Chapter 2

STL components:

Diagram

Description automatically generated

1. Containers

Containers are objects that store a collection of other objects.

STL container types:

*Sequence containers* organize a collection of objects of the same type T into a strictly linear arrangement. Vector<T>, deque<T>, and list<T>. *See reverse.CPP, vectorReverse.CPP, reverselist.CPP*

Some are faster than other algorithms, but non is a winner in all cases.

Sorted associated containers, provides ability for fast retrieval of objects from the collection based on keys.

* set<key> supports unique key. Provides fast retrieval of the keys themselves.
* multiset<key> supports duplicate keys. Provides fast retrieval of the keys themselves.
* map <key, T> Supports unique keys and provides for fast retrieval of another type T based on the keys. *See mapExample.cpp,*
* Multimap<key, T>support duplicate keys (of type key) and provides for fast retrieval of another type T based on the keys.

1. Generic algorithms

two simplest generic algorithm types in STL are find and merge.

*See genericFindwithArray.cpp*

1. Iterators

Understanding iterators is the key to understanding fully the STL framework and learning how to make the best use of the library. Pointers are iterators.

Other Types of iterators in STL

*Forward iterators*

*Bidirectional iterators*

*Random access iterators*

1. Function objects
2. Adaptor
3. Allocators