**Computer Organization & Assembly Language**

**Lab 02**

**Topics:**

1. Details of Registers
2. Assembly Instructions
3. Addressing Modes
4. ASCII codes
5. Assembler Directives

**Tasks:**

1. Write an assembly language program to store your first name in memory.

.model small

.stack 100h

.data

.code

mov al,'H'

mov ah,'A'

mov bl,'M'

mov bh,'Z'

mov cl,'A'

mov ah, 4ch

int 21h

end

1. Write an assembly language program to increment and decrement any value stored in the registers in memory.

.model small

.stack 100h

.data

.code

mov al,48d

mov ah,48d

inc al

dec ah

mov ah, 4ch

int 21h

end

1. Write an assembly language program to exchange values in two registers.

.model small

.stack 100h

.data

.code

mov al,48d

mov ah,50d

xchg al,ah

mov ah, 4ch

int 21h

end

1. Write an assembly language program to take 2’s compliment of a number stored in register.

.model small

.stack 100h

.data

.code

mov al,01001000b

neg al

mov ah, 4ch

int 21h

end

1. Write an assembly language program to invert the bits of the register.

.model small

.stack 100h

.data

.code

mov al,01001000b

not al

mov ah, 4ch

int 21h

end

1. Write an assembly language program to add two values and see the values in memory.

.model small

.stack 100h

.data

.code

mov al,5h

mov ah,5h

add al,ah

mov ah, 4ch

int 21h

end

1. Write an assembly language program to subtract two values and see the values in memory.

.model small

.stack 100h

.data

.code

mov al,6h

mov ah,5h

sub al,ah

mov ah, 4ch

int 21h

end