COAL ASSIGNMENT 2

Q1 Code + Output

```
1    Include Irvine32.inc
2
3    .data
4    arrA sdword 30,-40,20,65,80,45
5    j sdword ?
6    k sdword ?
7    str1 byte "Enter The Value Of J:",0
8    str2 byte "Enter The Value Of K:",0
9
10
11
12   .code
13
14   sumArr PROTO arr:ptr sdword, from:ptr sdword, to:ptr sd
15
16   main PROC
17
18   call TakeInput
19   invoke sumArr, ADDR arrA, j,k, lengthof arrA
20   call writeint
21   call crlf
22   call TakeInput
```

```
Microsoft Visual Studio Debug Console
Enter The Value Of J:20
Enter The Value Of K:50
+95
Enter The Value Of J:35
Enter The Value Of K:90
+190
C:\Users\acer\source\repos\Practice\Debug\Practice.exe (process 132) exited with code
Press any key to close this window . . .
```

Q2 Code + Output

```
1    Include Irvine32.inc
2
3    .data
4    arr dword 60,4,17,45,7
5
6    .code
7
8    swap PROC
9    push [esi]
10   push [edi]
11   pop [esi]
12   pop [edi]
13   ret
14   swap ENDp
15
```
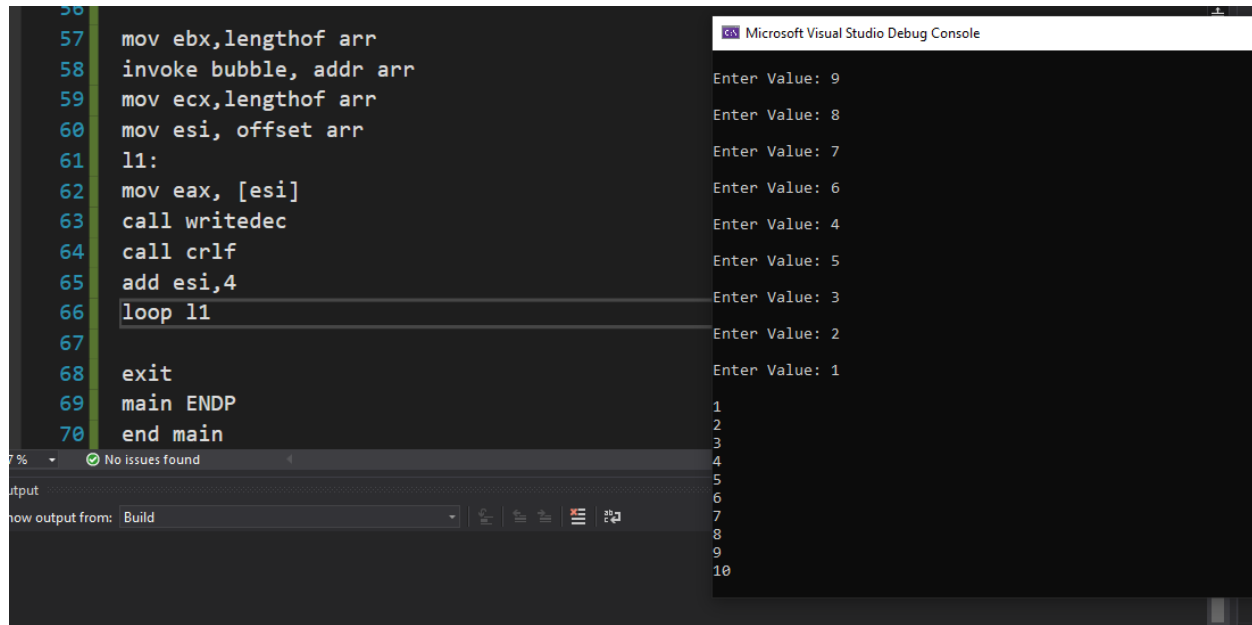
No issues found

output from: Build

```
Microsoft Visual Studio Debug Console
4
7
17
45
60
C:\Users\student\source\repos\Project12\Debug\Project12.exe (pro
Press any key to close this window . . .
```

COAL ASSIGNMENT 2

Q3 Code + Output

```
57    mov ebx,lengthof arr
58    invoke bubble, addr arr
59    mov ecx,lengthof arr
60    mov esi, offset arr
61    l1:
62    mov eax, [esi]
63    call writedec
64    call crlf
65    add esi,4
66    loop l1
67
68    exit
69    main ENDP
70    end main
```

