The Standard C++ Library – Algorithms

Based on: Jonathan Boccara, "105 algorithms in less than an hour", CPPCON 2018,

https://youtu.be/2olsGf6JlkU

Summarized by: Erel Segal-Halevi

Algorithms

- In C++17, there are 105 algorithms that perform common programming tasks.
- We need to know them all.
- Why? otherwise, we will try to implement them ourselves as part of larger projects, and:
 - Make bugs (no time to test..),
 - Produce inefficient code (no time to optimize..)
- How can we remember them? use a map →



Queries (10)

Algorithms that calculate a value related to the collection, without modifying it.



Set Algorithms (11)

Operations on any sorted collection (including std::set but also sorted vectors)



Permutations (12)

Algorithms that move elements around the collection, without changing their values:



Movers (13)

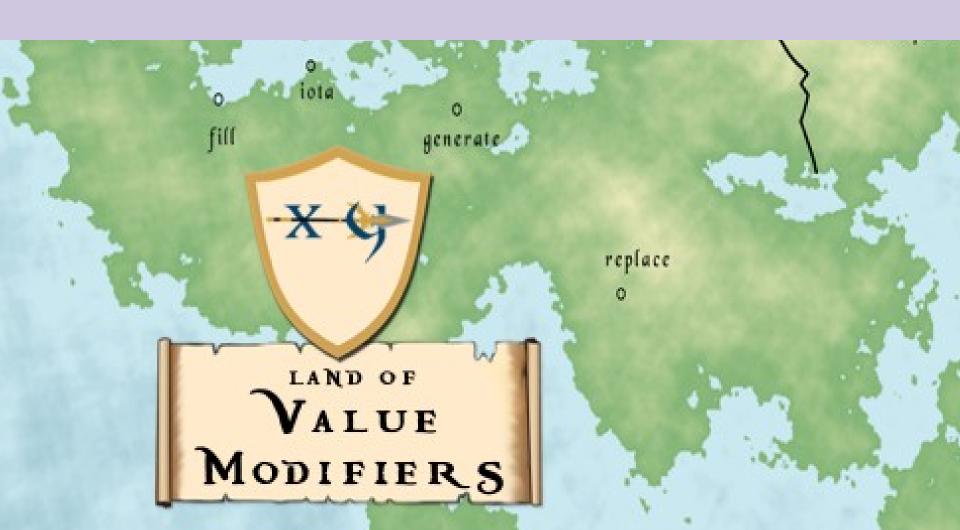
Algorithms that move things between

collections.



Value modifiers (14)

Modify values in a collection.



Runes (15)

Words you can add to an algorithm to get a new algorithm:



Structure changers (16)

STL algorithms work on iterators, so they cannot change the size!

Solution: move the remaining elements to the beginning of the collection, and return an iterator to the new end.



