Arrays

1. Looking up an item at an index
   1. O(1) complexity
2. In Java and many other languages, arrays are static
   1. So we need to specify their type and length ahead of time and this cannot change later.
      1. In this case, Inserting a new item has O(n) complexity
      2. Because we’d have to create a new array that is bigger and then copy all the items from the original array into it.
   2. JavaScript arrays are dynamic
3. Removing an item
   1. Remove the last item = O(1) = best case
   2. Remove the first item = O(n) = worst case
      1. This is because we’d have to shift all of the items on the right side to the left by one.
4. In situations where we don’t know ahead of time how many items we want to store or when we need to add or remove a lot of items from them, arrays don’t perform well.
   1. In this case, linked lists are better