Iterators
“Iterators are the glue that holds containers and algorithms together”.

- P 549 *The C++ Programming Language*, Bjarne Stroustrup

- They provide an abstract view of data
- Iterators support an abstract model of data as sequences.
Iterators and Sequences

- An iterator is pure abstraction
- Anything that behaves like an iterator is an iterator
- An iterator is an abstraction of a pointer to an element of a sequence
- For example, an int* is an iterator to int[]
More Iterator Issues

- There is no concept of a “null iterator”
- An iterator that points to nothing typically points to the same value as “one past the end” and should be compared to that same value
- If an iterator points to an element, it is said to be valid.
Const Iterators

- Const iterators support the same behavior as non-const iterators with the major exception that const iterators are not allowed to modify the container to which they point.