K230013
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BAI-4A

COAL
LAB 6

TASK#1
TITLE k230013COALLAB6 (TASK1.asm)
INCLUDE Irvine32.inc

```
.data
a SWORD 6
b SWORD 5
.CODE
main PROC
   mov ax, a
   mov bx, b
   cmp ax, bx
   jle skip_code
   call DumpRegs
skip_code:
   add ax, bx
   call DumpRegs
EXIT
main ENDP
END main
```

OUTPUT

```
 EAX=003A0006  EBX=00470005  ECX=00A610AA  EDX=00A610AA
 ESI=00A610AA  EDI=00A610AA  EBP=003AFBC4  ESP=003AFBB8
 EIP=00A63677  EFL=00000202  CF=0  SF=0  ZF=0  OF=0  AF=0  PF=0


 EAX=003A000B  EBX=00470005  ECX=00A610AA  EDX=00A610AA
 ESI=00A610AA  EDI=00A610AA  EBP=003AFBC4  ESP=003AFBB8
 EIP=00A6367F  EFL=00000202  CF=0  SF=0  ZF=0  OF=0  AF=0  PF=0


C:\Users\it\source\repos\Project3\Debug\Project3.exe (process 8484) exited with code 0 (0x0).
Press any key to close this window . . .
```

TASK#2

TITLE k230013COALLAB6 (TASK2.asm)
INCLUDE Irvine32.inc
.data
a DWORD 1
b DWORD 1
.CODE
main PROC
  mov ebx, a
  mov edx, b
  mov eax, 1
  call WriteDec
  call Crlf
  call WriteDec
  call Crlf
  mov ecx, 8
  mov eax, 0
  L1:
    add eax, ebx
    add eax, edx
    call WriteDec
    call Crlf
    mov ebx, edx
    mov edx, eax
    mov eax, 0
    loop L1
EXIT
main ENDP
END main

OUTPUT

```
1
1
2
3
5
8
13
21
34
55

C:\Users\it\source\repos\Project3\Debug\Project3.exe (process 22584) exited with code 0 (0x0).
Press any key to close this window . . .
```

TASK#3(a)

TITLE k230013COALLAB6 (TASK3a.asm)

INCLUDE Irvine32.inc

```
.DATA
a DWORD 1
.CODE
main PROC
  mov eax, a
  mov ebx, 1
  mov ecx, 4
  L1:
    push ecx
    mov ecx, ebx

    L2:
      call WriteDec
      loop L2

  call Crlf
  inc ebx
  pop ecx
  loop L1

EXIT
main ENDP
END main
```

OUTPUT:

```
1
11
111
1111

C:\Users\it\source\repos\Project3\Debug\Project3.exe (process 5920) exited with code 0 (0x0).
Press any key to close this window . . .
```

TASK#3(b)

```
TITLE k230013COALLAB6 (TASK3b.asm)
INCLUDE Irvine32.inc

.DATA
a DWORD 1
.CODE
main PROC
  mov eax, a
  mov ebx, 4
  mov ecx, 4
  L1:
    push ecx
    mov ecx, ebx

    L2:
      call WriteDec
      loop L2

  call Crlf
  dec ebx
  pop ecx
  loop L1

EXIT
main ENDP
END main
```

OUTPUT:

```
1111
111
11
1

C:\Users\it\source\repos\Project3\Debug\Project3.exe (process 25872) exited with code 0 (0x0).
Press any key to close this window . . .
```

TASK#3(c):

TITLE k230013COALLAB6 (TASK3c.asm)
INCLUDE Irvine32.inc
.DATA
a DWORD 4
.CODE
main PROC
    mov eax, a
    mov ebx, 4
    mov ecx, 4
L1:
    push ecx
    push eax
    mov ecx, ebx
L2:
    push eax
    call WriteDec
    pop eax
    dec eax
    loop L2
    call Crlf
    dec ebx
    pop eax
    pop ecx
    loop L1
EXIT
main ENDP
END main

OUTPUT:

```
4321
432
43
4

C:\Users\it\source\repos\COALLAB6\Debug\COALLAB6.exe (process 496) exited with code 0 (0x0).
Press any key to close this window . . .
```

TASK#3(d):

```
TITLE k230013COALLAB6 (TASK3d.asm)
INCLUDE Irvine32.inc

.DATA
a DWORD 1

.CODE
main PROC
    mov eax, a
    mov ebx, 4
    mov ecx, 4

L1:
    push ecx
    push eax
    mov ecx, ebx

L2:
    push eax
    call WriteDec
    pop eax
    inc eax
    loop L2

    call Crlf
    dec ebx
    pop eax
    pop ecx
    loop L1
EXIT
main ENDP
END main
```

