```
; Q 5>
;   a>  Split a given array of 8bit numbers into two different
;       arrays containing odd and even numbers
    SU      4300h
            [4300h]     =   10h         ; addr. of Odd Array
            [4301h]     =   43h         ;
            [4302h]     =   20h         ; addr. of Even Array
            [4303h]     =   43h         ;
            [4304h]     =   05h         ; A.length = 5
            [4305h]     =   01h         ; A[0] = 1
            [4306h]     =   02h         ; A[1] = 2
            [4307h]     =   03h         ; A[2] = 3
            [4308h]     =   04h         ; A[3] = 4
            [4309h]     =   05h         ; A[4] = 5
            .

    A
    ORG 4200h
        lda     4304h
        mov     b, a
        push    b
        lhld    4300h
        push    h
        pop     b
        lhld    4302h
        push    h
        pop     d
        lxi     h, 4305h
        main_loop:
        mov     a, M
        ani     1
        jz      is_even
        mov     a, M
        stax    b
        inx     b
        jmp     is_common
        is_even:
        mov     a, M
        stax    d
        inx     d
        is_common:
        inx     h
        lda     4304h
        dcr     a
        sta     4304h
        jnz     main_loop
        pop     b
        mov     a, b
        sta     4304h
        hlt
        .

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

    SU      4310h
    [4310h]     ->  01h         ; Odd[0] = 1
    [4311h]     ->  03h         ; Odd[1] = 3
    [4312h]     ->  05h         ; Odd[2] = 5
    SU      4320h
    [4320h]     ->  02h         ; Even[0] = 2
    [4321h]     ->  04h         ; Even[1] = 4
    .



;   b>  Split a given array of 8bit numbers into two different
;       arrays containing odd and even elements
    SU      4300h
            [4300h]     =   10h         ; addr. of Odd Array
            [4301h]     =   43h         ;
            [4302h]     =   20h         ; addr. of Even Array
            [4303h]     =   43h         ;
            [4304h]     =   05h         ; A.length = 5
            [4305h]     =   02h         ; A[0] = 2
            [4306h]     =   04h         ; A[1] = 4
            [4307h]     =   06h         ; A[2] = 6
            [4308h]     =   08h         ; A[3] = 8
            [4309h]     =   0Ah         ; A[4] = 10
            .

    A
    ORG 4200h
        lda     4304h
        mov     b, a
        push    b
        lhld    4300h
        push    h
        pop     b
        lhld    4302h
        push    h
        pop     d
        lxi     h, 4305h
        main_loop:
        mov     a, M
        stax    b
        inx     b
        inx     h
        lda     4304h
        dcr     a
        sta     4304h
        jz      main_end
        mov     a, M
        stax    d
        inx     d
        inx     h
        lda     4304h
        dcr     a
        sta     4304h
        jnz     main_loop
        main_end:
        pop     b
        mov     a, b
        sta     4304h
        hlt
        .

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

    SU      4310h
    [4310h]     ->  02h         ; Odd[0] = 2
    [4311h]     ->  06h         ; Odd[1] = 6
    [4312h]     ->  0Ah         ; Odd[2] = 10
    SU      4320h
    [4320h]     ->  04h         ; Even[0] = 4
    [4321h]     ->  08h         ; Even[1] = 8
    .



;   c>  Move the content of a block of memory to another
;       memory location using stack pointer
    SU      4300h
            [4300h]     =   10h         ; addr. of Dest Block
            [4301h]     =   43h         ;
            [4302h]     =   05h         ; Src.length = 5
            [4303h]     =   02h         ; Src[0] = 1
            [4304h]     =   04h         ; Src[1] = 2
            [4305h]     =   06h         ; Src[2] = 3
            [4306h]     =   08h         ; Src[3] = 4
            [4307h]     =   0Ah         ; Src[4] = 5
            .

    A
    ORG 4200h
        lhld    4300h
        lda     4302h
        add     l
        mov     l, a
        mov     a, h
        aci     0
        mov     h, a
        sphl
        lxi     h, 4302h
        mov     c, M
        mov     a, c
        add     l
        mov     l, a
        mov     a, h
        aci     0
        mov     h, a
        move_loop:
        mov     b, M
        dcx     h
        push    b
        inx     sp
        dcr     c
        jnz     move_loop
        hlt
        .

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

    SU      4310h
    [4310h]     ->  01h         ; Dest[0] = 1
    [4311h]     ->  02h         ; Dest[1] = 2
    [4312h]     ->  03h         ; Dest[2] = 3
    [4313h]     ->  04h         ; Dest[0] = 4
    [4314h]     ->  05h         ; Dest[1] = 5
    .
```