

Wrapping Up The STL

Bad Dad Joke of the Day:

- How did the hamburger introduce his wife?
- Meat patty.

Creds: Julie

Abstraction in the STL

Abstractions allow us to express the **general structure** of a problem instead of the particulars of its **implementation**.

Rather than solve specific instances, solve the problem in a general setting!

do is express general problems rather than specific ones

Abstraction in the STL

We started off with **basic** types:

char

int

double

...

Each type was conceptually a “**single value**”.

sort of taste of this we start off in
computer

Abstraction in the STL

Can we keep track of a collection of **basic types**, regardless of what the type is?

of a collection of basic types no matter
what the type is

Basic types

Abstraction in the STL

Many programs require a collection of basic types:

A `vector<int>` representing student ages

A `map<string, int>` of names to phone numbers

Containers let us perform operations on basic types, **regardless of what the basic type is.**

what the type is so abstracting away
from the type absolutely and you guys

Abstraction in the STL

Can we perform operations on **containers** regardless of what the container is?

Containers



regardless of what the container is can
does someone

Basic types

Abstraction in the STL

Iterators allow us to abstract away from the **container** being used.

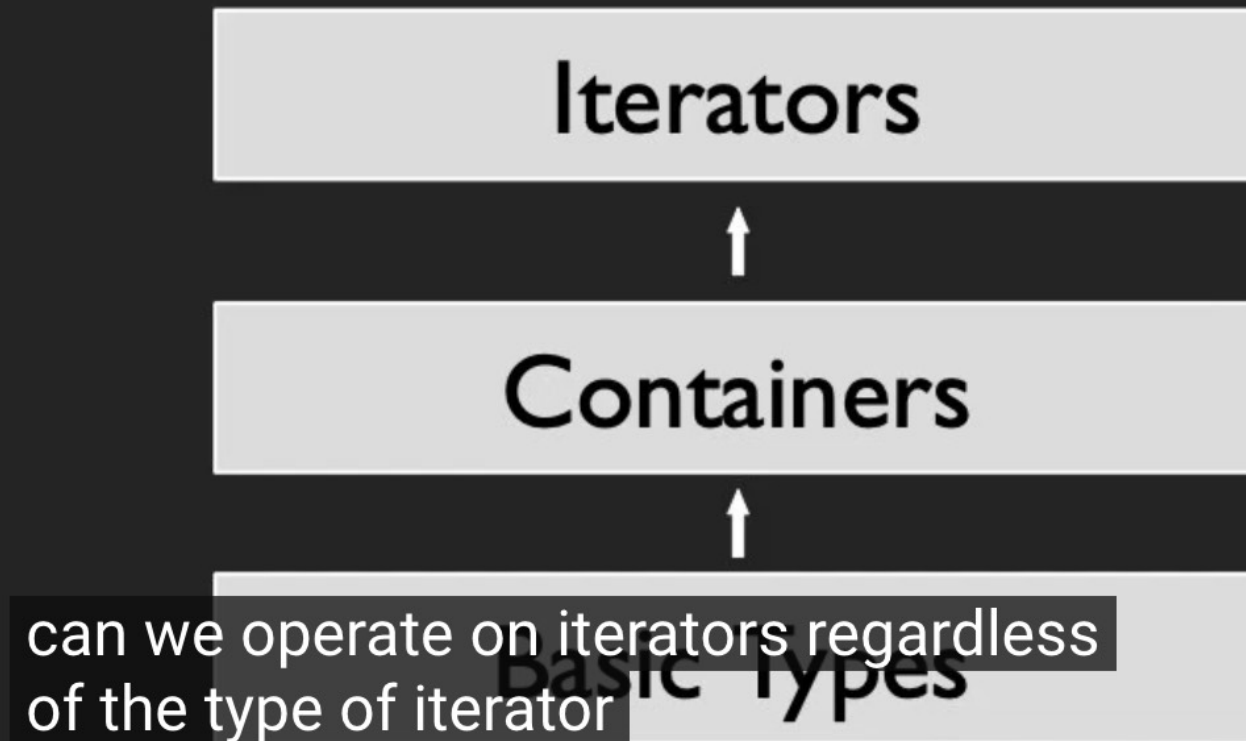
Similar to how **containers** allow us to abstract away from the **basic type** being used.

Operations like sorting, searching, filtering, partitioning, and more can be written to work with almost **any** container.

really yeah just like well this is an
imperfect

Abstraction in the STL

Can we operate on **iterators** regardless of what type of container the iterator is for?



Abstraction in the STL

The STL contains pre-written **algorithms** that:

- operate on iterators, which lets them work on many types of containers, and
- often apply **functors**, which allows generalization of the algorithm's applications

of the type of iterator that it is and
it's exactly as we already said

Abstraction in the STL

STL核心概念：

– Iterator:

iterator 链接container和
algorithms，所有对container操作
的算法都离不开iterator

