Week 5 submission work:

Trace the partition function discussed in lectures for the array

$$A = \{27, 38, 12, 39, 27, 16\}.$$

After each iteration of the loop check that the invariant is true.

Initialisation of function partition(a, 0, a.length):

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	//	unknown
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During iteration:

1.

p	
\vee	<s1><s2><</s2></s1>
27	38 ???

The Invariant is still true here as anything from LastS1 + 1 -> firstunknown - 1 is still bigger then 27 or equal to it.

2.

p					
V	<><><>				
27	12	38	???		

The Invariant is still true as a[first+1...LastS1] are all < 27

3.

p			
V .	<><		unknown>
27	12	38, 39	???

The Invariant is still true as [12]<27<=[38,39]

4.

p			
V	<s1< th=""></s1<>		
27	12	38,39,27	???

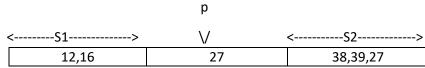
The Invariant is still true as [12]<27<=[38,39,27]

5.

p			
V	<s1><></s1>		
27	12,16	38,39,27	???

The Invariant is still true as [12,16]<27<=[38,39,27]

Post iteration:



Post Condition Invariant also remains true for the same reasoning as step 5 of the iteration