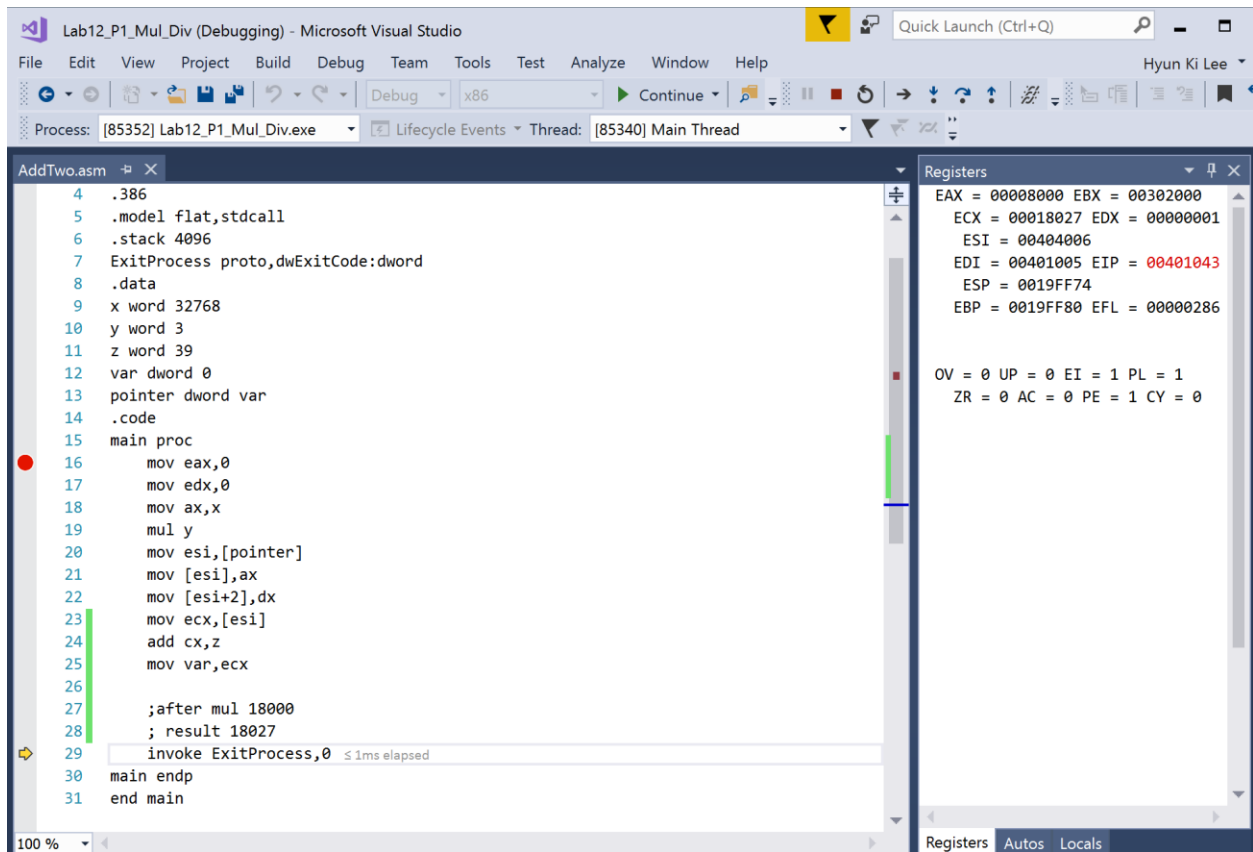


Lab12

Hyunki Lee

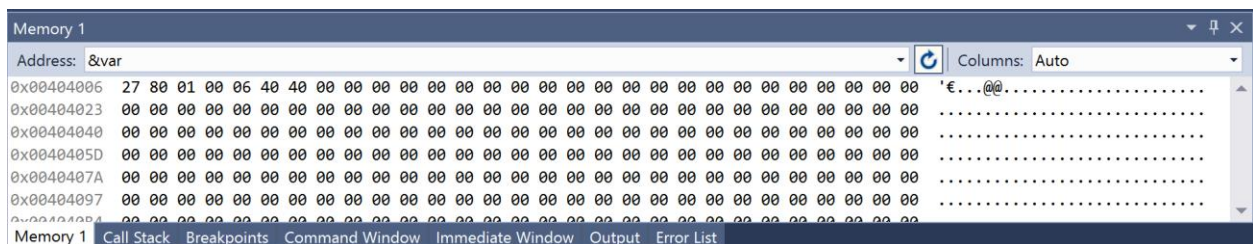
Problem1

Code (result is in ECX and var)



The screenshot shows the Microsoft Visual Studio IDE with the assembly file `AddTwo.asm` open. The code is in x86 assembly, using the flat model and stdcall convention. It defines a `main` procedure that initializes `eax` to 0, `edx` to 0, and `ax` to `x`. It then multiplies `y` by `ax` (`mul y`), stores the result in `esi` (`mov esi, [pointer]`), increments `esi` by `dx` (`mov [esi+2], dx`), moves the value at `esi` to `ecx` (`mov ecx, [esi]`), adds `z` to `ecx` (`add cx, z`), and finally moves the result from `ecx` to `var` (`mov var, ecx`). A comment indicates the result is 18027. The `Registers` window on the right shows the current state of the CPU registers: `EAX = 00000000`, `EBX = 00302000`, `ECX = 00018027`, `EDX = 00000001`, `ESI = 00404006`, `EDI = 00401005`, `EIP = 00401043`, `ESP = 0019FF74`, and `EBP = 0019FF80`. The `OV` (Overflow Flag) is 0, `UP` (Underflow Flag) is 0, `EI` (Interrupt Flag) is 1, `PL` (Parity Flag) is 1, `ZR` (Zero Flag) is 0, `AC` (Arithmetic Carry Flag) is 0, `PE` (Parity Error Flag) is 1, and `CY` (Carry Flag) is 0.

