

Assignment – 7 (Non-Overlapped block data transfer)

Code

; Problem Statement: Write X86/64 ALP to perform non-overlapped block transfer without string specific instructions Block containing data can be defined in the data segment.

; BEGINNING OF CODE

%macro print 2

mov rax,1

mov rdi,1

mov rsi,%1

mov rdx,%2

syscall

%endmacro

section .data

m1 db 10,"Source block:",10,13

m1len equ \$-m1

m2 db 10,"Destination block after transfer:",10,13

m2len equ \$-m2

space db" "

spacelen equ \$-space

srcblk db 10h,20h,30h,40h,50h

count equ 05h

section .bss

ans resb 4

dstblk resb 5

section .text

global _start

_start:

print m1,m1len

mov rsi,srcblk

call disp_block

print m2,m2len

mov rsi,srcblk

mov rdi,dstblk

mov rcx,05

s1: mov al,[rsi]

mov [rdi],al

inc rsi

```
inc rdi
loop s1
mov rsi,dstblk
call disp_block
mov rax,60
xor rdi,rdi
syscall
disp_block:
mov rbp,count
back:mov al,[rsi]
push rsi
call disp_8
print space,1
pop rsi
inc rsi
dec rbp
jnz back
ret
disp_8:mov rsi,ans
mov bl,al
mov dl,bl
rol dl,04
and dl,0fh
cmp dl,09h
jbe add30
add dl,07h
add30:
add dl,30h
mov [rsi],dl
inc rsi
mov dl,bl
and dl,0fh
cmp dl,09h
jbe add130
add dl,07h
add130:
add dl,30h
mov [rsi],dl
print ans,2
ret
```

; END OF CODE

Output

```
$ nasm -f elf64 Practical-3.2\ \ (without\ string\).asm && ld -o exec Practical-3  
.2\ \ (without\ string\).o && ./exec
```

Source block:

10 20 30 40 50

Destination block after transfer:

10 20 30 40 50