

Data structure types:

1-Linked Lists

A linked list is one of the most basic data structures. It is often compared to an array since many other data structures can be implemented with either an array or a linked list. They each have advantages and disadvantages.

2-Stacks

A stack is a basic data structure where you can only insert or delete items at the top of the stack. It is kind of similar to a stack of books. If you want to look at a book in the middle of the stack you must take all of the books above it off first.

The stack is considered LIFO (Last In First Out) — meaning the last item you put in the stack is the first item that comes out of the stack

3-Queues

You can think of a queue as a line of people at a grocery store. The first one in the line is the first one to be served. Just like a queue.

4-Sets

The set data structure stores values without any particular order and with no repeated values. Besides being able to add and remove elements to a set, there are a few other important set functions that work with two sets at once.

Union — This combines all the items from two different sets and returns this as a new set (with no duplicates).

Intersection — Given two sets, this function returns another set that has all items that are part of both sets.

Difference — This returns a list of items that are in one set but NOT in a different set.

Subset — This returns a boolean value that shows if all the elements in one set are included in a different set

5-Maps

A map is a data structure that stores data in key / value pairs where every key is unique. A map is sometimes called an associative array or dictionary.

6-Binary tree

A tree is a data structure composed of nodes It has the following characteristics:

Each tree has a root node (at the top).

The root node has zero or more child nodes.

Each child node has zero or more child nodes, and so on.

7-Binary Heap

A binary heap is another type of tree data structure. Every node has at most two children. Also, it is a complete tree. This means that all levels are completely filled until the last level and the last level is filled from left to right.