

## Interview Questions (optional)

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1.

**Queue with two stacks.** Implement a queue with two stacks so that each queue operations takes a constant amortized number of stack operations.

*Note: these interview questions are ungraded and purely for your own enrichment. To get a hint, submit a solution.*

good

**Thank you for your response.**

*Hint:* If you push elements onto a stack and then pop them all, they appear in reverse order. If you repeat this process, they're now back in order.



1 / 1  
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2.

**Stack with max.** Create a data structure that efficiently supports the stack operations (push and pop) and also a return-the-maximum operation. Assume the elements are real numbers so that you can compare them.

good

Thank you for your response.

*Hint:* Use two stacks, one to store all of the items and a second stack to store the maximums.



1 / 1  
points

3.

**Java generics.** Explain why Java prohibits generic array creation.

good

Thank you for your response.

*Hint:* to start, you need to understand that Java arrays are *covariant* but Java generics are not: that is, `String[]` is a subtype of `Object[]`, but `Stack < String >` is not a subtype of `Stack < Object >`.

