

Muhammad Mufeez

23k-0800

BCS-3J

Task 1a:

The screenshot displays a debugger interface with the following components:

- Registers Window:** Shows the current state of CPU registers. EAX is 00000149, EBX is 0054C000, ECX is 002710AA, EDX is 002710AA, ESI is 002710AA, EDI is 002710AA, EIP is 0027367C, ESP is 006FF9BC, EBP is 006FF9C8, and EFL is 00000212.
- Assembly Window:** Displays the assembly code for '1_task.asm'. The code includes Irvine32.inc, defines a .code section, and contains a main PROC. The instructions are: mov eax, 0; mov eax, 47; add eax, 60; add eax, 39; add eax, 85; add eax, 64; add eax, 540; sub eax, 0Ah; and a call to DumpRegs. The current instruction pointer is at line 16.
- Diagnostic Tools Window:** Shows a diagnostics session with a duration of 0 seconds (7 ms selected). It includes a timeline with a 6.4ms marker and sections for Events, Process Memory, and CPU Usage.
- Autos Window:** A search bar with the text 'Search (Ctrl+E)' and a search depth of 3.
- Output Window:** Displays the output of the program, showing three lines of text: 'project1.exe' (Win32): Loaded 'C:\Windows\SysWOW64\...'

Task 1b:

Registers

EAX = 00000039 EBX = 00EE5000 ECX = 006310AA EDX = 006310AA ESI = 006310AA
EDI = 006310AA EIP = 0063367C ESP = 00D9FED0 EBP = 00D9FEDC EFL = 00000206

121 %

1_task.asm

```
1 INCLUDE Irvine32.inc
2 .code
3
4 main PROC
5     mov eax, 0
6     mov eax, 30
7     sub eax, 9
8     add eax, 186
9     sub eax, 150
10
11
12     call DumpRegs
13     exit < 2ms elapsed
14 main ENDP
15
16 END main
```

121 % No issues found Ln: 13 Ch: 1 TABS CRLF

Diagnostic Tools

Diagnostics session: 0 seconds (8 ms selected)

6ms

Events

Process Memory

Summary Events Memory Usage CPU Usage

Events

Show Events (8 of 8)

Memory Usage

Take Snapshot

Autos

Search (Ctrl+E) Search Depth: 3

Call Stack

Name

Task 1c:

Extensions Window Help

Process: [13078] project1.exe Lifecycle Events

Registers

EAX = 00001FCE EBX = 0117A000 ECX = 00AA10AA EDX = 00AA10AA ESI = 00AA10AA
EDI = 00AA10AA EIP = 00AA367F ESP = 0136FEDC EBP = 0136FEE8 EFL = 00000212

121 %

1_task.asm

```
1 INCLUDE Irvine32.inc
2 .code
3
4 main PROC
5     mov eax, 0
6     mov eax, 101110b
7     add eax, 50Ah
8     add eax, 6710d
9     add eax, 1010001b
10    add eax, 0Fh
11
12
13
14    call DumpRegs
15    exit < 3ms elapsed
16 main ENDP
```

121 % No issues found Ln: 15 Ch: 1 TABS CRLF

Solution Explorer

Diagnostic Tools

Diagnostics session: 0 seconds (10 ms selected)

6ms 8ms

Events

Process Memory

Summary Events Memory Usage CPU Usage

Events

Show Events (9 of 9)

Memory Usage

Take Snapshot

Registers

EAX=00001FCE EBX=0117A000 ECX=00AA10AA EDX=00AA10AA
ESI=00AA10AA EDI=00AA10AA EBP=0136FEE8 ESP=0136FEDC
EIP=00AA367F EFL=00000212 CF=0 SF=0 ZF=0 OF=0 AF=1 PF=0

Task 1d:

The screenshot shows a debugger window with the 'Registers' pane at the top displaying the following values: EAX = FFFFFFF513, EBX = 0096E000, ECX = 000510AA, EDX = 000510AA, ESI = 000510AA, EDI = 000510AA, EIP = 00053685, ESP = 00B7FCC8, EBP = 00B7FCD4, EFL = 00000292. Below the registers, the assembly code for '1_task.asm' is visible, starting with 'INCLUDE Irvine32.inc' and '.code'. The 'main' procedure contains several instructions: 'mov eax, 0', 'mov eax, 10001101b', 'sub eax, 0083h', 'add eax, 385d', 'add eax, 10d', 'add eax, 1111101b', 'sub eax, 0Eh', 'add eax, 0Fh', 'call DumpRegs', and 'exit'. A yellow arrow points to the 'exit' instruction, which has a status of '≤ 4ms elapsed'. On the right side, the 'Diagnostic Tools' pane is open, showing 'Events' and 'Process Memory' sections.

```
Registers
EAX = FFFFFFF513 EBX = 0096E000 ECX = 000510AA EDX = 000510AA ESI = 000510AA EDI = 000510AA EIP = 00053685 ESP = 00B7FCC8 EBP = 00B7FCD4 EFL = 00000292

121 %
1_task.asm
1 INCLUDE Irvine32.inc
2 .code
3
4
5 main PROC
6 mov eax, 0
7 mov eax, 10001101b
8 sub eax, 0083h
9 add eax, 385d
10 add eax, 10d
11 add eax, 1111101b
12 sub eax, 0Eh
13 add eax, 0Fh
14
15
16 call DumpRegs
17 exit ≤ 4ms elapsed
```

