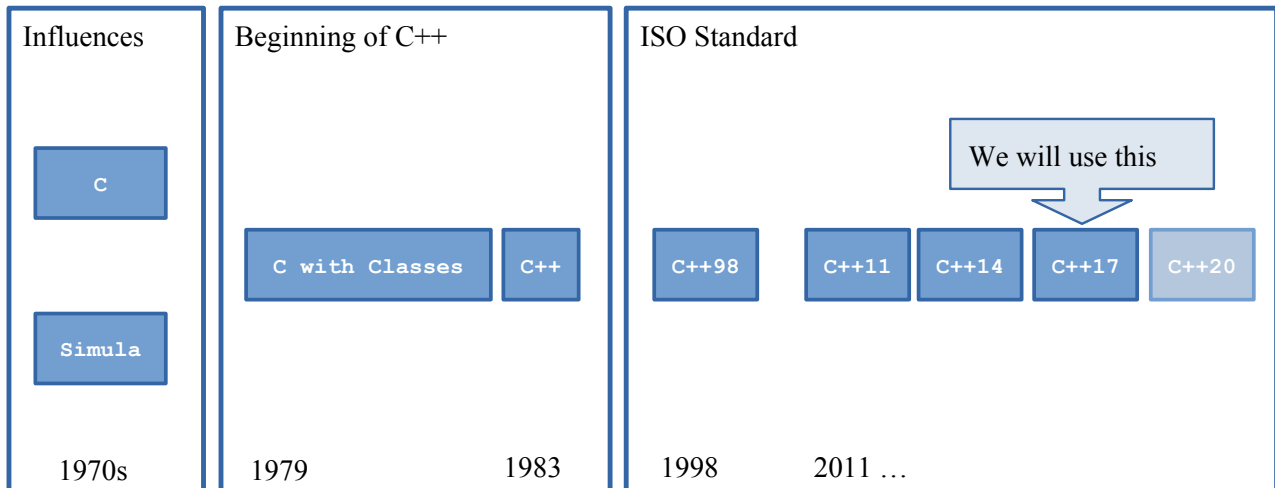# ADVANCED PROGRAMMING IN C++
Introduction

Patrick Bader · SS 2023

History

Why Choose C++?

Systems programming language

Multi-paradigm language

Statically typed

Royalty free / ISO standard

Available on most platforms

Backwards compatible

Maps well to hardware

Zero cost abstraction

Deterministic

Not a hype (anymore?)!

Why Not Choose C++?

Hard to learn and to master

Broken syntax

Limited standard library

Compile times

Manual memory management

Type safety

No package manager

No common ABI

...

Topics We Will Cover

Basic syntax

Fundamental/Complex types

Memory management

Generic programming

Polymorphism under the hood

Smart pointers

Standard library
- Console/File IO
- Containers
- Algorithms