Write an assembly language program of factorial with carry in 8085 microprocessor

```
lxi h,0000H;
mov D,m;
INR D;
MVI B,1;
MVI C,0;
MVI E,0;
MVI L,1;
LOOP:   MVI A,0;
        LOOP1: ADD L;
                JNC NOCARRY;
                INR C;
        NOCARRY: DCR B;
        JZ NEXT;
        JMP LOOP1;
        NEXT: MOV E,A;
                MOV A,L;
                INR A;
                CMP D;
                JZ END;
                INR L;
                MOV B,E;
                MOV H,C;
                MVI A,0;
                PRECARRY: ADD L;
                DCR H;
                JNZ PRECARRY;
                MOV C,A;
                JMP LOOP;
         END: MOV A,E;
        STA 0002;
MOV A,C;
STA 0001;
        HLT;
```

Observation:

6!=> 2001: 02 2002: 208

we know that value of 6! is 720(i.e. 256+256+208), 8085 use 8bit memory so memory over flow become two times that represent carry 02 and remaining value is 208

7!=> 2001: 19 2002: 176

we know that value of 7! is 5040 (i.e.256*19+176), 8085 use 8bit memory so memory over flow become 19 times that represent carry 19 and remaining value is 176

8!=> 2001: 128 2002: 157

we know that value of 8! is 40320 (i.e.256*157+128), 8085 use 8bit memory so memory over flow become 157 times that represent carry 157 and remaining value is 128

Output:

Input values at 0000 address	Output value at 2002	Carry at 2001
1	1	0
2	2	0
3	6	0
4	24	0
5	120	0
6	208	02
7	176	19
8	128	157
0	1	0