STL Forward Iterators

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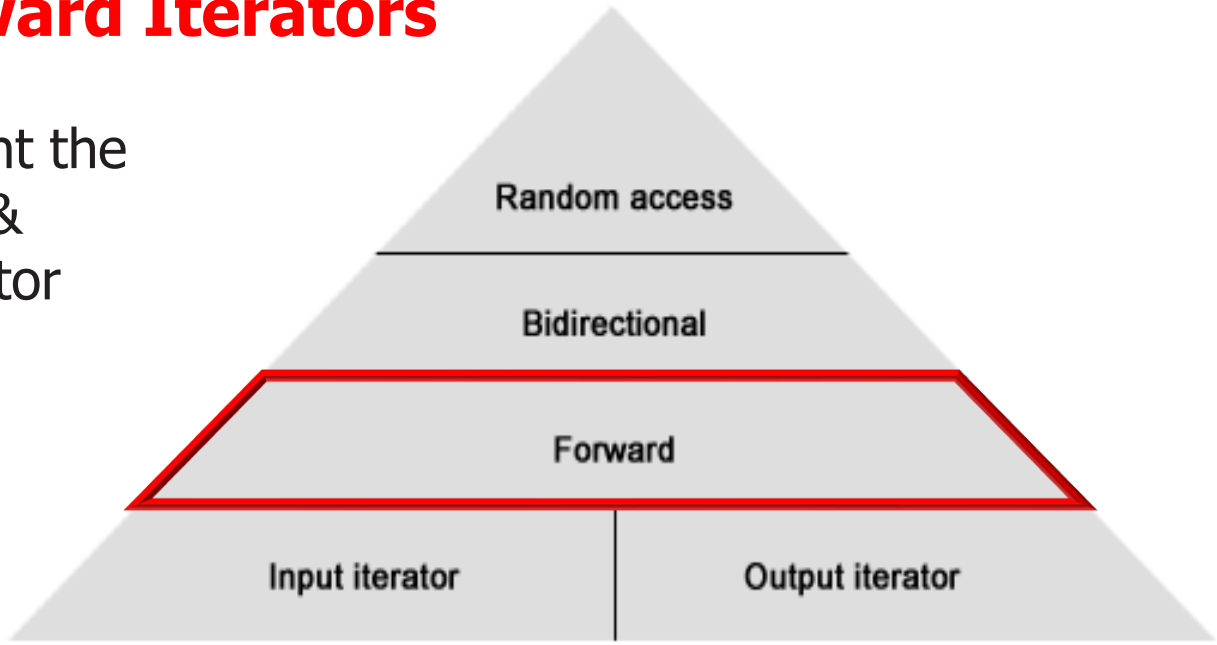
- *Forward* iterators must implement the union of requirements for *input* & *output* iterators, plus a default ctor



See www.cplusplus.com/reference/iterator/ForwardIterator

STL Forward Iterators

- A difference to *output* iterators is that `operator*` is also valid on the left side of `operator=` (`*it = v` is valid)
  - Moreover, the # of assignments to a *forward* iterator is not restricted

```
template <typename ForwardIterator,
          typename T>
void replace (ForwardIterator first,
              ForwardIterator last,
              const T& old_value,
              const T& new_value) {
   for (; first != last; ++first)
      if (*first == old_value)
        *first = new_value;
}
```

STL Forward Iterator Example

```
template <typename ForwardIterator, typename T>
void replace (ForwardIterator first,
              ForwardIterator last,
              const T& old_value,
              const T& new_value) {
   for (; first != last; ++first)
      if (*first == old_value) *first = new_value;
}

// Iniitalize 3 ints to default value 1
std::vector<int> v (3, 1);
v.push_back (7);     // vector v: 1 1 1 7
replace (v.begin(), v.end(), 7, 1);
assert (std::find (v.begin(), v.end(), 7) == v.end());
```

See github.com/douglascraigschmidt/CPlusPlus/tree/master/STL/S-04/4.5/4.5a