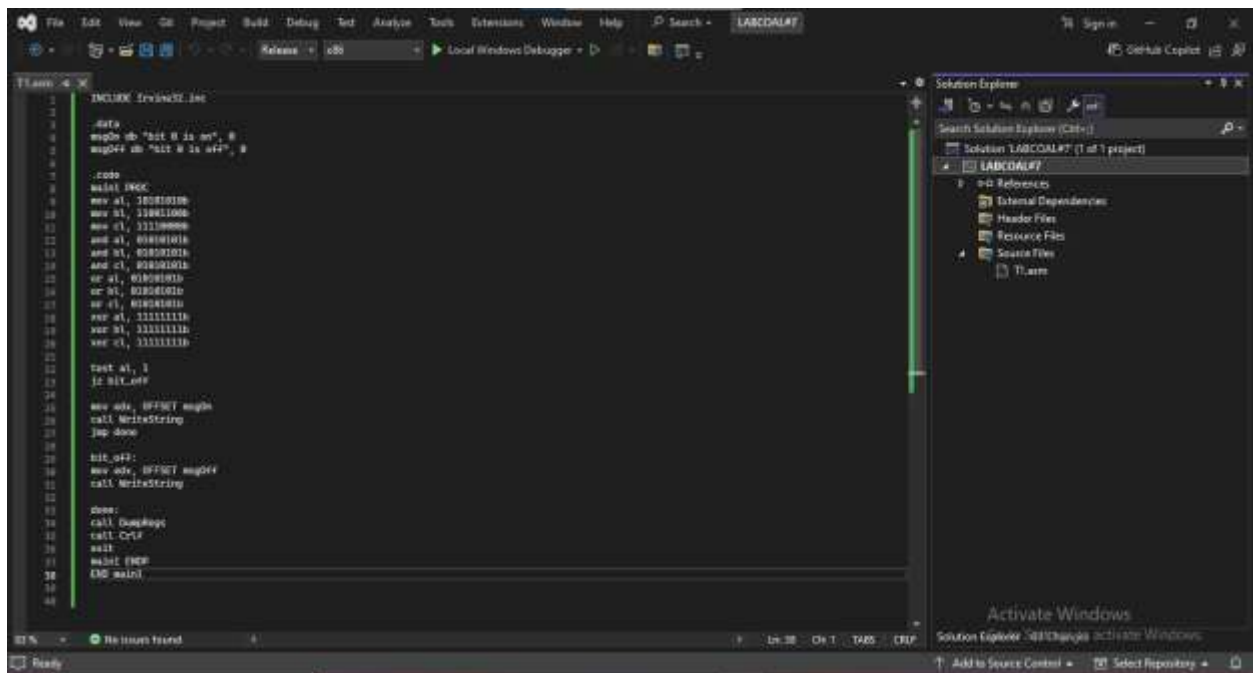


# COAL LAB # 7

## Task 1:

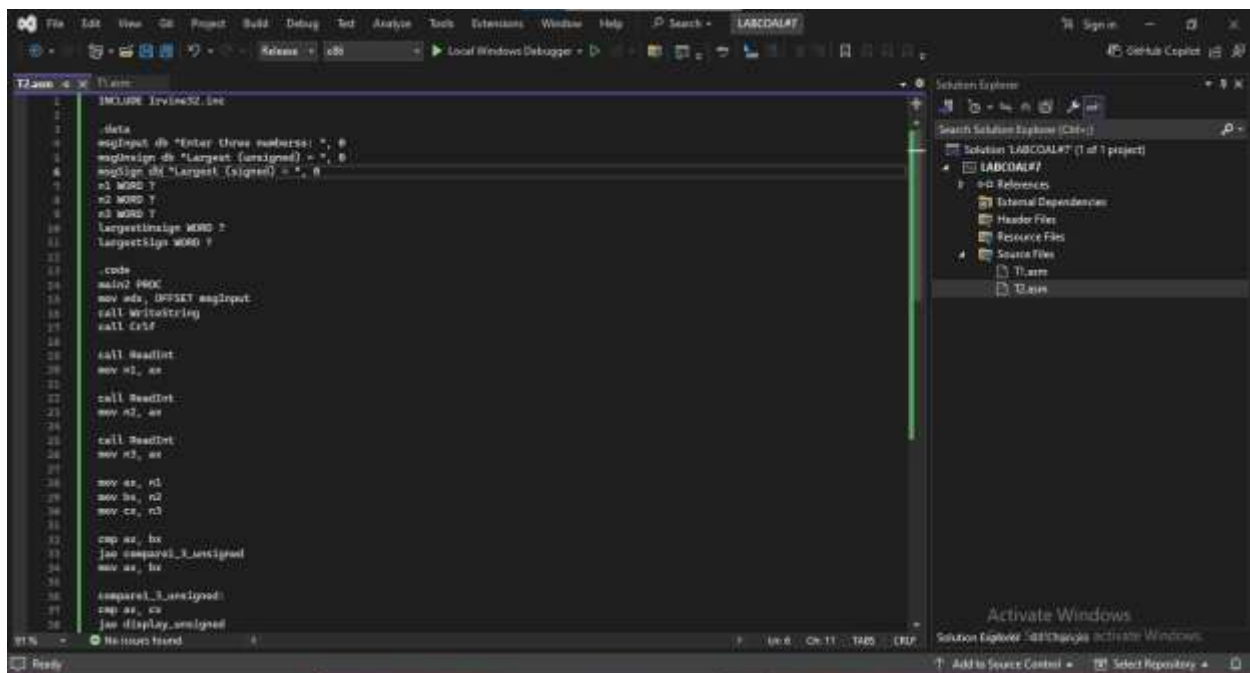


## Output:

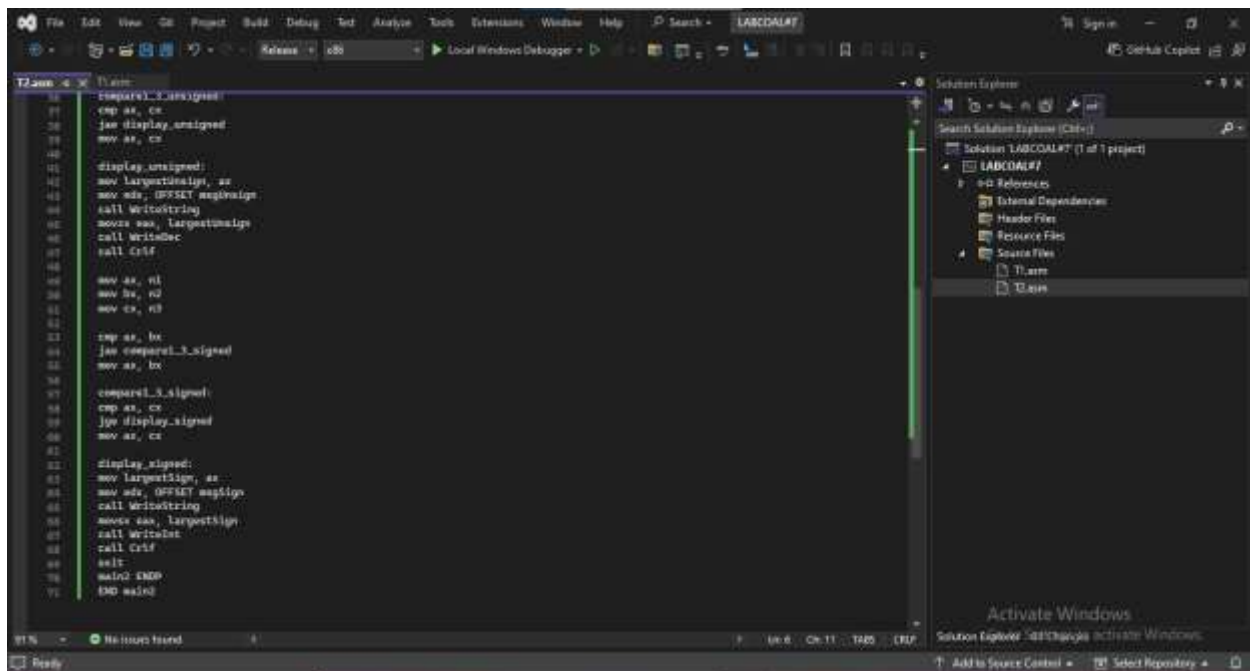
```
bit 0 is off
EAX=0019FFAA  EBX=003200AA  ECX=006A1FAA  EDX=006A400C
ESI=006A1FE0  EDI=006A1FE0  EBP=0019FEF8  ESP=0019FEEC
EIP=006A201D  EFL=00000202  CF=0  SF=0  ZF=0  OF=0  AF=0  PF=0

C:\Users\Lenovo\OneDrive\Desktop\LABCOAL#4\LABCOAL#7\Release\LABCOAL#7.exe (process 6200) exited with code 0 (0x0).
Press any key to close this window . . .
```

