main.asm

```
;-------------------------------------------------------------------------------
; MSP430 Assembler Code Template for use with TI Code Composer Studio
;
;
;-------------------------------------------------------------------------------
            .cdecls C,LIST,"msp430.h"       ; Include device header file

;-------------------------------------------------------------------------------
            .def    RESET                   ; Export program entry-point to
                                            ; make it known to linker.
;-------------------------------------------------------------------------------
            .data
            .retain                         ; Override ELF conditional linking
                                            ; and retain current section.
            .retainrefs                     ; And retain any sections that have
                                            ; references to current section.


max:    .space 2

;-------------------------------------------------------------------------------
;   Determine the maximum element of the array
;-------------------------------------------------------------------------------
            .text                           ; Assemble into program memory.
            .retain                         ; Override ELF conditional linking
                                            ; and retain current section.
            .retainrefs                     ; And retain any sections that have
                                            ; references to current section.
array:  .word -31, 302, 0, -3, 289, -44, -321, 33, 221, -99
;-------------------------------------------------------------------------------
RESET       mov.w   #__STACK_END,SP         ; Initialize stackpointer
StopWDT     mov.w   #WDTPW|WDTHOLD,&WDTCTL  ; Stop watchdog timer


;-------------------------------------------------------------------------------
; Main loop here
;-------------------------------------------------------------------------------

    ; for loop start
        mov.w   #0, R5  ; arrray index
        mov.w   array(R5), &max ; initialize max by the first element of the array
                               ; you could have initialized max by any element of the array
for_cond:
        cmp.w #20, R5
        jge for_break

    ; if structure start
        cmp.w array(R5), &max
        jge if_break

        mov.w array(R5), &max

if_break:
    ; end if structure

        incd.w R5 ; incd and not inc becasue we have a word sized array, not a byte sized
        jmp for_cond
```

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for_break:
    ; end for loop

loop:   jmp loop


;-------------------------------------------------------------------------------
; Stack Pointer definition
;-------------------------------------------------------------------------------
            .global __STACK_END
            .sect   .stack

;-------------------------------------------------------------------------------
; Interrupt Vectors
;-------------------------------------------------------------------------------
            .sect   ".reset"                ; MSP430 RESET Vector
            .short  RESET


```