**Computer Organization & Assembly Language**

**Lab 03**

**Topics:**

1. Variables and Strings
2. Declaration of variables in data segment
3. Arithmetic Operations (MUL, DIV)

**Tasks:**

1. Write Assembly program to add two numbers using variables.

.model small

.stack 100h

.data

X db 5H

Y db 6H

.code

MOV AX,@DATA

MOV DS,AX

mov bl,X

mov cl,Y

add bl,cl

mov ah,4ch

int 21h

end

1. Write Assembly program to subtract two numbers using variables.

.model small

.stack 100h

.data

X db 6H

Y db 5H

.code

MOV AX,@DATA

MOV DS,AX

mov bl,X

mov cl,Y

sub bl,cl

mov ah,4ch

int 21h

end

1. Write Assembly program to multiply two numbers using variables.

.model small

.stack 100h

.data

X db 6H

Y db 5H

.code

MOV AX,@DATA

MOV DS,AX

mov bl,X

mov al,Y

mul bl

mov ah,4ch

int 21h

end

1. Write Assembly program to divide two numbers using variables.

.model small

.stack 100h

.data

X dw 0FH

Y db 3H

.code

MOV AX,@DATA

MOV DS,AX

mov ax,X

mov bl,Y

div bl

mov ah,4ch

int 21h

end

1. Declare and initialize string of your choice and store its length, size, and type in separate variables.

.model small

.stack 100h

.data

s db "Hamza",'$'

x db ?

y db ?

z db ?

.code

MOV AX,@DATA

MOV DS,AX

mov bl,lengthof s

mov x,bl

mov cl,sizeof s

mov y,cl

mov dl,type s

mov z,dl

mov ah,4ch

int 21h

end