TASK 1

```
**************************************
INCLUDE Irvine32.inc
.code
main PROC
mov ebp, 0
mov edx,1
mov ebx, edx
mov ecx, 10
fib:
mov eax, edx
mov ebp, eax
mov edx, ebx
add ebx, ebp
call writedec
call crlf
loop fib
exit
main ENDP
END main
***************************************
```

TASK 2

```
***************************************
INCLUDE Irvine32.inc
.data
array1 DWORD 8h, 5h, 1h, 2h, 6h
i DWORD 0
temp DWORD ?
.code
main PROC
mov ecx, 4
outer:
mov temp, ecx
mov eax, 0
mov ebx, 0
sub ecx, i
mov esi, 0
mov edi, 1
inner:
mov eax, array1[esi*TYPE array1]
mov ebx, array1[edi*TYPE array1]
cmp eax, ebx
JG swap
JLE cont
swap:
mov eax, array1[esi*TYPE array1]
mov ebx, array1[edi*TYPE array1]
xchg eax, array1[edi*TYPE array1]

xchg ebx, array1[esi*TYPE array1]
cont:
inc esi
inc edi
```

```
cmp ecx, 0
JLE outside_inner
loop inner
outside_inner:
mov ecx, temp
inc i
loop outer
mov edi, 0
mov ecx, LENGTHOF array1
mov esi, 0
print:
mov eax, array1[esi*TYPE array1]
inc esi
call writedec
call crlf
loop print
exit
main ENDP
END main
************************************
```

TASK 3(i)

```
************************************
INCLUDE Irvine32.inc
.data

val1 byte '1',0
j dword ?
.code
main PROC
mov j,1
mov ecx,4
L1:
mov ebx,ecx
mov ecx,j
L3:
mov al,val1
call writechar
Loop L3
mov ecx,ebx
inc j
call Crlf
Loop L1
call DumpRegs
exit
main ENDP
END main
*********************
```

TASK 3(ii)

```
*********************
INCLUDE Irvine32.inc
.data
val1 byte '1 ',0
i dword ?
```

```
.code
main PROC
mov i,4
mov ecx,4
L1:
mov ebx,ecx
L2:
mov al,val1
call WriteChar
Loop L2
mov ecx,ebx
dec i
call Crlf
Loop L1
call DumpRegs
exit
main ENDP
END main
******************
```

TASk 3(iii)

```
*******************
INCLUDE Irvine32.inc
.data
i byte ?
.code
main PROC
mov i,4
mov ecx,4

L1:
mov ebx,ecx
mov eax,4
L2:
mov eax,eax
call WriteDec
sub eax,1
Loop L2
mov ecx,ebx
dec i
call Crlf
Loop L1
call DumpRegs
exit
main ENDP
END main
******************
```

TASK 3(iv)

```
******************
INCLUDE Irvine32.inc
.data
i byte ?

.code
main PROC
```

```
mov i,4
mov ecx,4
L1:
mov ebx,ecx
mov eax,1
L2:
mov eax,eax
call WriteDec
add eax,1
Loop L2
mov ecx,ebx
dec i
call Crlf
Loop L1
call DumpRegs
exit
main ENDP
END main
*******************************

TASK 4
*******************************
INCLUDE Irvine32.inc
.data

sum dword 0h
AnnualSalary DWORD 5 DUP(?)
prompt BYTE "Enter a Employee Id: ", 0
prompt1 BYTE "Enter a Employee name: ", 0
prompt2 BYTE "Enter Year of Birth ", 0
prompt3 BYTE "Enter Annual Salary ", 0
prompt4 BYTE "Total Annual Salary ", 0
id DWORD 5 DUP(?)
myname BYTE 20 DUP(?)
Byear DWORD 5 DUP(?)
salary DWORD 5 DUP(?)
.code
main PROC
mov ebx,0
mov ecx, 5
mov edi ,ecx
L1:
mov edx, OFFSET prompt
call WriteString
call ReadHex
mov id[ebx],eax
mov edx, OFFSET prompt1
call WriteString
mov edx,offset myname
mov ecx,sizeof myname
call Readstring
mov edx, OFFSET prompt2

call WriteString
call ReadHex
mov Byear[ebx],eax
mov edx, OFFSET prompt3
```

```
call WriteString
call ReadHex
mov Salary[ebx],eax
add sum ,eax
inc ebx
mov ecx ,edi
dec edi
loop L1
call crlf
mov edx, OFFSET prompt4
call WriteString
mov eax,sum
call writedec

exit
main ENDP
END main
```

****

TASk 5

****

```
INCLUDE Irvine32.inc
.data
source BYTE 'a','l','i','s','a','l','m',0
target BYTE LENGTHOF source DUP(?),0
.code
main PROC
mov ecx,lengthof source
L1:
mov al,source[ecx-1]
mov target[ecx-1],al
loop L1
mov edx,offset target
call WriteString
call DumpRegs
exit
main ENDP
END main
```

****

TASK 6

****

```
INCLUDE Irvine32.inc
.data
array byte 1,2,4,8
.code
main PROC
mov ecx,(lengthof array/2)
mov esi,(lengthof array-1)
mov edx,0
L1:
mov al,array[esi]
mov bl,array[edx]
mov array[edx],al
mov array[esi],bl
```

```
dec esi
inc edx
loop L1
mov ecx,(lengthof array)
mov edx,0
mov eax,0
L2:
mov al,array[edx]
call WriteDec
inc edx
Loop L2
call DumpRegs
exit
main ENDP
END main
****************************************
```