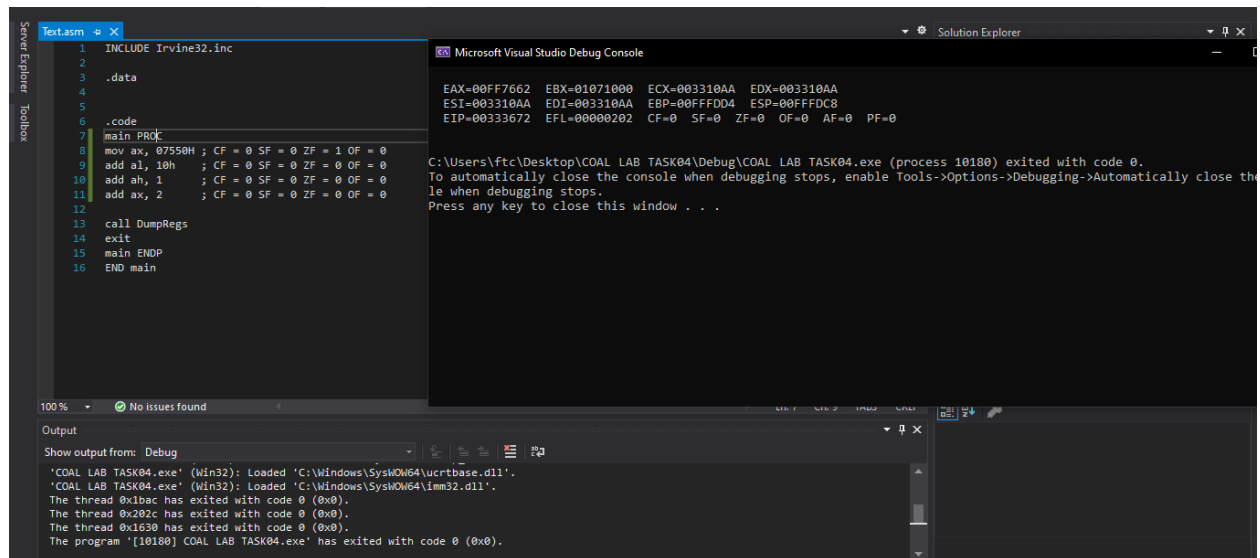
```
EAX=00013881  EBX=0052C000  ECX=00A410AA  EDX=00A410AA
ESI=00A410AA  EDI=00A410AA  EBP=006FF8B0  ESP=006FF8A4
EIP=00A4366D  EFL=00000206  CF=0  SF=0  ZF=0  OF=0  AF=0  PF=1

C:\Users\ftc\Desktop\COAL LAB TASK04\Debug\COAL LAB TASK04.exe (process 3860) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the conso
le when debugging stops.
Press any key to close this window . . .
```

Task#02:


```
INCLUDE Irvine32.inc

.data

.code
main PROC
mov ax, 07550H ; CF = 0 SF = 0 ZF = 1 OF = 0
add al, 10h    ; CF = 0 SF = 0 ZF = 0 OF = 0
add ah, 1      ; CF = 0 SF = 0 ZF = 0 OF = 0
add ax, 2      ; CF = 0 SF = 0 ZF = 0 OF = 0

call DumpRegs
exit
main ENDP
END main
```

```
EAX=00FF7662  EBX=01071000  ECX=003310AA  EDX=003310AA
ESI=003310AA  EDI=003310AA  EBP=00FFFDD4  ESP=00FFFDC8
EIP=00333672  EFL=00000202  CF=0  SF=0  ZF=0  OF=0  AF=0  PF=0

C:\Users\ftc\Desktop\COAL LAB TASK04\Debug\COAL LAB TASK04.exe (process 10180) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the
le when debugging stops.
Press any key to close this window . . .
```

```
'COAL LAB TASK04.exe' (Win32): Loaded 'C:\Windows\SysWOW64\ucrtbase.dll'.
'COAL LAB TASK04.exe' (Win32): Loaded 'C:\Windows\SysWOW64\imm32.dll'.
The thread 0x1bac has exited with code 0 (0x0).
The thread 0x202c has exited with code 0 (0x0).
The thread 0x1630 has exited with code 0 (0x0).
The program '[10180] COAL LAB TASK04.exe' has exited with code 0 (0x0).
```

