Good morning! Here's your coding interview problem for today.

This problem was asked by Google.

An XOR linked list is a more memory efficient doubly linked list. Instead of each node holding next and prev fields, it holds a field named both, which is an XOR of the next node and the previous node. Implement an XOR linked list; it has an add(element) which adds the element to the end, and a get(index) which returns the node at index.

If using a language that has no pointers (such as Python), you can assume you have access to get\_pointer and dereference\_pointer functions that converts between nodes and memory addresses.