.MODEL SMALL

.STACK 100H

.DATA

; \*\*\*Mini Calculator\*\*\*

Msg00 DB "+--------------------------------------+$"

Msg0 DB "| Mini Assembly Calculator v1.0 |$"

Msg000 DB "+--------------------------------------+$"

Msg1 DB ": [1] Addition ;$"

Msg2 DB ": [2] Subtract ;$"

Msg3 DB ": [3] Multiply ;$"

Msg4 DB ": [4] Divide ;$"

Msg5 DB "Enter two numbers for Addition: $"

Msg6 DB "Enter two numbers for Subtraction: $"

Msg7 DB "Enter two numbers for Multiplication: $"

Msg8 DB "Enter two numbers for Division: $"

Msg9 DB "| Choose an option |$"

Msg10 DB "RESULT (Decimal) : $"

Msg11 DB "Thank You for Using Our Assembly Calculator! $"

Msg12 DB "Please Enter an Valid option : $"

Msg13 DB "RESULT (Binary) : $"

Msg14 DB "RESULT (Hexadecimal) : $"

Msg15 DB "Remainder : $"

Msg16 DB "Just type 1 to perform another calculation $"

Msg17 DB "To EXIT,type : 2 $"

Msg18 DB "Error 404! $"

.CODE

MAIN PROC

MOV AX,@DATA

MOV DS,AX

LEA DX,Msg00

MOV AH,9

INT 21H

call NL

LEA DX,Msg0

MOV AH,9

INT 21H

call NL

LEA DX,Msg000

MOV AH,9

INT 21H

call NL

START:

call NL

LEA DX,Msg1

MOV AH,9

INT 21H

CALL NL

LEA DX,Msg2

MOV AH,9

INT 21H

CALL NL

LEA DX,Msg3

MOV AH,9

INT 21H

CALL NL

LEA DX,Msg4

MOV AH,9

INT 21H

CALL NL

call NL

LEA DX,Msg00

MOV AH,9

INT 21H

call NL

LEA DX,Msg9

MOV AH,9

INT 21H

call NL

LEA DX,Msg000

MOV AH,9

INT 21H

call NL

CALC:

MOV AH,1

INT 21H

MOV BL,AL

CALL NL

CALL NL

CMP BL,'1'

JE ADDD

CMP BL,'2'

JE SUBB

CMP BL,'3'

JE MULL

CMP BL,'4'

JE DIVV

LEA DX,Msg12

MOV AH,9

INT 21H

JMP CALC

ADDD:

LEA DX,Msg5

MOV AH,9

INT 21H

MOV AH,1

INT 21H

MOV BL,AL

MOV AH,2

MOV DL,'+'

INT 21H

MOV AH,1

INT 21H

MOV CL,AL

ADD BL,CL

MOV BH,BL

SUB BL,48

CMP BL,'9'

JG I

CALL NL

CALL NL

CALL DR

MOV AH,2

MOV DL,BL

INT 21H

CALL NL

CALL HR

CALL NL

CALL BR

CALL NL

CALL NL

LEA DX,Msg16

MOV AH,9

INT 21H

CALL NL

LEA DX,Msg17

MOV AH,9

INT 21H

CALL NL

LEA DX,Msg9

MOV AH,9

INT 21H

MOV AH,1

INT 21H

MOV BL,AL

CMP BL,'1'

JE START

CALL NL

CALL NL

CALL TNX

JMP EXIT

SUBB:

LEA DX,Msg6

MOV AH,9

INT 21H

MOV AH,1

INT 21H

MOV BL,AL

MOV AH,2

MOV DL,'-'

INT 21H

MOV AH,1

INT 21H

MOV CL,AL

CMP BL,CL

JL J

SUB BL,CL

CMP BL,'9'

JG J

ADD BL,48

CALL NL

CALL NL

CALL DR

MOV AH,2

MOV DL,BL

INT 21H

CALL NL

CALL HR

CALL NL

CALL BR

CALL NL

CALL NL

LEA DX,Msg16

MOV AH,9

INT 21H

CALL NL

LEA DX,Msg17

MOV AH,9

INT 21H

CALL NL

LEA DX,Msg9

MOV AH,9

INT 21H

MOV AH,1

INT 21H

MOV BL,AL

CMP BL,'1'

JE START

CALL NL

CALL NL

CALL TNX

JMP EXIT

MULL:

LEA DX,Msg7

MOV AH,9

INT 21H

MOV AX,0

MOV BX,0

MOV CX,0

MOV DX,0

MOV AH,1

INT 21H

SUB AL,48

MOV CL,AL

MOV CH,0

MOV AH,2

MOV DL,'\*'

INT 21H

MOV AH,1

INT 21H

SUB AL,48

MOV BL,AL

MOV BH,0

MOV AX,CX

MUL BX

MOV CX,AX

ADD CL,48

CMP CL,'9'

