Lists in other languages

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- The word, list, has many different connotations depending on the context and the language. For example, in Java a list is not a data type, but in Python it is. Diving into Java first we can create different types of lists in Java with the list interface as a part of the collection framework in the Java.util package. Think of an interface as an abstract definition. What that means is that you cannot create a plain original list in Java, but you can create objects that support the behavior like an Array List or a Linked List. The Array List and Linked List live in the Java.util package and we can import them into our code in order to use them, just like we did with Linked Lists, which are doubly linked. We won't dive too deep into Array List, but the term Array List can definitely sound confusing. Is it an array or is it a list? Well, it's a little bit of both. It's easy to iterate through without using specific indexes and that's a convenient behavior of a list. Under the hood, it is stored as an array. Array Lists favor direct access and you wouldn't expect great performance from insertions and deletions since it's implemented as an array. In C# there's a Linked List class in systems.collections and again, these Linked Lists are doubly linked. Yes, everything is in its own organized place with all of these collections and packages. However, in Swift, Ruby, and JavaScript there are no built in Linked Lists. There are third party implementations, but there is no direct equivalent provided in the given language frameworks. Now, going back to Python, Python lists are not really lists. They are resizeable arrays. So even though they have the name, list, they are really just arrays that we can use. Python does not have a built in Linked List implementation. In C++ we have the list container in the standard template library, which has a doubly Linked List implementation. Now, if your chosen language does not have a specific Linked List implementation, it's not the end of the world. Most of the time you need array structures rather than Linked Lists. Even in the case where you need to do a lot of insertions and deletions, which arrays aren't great at, there are other structures coming up that might be better for you to use.