

COAL LAB# 4

TASK 1:

The screenshot displays the Visual Studio IDE with the following components:

- Assembly Code (T1.asm):**

```

1  INCLUDE Irvine32.inc
2  .data
3  num1 BYTE 25
4  num2 WORD 1280h
5  num3 DWORD ?
6  .code
7  Task1 PROC
8      mov al, num1
9      movzx eax, BYTE PTR num1
10     mov ax, num2
11     movzx ebx, WORD PTR num2
12     shl ebx, 8
13     movzx ecx, BYTE PTR num1
14     or ebx, ecx
15     mov num3, ebx
16     call DumpRegs
17     exit
18 Task1 ENDP
19 END Task1
20

```
- Solution Explorer:** Shows the project structure with 'LAB#4' selected. It includes references to 'External Dependencies', 'Header Files', 'Resource Files', and 'Source Files' (containing 'T1.asm').
- Output Window:** Displays the execution output for 'Debug'. It shows messages from 'Win32' indicating that various system DLLs (gdi32.dll, user32.dll, vmacthlp.dll, ucrtbase.dll, imm32.dll) were loaded, with symbol loading disabled. It also reports that three threads (7572, 7916, 7060) and the program '[2848] LAB#4.exe' have exited with code 0 (0x0).

OUTPUT:

```
EAX=00001200 EBX=00120019 ECX=00000019 EDX=00F52000
ESI=00F52000 EDI=00F52000 EBP=00AFFC68 ESP=00AFFC5C
EIP=00F52030 EFL=00000202 CF=0 SF=0 ZF=0 OF=0 AF=0 PF=0
```

```
C:\Users\Lenovo\OneDrive\Desktop\LABCOAL#4\Project1\Release\LAB#4.exe (process 2848) exited with code 0 (0x0).
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 . . .
```

TASK 2:

The screenshot shows the Visual Studio Code interface. The main editor displays assembly code for a program named 'T2.asm'. The code includes Irvine32.inc, defines a word variable 'Result', and contains a procedure 'Task2' that increments a counter and prints the result. The Solution Explorer on the right shows the project structure, including 'T2.asm'. The Output window at the bottom shows the execution results, indicating that the program exited successfully.

```

1  COUNT = 5
2  LIMIT EQU 10
3
4  INCLUDE Irvine32.inc
5  .data
6  Result WORD ?
7  .code
8  Task2 PROC
9
10     mov ax, COUNT
11     add ax, LIMIT
12     inc ax
13     mov Result, ax
14     call DumpRegs
15     exit
16 Task2 ENDP
17 END Task2

```

Output

Show output from: Debug

```

C:\Windows\System32\cmd.exe - C:\Windows\System32\cmd.exe /c g++ -std=c++11 -c main.cpp -o main.o
C:\Windows\System32\cmd.exe - C:\Windows\System32\cmd.exe /c g++ -std=c++11 -o main.exe main.o
C:\Windows\System32\cmd.exe - C:\Windows\System32\cmd.exe /c main.exe
The thread 9544 has exited with code 0 (0x0).
The thread 3320 has exited with code 0 (0x0).
The thread 908 has exited with code 0 (0x0).
The program '[1332] LAB4.exe' has exited with code 0 (0x0).

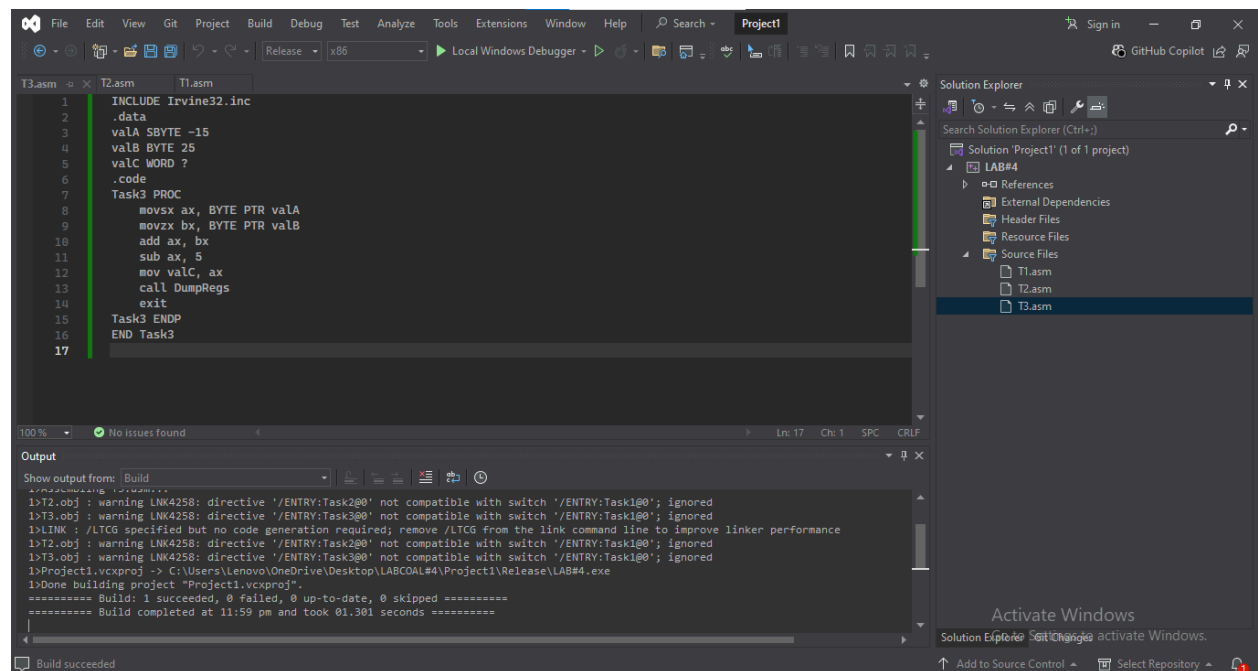
```