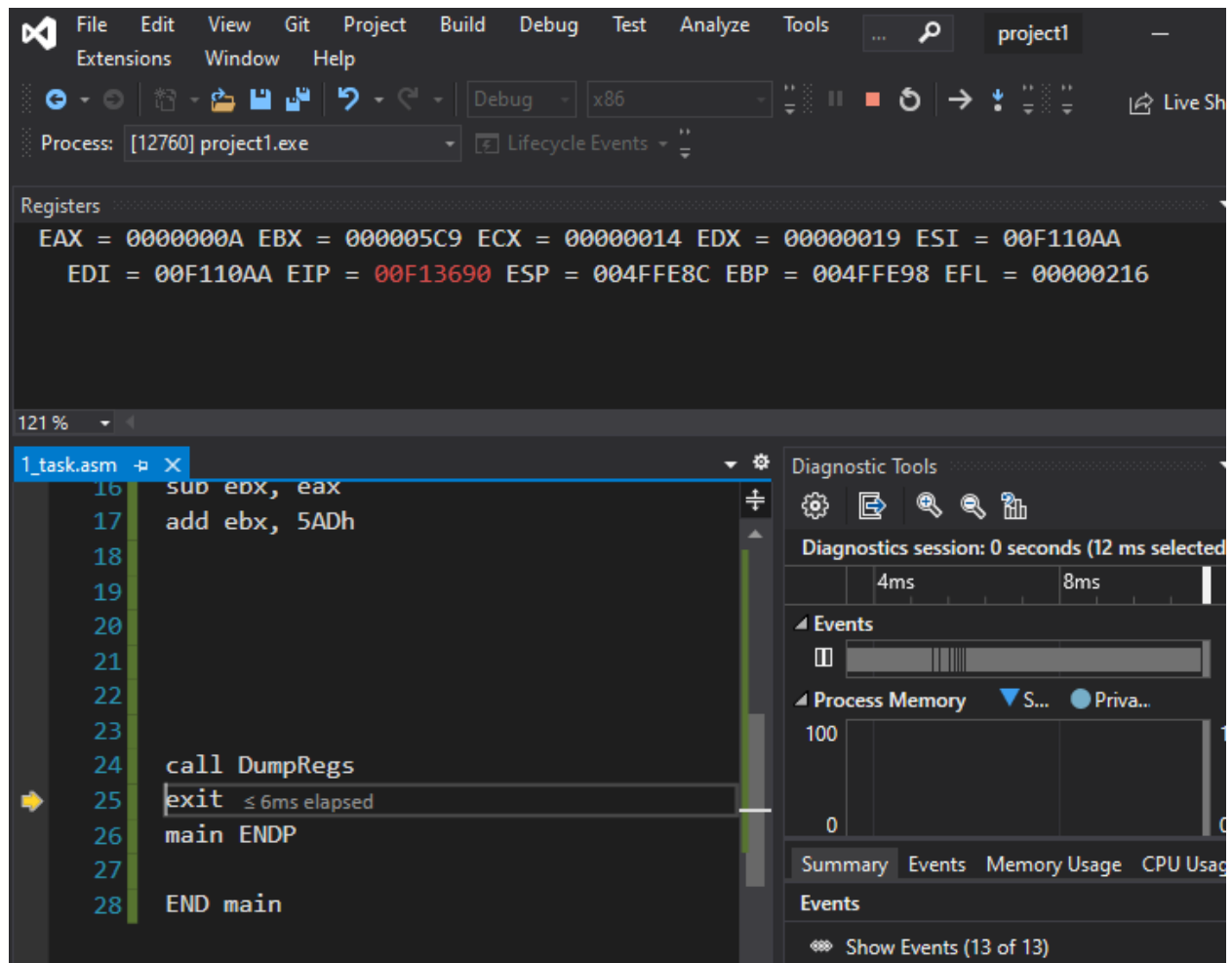
Task 2a:

