```
TITLE Reverse Array, Version 1 (ReverseArray.asm)
; Author: Stephen Devaney
; Last Updated: 10/29/2019
; For Professor Victor Sheng's CS 2350-001 course at TTU

; This program uses a loop with indirect addressing to
; reverse the elements of an integer array in place. The
; program uses SIZEOF, TYPE, and LENGTHOF to try to remain
; flexible for future changes. The program uses DUMPMEM
; to display both the orginal array and the reversed array

INCLUDE Irvine32.inc
.data
array BYTE 1,2,3,4,5,6,7,8,9
Onotification BYTE 0dh, 0ah,"Array before changes: ", 0
Rnotification BYTE 0dh, 0ah,"Array after changes: ", 0

.code
main PROC
;display orginal array prior to changing array
        MOV EDX, offset Onotification
        CALL WRITESTRING
        MOV ESI, OFFSET array
        MOV ECX, LENGTHOF array
        MOV EBX, TYPE array
        CALL DUMPMEM

        MOV ECX, LENGTHOF array/2 ;loop counter is half of the elements
        MOV ESI, OFFSET array ;address of the front array
        MOV EDI, OFFSET array + SIZEOF array - TYPE array ;address of the rear

ReverseLoop:
        MOV BL, [ESI] ;Temp = source
        MOV AL, [EDI] ;Source = Destination
        MOV [ESI], AL
        MOV [EDI], BL ;Destination = Temp
        ADD ESI, TYPE array ;move to next element at front of array
        SUB EDI, TYPE array ;move to next element at end of array
LOOP ReverseLoop

;display reversed array after changeing array
        MOV EDX, offset Rnotification
        CALL WRITESTRING
        MOV ESI, OFFSET array
        MOV ECX, LENGTHOF array
        MOV EBX, TYPE array
        CALL DUMPMEM

exit
main ENDP
```

```
END main
```