

Assembly language Lab

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Submitted by:

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1. Factorial of any number

TITLE FACTORIAL NUMBER

.MODEL SMALL

.STACK 10H

.CODE

MAIN PROC

MOV BH,0

MOV BL,10D

INPUT:

MOV AH,1

INT 21H

CMP AL,13D

JNE NUMBER

AND CX,0

MOV CL,BH

DEC CX

AND AX,0

MOV AL,BH

JMP FACT

NUMBER:

SUB AL,30H

MOV CL,AL

MOV AL,BH

MUL BL

ADD AL,CL

MOV BH,AL

JMP INPUT

FACT:

MUL CX

LOOP FACT

AND DX,0

MOV CX,10D

```
MOV BX,0000H
```

```
STORE:  
DIV CX  
MOV [0000H+BX],DX  
ADD BX,2H  
MOV DX,0  
CMP AX,0  
JNE STORE
```

```
MOV AH,2  
MOV DL,0DH  
INT 21H  
MOV DL,0AH  
INT 21H
```

```
PRINT:  
SUB BX,2H  
MOV DL,[0000H+BX]  
ADD DL,30H  
INT 21H  
CMP BX,0  
JNE PRINT
```

```
MAIN ENDP  
END MAIN
```

2. Equation: $3A + B - 2C$

```
INCLUDE 'EMU8086.INC'  
TITLE EQUATION_SOLVING 3A+B-2C  
.MODEL SMALL  
.STACK 100H  
.DATA  
    A DB ?  
    B DB ?  
    C DB ?  
    CNST1 DB 3  
    CNST2 DB 2  
  
.CODE  
MAIN PROC  
    MOV AX, @DATA  
    MOV DS, AX
```

```
PRINT "VALUE OF A: "  
MOV AH, 01  
INT 21H  
SUB AL, 48  
MUL CNST1  
MOV A, AL
```

```
PRINTN  
PRINT "VALUE OF B: "  
MOV AH, 01  
INT 21H  
SUB AL, 48  
ADD AL, A  
MOV B, AL
```

```
PRINTN  
PRINT "VALUE OF C: "  
MOV AH, 01  
INT 21H  
SUB AL, 48  
MUL CNST2  
SUB AL, B  
MOV C, AL  
ADD C, 48
```

```
PRINTN  
PRINT "RESULT: "  
MOV AH, 02  
MOV DL, C  
INT 21H
```

```
EXIT:  
MOV AH, 4CH  
INT 21H  
MAIN ENDP  
END MAIN
```

3. Addition of last 4 digit of ID and Date: 11182020

```
INCLUDE 'EMU8086.INC'
TITLE EQUATION_SOLVING 3A+B-2C
.MODEL SMALL
.STACK 100H
.DATA
    A DB ?
    B DB ?
    C DB ?
    CNST1 DB 3
    CNST2 DB 2

.CODE
MAIN PROC
    MOV AX, @DATA
    MOV DS, AX

    PRINT "VALUE OF A: "
    MOV AH, 01
    INT 21H
    SUB AL, 48
    MUL CNST1
    MOV A, AL

    PRINTN
    PRINT "VALUE OF B: "
    MOV AH, 01
    INT 21H
    SUB AL, 48
    ADD AL, A
    MOV B, AL

    PRINTN
    PRINT "VALUE OF C: "
    MOV AH, 01
    INT 21H
```

```
SUB AL, 48  
MUL CNST2  
SUB AL, B  
MOV C, AL  
ADD C, 48
```

```
PRINTN  
PRINT "RESULT: "  
MOV AH, 02  
MOV DL, C  
INT 21H
```

```
MAIN ENDP  
END MAIN
```