

- a. There is not a best or worst case for this program because it will always check every index of the array twice. No sentinel values in the loops
- b. The runtime of this function is linear, which means that it is $O(n)$.
- c. Doing two running loops as opposed to having a nested loop does change the shape of the runtime graph. Having two separate loops keeps the runtime linear, whereas a nested loop would have been quadratic [$O(n^2)$].
- d. Pseudocode for my method:

secondMax(array A)

for i=1 to A.length

 if A[i] > Max

 Second = Max

 Max = A[i]

 //Moves to next loop rendition (continue)

 if A[i] > Second or Second == max

 Second = A[i]