

C++面向对象程序设计 作业报告4

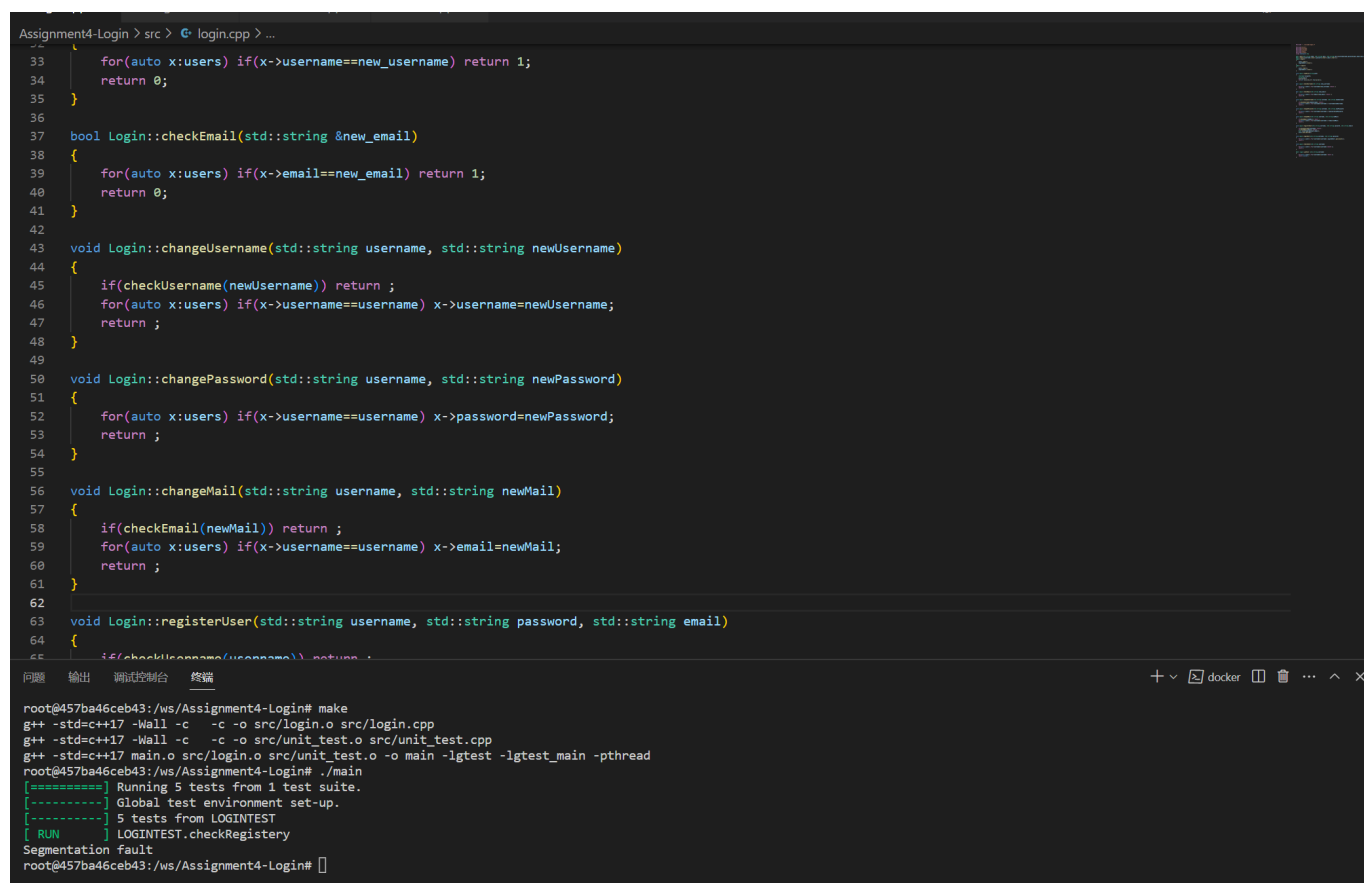
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目标：实现一个简单的用户账号管理系统，保证用户名不重复，相同邮箱只能注册单一账号，支持改名与更改邮箱功能。

实现思路：check时暴力查找是否存在同名用户，注册时检验是否有同名用户与相同邮箱，更改时查询新用户名与邮箱是否已存在，采用delete实现删除释放功能。

具体实现：见附件代码。

运行结果：

The image shows a screenshot of a code editor and a terminal window. The code editor displays the implementation of a user management system in C++. It includes functions for checking if a username or email already exists, changing a user's name or email, and registering a new user. The terminal window shows the compilation and execution of the program, including a unit test suite that passes all five tests. The code is as follows:

```
Assignment4-Login > src > @ login.cpp > ...
33     for(auto x:users) if(x->username==new_username) return 1;
34     return 0;
35 }
36
37 bool Login::checkEmail(std::string &new_email)
38 {
39     for(auto x:users) if(x->email==new_email) return 1;
40     return 0;
41 }
42
43 void Login::changeUsername(std::string username, std::string newUsername)
44 {
45     if(checkUsername(newUsername)) return ;
46     for(auto x:users) if(x->username==username) x->username=newUsername;
47     return ;
48 }
49
50 void Login::changePassword(std::string username, std::string newPassword)
51 {
52     for(auto x:users) if(x->username==username) x->password=newPassword;
53     return ;
54 }
55
56 void Login::changeMail(std::string username, std::string newMail)
57 {
58     if(checkEmail(newMail)) return ;
59     for(auto x:users) if(x->username==username) x->email=newMail;
60     return ;
61 }
62
63 void Login::registerUser(std::string username, std::string password, std::string email)
64 {
65     if(checkUsername(username)) return ;
66     if(checkEmail(email)) return ;
67     User* user = new User(username, password, email);
68     users.push_back(user);
69 }
```

The terminal output is as follows:

```
root@457ba46ceb43:/ws/Assignment4-Login# make
g++ -std=c++17 -Wall -c -c -o src/login.o src/login.cpp
g++ -std=c++17 -Wall -c -c -o src/unit_test.o src/unit_test.cpp
g++ -std=c++17 main.o src/login.o src/unit_test.o -o main -lgtest -lgtest_main -pthread
root@457ba46ceb43:/ws/Assignment4-Login# ./main
[=====] Running 5 tests from 1 test suite.
[-----] Global test environment set-up.
[-----] 5 tests from LOGINTEST
[ RUN      ] LOGINTEST.checkRegistry
Segmentation fault
root@457ba46ceb43:/ws/Assignment4-Login#
```

如上图，全部测试点均通过。