Output



The screenshot shows the `Memory` window in Visual Studio, displaying the memory address `&var`. The memory is shown in hexadecimal and ASCII. The first few bytes are `27 80 01 00 06 40 40 00`, which corresponds to the decimal value 18027. The rest of the memory is filled with zeros. The `Columns` are set to `Auto`.

When I did mul operation CF=1 ZF=0, but the end of result CF=0, ZF=0.

Problem2

Code

Lab12_P2_Stack (Debugging) - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Process: [38640] Lab12_P2_Stack.exe Thread: [40164] Main Thread Stack Frame: main

AddTwo.asm

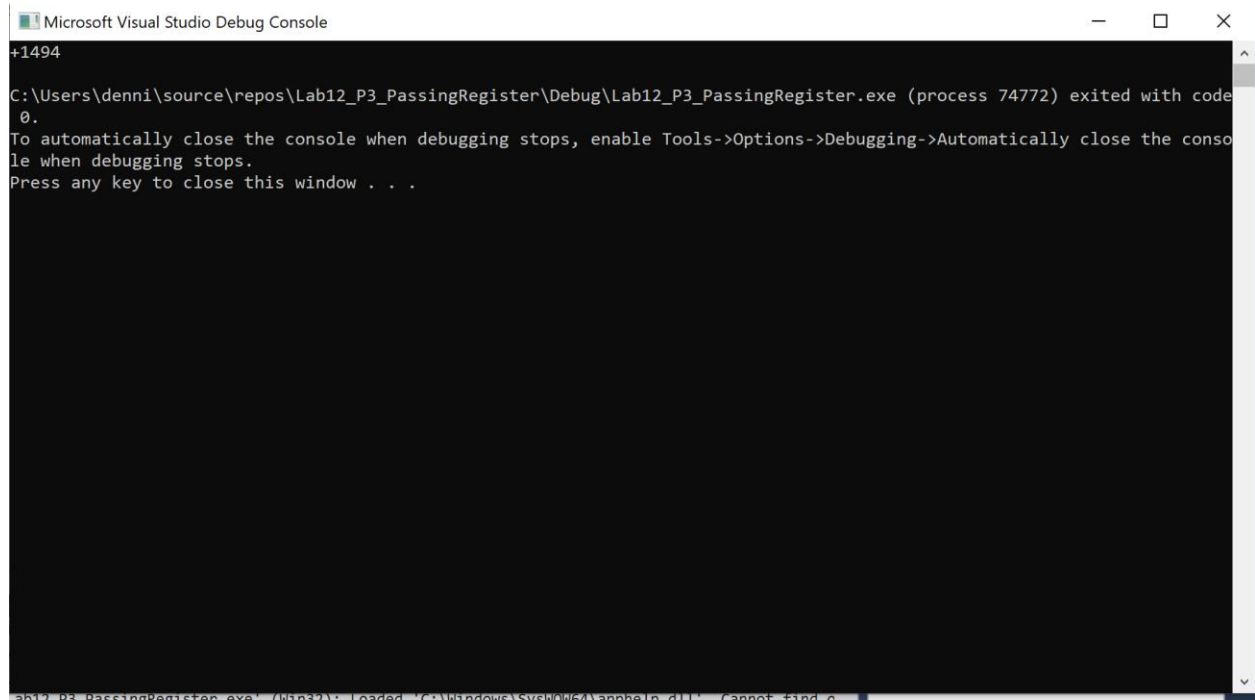
```
5 .model flat,stdcall
6 .stack 4096
7 ExitProcess proto,dwExitCode:DWORD
8 .data
9 aName byte "Abraham Lincoln",0
10 nameSize = ($ - aName) - 1
11 .code
12 main proc
13     mov ecx,nameSize
14     mov esi,0
15
16     L1:
17     cmp ecx,0
18     je L2
19     movzx eax,aName[esi]
20     push eax
21     inc esi
22     dec ecx
23     jmp L1
24
25     L2:
26     mov ecx,nameSize
27     mov esi,0
28
29     L3:
30     cmp ecx,0
31     je exit
32     pop eax
33     mov aName[esi],al
34     inc esi
35     dec ecx
36     jmp L3
37
38     exit:
39
40     invoke ExitProcess,0
```

Output

The screenshot shows the Memory window in a debugger. The address range is 0x00404000 to 0x004040C6. The memory dump shows a string 'niocniL maharBA' in reverse order. The bottom status bar indicates the current window is 'Memory 1'.

Problem3

Command prompt screen



```
Microsoft Visual Studio Debug Console

+1494
C:\Users\denni\source\repos\Lab12_P3_PassingRegister\Debug\Lab12_P3_PassingRegister.exe (process 74772) 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 . . .
```