

Final Project: Bees

Java STL in C++

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Things to Do

- ▶ 使用C++实现六种不同功能的容器及其迭代器。
- ▶ 测试性能。

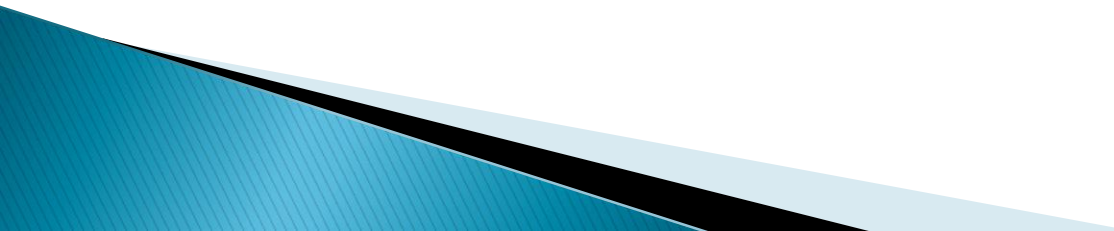
My Implementation

- ▶ **ArrayList.h**
- ▶ 数组指针Storage
- ▶ doubleSpace函数

- ▶ **LinkedList.h**
- ▶ 双向链表node结构

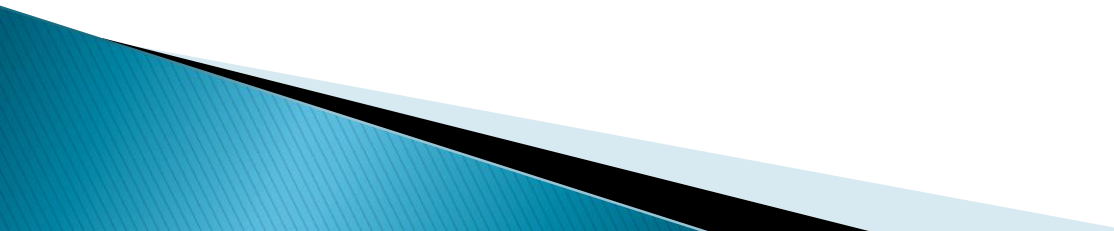
My Implementation

- ▶ **TreeSet.h**
 - ▶ AA树实现，LL与RR操作
 - ▶ next函数使用由根向下搜索的方法

 - ▶ **TreeMap.h**
 - ▶ 基本与TreeSet相同
 - ▶ 结点结构中保存键值对
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My Implementation

- ▶ **HashSet.h**
 - ▶ 开散列表
 - ▶ 保存头指针的数组array

 - ▶ **HashMap.h**
 - ▶ 基本与HashSet相同
 - ▶ 结点结构中保存键值对
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Test Results

▶ ArrayList.h

Data Size	My ArrayList	C++ Vector
10^6	0 ms	0 ms
10^7	166.667 ms	166.667 ms
10^8	1000 ms	1333.33 ms

Test Results

▶ LinkedList.h

Data Size	My LinkedList	C++ List
10 ⁶	166.667 ms	0 ms
10 ⁷	1500 ms	1333.33 ms

Test Results

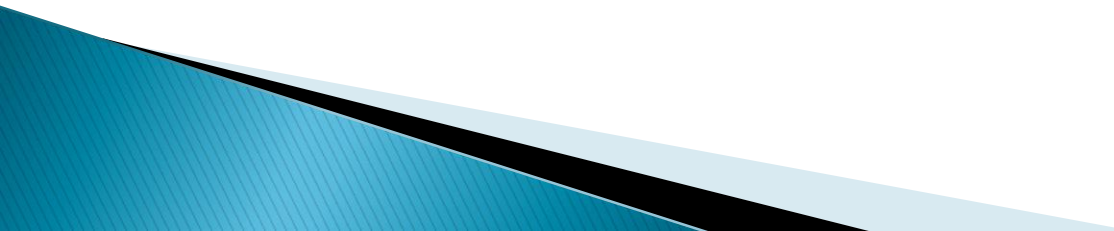
▶ TreeSet.h

Data Size	My TreeSet	C++ Set
10^6	1000 ms	1000 ms
10^7	15500 ms	10666.7 ms

▶ TreeMap.h

Data Size	My TreeMap	C++ Map
10^6	1333.33 ms	1000 ms
10^7	16333.3 ms	10833.3 ms

Gains

- ▶ 提高了对于大项目的分析与完成能力
 - ▶ 对容器及迭代器有了清晰的认识
 - ▶ 在解决各种问题的过程中提升了代码能力
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Thanks for Listening !