The screenshot shows a debugger window with the 'Registers' pane at the top displaying the following values: EAX = 0000000A, EBX = 0000001A, ECX = 00000014, EDX = 00000048, ESI = 00F110AA, EDI = 00F110AA, EIP = 00F1368B, ESP = 006FFD28, EBP = 006FFD34, EFL = 00000216. Below the registers, the assembly code for '1_task.asm' is visible, starting with 'sub edx, ecx', 'add edx, ebx', 'add edx, 1d', 'add edx, eax', 'call DumpRegs', 'exit', 'main ENDP', and 'END main'. A yellow arrow points to the 'exit' instruction, which has a status of '≤ 3ms elapsed'. On the right side, the 'Diagnostic Tools' pane is open, showing 'Events' and 'Process Memory' sections. The 'Events' section shows a timeline with a selected range from 6ms to 8ms. The 'Process Memory' section shows a memory usage graph.

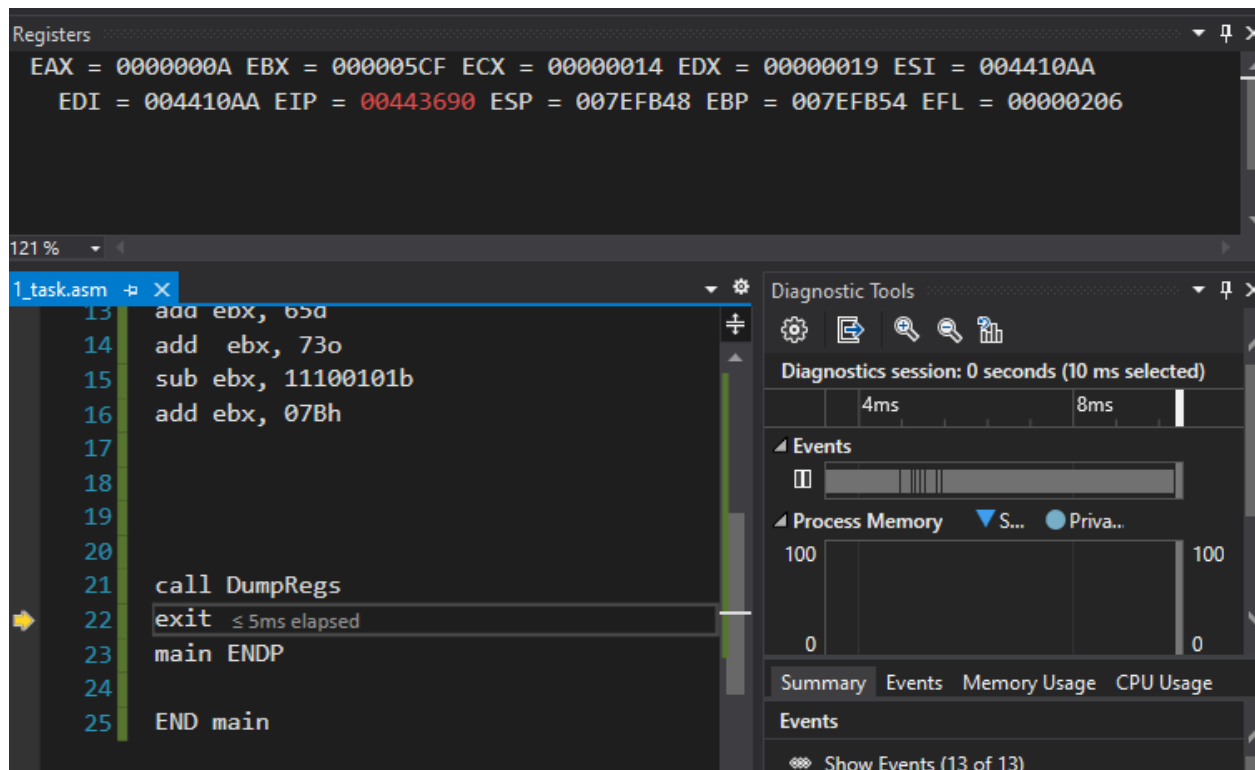
```
Registers
EAX = 0000000A EBX = 0000001A ECX = 00000014 EDX = 00000048 ESI = 00F110AA
EDI = 00F110AA EIP = 00F1368B ESP = 006FFD28 EBP = 006FFD34 EFL = 00000216

121 %
1_task.asm
14 sub edx, ecx
15 add edx, ebx
16 add edx, 1d
17 add edx, eax
18
19
20
21
22 call DumpRegs
23 exit ≤ 3ms elapsed
24 main ENDP
25
26 END main
```

Task 2b:



Task 2c:



Task 2d:

