COAL LAB2-23k-0842-Kinza afzal

1. Calculate the sum of:
    - 50 + 31 + 20 + 15 + 74 + 14 – 0Bh

```
INCLUDE Irvine32.inc
.code
main PROC
mov eax, 50d
mov ebx, 31d
mov ecx, 20d
add eax, ebx
add eax, ecx
mov ebx, 15d
mov ecx, 74d
add eax, ebx
add eax, ecx
mov ebx, 14d
add eax, ebx
mov ecx, 0Bh
sub eax, ecx
call DumpRegs ≤1ms elapsed
exit
main ENDP
END main
```

```
EAX=000000C1  EBX=0000000E  ECX=0000000B  EDX=006510AA
ESI=006510AA  EDI=006510AA  EBP=012FF888  ESP=012FF87C
EIP=00653694  EFL=00000202  CF=0  SF=0  ZF=0  OF=0  AF=0  PF=0


C:\Users\k230842\source\repos\Coallab2\Debug\Coallab2.exe (process 6428
To automatically close the console when debugging stops, enable Tools->
le when debugging stops.
Press any key to close this window . . .
```

```
Registers
EAX = 00000032 EBX = 00827000 ECX = 006510AA EDX = 006510AA ESI = 006510AA EDI = 006510AA EIP = 00653665 ESP = 00B3FCBC EBP = 00B3FCC8 EFL = 00000246
```

```
Registers
EAX = 00000032 EBX = 0000001F ECX = 006510AA EDX = 006510AA ESI = 006510AA EDI = 006510AA EIP = 0065366A ESP = 00B3FCBC EBP = 00B3FCC8 EFL = 00000246
```

```
Registers
EAX = 00000032 EBX = 0000001F ECX = 00000014 EDX = 006510AA ESI = 006510AA EDI = 006510AA EIP = 0065366F ESP = 00B3FCBC EBP = 00B3FCC8 EFL = 00000246
```

```
Registers
 EAX = 00000051 EBX = 0000001F ECX = 00000014 EDX = 006510AA ESI = 006510AA EDI = 006510AA EIP = 00653671 ESP = 00B3FCBC EBP = 00B3FCC8 EFL = 00000212
```

```
Registers
 EAX = 00000065 EBX = 0000001F ECX = 00000014 EDX = 006510AA ESI = 006510AA EDI = 006510AA EIP = 00653673 ESP = 00B3FCBC EBP = 00B3FCC8 EFL = 00000206
```

```
Registers
 EAX = 00000065 EBX = 0000000F ECX = 00000014 EDX = 006510AA ESI = 006510AA EDI = 006510AA EIP = 00653678 ESP = 00B3FCBC EBP = 00B3FCC8 EFL = 00000206
```

```
Registers
 EAX = 00000065 EBX = 0000000F ECX = 0000004A EDX = 006510AA ESI = 006510AA EDI = 006510AA EIP = 0065367D ESP = 00B3FCBC EBP = 00B3FCC8 EFL = 00000206
```

```
Registers
 EAX = 00000074 EBX = 0000000F ECX = 0000004A EDX = 006510AA ESI = 006510AA EDI = 006510AA EIP = 0065367F ESP = 00B3FCBC EBP = 00B3FCC8 EFL = 00000216
```

```
Registers
 EAX = 000000BE EBX = 0000000F ECX = 0000004A EDX = 006510AA ESI = 006510AA EDI = 006510AA EIP = 00653681 ESP = 00B3FCBC EBP = 00B3FCC8 EFL = 00000206
```

```
Registers
 EAX = 000000BE EBX = 0000000E ECX = 0000004A EDX = 006510AA ESI = 006510AA EDI = 006510AA EIP = 00653686 ESP = 00B3FCBC EBP = 00B3FCC8 EFL = 00000206
```

```
Registers
 EAX = 000000CC EBX = 0000000E ECX = 0000004A EDX = 006510AA ESI = 006510AA EDI = 006510AA EIP = 00653688 ESP = 00B3FCBC EBP = 00B3FCC8 EFL = 00000216
```

```
Registers
 EAX = 000000CC EBX = 0000000E ECX = 0000000B EDX = 006510AA ESI = 006510AA EDI = 006510AA EIP = 0065368D ESP = 00B3FCBC EBP = 00B3FCC8 EFL = 00000216
```

```
Registers
 EAX = 000000C1 EBX = 0000000E ECX = 0000000B EDX = 006510AA ESI = 006510AA EDI = 006510AA EIP = 0065368F ESP = 00B3FCBC EBP = 00B3FCC8 EFL = 00000202
```

2. Perform the subtraction and addition:
    - 10 - 4 + 200 - 150

```
1   INCLUDE Irvine32.inc
2   .code
3   main PROC
4   mov eax, 10d
5   mov ebx, 4d
6   mov ecx, 200d
7   sub eax, ebx
8   add eax, ecx
9   mov ebx, 150d
10  sub eax, ebx
11  call DumpRegs
12  exit  ≤2ms elapsed
13  main ENDP
14  END main
```

```
EAX=00000038  EBX=00000096  ECX=000000C8  EDX=001610AA
ESI=001610AA  EDI=001610AA  EBP=008FFDC4  ESP=008FFDB8
EIP=0016367F  EFL=00000202  CF=0  SF=0  ZF=0  OF=0  AF=0  PF=0


:\Users\k230842\source\repos\Coallab2\Debug\Coallab2.exe (process
o automatically close the console when debugging stops, enable To
e when debugging stops.
ress any key to close this window . . .
```

```
Registers
EAX = 0000000A EBX = 00407000 ECX = 001610AA EDX = 001610AA ESI = 001610AA EDI = 001610AA EIP = 00163665 ESP = 0075F9E0 EBP = 0075F9EC EFL = 00000246
```

```
Registers
EAX = 0000000A EBX = 00000004 ECX = 001610AA EDX = 001610AA ESI = 001610AA EDI = 001610AA EIP = 0016366A ESP = 0075F9E0 EBP = 0075F9EC EFL = 00000246
```

```
Registers
EAX = 0000000A EBX = 00000004 ECX = 000000C8 EDX = 001610AA ESI = 001610AA EDI = 001610AA EIP = 0016366F ESP = 0075F9E0 EBP = 0075F9EC EFL = 00000246
```

```
Registers
EAX = 00000006 EBX = 00000004 ECX = 000000C8 EDX = 001610AA ESI = 001610AA EDI = 001610AA EIP = 00163671 ESP = 0075F9E0 EBP = 0075F9EC EFL = 00000206
```

```
Registers
EAX = 000000CE EBX = 00000004 ECX = 000000C8 EDX = 001610AA ESI = 001610AA EDI = 001610AA EIP = 00163673 ESP = 0075F9E0 EBP = 0075F9EC EFL = 00000202
```

```
Registers
EAX = 000000CE EBX = 00000096 ECX = 000000C8 EDX = 001610AA ESI = 001610AA EDI = 001610AA EIP = 00163678 ESP = 0075F9E0 EBP = 0075F9EC EFL = 00000202
```

```
Registers
EAX = 00000038 EBX = 00000096 ECX = 000000C8 EDX = 001610AA ESI = 001610AA EDI = 001610AA EIP = 0016367A ESP = 0075F9E0 EBP = 0075F9EC EFL = 00000202
```

3. Sum up binary and hexadecimal values:
    - 10111b + 40Bh + 205d + 1010001b + E

```
1   INCLUDE Irvine32.inc
2   .code
3   main PROC
4   mov eax, 10111b
5   mov ebx, 40Bh
6   mov ecx, 205d
7   add eax, ebx
8   add eax, ecx
9   mov ebx, 1010001b
10  mov ecx, 0Eh
11  add eax, ebx
12  add eax, ecx
13  call DumpRegs
14  exit
15  main ENDP
16  END main
```

```
EAX=0000054E  EBX=00000051  ECX=0000000E  EDX=00B610AA
ESI=00B610AA  EDI=00B610AA  EBP=00EFF914  ESP=00EFF908
EIP=00B63686  EFL=00000206  CF=0  SF=0  ZF=0  OF=0  AF=0  PF=1


:\Users\k230842\source\repos\Coallab2\Debug\Coallab2.exe (proces
o automatically close the console when debugging stops, enable T
e when debugging stops.
ress any key to close this window . . .
```

```
Registers
EAX = 00000017 EBX = 0043E000 ECX = 00C210AA EDX = 00C210AA ESI = 00C210AA EDI = 00C210AA EIP = 00C23665 ESP = 0073FC98 EBP = 0073FCA4
EFL = 00000246
```

```
Registers
EAX = 00000017 EBX = 0000040B ECX = 00C210AA EDX = 00C210AA ESI = 00C210AA EDI = 00C210AA EIP = 00C2366A ESP = 0073FC98 EBP = 0073FCA4
EFL = 00000246
```

```
Registers
EAX = 00000017 EBX = 0000040B ECX = 000000CD EDX = 00C210AA ESI = 00C210AA EDI = 00C210AA EIP = 00C2366F ESP = 0073FC98 EBP = 0073FCA4
EFL = 00000246
```

```
Registers
EAX = 00000422 EBX = 0000040B ECX = 000000CD EDX = 00C210AA ESI = 00C210AA EDI = 00C210AA EIP = 00C23671 ESP = 0073FC98 EBP = 0073FCA4
EFL = 00000216
```

```
Registers
EAX = 000004EF EBX = 0000040B ECX = 000000CD EDX = 00C210AA ESI = 00C210AA EDI = 00C210AA EIP = 00C23673 ESP = 0073FC98 EBP = 0073FCA4
EFL = 00000202
```

```
Registers
EAX = 000004EF EBX = 00000051 ECX = 000000CD EDX = 00C210AA ESI = 00C210AA EDI = 00C210AA EIP = 00C23678 ESP = 0073FC98 EBP = 0073FCA4
EFL = 00000202
```

```
Registers
EAX = 000004EF EBX = 00000051 ECX = 0000000E EDX = 00C210AA ESI = 00C210AA EDI = 00C210AA EIP = 00C2367D ESP = 0073FC98 EBP = 0073FCA4
EFL = 00000202
```

```
Registers
EAX = 00000540 EBX = 00000051 ECX = 0000000E EDX = 00C210AA ESI = 00C210AA EDI = 00C210AA EIP = 00C2367F ESP = 0073FC98 EBP = 0073FCA4
EFL = 00000212
```

```
Registers
EAX = 0000054E EBX = 00000051 ECX = 0000000E EDX = 00C210AA ESI = 00C210AA EDI = 00C210AA EIP = 00C23681 ESP = 0073FC98 EBP = 0073FCA4
EFL = 00000206
```

4. Execute a series of operations:
    - 10001101b – 062h + 255 + 5 + 11101b - A + B

```
1   INCLUDE Irvine32.inc
2   .code
3   main PROC
4   mov eax, 10001101b
5   mov ebx, 062h
6   mov ecx, 255d
7   sub eax, ebx
8   add eax, ecx
9   mov ebx, 5d
10  mov ecx, 11101b
11  add eax, ebx
12  add eax, ecx
13  mov ebx, 0Ah
14  mov ecx, 0Bh
15  sub eax, ebx
16  add eax, ecx
17  call DumpRegs
18  exit
19  main ENDP
20  END main
```

```
EAX=0000014D  EBX=0000000A  ECX=0000000B  EDX=003D10AA
ESI=003D10AA  EDI=003D10AA  EBP=006FFEE4  ESP=006FFED8
EIP=003D3694  EFL=00000206  CF=0  SF=0  ZF=0  OF=0  AF=0  PF=1


C:\Users\k230842\source\repos\Coallab2\Debug\Coallab2.exe (process
To automatically close the console when debugging stops, enable To
le when debugging stops.
Press any key to close this window
```

```
Registers
EAX = 0000008D EBX = 006B9000 ECX = 003D10AA EDX = 003D10AA ESI = 003D10AA EDI = 003D10AA EIP = 003D3665 ESP = 008FFD5C EBP = 008FFD68
  EFL = 00000246
```

```
Registers
EAX = 0000008D EBX = 00000062 ECX = 003D10AA EDX = 003D10AA ESI = 003D10AA EDI = 003D10AA EIP = 003D366A ESP = 008FFD5C EBP = 008FFD68
  EFL = 00000246
```

```
Registers
 EAX = 0000008D EBX = 00000062 ECX = 000000FF EDX = 003D10AA ESI = 003D10AA EDI = 003D10AA EIP = 003D366F ESP = 008FFD5C EBP = 008FFD68
   EFL = 00000246
```

```
Registers
 EAX = 0000002B EBX = 00000062 ECX = 000000FF EDX = 003D10AA ESI = 003D10AA EDI = 003D10AA EIP = 003D3671 ESP = 008FFD5C EBP = 008FFD68
   EFL = 00000206
```

```
Registers
 EAX = 0000012A EBX = 00000062 ECX = 000000FF EDX = 003D10AA ESI = 003D10AA EDI = 003D10AA EIP = 003D3673 ESP = 008FFD5C EBP = 008FFD68
   EFL = 00000212
```

```
Registers
 EAX = 0000012A EBX = 00000005 ECX = 000000FF EDX = 003D10AA ESI = 003D10AA EDI = 003D10AA EIP = 003D3678 ESP = 008FFD5C EBP = 008FFD68
   EFL = 00000212
```

```
Registers
 EAX = 0000012A EBX = 00000005 ECX = 0000001D EDX = 003D10AA ESI = 003D10AA EDI = 003D10AA EIP = 003D367D ESP = 008FFD5C EBP = 008FFD68
   EFL = 00000212
```

```
Registers
 EAX = 0000012F EBX = 00000005 ECX = 0000001D EDX = 003D10AA ESI = 003D10AA EDI = 003D10AA EIP = 003D367F ESP = 008FFD5C EBP = 008FFD68
   EFL = 00000202
```

```
Registers
 EAX = 0000014C EBX = 00000005 ECX = 0000001D EDX = 003D10AA ESI = 003D10AA EDI = 003D10AA EIP = 003D3681 ESP = 008FFD5C EBP = 008FFD68
   EFL = 00000212
```

```
Registers
 EAX = 0000014C EBX = 0000000A ECX = 0000001D EDX = 003D10AA ESI = 003D10AA EDI = 003D10AA EIP = 003D3686 ESP = 008FFD5C EBP = 008FFD68
   EFL = 00000212
```

```
Registers
 EAX = 0000014C EBX = 0000000A ECX = 0000000B EDX = 003D10AA ESI = 003D10AA EDI = 003D10AA EIP = 003D368B ESP = 008FFD5C EBP = 008FFD68
   EFL = 00000212
```

```
Registers
 EAX = 00000142 EBX = 0000000A ECX = 0000000B EDX = 003D10AA ESI = 003D10AA EDI = 003D10AA EIP = 003D368D ESP = 008FFD5C EBP = 008FFD68
   EFL = 00000206
```

```
Registers
 EAX = 0000014D EBX = 0000000A ECX = 0000000B EDX = 003D10AA ESI = 003D10AA EDI = 003D10AA EIP = 003D368F ESP = 008FFD5C EBP = 008FFD68
   EFL = 00000206
```

```
Registers
 EAX = 0000014D EBX = 0000000A ECX = 0000000B EDX = 003D10AA ESI = 003D10AA EDI = 003D10AA EIP = 003D3694 ESP = 00CFFEB4 EBP = 00CFFEC0
   EFL = 00000206
```

5. Handle binary, hexadecimal, and octal:
    - 1110b - 7 + 1B2h - 557o

```
INCLUDE Irvine32.inc
.code
main PROC
mov eax, 1110b
mov ebx, 7d  ≤ 1ms elapsed
mov ecx, 1B2h
sub eax, ebx
add eax, ecx
mov ebx, 557o
sub eax, ebx
call DumpRegs
exit
main ENDP
END main
```

```
EAX=0000004A  EBX=0000016F  ECX=000001B2  EDX=009010AA
ESI=009010AA  EDI=009010AA  EBP=005CFE84  ESP=005CFE78
EIP=0090367F  EFL=00000212  CF=0  SF=0  ZF=0  OF=0  AF=1  PF=0


:\Users\Kainat\OneDrive\Desktop\Coal\CoalLabtask\Debug\CoalLabtask.exe (p
o automatically close the console when debugging stops, enable Tools->Opt
e when debugging stops.
ress any key to close this window . . .
```

```
Registers
EAX = 0000000E EBX = 0103D000 ECX = 009010AA EDX = 009010AA ESI = 009010AA EDI = 009010AA EIP = 00903665 ESP = 00FEFA9C EBP = 00FEFAA8 EFL = 00000246
```

```
Registers
EAX = 0000000E EBX = 00000007 ECX = 009010AA EDX = 009010AA ESI = 009010AA EDI = 009010AA EIP = 0090366A ESP = 00FEFA9C EBP = 00FEFAA8 EFL = 00000246
```

```
Registers
EAX = 0000000E EBX = 00000007 ECX = 000001B2 EDX = 009010AA ESI = 009010AA EDI = 009010AA EIP = 0090366F ESP = 00FEFA9C EBP = 00FEFAA8 EFL = 00000246
```

```
Registers
EAX = 00000007 EBX = 00000007 ECX = 000001B2 EDX = 009010AA ESI = 009010AA EDI = 009010AA EIP = 00903671 ESP = 00FEFA9C EBP = 00FEFAA8 EFL = 00000202
```

```
Registers
 EAX = 000001B9 EBX = 00000007 ECX = 000001B2 EDX = 009010AA ESI = 009010AA EDI = 009010AA EIP = 00903673 ESP = 00FEFA9C EBP = 00FEFAA8 EFL = 00000202
```

```
Registers
 EAX = 000001B9 EBX = 0000016F ECX = 000001B2 EDX = 009010AA ESI = 009010AA EDI = 009010AA EIP = 00903678 ESP = 00FEFA9C EBP = 00FEFAA8 EFL = 00000202
```

```
Registers
 EAX = 0000004A EBX = 0000016F ECX = 000001B2 EDX = 009010AA ESI = 009010AA EDI = 009010AA EIP = 0090367A ESP = 00FEFA9C EBP = 00FEFAA8 EFL = 00000212
```

```
Registers
 EAX = 0000004A EBX = 0000016F ECX = 000001B2 EDX = 009010AA ESI = 009010AA EDI = 009010AA EIP = 0090367F ESP = 00FEFA9C EBP = 00FEFAA8 EFL = 00000212
```

Task 02: Write a Program – 5 Marks

Now, imagine you are designing a program in assembly language to handle specific expressions. For all expressions, take `eax = ebx = ecx = edx = 0` **on R.H.S.**

1. Update the value in register `edx` based on the expression:
    - `edx = eax + 2 + ebx - ecx + 0Eh - 23o + 63d`

```
INCLUDE Irvine32.inc
.code
main PROC
mov eax, 0
mov ebx, 0
mov ecx, 0
mov edx, 0
add eax, 2
add eax,ebx
sub eax, ecx
add eax, 0Eh
sub eax, 23o
add eax, 63d
mov edx, eax
call DumpRegs
exit
main ENDP
END main
```

```
EAX=0000003C  EBX=00000000  ECX=00000000  EDX=0000003C
ESI=005210AA  EDI=005210AA  EBP=00CFFDC0  ESP=00CFFDB4
EIP=0052368B  EFL=00000217  CF=1  SF=0  ZF=0  OF=0  AF=1  PF=1


C:\Users\k230842\source\repos\Coallab2\Debug\Coallab2.exe (process 7
To automatically close the console when debugging stops, enable Tool
le when debugging stops.
```

```
Registers
EAX = 00000000 EBX = 007F9000 ECX = 005210AA EDX = 005210AA ESI = 005210AA EDI = 005210AA EIP = 00523665 ESP = 008FFC10 EBP = 008FFC1C
  EFL = 00000246
```

```
Registers
 EAX = 00000000 EBX = 00000000 ECX = 005210AA EDX = 005210AA ESI = 005210AA EDI = 005210AA EIP = 0052366A ESP = 008FFC10 EBP = 008FFC1C
   EFL = 00000246
```

```
Registers
 EAX = 00000000 EBX = 00000000 ECX = 00000000 EDX = 005210AA ESI = 005210AA EDI = 005210AA EIP = 0052366F ESP = 008FFC10 EBP = 008FFC1C
   EFL = 00000246
```

```
Registers
 EAX = 00000000 EBX = 00000000 ECX = 00000000 EDX = 00000000 ESI = 005210AA EDI = 005210AA EIP = 00523674 ESP = 008FFC10 EBP = 008FFC1C
   EFL = 00000246
```