OUTPUT:

```
EAX=00001200  EBX=00120019  ECX=00000019  EDX=00392000
ESI=00392000  EDI=00392000  EBP=009EFE58  ESP=009EFE4C
EIP=00392030  EFL=00000202  CF=0  SF=0  ZF=0  OF=0  AF=0  PF=0

C:\Users\Lenovo\OneDrive\Desktop\LABCOAL#4\Project1\Release\LAB#4.exe (process 1332) exited with code 0 (0x0).
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 . . .
```

TASK 3:

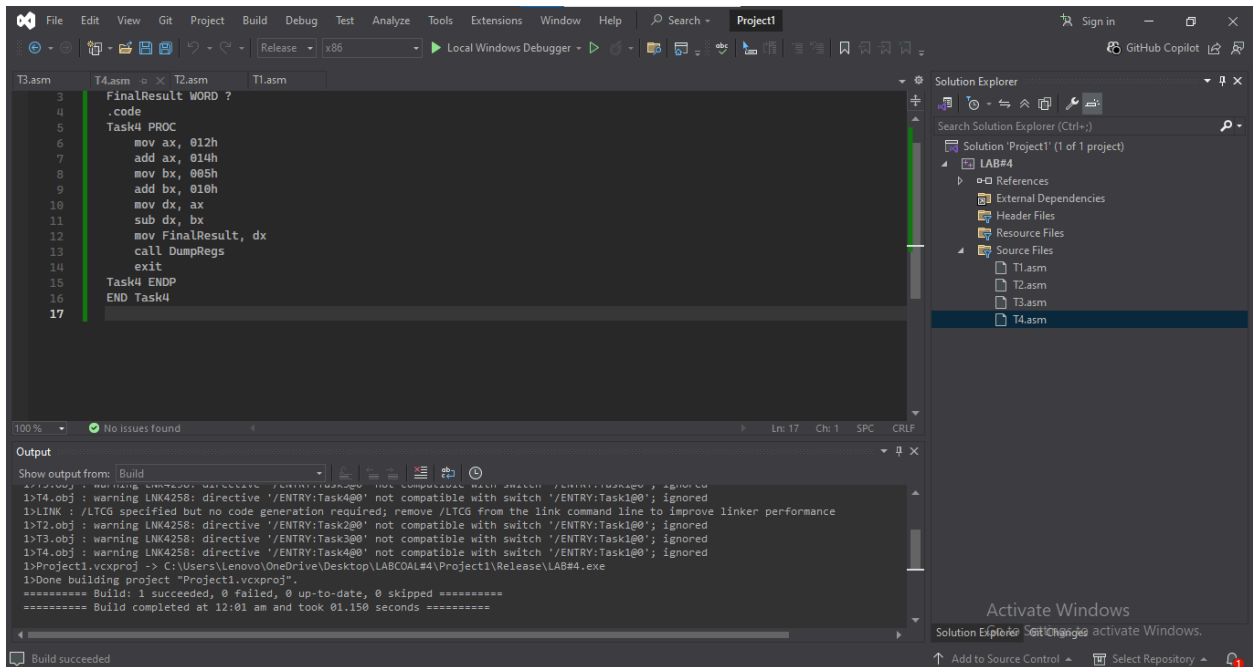


OUTPUT:

```
EAX=00001200  EBX=00120019  ECX=00000019  EDX=00402000
ESI=00402000  EDI=00402000  EBP=00D3FB2C  ESP=00D3FB20
EIP=00402030  EFL=00000202  CF=0  SF=0  ZF=0  OF=0  AF=0  PF=0

C:\Users\Lenovo\OneDrive\Desktop\LABCOAL#4\Project1\Release\LAB#4.exe (process 14300) exited with code 0 (0x0).
Press any key to close this window . . .
```

