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dosseg
.model small
.stack 100h
.data
    arr db 6 dup(?)           ; array of 6 numbers to input
    msg1 db 'Enter 6 numbers: $'
    msg2 db 'You entered: $'
    msg3 db 13, 10, 'Sum: $'  ; new line and label for sum
    newline db 13, 10, '$'    ; new line
    sum db 0                   ; to store the sum
.code
main proc
    mov ax, @data              ; initialize data segment
    mov ds, ax

    mov cx, 6                  ; counter for loop
    mov si, offset arr         ; address of array

    ; Prompt for input
    lea dx, msg1
    mov ah, 9
    int 21h

    ; Input Loop
loopInput:
    mov ah, 1                  ; input character
    int 21h
    sub al, '0'                ; convert ASCII to integer
    mov [si], al               ; store input in array
    inc si                     ; move to next array element
    loop loopInput

    ; New Line
    lea dx, newline
    mov ah, 9
    int 21h

    ; Display entered numbers
    mov si, offset arr
    lea dx, msg2
    mov ah, 9
    int 21h

    mov cx, 6                  ; reset counter
loopOutput:

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    mov al, [si]
    add al, '0'           ; convert integer to ASCII
    mov dl, al
    mov ah, 2
    int 21h
    inc si
    loop loopOutput

; New Line
lea dx, newline
mov ah, 9
int 21h

; Calculate sum
mov si, offset arr
xor al, al               ; clear AL register (will hold sum)
mov cl, 6                ; counter for sum loop
loopSum:
    add al, [si]
    inc si
    loop loopSum
    mov sum, al          ; store the sum

; Display sum
lea dx, msg3
mov ah, 9
int 21h

mov al, sum
add al, '0'             ; convert sum to ASCII
mov dl, al
mov ah, 2
int 21h

; Exit program
mov ah, 4Ch
int 21h
main endp
end main

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