```
Registers
 EAX = 00000002 EBX = 00000000 ECX = 00000000 EDX = 00000000 ESI = 005210AA EDI = 005210AA EIP = 00523677 ESP = 008FFC10 EBP = 008FFC1C
   EFL = 00000202
```

```
Registers
 EAX = 00000002 EBX = 00000000 ECX = 00000000 EDX = 00000000 ESI = 005210AA EDI = 005210AA EIP = 00523679 ESP = 008FFC10 EBP = 008FFC1C
   EFL = 00000202
```

```
Registers
 EAX = 00000002 EBX = 00000000 ECX = 00000000 EDX = 00000000 ESI = 005210AA EDI = 005210AA EIP = 0052367B ESP = 008FFC10 EBP = 008FFC1C
   EFL = 00000202
```

```
Registers
 EAX = 00000010 EBX = 00000000 ECX = 00000000 EDX = 00000000 ESI = 005210AA EDI = 005210AA EIP = 0052367E ESP = 008FFC10 EBP = 008FFC1C
   EFL = 00000212
```

```
Registers
 EAX = FFFFFFFD EBX = 00000000 ECX = 00000000 EDX = 00000000 ESI = 005210AA EDI = 005210AA EIP = 00523681 ESP = 008FFC10 EBP = 008FFC1C
   EFL = 00000293
```

```
Registers
 EAX = 0000003C EBX = 00000000 ECX = 00000000 EDX = 00000000 ESI = 005210AA EDI = 005210AA EIP = 00523684 ESP = 008FFC10 EBP = 008FFC1C
   EFL = 00000217
```

```
Registers
 EAX = 0000003C EBX = 00000000 ECX = 00000000 EDX = 0000003C ESI = 005210AA EDI = 005210AA EIP = 00523686 ESP = 008FFC10 EBP = 008FFC1C
   EFL = 00000217
```

2. Modify the value in register eax using:
    - eax = 6ABh - ebx + 47o + 55d - 110111b + 130

```
INCLUDE Irvine32.inc
.code
main PROC
mov eax, 0
mov ebx, 0
mov ecx, 0
mov edx, 0
mov eax, 6ABh
sub eax, ebx
add eax, 47o
add eax, 55d
sub eax, 110111b
add eax, 130d
call DumpRegs
exit
main ENDP
END main
```

```
EAX=00000754  EBX=00000000  ECX=00000000  EDX=00000000
ESI=006A10AA  EDI=006A10AA  EBP=00EFFE54  ESP=00EFFE48
EIP=006A368E  EFL=00000202  CF=0  SF=0  ZF=0  OF=0  AF=0  PF=0


:\Users\k230842\source\repos\Coallab2\Debug\Coallab2.exe (process 7
o automatically close the console when debugging stops, enable Tool
e when debugging stops.
ress any key to close this window . . .
```

```
Registers
  EAX = 00000000 EBX = 0044E000 ECX = 006A10AA EDX = 006A10AA ESI = 006A10AA EDI = 006A10AA EIP = 006A3665 ESP = 007AFA38 EBP = 007AFA44
    EFL = 00000246
```

```
Registers
  EAX = 00000000 EBX = 00000000 ECX = 006A10AA EDX = 006A10AA ESI = 006A10AA EDI = 006A10AA EIP = 006A366A ESP = 007AFA38 EBP = 007AFA44
    EFL = 00000246
```

```
Registers
EAX = 00000000 EBX = 00000000 ECX = 00000000 EDX = 006A10AA ESI = 006A10AA EDI = 006A10AA EIP = 006A366F ESP = 007AFA38 EBP = 007AFA44
EFL = 00000246
```

```
Registers
EAX = 00000000 EBX = 00000000 ECX = 00000000 EDX = 00000000 ESI = 006A10AA EDI = 006A10AA EIP = 006A3674 ESP = 007AFA38 EBP = 007AFA44
EFL = 00000246
```

```
Registers
EAX = 000006AB EBX = 00000000 ECX = 00000000 EDX = 00000000 ESI = 006A10AA EDI = 006A10AA EIP = 006A3679 ESP = 007AFA38 EBP = 007AFA44
EFL = 00000246
```

```
Registers
EAX = 000006AB EBX = 00000000 ECX = 00000000 EDX = 00000000 ESI = 006A10AA EDI = 006A10AA EIP = 006A367B ESP = 007AFA38 EBP = 007AFA44
EFL = 00000202
