

MICROPROCESSOR LABORATORY

Assignment No.3

X86/64 ALP to accept a string and to display its length.

Program:

```
%macro writefn 2
    mov rax,01
    mov rdi,01
    mov rsi,%1
    mov rdx,%2
    Syscall
%endmacro
```

Section .data

```
msg1 db 10,"Enter a string:"
msg1_len equ $-msg1
msg2 db 10,"Length of the string is: "
msg2_len equ $-msg2
```

Section .bss

```
str1 resb 100
char_ans resb 100
```

Section .text

```
global _start
```

```
_start:
    writefn msg1,msg1_len
    mov rax,00
    mov rdi,00
    mov rsi,str1
    mov rdx,100
    Syscall

    mov bl,al

    display_proc:
    mov rbp,char_ans
    mov rcx,2

    up:
        rol bl,04h
        mov dl,bl
        and dl,0Fh
        cmp dl,09h
        jbe next
        add dl,07h

    next:
        add dl,30h
```

```
mov [rbp],dl
inc rbp
dec rcx
jnz up
writefn msg2,msg2_len
writefn char_ans,3
```

```
mov rax,60
mov rdi,00
Syscall
```

Output:

```
guest-oktmUi@student-OptiPlex-3010:~$ nasm -f elf64 -o A3String.o A3String.asm
guest-oktmUi@student-OptiPlex-3010:~$ ld -o A3String A3String.o
guest-oktmUi@student-OptiPlex-3010:~$ ./A3String
```

```
Enter a string:
Hello! This is Aditi Pardeshi!
Length of the string is: 1E
```

```
guest-oktmUi@student-OptiPlex-3010:~$
```