## Task 2:



```
1 INCLUDE Irvine32.inc
2
3 .data
4 msgInput db "Enter three numbers: ", 0
5 msgUnsign db "Largest (unsigned) = ", 0
6 msgSign db "Largest (signed) = ", 0
7 n1 WORD ?
8 n2 WORD ?
9 n3 WORD ?
10 largestUnsign WORD ?
11 largestSign WORD ?
12
13 .code
14 main2 PROC
15     mov edx, OFFSET msgInput
16     call WriteString
17     call CrLf
18
19     call ReadInt
20     mov n1, ax
21
22     call ReadInt
23     mov n2, ax
24
25     call ReadInt
26     mov n3, ax
27
28     mov ax, n1
29     mov bx, n2
30     mov cx, n3
31
32     cmp ax, bx
33     jae compare1_1_unsigned
34     mov ax, bx
35
36 compare1_1_unsigned:
37     cmp ax, cx
38     jae display_unsigned
39     mov ax, cx
40
41 display_unsigned:
42     mov largestUnsign, ax
43     mov edx, OFFSET msgUnsign
44     call WriteString
45     movs eax, largestUnsign
46     call WriteDec
47     call CrLf
48
49     mov ax, n1
50     mov bx, n2
51     mov cx, n3
52
53     cmp ax, bx
54     jae compare1_1_signed
55     mov ax, bx
56
57 compare1_1_signed:
58     cmp ax, cx
59     jpe display_signed
60     mov ax, cx
61
62 display_signed:
63     mov largestSign, ax
64     mov edx, OFFSET msgSign
65     call WriteString
66     movs eax, largestSign
67     call WriteInt
68     call CrLf
69     call Exit
70 main2 ENDP
71
```



