STL Container Adapters

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- There are three types of container adapters in STL

Category	Containers	Characteristics
Adapter	stack	Last in, first out (LIFO) data structure.
	queue	First in, first out (FIFO) data structure.
	priority_ queue	Queue that maintains items in a sorted order based on a priority value.

STL Container Adapters

- There are three types of container adapters in STL
  - The `stack` container adapter
    - Ideal when one needs to use a "Last In, First Out" (LIFO) data structure where elements are inserted & removed from the same end

STL Container Adapters

- There are three types of container adapters in STL
  - The `stack` container adapter
  - The **`queue`** container adapter
    - A "First In, First Out" (FIFO) data structure where elements are inserted into one end & removed from the other end

STL Container Adapters

- There are three types of container adapters in STL
  - The `stack` container adapter
  - The `queue` container adapter
  - The `priority_queue` adapter
    - Assigns a priority to every element that it stores
      - New elements are added to the queue using the `push()` function, just as with a `queue`
      - However, its `pop()` function gets element with the highest priority

STL Container Adapter Examples

```
template <typename T, typename Container = deque<T>>
class stack {
public:
  explicit stack(const Container& c): container_(c) {}
  ...
  bool empty() const { return container_.empty(); }
  size_type size() const { return container_.size(); }
  value_type& top() { return container.back(); }
  const value_type& top() const { return container.back(); }
  void push(const value_type& t)  { container.push_back(t); };
  void pop() { container.pop_back(); }

private :
  Container container_ ;
  //...
};
```

See github.com/douglascraigschmidt/CPlusPlus/tree/master/STL/S-07