No issues found

how output from: Build

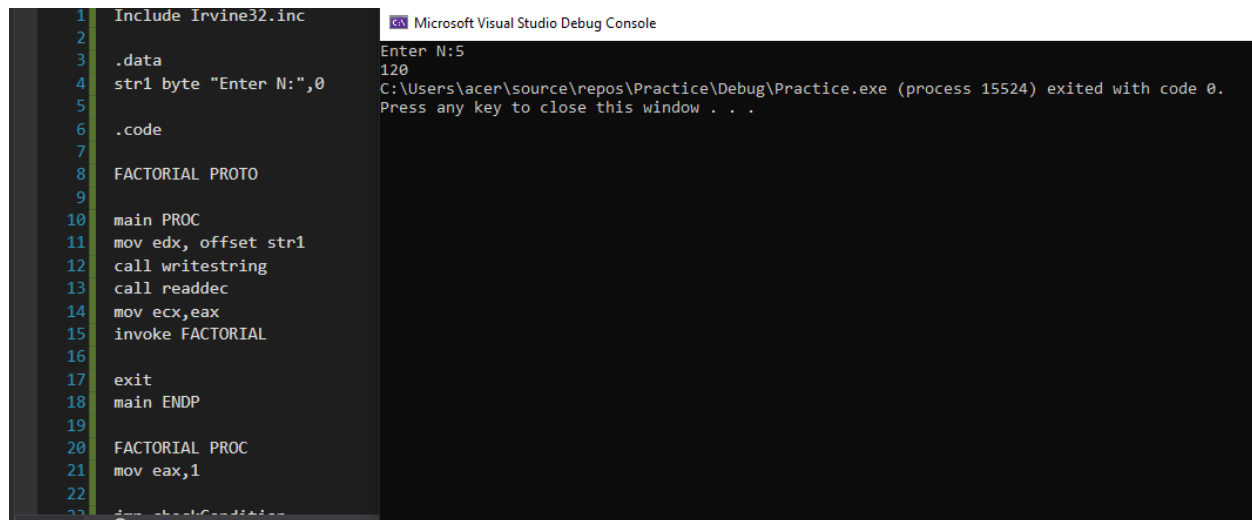Microsoft Visual Studio Debug Console

```
Enter Value: 9
Enter Value: 8
Enter Value: 7
Enter Value: 6
Enter Value: 4
Enter Value: 5
Enter Value: 3
Enter Value: 2
Enter Value: 1
1
2
3
4
5
6
7
8
9
10
```

Q4 Code + Output

```
1    Include Irvine32.inc
2
3    .data
4    str1 byte "Enter N:",0
5
6    .code
7
8    FACTORIAL PROTO
9
10   main PROC
11   mov edx, offset str1
12   call writestring
13   call readdec
14   mov ecx,eax
15   invoke FACTORIAL
16
17   exit
18   main ENDP
19
20   FACTORIAL PROC
21   mov eax,1
22
```

No issues found

Microsoft Visual Studio Debug Console

```
Enter N:5
120
C:\Users\acer\source\repos\Practice\Debug\Practice.exe (process 15524) exited with code 0.
Press any key to close this window . . .
```

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COAL ASSIGNMENT 2

Q5 Code + Output

```asm
25
26      mov ecx,32
27  l1:
28          rol eax,1
29          jnc continue
30          inc count
31
32          continue:
33  loop l1
34
35      mov eax,count
36      mov edx,offset str3
37      call writestring
38      call writedec
39
40  exit
41  main ENDP
42  end main
```

```
Microsoft Visual Studio Debug Console

TYPE A CHARACTER:
THE ASCII CODE OF 'A' IN BINARY IS: 0000 0000 0000 0000 0000 0000 0100 0001
THE NUMBER OF 1 BITS IS: 2
C:\Users\acer\source\repos\Practice\Debug\Practice.exe (process 3248) exited with code 0.
Press any key to close this window . . .
```

114 %   ⊘ No issues found

Q6 Code + Output

```asm
45      continue:
46  l3:
47      mov esi,arr1
48      add esi,count
49      mov ebx,[esi]
50      mov esi,arr2
51      add esi,count
52      cmp ebx,[esi]
53      jne next
54      inc eax
55
56  next:
57      add count,4
58  loop l3
59
60      call writedec
61
62      pop ebx
63      pop esi
64      ret
65  CountMatches ENDP
66      end main
```

```
Microsoft Visual Studio Debug Console

2
C:\Users\acer\source\repos\Practice\Debug\Practice.exe (process 20316) exited with code 0.
Press any key to close this window . . .
```

Q7 Code + Output

```asm
1   INCLUDE Irvine32.inc
2
3
4   .data
5   op1 QWORD 0A2B2A40674981234h
6   op2 QWORD 080010870000234502h
7   result QWORD 1 DUP(0) ; = 22A21D067474CD32h
8   msg BYTE "The difference equals ",0
9   DoubleWords = SIZEOF op1 / TYPE DWORD
10
11
12  .code
13  main PROC
14  mov esi, OFFSET op1
15  mov edi, OFFSET op2
16  mov ebx, OFFSET result
17  mov ecx, DoubleWords
18  call Extended_Sub
```

```
Microsoft Visual Studio Debug Console

The difference equals 22A21D067474CD32
C:\Users\acer\source\repos\Practice\Debug\Practice.exe (process 6356) exited with co
Press any key to close this window . . .
```