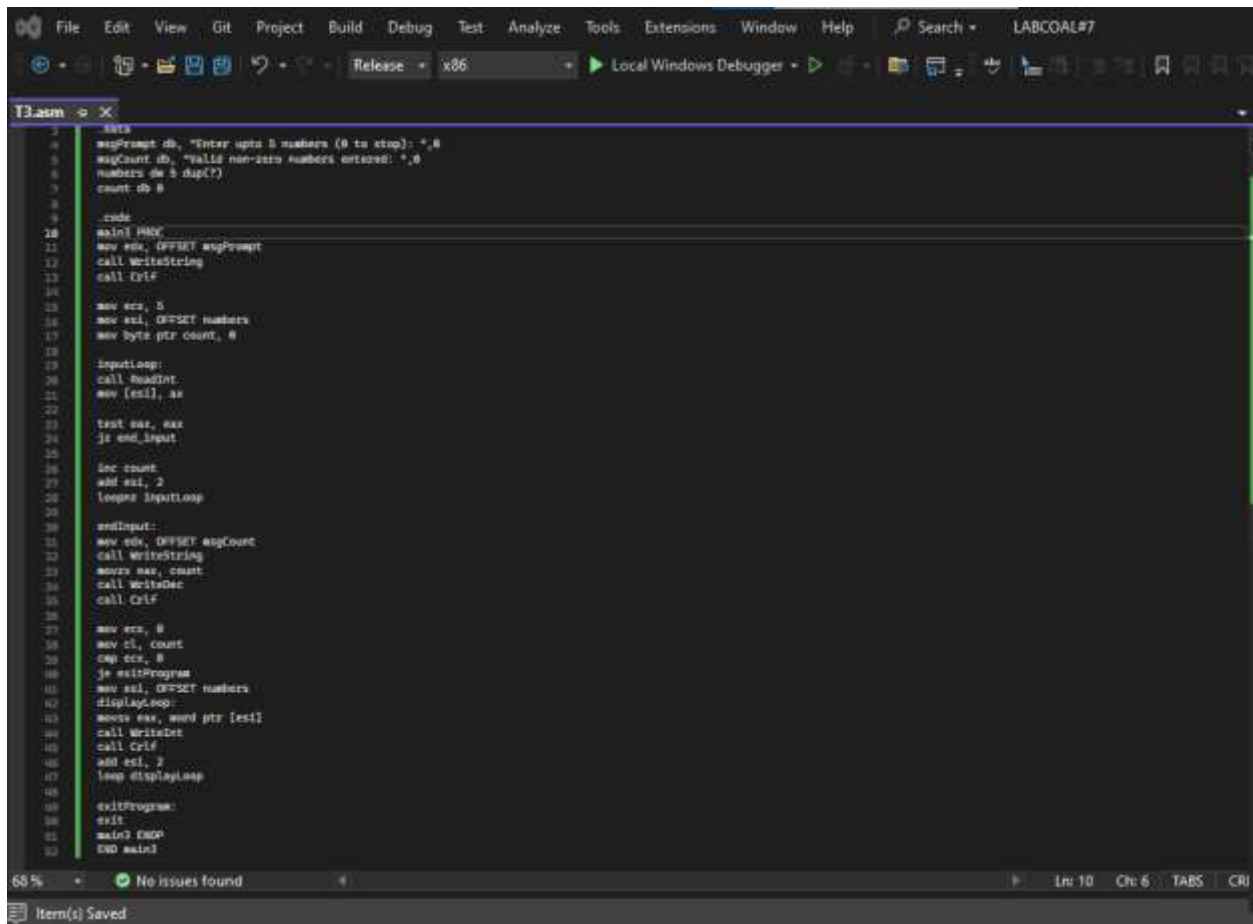
```
63 compare1_1_signed:
64     cmp ax, cx
65     jpe display_signed
66     mov ax, cx
67
68 display_signed:
69     mov largestSign, ax
70     mov edx, OFFSET msgSign
71     call WriteString
72     movs eax, largestSign
73     call WriteInt
74     call CrLf
75     call Exit
76 main2 ENDP
77
```

