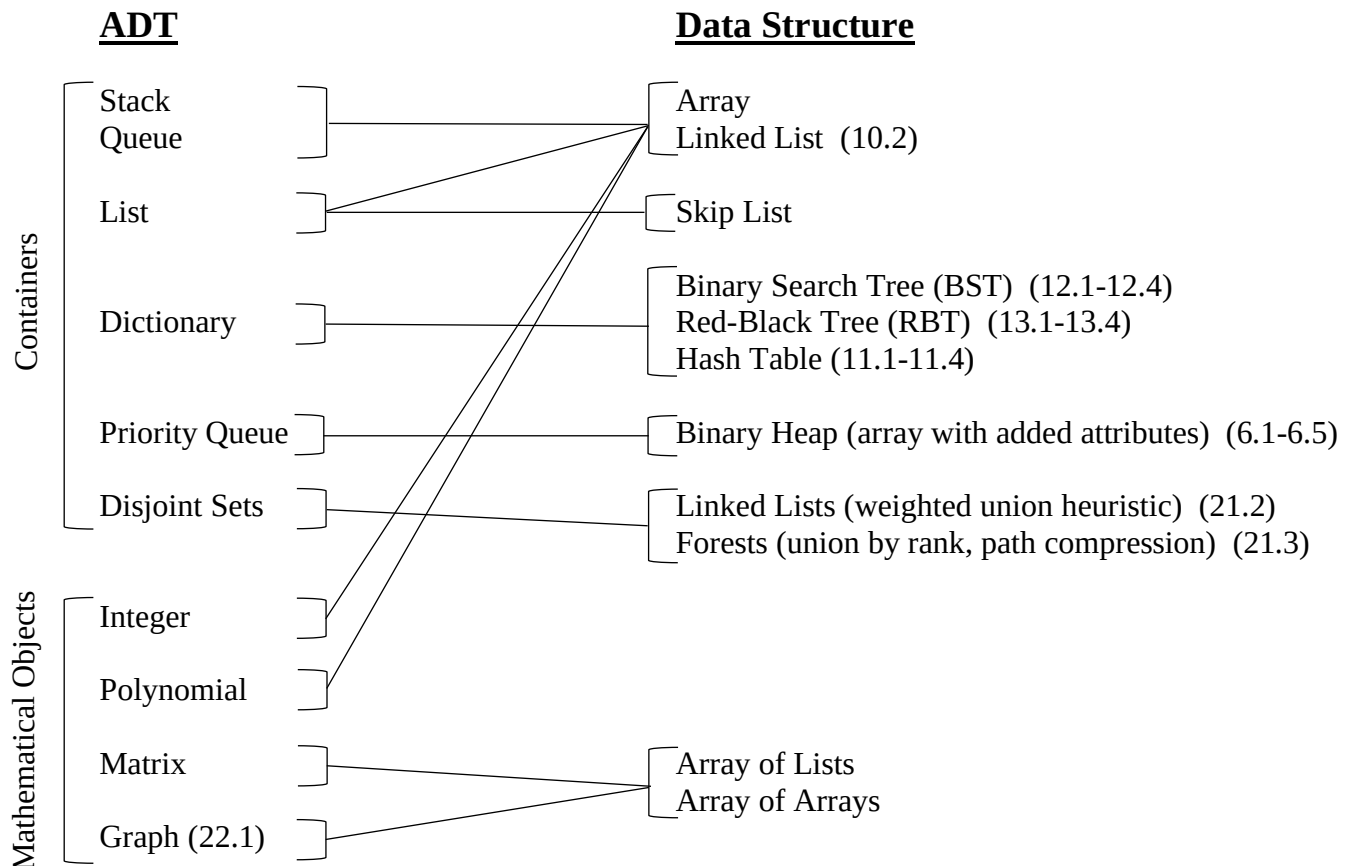


CSE 101

Introduction to Data Structures and Algorithms

ADTs and Data Structures

An *Abstract Data Type*, or ADT, is a mathematical model of a data type. It is defined by a collection of operations on the data type, as seen from the point of view of a user. A *Data Structure*, on the other hand, is a concrete implementation of a data type, defined by a specific organization and storage format. Data Structures are the raw materials out of which ADTs are implemented. We list here a few ADTs and the Data Structures used to build them.



Readings from Cormen, Leiserson, Rivest and Stein (CLRS)

The following summary is a (non-chronological) summary of the sections in CLRS that will be covered in this course.

Asymtotic Growth	3.1-3.2
Heaps and Priority Queues	6.1-6.5
Stacks, Lists and Queues	10.1-10.2
Hash Tables	11.1-11.4
Binary Search Trees	12.1-12.4
Red-Black Trees	13.1-13.4
Disjoint Sets	21.2-21.3
Basic Graph Algorithms	22.1-22.3
Weighted Graph Algorithms	24.1, 24.3