OUTPUT:

```
1234
123
12
1

C:\Users\it\source\repos\COALLAB6\Debug\COALLAB6.exe (process 19736) exited with code 0 (0x0).
Press any key to close this window . . .
```

TASK#4

```
INCLUDE Irvine32.inc

.data
id DWORD 5 DUP(?)
nname BYTE 5 DUP(50 DUP(?))
year DWORD 5 DUP(?)
salary DWORD 5 DUP(?)
prompt BYTE "Enter your name, year and salary for employee no: ", 0
buffer byte "Sum of all salaries : " ,0
sum dword ?
.code
main PROC
    mov ebx, 0
    mov ecx, 5

l2:
    mov edx, OFFSET prompt
    call WriteString
    mov eax, ebx
    call WriteDec
    call CrLf

    mov edx, OFFSET nname
     mov eax, ebx
    imul eax, 50          ; Multiply index by 50
    add edx, eax          ; Add the offset to base address

    call ReadString

    call ReadInt
    mov esi, OFFSET year

    mov [esi +TYPE year*ebx], eax

    call ReadInt
    mov esi, OFFSET salary

    mov [esi +TYPE salary*ebx], eax
```

```
    inc ebx
    loop l2
mov ecx ,5
mov ebx,0
mov eax,0
l1:
mov esi,offset salary
add eax,[esi +TYPE salary *ebx]
inc ebx
loop l1
mov edx,offset buffer
call writestring
call writedec
    exit
main ENDP


END main
```

OUTPUT

```
Enter your name, year and salary for employee no: 0
 Zunaira
 2004
 2000
Enter your name, year and salary for employee no: 1
 Hudi
 2006
 3000
Enter your name, year and salary for employee no: 2
 Emaa
 2005
 5000
Enter your name, year and salary for employee no: 3
 Dania
 2005
 3000
Enter your name, year and salary for employee no: 4
 Tanisha
 2004
 5000
Sum of all salaries : 18000
C:\Users\it\source\repos\COALLAB6\Debug\COALLAB6.exe (process 13228) exited with code 0 (0x0).
Press any key to close this window . . .
```

TASK#5:

INCLUDE Irvine32.inc
.data
source byte "Hi im the string to be copied",0
target BYTE 1024 DUP(?)
.code
main PROC
mov ecx,lengthof source
mov esi,offset source
mov edi,offset target
l1:
mov eax,[esi]
mov[edi],eax
add esi,1
add edi,1
loop l1
mov edx,offset target
call writestring

exit
main ENDP
END main

OUTPUT:

```
Hi im the string to be copied
C:\Users\it\source\repos\COALLAB6\Debug\COALLAB6.exe (process 25412) exited with code 0 (0x0).
Press any key to close this window . . .
```

TASK#6

```
INCLUDE Irvine32.inc

.data

array dword 1,2,3,4,5

.code

main PROC

mov ecx,1

mov esi,offset array

mov eax,0

mov ebx,lengthof array

dec ebx

l1:

mov edx,[esi + eax*type array]

xchg edx,[esi +ebx * type array]

mov [esi + eax*type array],edx

inc eax

dec ebx

cmp eax,ebx

jl l1

mov ecx,lengthof array

mov ebx,0

l2:

mov eax,[esi +ebx*type array]
```

call writedec

call crlf

inc ebx

loop l2

exit

main ENDP

END main

OUTPUT

```
5
4
3
2
1

C:\Users\it\source\repos\COALLAB6\Debug\COALLAB6.exe (process 13176) exited with code 0 (0x0).
Press any key to close this window . . .
```

TASK#7

```
INCLUDE Irvine32.inc
.data
array DWORD 8, 1, 5, 2, 6
num DWORD ?


.code
main PROC
        mov ecx, LENGTHOF array
        dec ecx
outerLoop:
        mov ebx, 0
        mov edx, ecx
innerLoop:
        mov esi, OFFSET array
        mov eax, [esi + ebx * TYPE array]
        mov num, eax
        inc ebx
        mov eax, [esi + ebx * TYPE array]
        dec ebx
        cmp num, eax
        jle noSwap
        mov [esi + ebx * TYPE array], eax
```

```asm
        mov eax, num

        inc ebx

        mov [esi + ebx * TYPE array], eax

        dec ebx

noSwap:

        inc ebx

        dec edx

        jnz innerLoop

        loop outerLoop

        mov ecx, LENGTHOF array

        mov esi, OFFSET array

printArray:

        mov eax, [esi]

        call WriteDec

        call CrLf

        add esi, TYPE array

        loop printArray

        exit

main ENDP

END main
```

OUTPUT:

```
1
2
5
6
8

C:\Users\it\source\repos\COALLAB6\Debug\COALLAB6.exe (process 16512) exited with code 0 (0x0).
Press any key to close this window . . .
```