

Runtime Analysis:

The extraLargeArray Results:

Doubler insert: 870.46 ms

Doubler Append: 4.08 ms

Appending it i.e using push() method is significantly faster than inserting i.e. using unshift() method.

DoublerAppend() push()		Doubler Insert() unshift()	
tinyArray	109.12 us	tinyArray	45.67 us
smallArray	108.85 us	smallArray	56.86 us
mediumArray	163.89 us	mediumArray	180.45 us
largeArray	677.56 us	largeArray	7.45 ms
extraLargeArray	4.08 ms	extraLargeArray	870.46 ms

Results:

It can be observed that when the array has small size, then using push() method is slower than unshift() method, but as the array gets large or very larger the push method() becomes faster than unshift() method. Push() method is faster for large amount of data. Push method() or doublerAppend() function scales better than doublerInsert function as doublerAppend() gives faster time for medium, large and extra large arrays.

The slower function i.e. push() method is slow for tiny and small arrays, but gets progressively faster as the arrays get large. It is. because push() adds an element to the end so the index values for elements don't change. The values are just being added and index positions are just being increased. However unshift() adds elements in the beginning which moves the the index values for already present elements i.e. is reassigns the index values for each elements. Doing this for larger data takes a lot longer for unshift() compared to push() method.