

数据结构大作业-1

任务

给出Vector.hpp, List.hpp中每一个函数的具体实现，并通过测试

以List.hpp为例, 下图给出了部分需要完成的函数

```
47 public:
48     List();
49
50     List(List &&that);
51
52     List(List const &that);
53
54     List &operator=(List const &that);
55
56     bool empty();
57
58     T &front();
59
60     T &back();
61
62     T const &front();
63
64     T const &back();
65
66     explicit List(size_t n, Alloc const &alloc = Alloc());
67
68     List(size_t n, T const &val, Alloc const &alloc = Alloc());
69
70     template <std::input_iterator InputIt>
71     List(InputIt first, InputIt last, Alloc const &alloc = Alloc());
72
73     List(std::initializer_list<T> ilist, Alloc const &alloc = Alloc());
74
75     List &operator=(std::initializer_list<T> ilist);
76
77     size_t size();
```

编译 & 测试

项目结构

```
> Catch2
> miniSTL
  > cmake
  > include\miniSTL
    h++ list.hpp
    h++ stl.hpp
    h++ vector.hpp
  > lib
    CMakeLists.txt
  > project
  > test
    C++ test_list.cpp
    C++ test_vector.cpp
    CMakeLists.txt
```

命令行编译

编译

```
cmake -B build
```

```
cmake --build build
```

测试

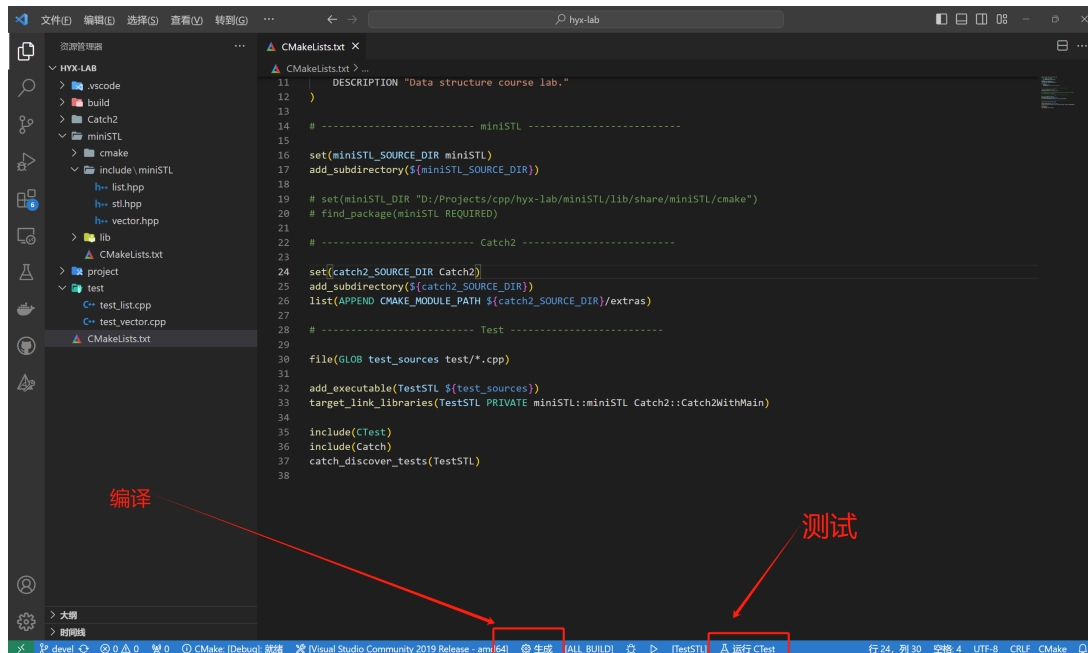
```
cd build
```

```
ctest
```

注: 以上指令在项目根目录执行(最外层CMakeLists.txt所在目录)

VSCode

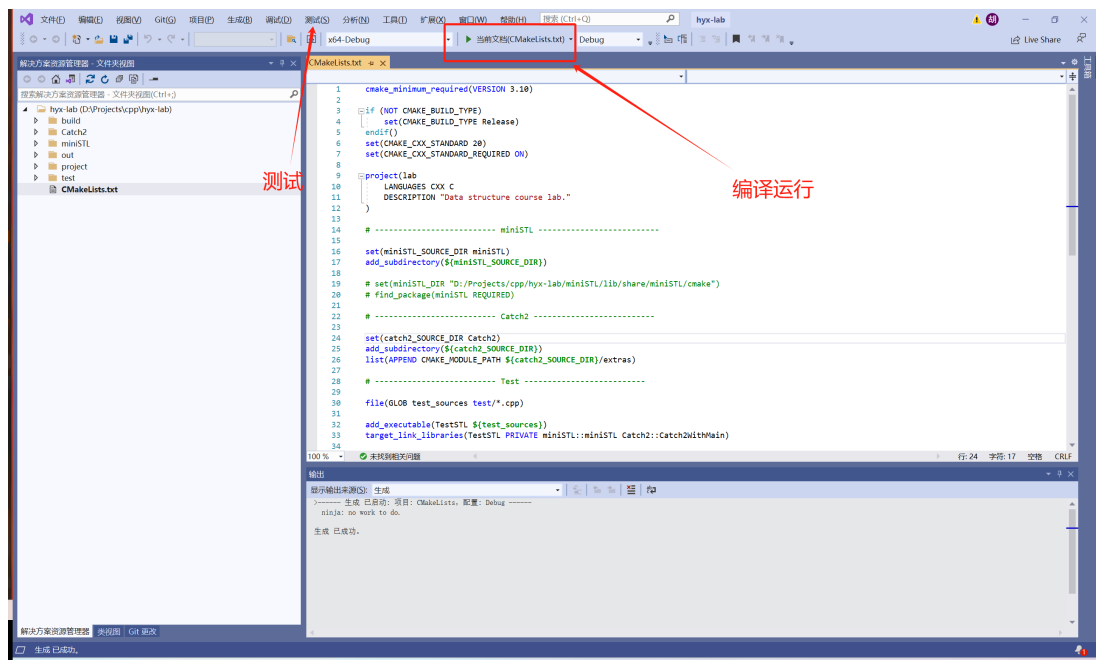
注: 需安装C/C++, CMake插件



Visual Studio

注: 需安装c++ CMake tools for Windows

VS配置方法参考 [Visual Studio 中的 CMake 项目](#)



测试通过示例

Start 1: test list

1/2 Test #1: test list Passed 0.02 sec

Start 2: test vector

2/2 Test #2: test vector Passed 0.01 sec

100% tests passed, 0 tests failed out of 2

Total Test time (real) = 0.04 sec

参考资料

<https://github.com/parallel101/stl1weekend>