```

```
Registers
EAX = 000006D2 EBX = 00000000 ECX = 00000000 EDX = 00000000 ESI = 006A10AA EDI = 006A10AA EIP = 006A367E ESP = 007AFA38 EBP = 007AFA44
EFL = 00000216
```

```
Registers
EAX = 00000709 EBX = 00000000 ECX = 00000000 EDX = 00000000 ESI = 006A10AA EDI = 006A10AA EIP = 006A3681 ESP = 007AFA38 EBP = 007AFA44
EFL = 00000206
```

```
Registers
EAX = 000006D2 EBX = 00000000 ECX = 00000000 EDX = 00000000 ESI = 006A10AA EDI = 006A10AA EIP = 006A3684 ESP = 007AFA38 EBP = 007AFA44
EFL = 00000206
```

```
Registers
EAX = 00000754 EBX = 00000000 ECX = 00000000 EDX = 00000000 ESI = 006A10AA EDI = 006A10AA EIP = 006A3689 ESP = 007AFA38 EBP = 007AFA44
EFL = 00000202
```

```
Registers
EAX = 00000754 EBX = 00000000 ECX = 00000000 EDX = 00000000 ESI = 006A10AA EDI = 006A10AA EIP = 006A368E ESP = 007AFA38 EBP = 007AFA44
EFL = 00000202
```

3. Adjust the value in register ebx according to:
    - ebx = 6BEh - eax + 23d + 61o – 11100101b + 6Ah

```
INCLUDE Irvine32.inc
.code
main PROC
mov eax, 0
mov ebx, 0
mov ecx, 0
mov edx, 0
mov ebx, 6BEh
sub ebx, eax
add ebx, 23d
add ebx, 61o
sub ebx, 11100101b
add ebx, 6Ah
call DumpRegs
exit
main ENDP
END main
```

```
EAX=00000000  EBX=0000068B  ECX=00000000  EDX=00000000
ESI=00B810AA  EDI=00B810AA  EBP=003FF844  ESP=003FF838
EIP=00B8368F  EFL=00000206  CF=0  SF=0  ZF=0  OF=0  AF=0  PF=1


C:\Users\k230842\source\repos\Coallab2\Debug\Coallab2.exe (process
To automatically close the console when debugging stops, enable Too
le when debugging stops.
Press any key to close this window . . .
```

```
Registers
 EAX = 00000000 EBX = 00C35000 ECX = 00B810AA EDX = 00B810AA ESI = 00B810AA EDI = 00B810AA EIP = 00B83665 ESP = 00F3FA5C EBP = 00F3FA68
   EFL = 00000246
```

```
Registers
 EAX = 00000000 EBX = 00000000 ECX = 00B810AA EDX = 00B810AA ESI = 00B810AA EDI = 00B810AA EIP = 00B8366A ESP = 00F3FA5C EBP = 00F3FA68
   EFL = 00000246
```

```
Registers
EAX = 00000000 EBX = 00000000 ECX = 00000000 EDX = 00B810AA ESI = 00B810AA EDI = 00B810AA EIP = 00B8366F ESP = 00F3FA5C EBP = 00F3FA68
EFL = 00000246
```

```
Registers
EAX = 00000000 EBX = 00000000 ECX = 00000000 EDX = 00000000 ESI = 00B810AA EDI = 00B810AA EIP = 00B83674 ESP = 00F3FA5C EBP = 00F3FA68
EFL = 00000246
```

```
Registers
EAX = 00000000 EBX = 000006BE ECX = 00000000 EDX = 00000000 ESI = 00B810AA EDI = 00B810AA EIP = 00B83679 ESP = 00F3FA5C EBP = 00F3FA68
EFL = 00000246
```

```
Registers
EAX = 00000000 EBX = 000006BE ECX = 00000000 EDX = 00000000 ESI = 00B810AA EDI = 00B810AA EIP = 00B8367B ESP = 00F3FA5C EBP = 00F3FA68
EFL = 00000206
```

```
Registers
EAX = 00000000 EBX = 000006D5 ECX = 00000000 EDX = 00000000 ESI = 00B810AA EDI = 00B810AA EIP = 00B8367E ESP = 00F3FA5C EBP = 00F3FA68
EFL = 00000212
```

```
Registers
EAX = 00000000 EBX = 00000706 ECX = 00000000 EDX = 00000000 ESI = 00B810AA EDI = 00B810AA EIP = 00B83681 ESP = 00F3FA5C EBP = 00F3FA68
EFL = 00000206
```

```
Registers