COAL ASSIGNMENT 2

Q8 Code + Output

```
1    INCLUDE Irvine32.inc
2
3
4    .data
5    op1 QWORD 0A2B2A40674981234h
6    op2 QWORD 08010870000234502h
7    result QWORD 1 DUP(0) ; = 22C32B0674BB5736
8    msg BYTE "The addition equals ",0
9    DoubleWords = SIZEOF op1 / TYPE DWORD
10
11
12   .code
13   main PROC
14   mov esi, OFFSET op1
15   mov edi, OFFSET op2
16   mov ebx, OFFSET result
17   mov ecx, DoubleWords
18   call Extended_Add
19   mov edx, OFFSET msg
```

Microsoft Visual Studio Debug Console

```
She addition equals 22C32B0674BB5736

C:\Users\acer\source\repos\Practice\Debug\Practice.exe (process 18832) exited with
Press any key to close this window . . .
```

Q9 Code + Output

```
47   mov eax,a
48   ret 8
49
50   continue:
51   cmp a,ebx
52   ja condition1
53
54   condition2:
55   sub ebx,a
56   invoke gcd, a,ebx
57   jmp quit
58
59   condition1:
60   sub edx,b
61   invoke gcd, edx,b
62   jmp quit
63
64
65   quit:
66   ret 8
67   gcd ENDP
68   end main
114 %        No issues found
```
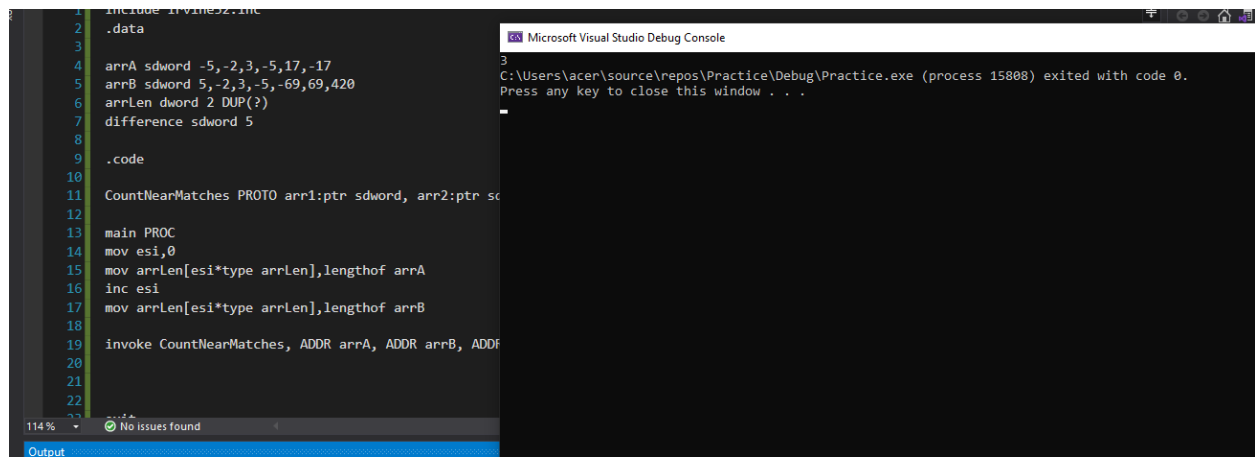
Microsoft Visual Studio Debug Console

```
5
6
2

C:\Users\acer\source\repos\Practice\Debug\Practice.exe (process 6140) exited with code
Press any key to close this window . . .
```

COAL ASSIGNMENT 2

Q10 Code + Output

```
1   include Irvine32.inc
2   .data
3
4   arrA sdword -5,-2,3,-5,17,-17
5   arrB sdword 5,-2,3,-5,-69,69,420
6   arrLen dword 2 DUP(?)
7   difference sdword 5
8
9   .code
10
11  CountNearMatches PROTO arr1:ptr sdword, arr2:ptr sd
12
13  main PROC
14  mov esi,0
15  mov arrLen[esi*type arrLen],lengthof arrA
16  inc esi
17  mov arrLen[esi*type arrLen],lengthof arrB
18
19  invoke CountNearMatches, ADDR arrA, ADDR arrB, ADDR
20
21
22
```

114 %   ⊘ No issues found

Output

Microsoft Visual Studio Debug Console

```
3
C:\Users\acer\source\repos\Practice\Debug\Practice.exe (process 15808) exited with code 0.
Press any key to close this window . . .
```