

Practical No – 10

section .data

```
msg db 10,"Menu"  
    db 10,"1.Succesive addition" db  
    10,'2.Add and Shift Addition' db  
    10,"3.Exit"  
    db 10,"Enter your choice: " len  
equ $-msg
```

```
msg1 db 10,"Enter 1st two digit number:" len1  
equ $-msg1  
msg2 db 10,"Enter 2nd two digit number:" len2  
equ $-msg2  
msg3 db 10,"Result:" len3  
equ $-msg
```

section .bss

```
numascii resb 05  
num1 resb 05  
num2 resb 05  
dispbuff resb 05
```

%macro print 2

```
    mov rax,1  
    mov rdi,1  
    mov rsi,%1  
    mov rdx,%2
```

syscall

%endmacro

%macro accept 2

```
    mov rax,0  
    mov rdi,0  
    mov rsi,%1  
    mov rdx,%2
```

syscall

%endmacro

section .text

global _start

_start:

print msg,len

accept numascii,2

case1:

```
    cmp byte[numascii],'1'  
    jne case2  
    call proc  
    jmp _start
```

case2:

```
    cmp byte[numascii],'2'  
    jne exit  
    call multi  
    jmp _start
```

exit:

```
    mov rax,60  
    syscall
```

;successive addition method

proc:

```
    print msg1,len1      ;enter 1st number  
    accept numascii,3  
    call packnum  
    mov [num1],bl        ;num1= 02
```

```
    print msg2,len2      ;enter 2nd number  
    accept numascii,3  
    call packnum         ; bl = 03
```

```
    mov ax,0             ; ax=0
```

up:

```
    add ax,[num1]         ; ax= ax+[num1] = 04 + 02 = 06
```

```
    dec bl               ; bl=0
```

```
    jnz up
```

```
    mov bx,ax            ; bx=06
```

```
    call dispnum
```

ret

; Add & Shift method

multi:

```

    print msg1,len1
    accept numascii,3
    call packnum
    mov [num1],bl      ; num1=02

    print msg2,len2
    accept numascii,3
    call packnum
    mov [num2],bl      ; num2=03

    mov ax,00h
    mov dx,00h
    mov al,[num1]      ; al= 02      0000 0010
    mov bl,[num2]      ; bl = 03      0000 0011
    mov cx,00h         ;result
    mov dl,08h         ;counter
12:
    shr bl,01h         ; bl= 0000 0000 , shr = 0000 0000 0 jnc
    ll
    add cx,ax           ; cx=cx+ax= 02+04 = 06
11: shl al,01          ;al= 0000 1000, shl= 0001 0000
    dec dl             ; dl=05
    jnz 12
    mov rbx,rcx
    call dispnum
ret

dispnum:
    mov rcx,04
    mov edi,dispbuff
up2:
    rol bx,04
    mov al,bl
    and al,0fh
    cmp al,09h
    jbe skip add
    al,07h
skip:
    add al,30h
    mov [edi],al
    inc edi
    loop up2
    print dispbuff,4
ret

```

```

packnum:
    mov bx,0
    mov rcx,02
    mov esi,numascii
up1:rol bl,04
    mov al,[esi]
    cmp al,39h
    jbe skip1
    sub al,07h
skip1:
    sub al,30h
    add bl,al
    inc esi loop
up1
ret

```

OUTPUT:

```

cns@cns-System-Product-Name: ~/Desktop
cns@cns-System-Product-Name:~$ cd Desktop
cns@cns-System-Product-Name:~/Desktop$ nasm -f elf64 mp10.asm
cns@cns-System-Product-Name:~/Desktop$ ld -o mp10 mp10.o
cns@cns-System-Product-Name:~/Desktop$ ./mp10

Menu
1.Succesive addition
2.Add and Shift Addition
3.Exit
Enter your choice: 1

Enter 1st two digit number:04

Enter 2nd two digit number:03
000C
Menu
1.Succesive addition
2.Add and Shift Addition
3.Exit
Enter your choice: 2

Enter 1st two digit number:04

Enter 2nd two digit number:03
000C
Menu
1.Succesive addition
2.Add and Shift Addition
3.Exit
Enter your choice: 3
cns@cns-System-Product-Name:~/Desktop$

```