EAX = 00000000 EBX = 00000621 ECX = 00000000 EDX = 00000000 ESI = 00B810AA EDI = 00B810AA EIP = 00B83687 ESP = 00F3FA5C EBP = 00F3FA68
EFL = 00000206
```

```
Registers
EAX = 00000000 EBX = 0000068B ECX = 00000000 EDX = 00000000 ESI = 00B810AA EDI = 00B810AA EIP = 00B8368A ESP = 00F3FA5C EBP = 00F3FA68
EFL = 00000206
```

```
Registers
EAX = 00000000 EBX = 0000068B ECX = 00000000 EDX = 00000000 ESI = 00B810AA EDI = 00B810AA EIP = 00B8368F ESP = 00F3FA5C EBP = 00F3FA68
EFL = 00000206
```

4. Calculate the value in register ecx with:
    - ecx = 1100101101b + 25h - 13o + ebx - ecx + 5

```
INCLUDE Irvine32.inc
.code
main PROC
mov eax, 0
mov ebx, 0
mov ecx, 0
mov edx, 0
mov eax, 1100101101b
add eax, 25h
sub eax, 13o
add eax, ebx
sub eax, ecx
add eax, 5
mov ecx, eax
call DumpRegs
exit
main ENDP
END main
```

```
EAX=0000034C  EBX=00000000  ECX=0000034C  EDX=00000000
ESI=009F10AA  EDI=009F10AA  EBP=008AF820  ESP=008AF814
EIP=009F368D  EFL=00000202  CF=0  SF=0  ZF=0  OF=0  AF=0  PF=0


:\Users\k230842\source\repos\Coallab2\Debug\Coallab2.exe (process
o automatically close the console when debugging stops, enable To
e when debugging stops.
ress any key to close this window . . .
```

```
Registers
  EAX = 00000000 EBX = 00FDC000 ECX = 009F10AA EDX = 009F10AA ESI = 009F10AA EDI = 009F10AA EIP = 009F3665 ESP = 010FF920 EBP = 010FF92C
    EFL = 00000246
```

```
Registers
  EAX = 00000000 EBX = 00000000 ECX = 009F10AA EDX = 009F10AA ESI = 009F10AA EDI = 009F10AA EIP = 009F366A ESP = 010FF920 EBP = 010FF92C
    EFL = 00000246
```

```
Registers
  EAX = 00000000 EBX = 00000000 ECX = 00000000 EDX = 00000000 ESI = 009F10AA EDI = 009F10AA EIP = 009F3674 ESP = 010FF920 EBP = 010FF92C
    EFL = 00000246
```

```
Registers
 EAX = 0000032D EBX = 00000000 ECX = 00000000 EDX = 00000000 ESI = 009F10AA EDI = 009F10AA EIP = 009F3679 ESP = 010FF920 EBP = 010FF92C
   EFL = 00000246
```

```
Registers
 EAX = 00000352 EBX = 00000000 ECX = 00000000 EDX = 00000000 ESI = 009F10AA EDI = 009F10AA EIP = 009F367C ESP = 010FF920 EBP = 010FF92C
   EFL = 00000212
```

```
Registers
 EAX = 00000347 EBX = 00000000 ECX = 00000000 EDX = 00000000 ESI = 009F10AA EDI = 009F10AA EIP = 009F367F ESP = 010FF920 EBP = 010FF92C
   EFL = 00000216
```

```
Registers
 EAX = 00000347 EBX = 00000000 ECX = 00000000 EDX = 00000000 ESI = 009F10AA EDI = 009F10AA EIP = 009F3681 ESP = 010FF920 EBP = 010FF92C
   EFL = 00000206
```

```
Registers
 EAX = 00000347 EBX = 00000000 ECX = 00000000 EDX = 00000000 ESI = 009F10AA EDI = 009F10AA EIP = 009F3683 ESP = 010FF920 EBP = 010FF92C
   EFL = 00000206
```

```
Registers
 EAX = 0000034C EBX = 00000000 ECX = 00000000 EDX = 00000000 ESI = 009F10AA EDI = 009F10AA EIP = 009F3686 ESP = 010FF920 EBP = 010FF92C
   EFL = 00000202
```

```
Registers
 EAX = 0000034C EBX = 00000000 ECX = 0000034C EDX = 00000000 ESI = 009F10AA EDI = 009F10AA EIP = 009F3688 ESP = 010FF920 EBP = 010FF92C
   EFL = 00000202
```