

# Experiment – 2

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Section: CSE E

**Write an assembly language program to perform scalar multiplication of an array of five unsigned bytes.**

```
.model small
.stack 100H
data segment array
db 1,2,3,4,5
m db ?
msg db "Multiplication is $"
data ends
```

```
code segment
assume ds:data, cs:code
```

```
start:
mov ax, data
mov ds, ax
lea si,array lea dx,msg
mov ah, 9
int 21h
mov bl, 0h
lea di,m
next:
mov al, byte ptr[si]
mul bl
mov word ptr[di], ax
inc si
add di, 2
loop next
mov dl, al
mov ah, 2
mov al, 31h
mov dl, al
mov ah, 2
int 21h
mov al, 32h
mov dl, al
mov ah, 2
int 21h
```

```
mov al, 30h
mov dl, al
mov ah, 2
int 21h
mov ax, 4C00h
int 21h
code ends
end start
```

**Write Assembly language program to add two 32-bit numbers.**

```
data segment
str1 db 0ah, "Enter the first number: $"
str2 db 0ah, "Enter the second number: $"
str3 db 0ah, "Result= $"
num1 db 08 dup(?)
num2 db 08 dup(?)
num3 db 08 dup(9)
data ends
code segment
assume cs:code,ds:data
start:
mov ax,data
mov ds,ax
mov ah,09h
lea dx,str1
int 21h
mov cl,08h
lea si,num1
readnum1: mov ah,01h
int 21h
mov [si],al
inc si
loop readnum1
dec si
lea dx,str2
mov ah,09h
int 21h
lea di,num2
mov cl,08h
```

```

readnum2: mov ah,01h
int 21h
mov [di],al
inc di
loop readnum2
dec di
mov cl,08h
clc
adding: mov bh,[si]
mov bl,[di]
adc bh,bl
mov al,bh
mov ah,00h
aaa
mov [si],al
dec si
dec di
loop adding
lea dx,str3
mov ah,09h
int 21h
jnc next
mov dl,31h
mov ah,02h
int 21h
next: lea si,num1
mov cl,08h
DISPLAY: mov ah,02h
mov dl,[si]
add dl,30h
int 21h
inc si
loop display
mov ah,4ch
int 21h
code ends
end start

```

**Write a assembly language program to subtract a byte from a word.**

```
.model small .stack 100h
.data
b dw 08h
c dw 02h
msg DB " Subtraction of byte from a word is : $" ends
.code MAIN PROC mov ax, @data
mov ds, ax
lea dx, msg
mov ah, 09h
int 21h
mov ax, @data
mov ds, ax
mov bx, b
mov cx, c
sub bx, cx
add bx, 30h
mov ah, 02
mov dx, bx
int 21h
main end
end main
```