```
/* Program that finds the largest number in a list of integers  */

            .text                   // executable code follows
            .global _start
_start:
            MOV     R4, #RESULT     // R4 points to result location
            LDR     R0, [R4, #4]    // R0 holds the number of elements in the list
            ADD     R1, R4, #8      // R1 points to the start of the list
            BL      LARGE
            STR     R0, [R4]        // R0 holds the subroutine return value

END:        B       END

/* Subroutine to find the largest integer in a list
 * Parameters: R0 has the number of elements in the lisst
 *             R1 has the address of the start of the list
 * Returns: R0 returns the largest item in the list
 */
LARGE:      MOV     R2, R0          // R2 now has number of elements in the list
            LDR     R0, [R1]        // R0 holds the largest number so far

LOOP:       SUBS    R2, R2, #1      // Decrement loop counter
            BEQ     DONE            // Loop ends when R2 reaches 0
            ADD     R1, #4          // Go to the next number's address
            LDR     R3, [R1]        // Get the next number
            CMP     R0, R3          // Check if larger number found
            BGE     LOOP            // If not found do not update and go to next
            iteration
            MOV     R0, R3          // Update largest number
            B       LOOP            // Go to next iteration

DONE:       MOV     pc, lr          // Return to main
// End of LARGE subroutine

RESULT:     .word   0
N:          .word   7           // number of entries in the list
NUMBERS:    .word   4, 5, 3, 6  // the data
            .word   1, 8, 2

            .end
```