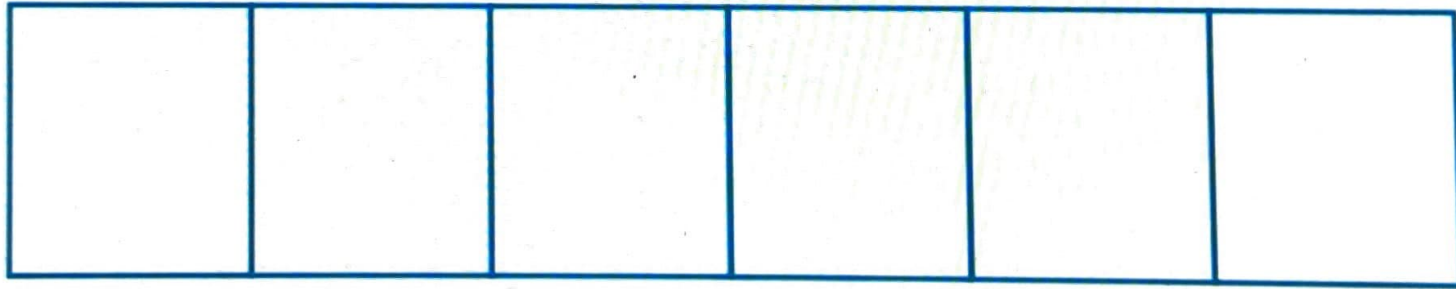




Iterators

Objects that enable us to traverse containers in some order for either reading or writing



Are pointers and iterators the same thing?

No, pointers are one particular type of
iterator.

Types of Iterators in the C++ STL

- Input iterator
- Output iterator
- Forward iterator
- Bidirectional iterator
- Random access iterator



Input Iterator

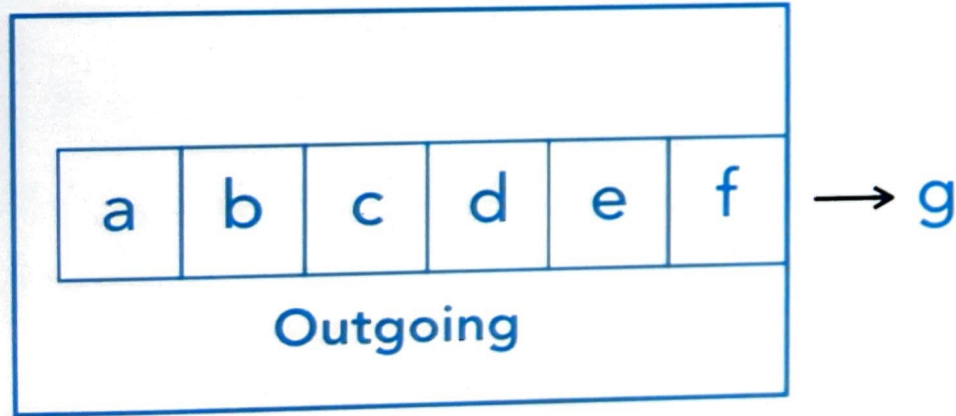
Read one way, one pass



- Only able to read
- Only moves forward
- Only one pass possible
- Least requirements
- Suitable for input streams, such as keyboard buffers

Output Iterator

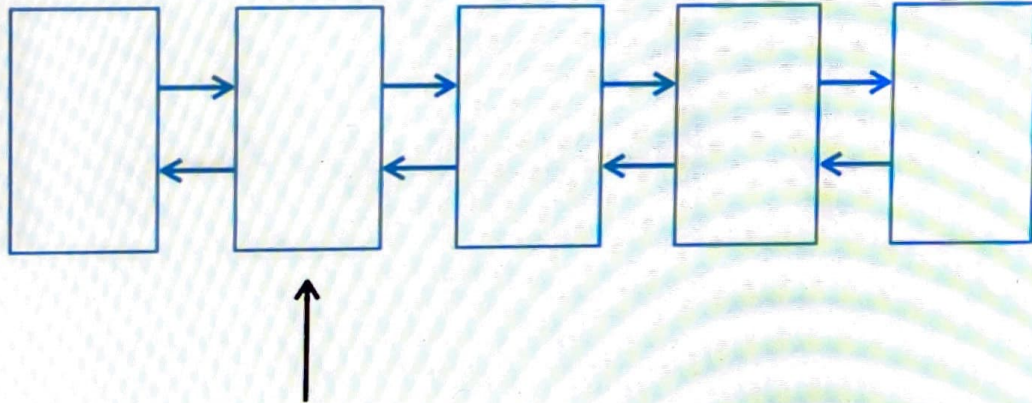
Write one way, one pass



- Only able to write
- Only moves forward
- Only one pass possible
- Least requirements
- Suitable for output streams, such as screen text

Bidirectional Iterator

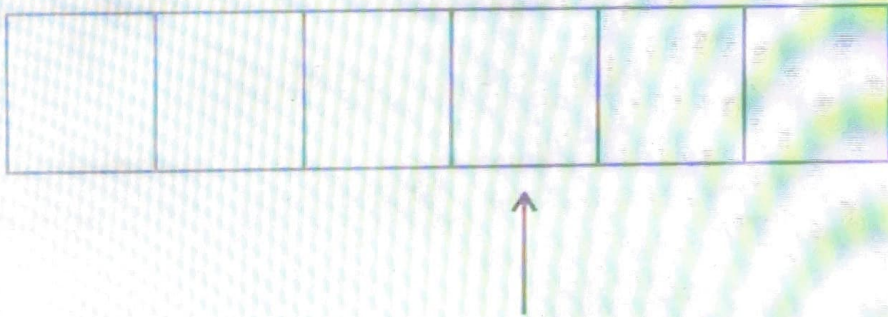
Read/write two way,
multipass



- Able to read and write (mutable)
- Moves forward and backward
- Supports multiple passes
- Suitable for traversing doubly linked lists

Random Access Iterator

Read/write anywhere



- Able to read and write (mutable)
- Able to access any element by index
- Supports multiple passes
- Suitable for vectors and arrays

C++ STL Iterators and Containers

Iterator	Containers
Forward	forward_list, unordered_[multi]set, unordered_[multi]map
Bidirectional	list, [multi]set, [multi]map
Random Access	vector, deque, array

