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`. 