```
; Q 4>
;   a>  To store the elements of a given array in 2 separate arrays
;       comprising of even and odd elements
    SW      2000h
            [2000h]     =   2006h       ; Address of source array A[]
            [2002h]     =   2014h       ; Address to even array E[]
            [2004h]     =   2024h       ; Address to odd array O[]
            [2006h]     =   0006h       ; A.length = 6
            [2008h]     =   0001h       ; A[0] = 1
            [200Ah]     =   0002h       ; A[1] = 2
            [200Ch]     =   0003h       ; A[2] = 3
            [200Eh]     =   0004h       ; A[3] = 4
            [2010h]     =   0005h       ; A[4] = 5
            [2012h]     =   0006h       ; A[5] = 6
            .

    A
    1000h
        mov     bx, [2000h]
        mov     si, [2002h]
        mov     di, [2004h]
        mov     ax, [bx]
        push    ax
        mov     bp, sp
        add     bx, 0002h
        add     si, 0002h
        add     di, 0002h
        mov     cx, 0000h
        mov     dx, 0000h
        loop_label:
        mov     ax, [bx]
        test    ax, 0001h
        jnz     odd_num
        mov     [si], ax
        add     si, 0002h
        inc     cx
        jmp     loop_comm
        odd_num:
        mov     [di], ax
        add     di, 0002h
        inc     dx
        loop_comm:
        add     bx, 0002h
        dec     [bp]
        jnz     loop_label
        pop     ax
        mov     [2014h], cx
        mov     [2024h], dx
        hlt
        .

    GO      1000h
    INT                     ;(try '.' here)
```

```
    SW      2014h                       ; ans = 0003h => E.length = 3
    SW      2016h                       ; ans = 0002h => E[0] = 2
    SW      2018h                       ; ans = 0004h => E[1] = 4
    SW      201Ah                       ; ans = 0006h => E[2] = 6
    SW      2024h                       ; ans = 0003h => O.length = 3
    SW      2026h                       ; ans = 0001h => O[0] = 1
    SW      2028h                       ; ans = 0003h => O[1] = 3
    SW      202Ah                       ; ans = 0005h => O[2] = 5
    .



;   b>  To move the contents from a block in a memory location to a
;       different memory location using stack
    SW      2000h
            [2000h]     =   2006h       ; Source Block Address SRC
            [2002h]     =   2010h       ; Destination Block Address DST
            [2004h]     =   000Ah       ; Transfer Size SZ = 10
            [2006h]     =   0001h       ; 00h, 01h
            [2008h]     =   0002h       ; 00h, 02h
            [200Ah]     =   0003h       ; 00h, 03h
            [200Ch]     =   0004h       ; 00h, 04h
            [200Eh]     =   0005h       ; 00h, 05h
            .

    A
    1000h
        mov     si, [2000h]
        mov     di, [2002h]
        mov     cx, [2004h]
        add     di, cx
        dec     di
        mov     ax, 0000h
        loop_label1:
        mov     al, [si]
        push    ax
        inc     si
        dec     cx
        jnz     loop_label1
        mov     cx, [2004h]
        loop_label2:
        pop     ax
        mov     [di], al
        dec     di
        dec     cx
        jnz     loop_label2
        hlt
        .

    GO      1000h
    INT                     ;(try '.' here)
```

```
SW      2010h                   ; ans = 0001h
SW      2012h                   ; ans = 0002h
SW      2014h                   ; ans = 0003h
SW      2016h                   ; ans = 0004h
SW      2018h                   ; ans = 0005h
```