.MODEL SMALL

.386

.DATA

X DD ?

Y DD ?

C DB 0

MSG1 db 10,13,'Enter first number : $'

MSG2 db 10,13,'Enter second number : $'

MSG3 db 10,13,'Their sum is : $'

MSG4 db 10,13,'Their difference is : $'

.CODE

.STARTUP

;First Number

MOV DX,OFFSET MSG1

MOV AH,09

INT 21H

MOV DL,10

MOV AH,02

INT 21H

MOV EBX,0

MOV CX,8

L2 : SHL EBX,4

MOV AH,01

INT 21H

CMP AL,39H

JBE L1

SUB AL,7

L1 : SUB AL,30H

ADD BL,AL

LOOP L2

MOV DL,10

MOV AH,02

INT 21H

MOV X,EBX

;Second Number

MOV DX,OFFSET MSG2

MOV AH,09

INT 21H

MOV DL,10

MOV AH,02

INT 21H

MOV EBX,0

MOV CX,8

L4 : SHL EBX,4

MOV AH,01

INT 21H

CMP AL,39H

JBE L3

SUB AL,7

L3 : SUB AL,30H

ADD BL,AL

LOOP L4

MOV DL,10

MOV AH,02

INT 21H

MOV Y,EBX

MOV EAX,X

;Addition

MOV CX,4

L6 : ADD AL,C

; or ADD BL,C

ADD AL,BL

DAA

JNC L7

MOV C,1

JMP L8

L7 : MOV C,0

L8 : ROR EAX,8

ROR EBX,8

LOOP L6

MOV EBX,EAX

MOV DX,OFFSET MSG3

MOV AH,09

INT 21H

MOV DL,10

MOV AH,02

INT 21H

MOV CX,8

L9 : ROL EBX,4

MOV AL,BL

AND AL,0FH

CMP AL,9H

JBE L10

ADD AL,7H

L10 : ADD AL,30H

MOV DL,AL

MOV AH,02

INT 21H

LOOP L9

MOV DL,10

MOV AH,02

INT 21H

MOV DX,OFFSET MSG4

MOV AH,09

INT 21H

MOV DL,10

MOV AH,02

INT 21H

MOV EAX,X

MOV EBX,Y

MOV C,0

;Subtraction

CMP EAX,EBX

JAE L11

MOV DL,'-'

MOV AH,02

INT 21H

MOV EAX,X

XCHG EAX,EBX

L11 :MOV CX,4

L12 : SUB AL,C

;or ADD BL,C

SUB AL,BL

DAS

JNC L13

MOV C,1

JMP L14

L13 : MOV C,0

L14 : ROR EAX,8

ROR EBX,8

LOOP L12

MOV EBX,EAX

MOV CX,8

L15 : ROL EBX,4

MOV AL,BL

AND AL,0FH

CMP AL,9H

JBE L16

ADD AL,7H

L16 : ADD AL,30H

MOV DL,AL

MOV AH,02

INT 21H

LOOP L15

MOV DL,10

MOV AH,02

INT 21H

.EXIT

END