

NAME :- DIVYA PRAVIN PATIL
CLASS :- SE COMPUTER
ROLL NO :- 45
BATCH :- B2
EXPERIMENT NO :- 7
TITLE:- FACTORIAL OF A NUMBER.
AIM :- Write an 8086 Assembly Language Program to find out
Factorial of a number using Recursive Procedure(0 to 8 Range)

```
DATA SEGMENT
    NUMBER DW 0004H
    HEX_CHART DB '0123456789ABCDEF'
    LSB_OF_RESULT DB ?
    MSB_OF_RESULT DB ?
    H_ATTACH DB 'H'
    MSG DB 'FACTORIAL IS :-$'
```

DATA ENDS

CODE SEGMENT

```
    ASSUME CS:CODE,DS:DATA
```

```
    MOV AX,DATA
```

```
    MOV DS,AX
```

```
    LEA DX,MSG
```

```
    MOV AH,09H
```

```
    INT 21H
```

```
    MOV AX,NUMBER
```

```
    MOV CX,NUMBER
```

```
    CALL FACTORIA
```

```
EXIT:MOV MSB_OF_RESULT,AH
```

```
    MOV LSB_OF_RESULT,AL
```

```
    MOV AL,MSB_OF_RESULT
```

```
    AND AL,0F0H
```

```
    MOV CL,04H
```

```
    ROR AL,CL
```

```
    CALL DISP_CHAR
```

```
    MOV AL,MSB_OF_RESULT
```

```
    AND AL,0FH
```

```
    CALL DISP_CHAR
```

```
    MOV AL,LSB_OF_RESULT
```

```
    AND AL,0F0H
```

```
    MOV CL,04H
```

```
    ROR AL,CL
```

```
    CALL DISP_CHAR
```

```
    MOV AL,LSB_OF_RESULT
```

```
    AND AL,0FH
```

```

        CALL DISP_CHAR

        MOV DL,H_ATTACH
        MOV AH,02H
        INT 21H

        JMP LAST

FACTORIAL PROC NEAR
        CMP CX,01
        JG N1
        MOV AX,01
        JMP EXIT
N1:CALL CALCULATION
        RET
FACTORIAL ENDP

CALCULATION PROC NEAR
        DEC CX
        MUL CX
        CMP CX,01
        JE EXIT
        CALL FACTORIAL
        RET
CALCULATION ENDP

DISP_CHAR PROC NEAR
        MOV BX,00H
        MOV BL,AL
        MOV DL,HEX_CHART[BX]
        MOV AH,02H
        INT 21H
        RET
DISP_CHAR ENDP

LAST:MOV AH,4CH
        INT 21H
CODE ENDS
END

OUTPUT:- FACTORIAL IS :-0018H

```