Task#03:


```
INCLUDE Irvine32.inc

.data
array DWORD 8, 5, 1, 2, 6

.code
main PROC
mov eax, [array+8]
mov ebx, array
XCHG eax, array
XCHG ebx, [array+8]
mov eax, [array+4]
mov ebx, [array+8]
XCHG eax, [array+8]
XCHG ebx, [array+4]
mov eax, [array+16]
mov ebx, [array+12]
XCHG eax, [array+12]
XCHG ebx, [array+16]
mov eax, [array+4]
mov ebx, [array+16]
XCHG eax, [array+16]
XCHG ebx, [array+4]
mov eax, array
mov ebx, [array+4]
mov ecx, [array+8]
mov edx, [array+12]
mov esi, [array+16]

call DumpRegs
exit
main ENDP
END main
```

```
EAX=00000001  EBX=00000002  ECX=00000005  EDX=00000006
ESI=00000008  EDI=00CA10AA  EBP=00BDFCAC  ESP=00BDFCA0
EIP=00CA36DE  EFL=00000246  CF=0  SF=0  ZF=1  OF=0  AF=0  PF=1

C:\Users\ftc\Desktop\COAL LAB TASK04\Debug\COAL LAB TASK04.exe (process 8960) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the conso
le when debugging stops.
Press any key to close this window . . .
```
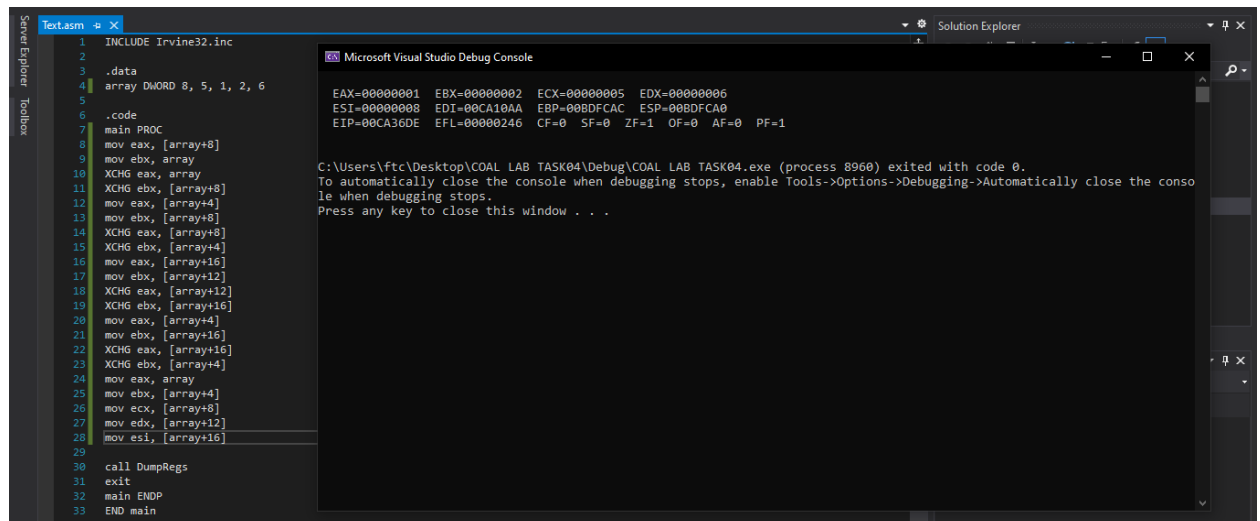
Task#04:

```asm
2    .data
3    arrayB BYTE 10, 20, 30
4    arrayW WORD 150, 250, 350
5    arrayD DWORD 600, 1200, 1800
6    SUM1 DWORD 0
7    SUM2 DWORD 0
8    SUM3 DWORD 0
9    .code
10   main PROC
11   ;FOR SUM1
12   movzx eax, arrayB
13   movzx ebx, arrayW
14   mov ecx, arrayD
15   add SUM1, eax
16   add SUM1, ebx
17   add SUM1, ecx
18   ;FOR SUM2
19   movzx eax, [arrayB+1]
20   movzx ebx, [arrayW+1]
21   mov ecx, [arrayD +1]
22   add SUM2, eax
23   add SUM2, ebx
24   add SUM2, ecx
25   ;FOR SUM3
26   movzx eax, [arrayB+2]
27   movzx ebx, [arrayW+2]
28   mov ecx, [arrayD +2]
29   add SUM3, eax
30   add SUM3, ebx
31   add SUM3, ecx
32   mov eax, SUM1
33   mov ebx, SUM2
34   mov ecx, SUM3
35   call DumpRegs
36   exit
```

Microsoft Visual Studio Debug Console

```
EAX=000002F8   EBX=B000FA16   ECX=04B00118   EDX=002410AA
ESI=002410AA   EDI=002410AA   EBP=0076FB98   ESP=0076FB8C
EIP=002436E8   EFL=00000206   CF=0   SF=0   ZF=0   OF=0   AF=0   PF=1


C:\Users\ftc\Desktop\COAL LAB TASK04\Debug\COAL LAB TASK04.exe (process 11188) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the conso
le when debugging stops.
Press any key to close this window . . .
```