Write a MIPS assembly program, and execute it using the SPIM simulator, that determines the maximum and minimum values of an array. The results are to be stored in memory locations named max and min, respectively.

For example, assume that the following memory is defined:

```
data
n:  .word 10      # Number of elements in the array
arr: .word 54, 234, 345, 62, 3, 12, 972, 60, 543, 123 # array values
max: .space 4
min: .space 4
```

Your program should place the maximum value (972) in the memory location named max, and the minimum value (3) into min.