```
; Q 5>  Arrange a set of given numbers in ascending order
;       using bubble sort algorithm

    SU      4300h
            [4300h]    =   05h         ; A.length = 5
            [4301h]    =   01h         ; A[0] = 5
            [4302h]    =   02h         ; A[1] = 3
            [4303h]    =   03h         ; A[2] = 1
            [4304h]    =   04h         ; A[3] = 4
            [4305h]    =   05h         ; A[4] = 2
                .

    A
    ORG 4200h
        lxi     h, 4300h
        mov     c, M
        inx     h
        dcr     c
        mvi     d, 0
        loop_pri:
        mov     a, d
        cmp     c
        jp      loop_pri_end
        jz      loop_pri_end
        mov     e, c
        loop_sec:
        mov     a, e
        cmp     d
        jm      loop_sec_end
        jz      loop_sec_end
        push    h
        mov     a, l
        add     e
        mov     l, a
        mov     a, h
        aci     0
        mov     h, a
        mov     a, M
        dcx     h
        mov     b, M
        cmp     b
        jp      dont_swap
        jz      dont_swap
        mov     M, a
        inx     h
        mov     M, b
        dont_swap:
        pop     h
        dcr     e
        jmp     loop_sec
        loop_sec_end:
        inr     d
        jmp     loop_pri
```

```
    loop_pri_end:
    hlt

    .


G       4200h
INT                                 ; (try '.' here)


SU      4300h
[4300h]    ->  05h          ; A.length = 5
[4301h]    ->  01h          ; A[0] = 1
[4302h]    ->  03h          ; A[1] = 2
[4303h]    ->  05h          ; A[2] = 3
[4304h]    ->  02h          ; A[3] = 4
[4305h]    ->  04h          ; A[4] = 5

.
```