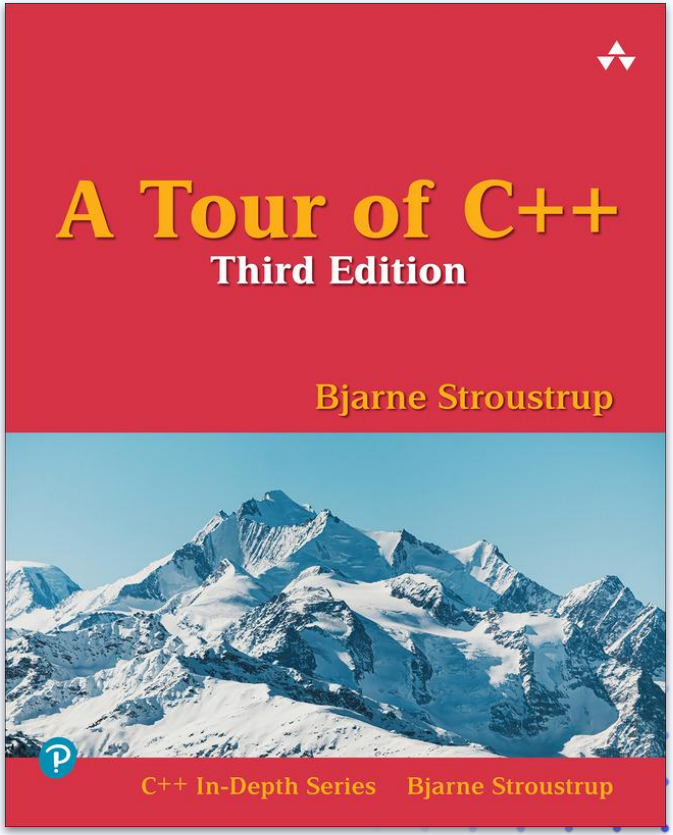
Destructors

CSE 232 - Dr. Josh Nahum

Reading:

Section 5.2.2



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RAII

Resource allocation (or acquisition) is done during object creation (specifically initialization), by the constructor, while resource deallocation (release) is done during object destruction (specifically finalization), by the destructor. In other words, resource acquisition must succeed for initialization to succeed. Thus the resource is guaranteed to be held between when initialization finishes and finalization starts (holding the resources is a class invariant), and to be held only when the object is alive. Thus if there are no object leaks, there are no resource leaks.

—Resource Acquisition Is Initialization (Wikipedia)

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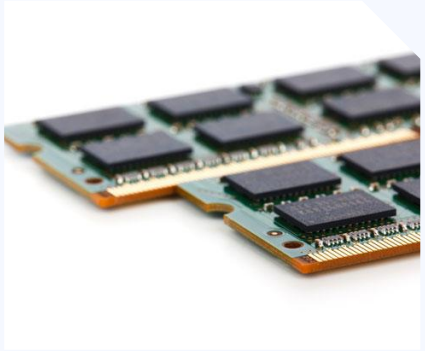
Resource Leaks

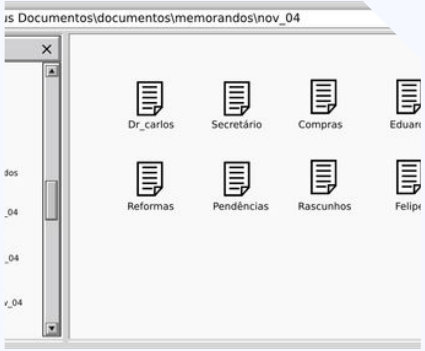
Resources



Memory

Memory allocated with new, must be released with delete.

Else, the program leaks memory.



File Handles

Files opened by a program are given a file handle. The file must be closed so that it can be accessed by other programs.

Database Lock

Writing (and reading) from a database involves locks to ensure database integrity (see CSE 480). Failing to release a lock can cause deadlock.

RAII

By ensuring that resources are acquired in the constructor and released in the destructor, resources are only kept during that object's lifetime.

Attribution

Please ask questions via Piazza

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