## Output:

```
Enter three numbers:
25
-47
33
Largest (unsigned) = 65489
Largest (signed) = +33

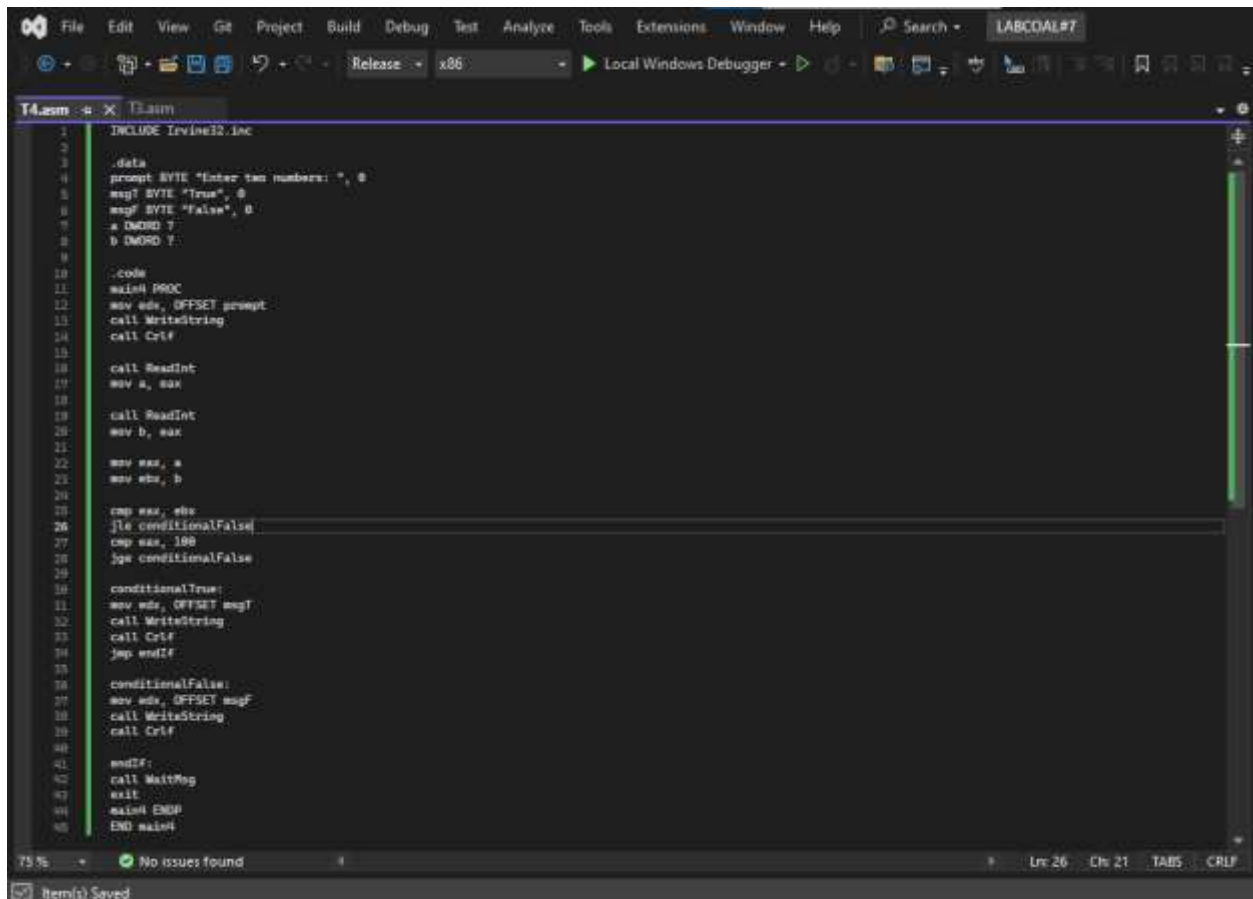
C:\Users\Lenovo\OneDrive\Desktop\LABCOAL#4\LABCOAL#7\Release\LABCOAL#7.exe (process 6180) exited with code 0 (0x0).
Press any key to close this window . . .
```

### Task 3:



```
1 .bits
2 msgPrompt db, "Enter upto 5 numbers (0 to stop): ",0
3 msgCount db, "Valid non-zero numbers entered: ",0
4 numbers dw 5 dup(?)
5 count db 0
6
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#### Task 4:



