

Final Review

Chapter 2. Data Types in C++

- types (enumeration, array, structure)
- pointers
- dynamic allocation
- heap-stack diagram (function call, dynamic allocation) using addresses and arrows

Chapter 3. Libraries and Interfaces

- the use of `random` library

Chapter 4. Using Abstract Data Types

- using the abstract data types: `Vector`, `Stack`, `Queue`, `Grid` and their operations

Chapters 5 and 6. Recursion

- the framework of recursive functions

Chapter 7. Backtracking Algorithms

- the maze problem as an example, two-player games and minimax strategy and mutual recursion

Chapter 8. Algorithmic Analysis

- binary search
- sorting (selection, merge, quick)
- complexity in terms of the big- O notation
- standard complexity classes

Chapter 9. Classes and Objects

- class definition
- public header file, private header file, implementation file

Chapter 10. Efficiency and Data Representation

- linked-list structure (recursive type) and operations (insert, delete, move forward, move backward)
- doubly linked-list and operations (insert and delete)