CS2124 Exam One Coverage (tentative) - 23S

Basics

Lec 1-3; rec01,2; hw1,2

- Types
    - static typing
    - Common types: primitive types, strings and vectors
    - Default values for non-primitives
- Conditions / if / else
- Looping: for loop, while, do-while, ranged for. Also break and continue.
- Console I/O
- File input: open and closing files. Testing if open works. Reading files.
- Functions / parameter passing / return types. Default parameter values
- Defining types: structs
    - Filling a vector with instances of a struct.

OOP Basics

Lec 4,5 / rec03 / hw3

- Encapsulation and data hiding
    - meaning of public / private.
- Constructors
    - Initialization lists
        - order of member variable initialization
    - Default constructor
- Methods
    - const methods
    - getters / setters
- Nested classes
- Delegation
- Overloading output operator
- Difference between the keywords `struct` and `class`

Pointers and Dynamic Memory

Lec 6,7 / rec04,5 / hw4,5

- Association
- Addresses
- address-of operator: &
- Pointer variables and strict typing
- dereference operator: *
- `nullptr`
- `this`
- arrow operator: `->`
- operator precedence: dot vs. asterisk
- Issues: dangling pointers and memory leaks
- `new` / `delete`
- pointers and `const`

Copy Control and Pointers

Lec 8-10; rec05,6;

- **Copy control**:
    - destructor,
    - copy constructor,
    - assignment operator
- dynamic arrays
- pointer arithmetic

<u>Not</u> covered

- Keyword: explicit
- Index operator: operator[]
- Ranged for support, i.e. begin() and end() method.
- Cyclic Association
- Separate compilation