
Coal Lab 04

Q1:

MOV AX 3d ; no , bdetween dest and source

MOV 23, AX ; value is the destination which is an error

MOV CX, CH ; registers size is not same

MOVE AX, 1h ; the keyword is mov not move

ADD 2, CX ; destination can't be a value

ADD 3, 6 ; destination can't be a value

INC AX, 2 ; wrong syntax

Q2:

Output:

```
EAX=0000004D  EBX=00000055  ECX=00000046  EDX=0087100A
ESI=0087100A  EDI=0087100A  EBP=004FF844  ESP=004FF838
EIP=0087367A  EFL=00000246  CF=0   SF=0   ZF=1   OF=0   AF=0   PF=1
```

Q3:

Output:

```
AX=0000000A  EBX=FFFFFF6A  ECX=00000258  EDX=00F2100A
SI=00F2100A  EDI=00F2100A  EBP=003EFA20  ESP=003EFA14
IP=00F23679  EFL=00000246  CF=0   SF=0   ZF=1   OF=0   AF=0   PF=1
```

Q4:

Output:

```

EAX=00000783  EBX=00A32000  ECX=00C2100A  EDX=00C2100A
ESI=00C2100A  EDI=00C2100A  EBP=00D2F798  ESP=00D2F78C
EIP=00C2367B  EFL=00000212  CF=0   SF=0   ZF=0   OF=0   AF=1   PF=0

```

```

EAX=FFFFFFA03  EBX=00000014  ECX=00C2100A  EDX=00C2100A
ESI=00C2100A  EDI=00C2100A  EBP=00D2F798  ESP=00D2F78C
EIP=00C236A1  EFL=00000287  CF=1   SF=1   ZF=0   OF=0   AF=0   PF=1

```

Q5:

Output:

```

EAX=00015180  EBX=00FD8000  ECX=00C6100A  EDX=00C6100A
ESI=00C6100A  EDI=00C6100A  EBP=0113F874  ESP=0113F868
EIP=00C6366A  EFL=00000246  CF=0   SF=0   ZF=1   OF=0   AF=0   PF=1

```

Q6:

Output:

The screenshot shows a debugger interface with two panels. The top panel displays the state of the registers:

```

Registers
EAX = 0000FF10 EBX = 0000E10B ECX = 00AE100A EDX = 00AE100A ESI = 00AE100A EDI = 00AE100A EIP = 00AE3677 ESP = 00F5F7F4 EBP = 00F5F800 EFL = 00000246

```

The bottom panel shows the assembly code in a window titled 'main.asm':

```

4  B WORD 0E10Bh
5
6  .code
7  main PROC
8  mov eax, 0
9  mov ebx, 0
10 mov ax, A
11 mov bx, B
12 XCHG ax, bx ≤ 1ms elapsed

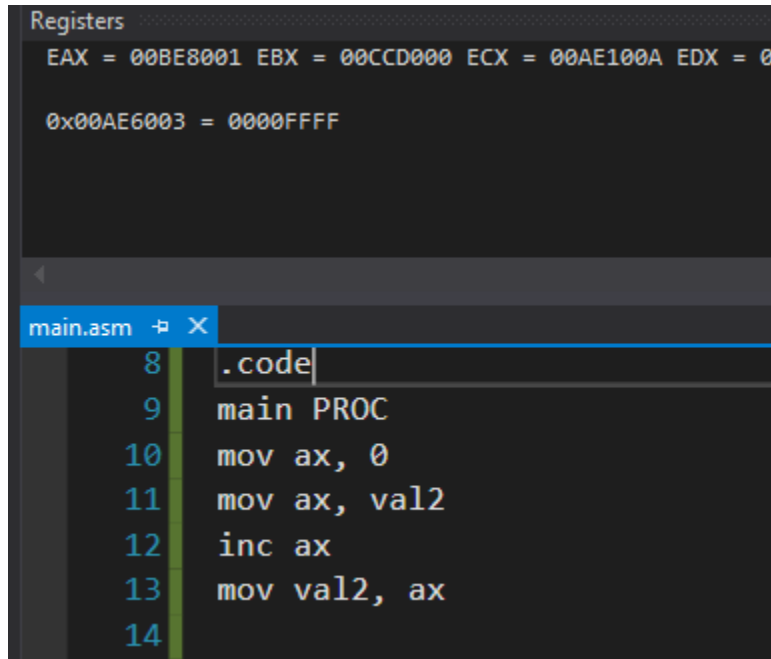
```

The right side of the debugger shows the 'Diagnostic Tools' panel with options for 'Events', 'Summary', 'Events', and 'Memory Usage'.

Q7:

Output:

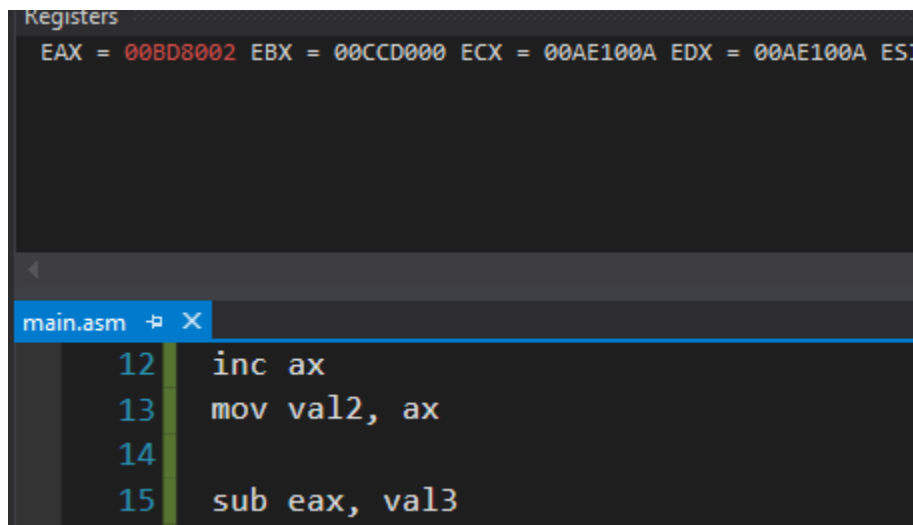
i. Write an instruction that increments val2.



The screenshot shows a debugger window with a 'Registers' pane at the top and an assembly window below it. The registers pane displays: EAX = 00BE8001, EBX = 00CCD000, ECX = 00AE100A, EDX = 0, and a memory location 0x00AE6003 = 0000FFFF. The assembly window shows the following code:

```
8  .code
9  main PROC
10 mov ax, 0
11 mov ax, val2
12 inc ax
13 mov val2, ax
14
```

ii. Write an instruction that subtracts val3 from EAX.



The screenshot shows a debugger window with a 'Registers' pane at the top and an assembly window below it. The registers pane displays: EAX = 00BD8002, EBX = 00CCD000, ECX = 00AE100A, EDX = 00AE100A, and ESI. The assembly window shows the following code:

```
12 inc ax
13 mov val2, ax
14
15 sub eax, val3
```

iii. Write instructions that subtract val4 from val2.

val2 was updated to 8001h

Registers

EAX = 00BB0002 EBX = 00C0B000 ECX = 0057100A EDX = 0057100A ESI

main.asm

```
15 sub eax, val3
16 mov ax, 0
17 mov ax, val2
18 sub ax, val4
19 mov val2, ax
20 call DumpRegs ≤ 1ms elapsed
21 exit
```