JG K

CALL NL

CALL NL

CALL DR

MOV AH,2

MOV DL,CL

INT 21H

MOV BL,CL

CALL NL

CALL HR

CALL NL

CALL BR

CALL NL

CALL NL

LEA DX,Msg16

MOV AH,9

INT 21H

CALL NL

LEA DX,Msg17

MOV AH,9

INT 21H

CALL NL

LEA DX,Msg9

MOV AH,9

INT 21H

MOV AH,1

INT 21H

MOV BL,AL

CMP BL,'1'

JE START

CALL NL

CALL NL

CALL TNX

JMP EXIT

DIVV:

LEA DX,Msg8

MOV AH,9

INT 21H

MOV AX,0

MOV BX,0

MOV CX,0

MOV DX,0

MOV AH,1

INT 21H

SUB AL,48

MOV CL,AL

MOV AH,2

MOV DL,'/'

INT 21H

MOV AH,1

INT 21H

SUB AL,48

CMP AL,0

JE L

MOV BL,AL

CMP CL,BL

JL L

MOV AX,CX

DIV BL

MOV CX,AX

ADD CL,48

CALL NL

CALL NL

CALL DR

MOV AH,2

MOV DL,CL

INT 21H

MOV BL,CL

call NL

LEA DX,Msg15

MOV AH,9

INT 21H

MOV CL,CH

ADD CL,48

MOV BH,CL

MOV AH,2

MOV DL,CL

INT 21H

CALL NL

CALL HR

call NL

LEA DX,Msg15

MOV AH,9

INT 21H

MOV AH,2

MOV DL,'3'

INT 21H

MOV DL,BH

INT 21H

MOV DL,'h'

INT 21H

CALL NL

CALL BR

call NL

LEA DX,Msg15

MOV AH,9

INT 21H

ADD BL,BH

CALL BR1

CALL NL

CALL NL

LEA DX,Msg16

MOV AH,9

INT 21H

CALL NL

LEA DX,Msg17

MOV AH,9

INT 21H

CALL NL

LEA DX,Msg9

MOV AH,9

INT 21H

MOV AH,1

INT 21H

MOV BL,AL

CMP BL,'1'

JE START

CALL NL

CALL NL

CALL TNX

JMP EXIT

NL:

MOV AH,2

MOV DL,13

INT 21H

MOV DL,10

INT 21H

RET

TNX:

LEA DX,Msg11

MOV AH,9

INT 21H

RET

DR:

LEA DX,Msg10

MOV AH,9

INT 21H

RET

BR:

LEA DX,Msg13

MOV AH,9

INT 21H

SUB BL,48

MOV CX,8

TOP:

SHL BL,1

JC ONE

MOV AH,2

MOV DL,'0'

INT 21H

LOOP TOP

JMP NEXT

ONE:

MOV AH,2

MOV DL,'1'

INT 21H

LOOP TOP

NEXT:

RET

HR:

LEA DX,Msg14

MOV AH,9

INT 21H

MOV AH,2

MOV DL,'3'

INT 21H

MOV DL,BL

INT 21H

MOV DL,'h'

INT 21H

RET

BR1:

SUB BL,48

MOV CX,8

TOP1:

SHL BL,1

JC ONE1

MOV AH,2

MOV DL,'0'

INT 21H

LOOP TOP1

JMP NEXT1

ONE1:

MOV AH,2

MOV DL,'1'

INT 21H

LOOP TOP1

NEXT1:

RET

I:

CALL NL

CALL NL

LEA DX,Msg18

MOV AH,9

INT 21H

CALL NL

JMP ADDD

J:

CALL NL

CALL NL

LEA DX,Msg18

MOV AH,9

INT 21H

CALL NL

JMP SUBB

K:

CALL NL

CALL NL

LEA DX,Msg18

MOV AH,9

INT 21H

CALL NL

JMP MULL

L:

CALL NL

CALL NL

LEA DX,Msg18

MOV AH,9

INT 21H

CALL NL

JMP DIVV

DISPLAY\_GREEN\_RESULT:

MOV AH,09H

MOV AL, BL

MOV BL, 0AH ; Green color

MOV CX, 1

INT 10H

RET

DISPLAY\_RED\_RESULT:

MOV AH,09H

MOV AL, BL

MOV BL, 0CH ; Red color

MOV CX, 1

INT 10H

RET

DISPLAY\_BLUE\_RESULT:

MOV AH,09H

MOV AL, BL

MOV BL, 09H ; Blue color

MOV CX, 1

INT 10H

RET

DISPLAY\_Magenta\_RESULT:

MOV AH,09H

MOV AL, BL

MOV BL, 0DH ; Magenta color

MOV CX, 1

INT 10H

RET

EXIT:

MOV AH,4CH

INT 21H

MAIN ENDP

END MAIN