```
 1 ;------------------------------------------------------------
   ------------
 2 ; MSP430 Assembler Code Template for use with TI Code Composer
   Studio
 3 ;
 4 ;
 5 ;------------------------------------------------------------
   ------------
 6          .cdecls C,LIST,"msp430.h"        ; Include device header
   file
 7
 8 ;------------------------------------------------------------
   ------------
 9          .def    RESET                    ; Export program
   entry-point to
10                                           ; make it known to
   linker.
11 ;------------------------------------------------------------
   ------------
12          .data
13          .retain                          ; Override ELF
   conditional linking
14                                           ; and retain current
   section.
15          .retainrefs                      ; And retain any
   sections that have
16                                           ; references to current
   section.
17
18
19 count:  .space 2
20
21 ;------------------------------------------------------------
   ------------
22 ;    Countthe number of negative elements in the array
23 ;------------------------------------------------------------
   ------------
24          .text                            ; Assemble into program
   memory.
25          .retain                          ; Override ELF
```

```
        conditional linking
26                                          ; and retain current
    section.
27          .retainrefs                     ; And retain any
    sections that have
28                                          ; references to current
    section.
29 array:  .word -11, -300, -28, -11, 99, -41, -310, -11, 121, -99
30 ;----------------------------------------------------------------
    ------------
31 RESET       mov.w   #__STACK_END,SP         ; Initialize
    stackpointer
32 StopWDT     mov.w   #WDTPW|WDTHOLD,&WDTCTL  ; Stop watchdog timer
33
34
35 ;----------------------------------------------------------------
    ------------
36 ; Main loop here
37 ;----------------------------------------------------------------
    ------------
38          mov.w   #0, &count
39     ; for loop
40          mov.w   #0, R5   ; arrray index
41 for_cond:
42          cmp.w #20, R5
43          jge for_break
44     ; if structure
45
46          cmp.w #0, array(R5)
47          jge if_break
48
49          inc.w &count
50
51 if_break:
52     ; end if structure
53
54          incd.w R5
55          jmp for_cond
56
57 for_break:
```

```
58      ; end for loop
59
60 loop:    jmp loop
61      nop
62
63
64 ;------------------------------------------------------------------------
   ------------
65 ; Stack Pointer definition
66 ;------------------------------------------------------------------------
   ------------
67              .global __STACK_END
68              .sect   .stack
69
70 ;------------------------------------------------------------------------
   ------------
71 ; Interrupt Vectors
72 ;------------------------------------------------------------------------
   ------------
73              .sect   ".reset"                ; MSP430 RESET Vector
74              .short  RESET
75
76
```