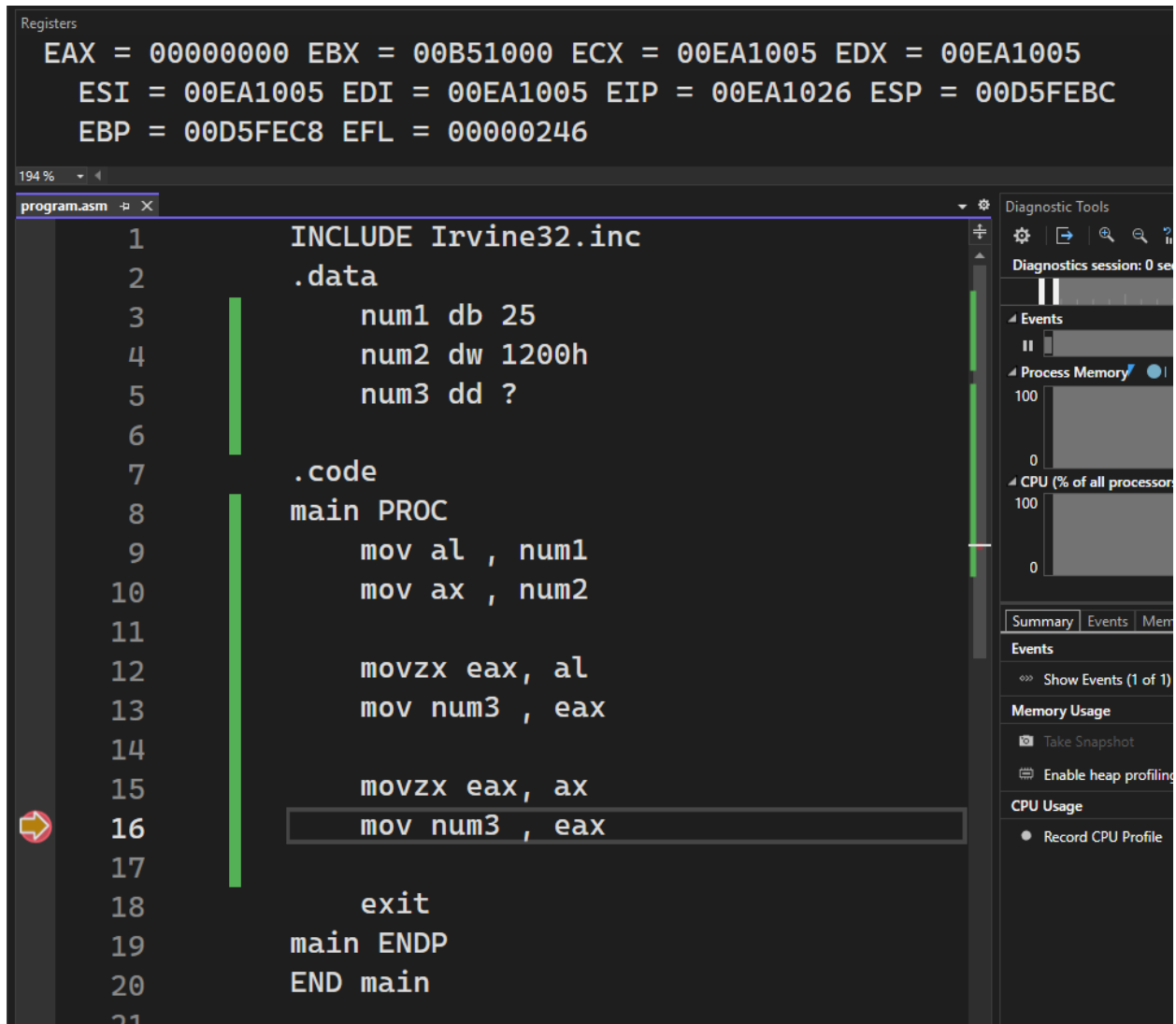


24K0025 – Syed Hanzala Ali

## LAB 04 TASK

Q1



The screenshot shows a debugger interface with a dark theme. At the top, the 'Registers' window displays the following values: EAX = 00000000, EBX = 00B51000, ECX = 00EA1005, EDX = 00EA1005, ESI = 00EA1005, EDI = 00EA1005, EIP = 00EA1026, ESP = 00D5FEB C, EBP = 00D5FEC8, and EFL = 00000246. Below this, the 'program.asm' file is open, showing assembly code. A green vertical bar highlights the code area. The code includes Irvine32.inc, defines data (num1, num2, num3), and contains a main procedure. Line 16, 'mov num3, eax', is highlighted with a yellow box. On the right, the 'Diagnostic Tools' panel shows a 'Diagnostics session: 0 seconds' and various monitoring graphs for Events, Process Memory, and CPU usage. The 'Events' section shows 'Show Events (1 of 1)'. The 'Memory Usage' section has a 'Take Snapshot' button. The 'CPU Usage' section has a 'Record CPU Profile' button.

```
Registers
EAX = 00000000 EBX = 00B51000 ECX = 00EA1005 EDX = 00EA1005
ESI = 00EA1005 EDI = 00EA1005 EIP = 00EA1026 ESP = 00D5FEB C
EBP = 00D5FEC8 EFL = 00000246

194 %
program.asm
1      INCLUDE Irvine32.inc
2      .data
3          num1 db 25
4          num2 dw 1200h
5          num3 dd ?
6
7      .code
8      main PROC
9          mov al, num1
10         mov ax, num2
11
12         movzx eax, al
13         mov num3, eax
14
15         movzx eax, ax
16         mov num3, eax
17
18         exit
19     main ENDP
20     END main
21
```

Q2

```
INCLUDE Irvine32.inc
.data
    result BYTE ?

.code
main PROC
    COUNT = 5
    LIMIT EQU 10
    mov ax , COUNT
    add ax , LIMITS
    inc ax
    mov result , ax

    exit
main ENDP
END main
```

Q3

```
INCLUDE Irvine32.inc
.data
    valA SBYTE -15
    valB BYTE 25
    valC WORD ?

.code
main PROC
    movsx eax , valA
    movsx ebx , valB
    add eax , ebx
    sub eax , 5
    mov valC , eax
    exit
main ENDP
END main
```

Q4

```
INCLUDE Irvine32.inc

.data
    x db 12h
    y db 14h
    z db 5h
    w db 10h
    finalresult dw ?

.code
main PROC
    mov edx , 0
    add dl , x
    add dl , y
    sub dl , z
    sub dl , w
    mov finalresult , dl

    exit
main ENDP
END main
```

Q5

```
INCLUDE Irvine32.inc
.data
    num1 dw 1234h
    num2 dw 5678h
.code
main PROC
    mov ax , num1
    mov bx , num2
    xchg ax ,bx
    mov num1 , ax
    mov num2 , bx
    exit
main ENDP
END main
```