**Assignment 1 –Bit manipulation**

;Susmita Rani Saha

include 'emu8086.inc'

org 100h

;AND

MOV AX,2

MOV BX,3

AND AX,BX

;XOR

MOV AX,4

MOV BX,5

XOR AX,BX

;SHL

MOV AX,56

SHL AX,1

;SHR

MOV AX,23

SHR AX,1

;SAL

MOV AX,12

SAL AX,1

;SAR

MOV AX,76

SAR AX,1

;ROL

MOV AX,34

ROL AX,1

;ROR

MOV AX,22

ROR AX,1

;RCL

STC

MOV AX,62

RCL AX,1

;RCR

STC

MOV AX,41

RCR AX,1

ret

**Assignment 2 – Arithmetic**

;Susmita Rani Saha

include 'emu8086.inc'

org 100h

;ADD

MOV AX,5

MOV BX,5

ADD AX,BX

;ADC

STC

MOV AX,5

MOV BX,4

ADC AX,BX

;INC

MOV AX,8

INC AX

;SUB

MOV AX,5

MOV BX,2

SUB AX,BX

;SBB

STC

MOV AX,5

MOV BX,3

SBB AX,BX

;DEC

MOV AX,6

DEC AX

;MUL

MOV AX,4

MOV BX,5

MUL BX

;DIV

MOV AX,10

MOV BX,3

DIV BX

Ret

**Assignment 3-Jump**

; Susmita Rani Saha

include 'emu8086.inc'

org 100h

PRINT 'Enter first Number :'

call scan\_num

mov ax,cx

PRINT 'Enter second Number :'

call scan\_num

mov bx,cx

PRINT 'Enter Third Number :'

call scan\_num

mov cx,cx

cmp ax,bx

jnl max1

mov ax,bx

max1:

cmp ax,cx

jnl max2

mov ax,cx

max2:

PRINT 'The Maximum Number of three Number is :'

call PRINT\_NUM

ret

DEFINE\_SCAN\_NUM

DEFINE\_PRINT\_NUM

DEFINE\_PRINT\_NUM\_UNS

Ends

**Assignment 4 –Loop**

; Susmita Rani Saha

include 'emu8086.inc'

org 100h

mov ax,00d

mov bx,01d

PRINT 'Enter The Number of Fibonacci Series :'

call scan\_num

dec cx

PRINT 'Fibonacci Series : '

call PRINT\_NUM

fibo:

mov dx,bx

add bx,ax

mov ax,dx

PRINT ','

call PRINT\_NUM

loop fibo

ret

DEFINE\_SCAN\_NUM

DEFINE\_PRINT\_NUM

DEFINE\_PRINT\_NUM\_UNS

Ends

**Assignment 5 –Shift & Rotation**

; Susmita Rani Saha

org 100h

;SHL

MOV AX,00010001b

SHL AX,1

;SHR

MOV AX,00100101b

SHR AX,1

;SAL

MOV AX,00101001b

SAL AX,1

;SAR

MOV AX,00101001b

SAR AX,1

;ROL

MOV AX,00001010b

ROL AX,1

;RCL

STC

MOV AX,01001001b

RCL AX,1

;ROR

MOV AX,00000100b

ROR AX,1

;RCR

STC

MOV AX,00001000b

RCR AX,1

Ret

**Assignment 6-Proc**

; Name : Susmita Rani Saha

include 'emu8086.inc'

org 100h

mov cx,8

mov dx,4

PRINT 'Two numbers are : '

mov ax,cx

call PRINT\_NUM

PRINT ' and '

mov ax,dx

call PRINT\_NUM

PRINTN

call ADDNUM

call SUBNUM

call MULNUM

call DIVNUM

ret

ADDNUM proc

mov ax,cx

mov bx,dx

ADD ax,bx

PRINT 'Summation of this two numbers is : '

call PRINT\_NUM

PRINTN

ret

ADDNUM endp

SUBNUM proc

mov ax,cx

mov bx,dx

SUB bx,ax

mov ax,bx

PRINT 'Subtraction of the first number from second number : '

call PRINT\_NUM

PRINTN

ret

SUBNUM endp

MULNUM proc

mov ax,cx

mov bx,dx

MUL bx

PRINT 'Multiplication of this two numbers is : '

call PRINT\_NUM

PRINTN

ret

MULNUM endp

DIVNUM proc

mov ax,8

mov bx,4

DIV bx

PRINT 'Division of the first number by second number is : '

call PRINT\_NUM

PRINTN

Ret

DIVNUM endp

DEFINE\_SCAN\_NUM

DEFINE\_PRINT\_NUM

DEFINE\_PRINT\_NUM\_UNS

Ends

**Assignment 8- I/o (Array)**

; Susmita Rani Saha

include 'emu8086.inc'

org 100h

.data

array dw 5 dup(?)

sum dw 0

ans dw 0

.code

mov ax,@data

mov ds,ax

PRINT 'Enter 4 numbers : '

mov cx,4

mov si,offset array

l1:

mov ah,01h

int 21h

sub al,48

mov [si],al

inc si

inc si

printn ""

loop l1

mov cx,4

mov si,offset array

l2:

mov ax,[si]

add sum,ax

inc si

inc si

loop l2

print "sum :"

mov ax,sum

call print\_num

printn ""

print "Average :"

mov ans,ax

cwd

mov bx,4d

div bx

call print\_num

ret

DEFINE\_PRINT\_NUM

DEFINE\_PRINT\_NUM\_UNS

Ends

**Assignment 9 – String**

;Susmita Rani Saha

include 'emu8086.inc'

org 100h

.data

str1 db 'I am Robot','$'

strlen dw $-str1

str2 db 20 dup('?')

.code

mov ax,@data

mov ds,ax

mov es,ax

mov cx,strlen

add cx,-2

lea si,str1

lea di,str2

add si,strlen

add si,-2

loop1:

mov al,[si]

mov [di],al

dec si

inc di

loop loop1

mov al,[si]

mov [di],al

inc di

mov dl,'$'

mov [di],dl

print:

mov ah,09h

lea dx,str2

int 21h

mov ax,4c00h

int 21h

ret