

Experiment No. 10

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```
%macro IO 4
    mov rax, %1
    mov rdi, %2
    mov rsi, %3
    mov rdx, %4
    syscall
%endmacro

section .data
    msg db " Factorial is -> ",
    11 equ $ - msg

    newline db "\n", 10
    12 equ $ - newline

    base db "0001"
    13 equ $ - base

    input db 006 ; Change the number to take different input
section .bss
    dispbuff resb 16
    result resb 4
    num resb 1

section .text
    global _start
    _start:
        IO 1, 1, msg, 11
        mov al, [input]
        cmp al, 01h
        jbe endFact

        mov bl, [input]
        call proc_fact
        mov rbx, rax
        call print

        IO 1, 1, newline, 12
        call exit
    ret

endFact:
    IO 1, 1, base, 13
    ret
```

```

print:
    mov rdi, dispbuff
    mov rcx, 16
repeat:
    rol rbx, 4
    mov dl,bl
    and dl, 0fh
    add dl, 30h
    cmp dl, 39h
    jbe skip1
    add dl, 07h

    skip1:
        mov [rdi], dl
        inc rdi
        loop repeat
    IO 1, 1, dispbuff, 16
ret

proc_fact:
    cmp bl, 1
    jne do_calc
    mov ax, 1
ret

do_calc:
    push rbx
    dec bl
    call proc_fact
    pop rbx
    mul bl
ret

exit:
    mov rax, 60
    mov rdi, 0
    syscall
ret

```