```
1 INCLUDE Irvine32.inc
2
3 .data
4 prompt BYTE "Enter two numbers: ", 0
5 msgT BYTE "True", 0
6 msgF BYTE "False", 0
7 a DWORD ?
8 b DWORD ?
9
10 .code
11 main PROC
12 mov edx, OFFSET prompt
13 call WriteString
14 call CrLf
15
16 call ReadInt
17 mov a, eax
18
19 call ReadInt
20 mov b, eax
21
22 mov eax, a
23 mov ebx, b
24
25 cmp eax, ebx
26 jle conditionalFalse
27 cmp eax, 100
28 jge conditionalFalse
29
30 conditionalTrue:
31 mov edx, OFFSET msgT
32 call WriteString
33 call CrLf
34 jmp endIf
35
36 conditionalFalse:
37 mov edx, OFFSET msgF
38 call WriteString
39 call CrLf
40
41 endIf:
42 call WaitMsg
43 exit
44 main ENDP
45 END main
```

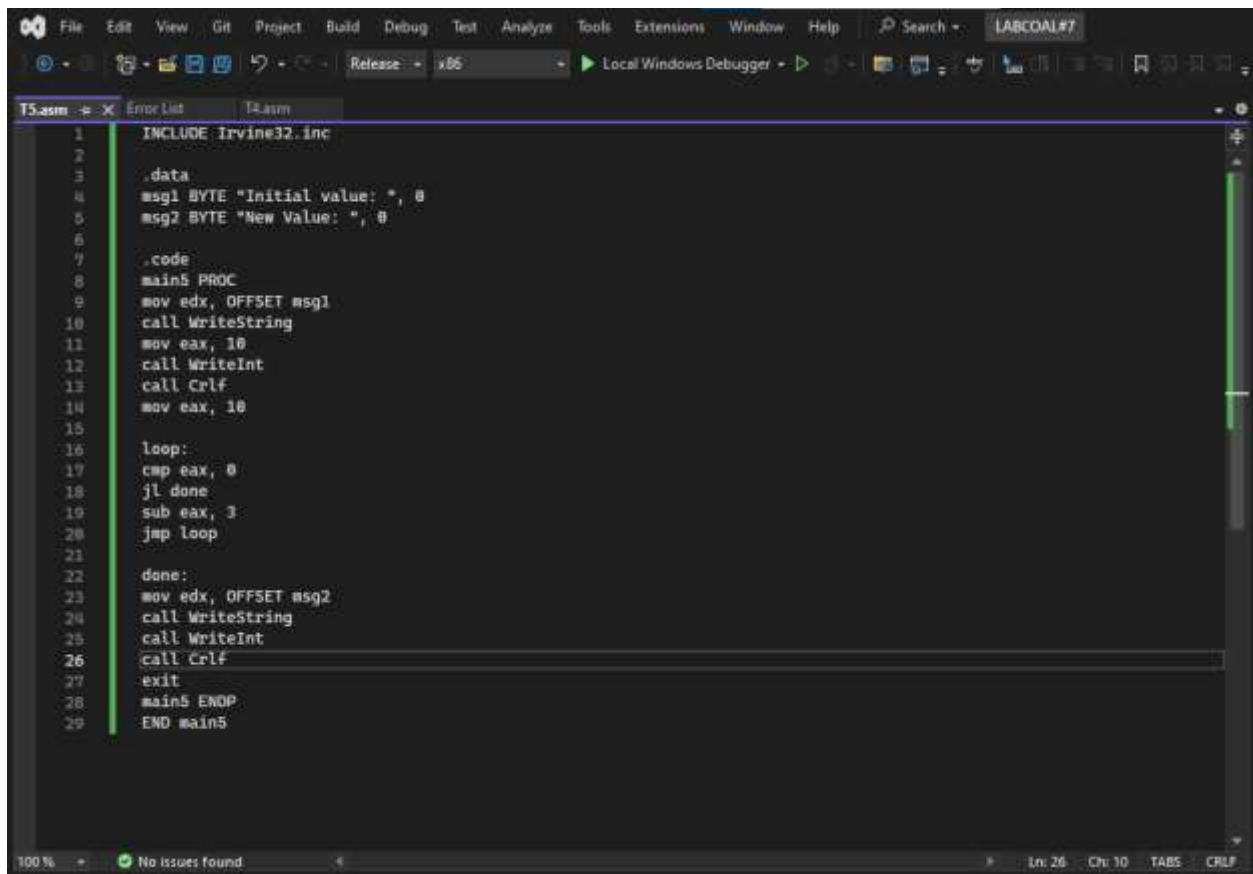
75 % No issues found Lnr 26 Ch 21 TAB5 CRLF

Item(s) Saved

#### Output:

```
Enter two numbers:
2
55
False
Press any key to continue...
C:\Users\Lenovo\OneDrive\Desktop\LABCOAL#4\LABCOAL#7\Release\LABCOAL#7.exe (process 644) exited with code 0 (0x0).
Press any key to close this window . . .
```

### Task 5:



```
1  INCLUDE Irvine32.inc
2
3  .data
4  msg1 BYTE "Initial value: ", 0
5  msg2 BYTE "New Value: ", 0
6
7  .code
8  main5 PROC
9  mov edx, OFFSET msg1
10 call WriteString
11 mov eax, 10
12 call WriteInt
13 call CrLf
14 mov eax, 10
15
16 loop:
17 cmp eax, 0
18 jl done
19 sub eax, 3
20 jmp loop
21
22 done:
23 mov edx, OFFSET msg2
24 call WriteString
25 call WriteInt
26 call CrLf
27 exit
28 main5 ENOP
29 END main5
```

### Output:

```
Initial value: +10
New Value: -2

C:\Users\Lenovo\OneDrive\Desktop\LABCOAL#4\LABCOAL#7\Release\LABCOAL#7.exe (process 10820) exited with code 0 (0x0).
Press any key to close this window . . .
```