```
%macro write 2
mov rax , 1
mov rdi , 1
mov rsi , %1
mov rdx , %2
syscall
%endmacro
%macro read 2
mov rax , 0
mov rdi , 0
mov rsi , %1
mov rdx , %2
syscall
%endmacro

section .data
    msg1 db 0x0A,"The data of GDTR is :-> "
    len1 equ $ - msg1
    msg2 db "The data of LDTR is :-> "
    len2 equ $ - msg2
    msg3 db "The data of IDTR is :-> "
    len3 equ $ - msg3

    msg4 db 0xA0,"Processor in Real Mode"
    len4 equ $ - msg4
    msg5 db "Processor in Protected Mode"
    len5 equ $ - msg5
    newLine db 0x0A

section .bss
    cnt resb 1
    value :resb 4
    gdtr resd 1
         resw 1
    idtr resd 1
         resw 1
    ldtr resw 1
    machineStatus resd 1


section .text
    global _start
    _start :
        smsw [machineStatus]
        mov eax , dword[machineStatus]
        bt eax , 0
        jc protectedMode
        write msg4,len4
        jmp exit
        protectedMode:
            write  msg5, len5
        write newLine , 1

        write msg1 , len1
        SGDT [gdtr]
        mov bx , [gdtr+4]
        CALL HtoA
        mov bx , [gdtr+2]
        CALL HtoA
        mov bx , [gdtr]
        CALL HtoA

        write newLine , 1
        write msg3 , len3
        sidt [idtr]

        mov bx , [idtr+4]
        CALL HtoA
        mov bx , [idtr+2]
        CALL HtoA
        mov bx , [idtr]
        CALL HtoA

        write newLine , 1
        write msg2 , len2
        sldt [ldtr]

        mov bx , [ldtr]
        CALL HtoA


    exit:
        mov rax , 60
        mov rdi , 0
        syscall

HtoA:
mov rdi,value
mov byte[cnt],4H
up:
rol bx,04
mov cl,bl
and cl,0FH
cmp cl,09H
jbe belowNine1
ADD cl,07H
belowNine1:
add cl, 30H
mov byte[rdi],cl
INC rdi
dec byte[cnt]
JNZ up
write value,4
ret
```