

Data Structures

Vector/Array/list/numpy Array- great for sorting, appending, looping, etc. This is what's generally used when others aren't needed. Choose which type based on the functions you want to leverage.

Linked List- When you want to be able to get elements just before or after based on a linking mechanism

Dictionary/Map- when you want to look things up based on a key very quickly (same thing with different names in different languages)

Set- When you want a list of all unique elements

Queue- When you want a list where you put new things at the end, and retrieve things at the beginning (FIFO- first in first out)

Stack- When you want a list where you put new things at the beginning and retrieve things at the beginning (LIFO- last in first out)

Enum- Yes, this is more of a C++ thing, but it's a really nice way to group all of the options of a category

Class- When you want to encapsulate data and functions within an object

Tree/Graph- when you want things interconnected, sorted in specific ways, and you want certain searching functionality (less common, more complex)