TASK 4:



OUTPUT:

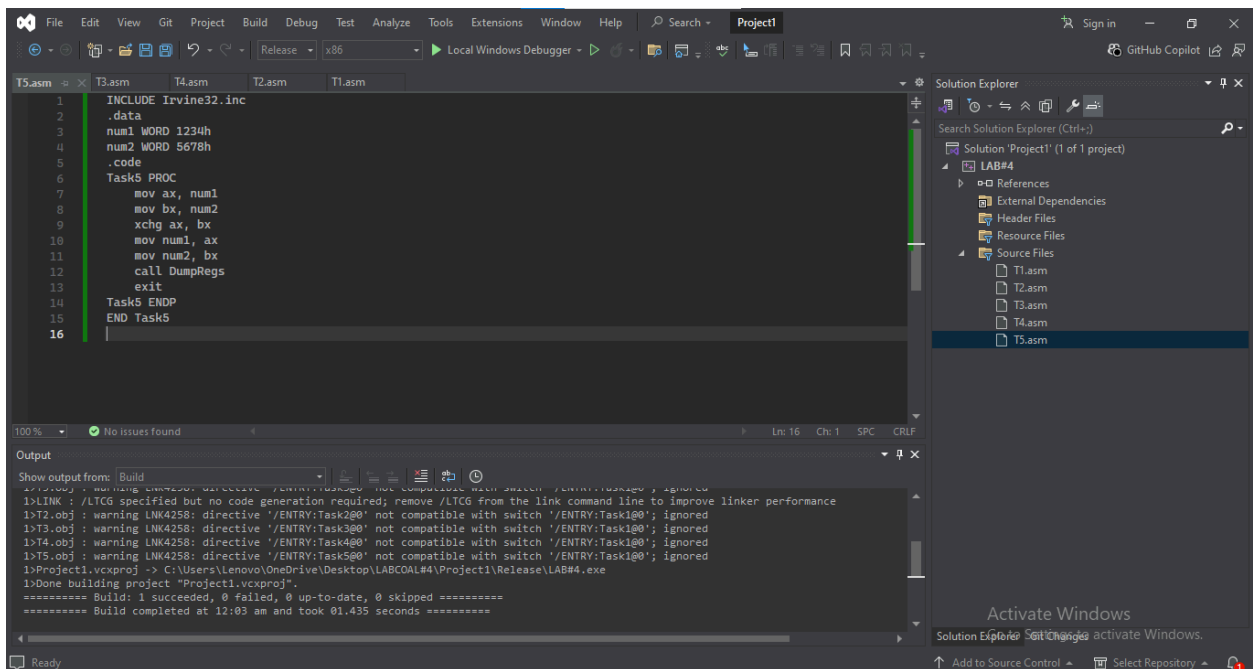
```

EAX=00001200  EBX=00120019  ECX=00000019  EDX=00F22000
ESI=00F22000  EDI=00F22000  EBP=006FFEE0  ESP=006FFED4
EIP=00F22030  EFL=00000202  CF=0  SF=0  ZF=0  OF=0  AF=0  PF=0

```

C:\Users\Lenovo\OneDrive\Desktop\LABCOAL#4\Project1\Release\LAB#4.exe (process 1240) exited with code 0 (0x0). Press any key to close this window . . .

TASK 5:



OUTPUT:

```
EAX=00001200  EBX=00120019  ECX=00000019  EDX=00E02000  
ESI=00E02000  EDI=00E02000  EBP=00B3F88C  ESP=00B3F880  
EIP=00E02030  EFL=00000202  CF=0  SF=0  ZF=0  OF=0  AF=0  PF=0
```

```
C:\Users\Lenovo\OneDrive\Desktop\LABCOAL#4\Project1\Release\LAB#4.exe (process 7584) exited with code 0 (0x0).  
Press any key to close this window . . .
```