



高级语言程序设计-II Assignment 4

1 Login

login.cpp 中如下:

```
1  #include "../include/login.h"
2  #include <algorithm>
3  #include <iostream>
4  #include <fstream>
5  #include <iomanip>
6  #include <cstdlib>
7  #include <cstdio>
8
9  User::User(std::string name, std::string pass, std::string mail){
10     username = name;
11     email = mail;
12     password = pass;
13 }
14
15 User::~User() {
16     username.clear();
17     password.clear();
18     email.clear();
19 }
20
21 void User::print() { // print name, password and email in one line
22     std::cout << std::setw(10) << std::left;
23     std::cout << username << password << std::setw(10) << email << std::endl;
24 }
25
26 Login::Login() {
27     users.clear();
28     LoggedUsers.clear();
29 }
30
31 Login::~Login() {
32     for (auto user : users) {
33         if (user != NULL) {
34             delete user;
```

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35     }
36 }
37     users.clear();
38     LoggedUsers.clear();
39 }
40
41 void Login::readFile(std::string path) { // read data from path
42     std::ifstream fin(path);
43     std::string str;
44     std::getline(fin, str); // ignore the header
45     std::string name, pass, mail, isLogged;
46     while (fin >> name >> pass >> mail >> isLogged) {
47         registerUser(name, pass, mail);
48         if (isLogged == "yes")
49             loginUser(name, pass);
50     }
51 }
52
53 bool Login::checkUsername(std::string &new_username) {
54     for (auto user : users) {
55         if (user->username == new_username) {
56             std::cout << "username already taken" << std::endl;
57             return false;
58         }
59     }
60     return true;
61 }
62
63 bool Login::checkEmail(std::string &new_email) {
64     for (auto user : users) {
65         if (user->email == new_email) {
66             return false;
67         }
68     }
69     return true;
70 }
71
72 void Login::registerUser(std::string username, std::string password, std::string email) { // function to
73     creat a user
74     if (checkUsername(username) == false) return;
75     if (checkEmail(email) == false) return;
76     User *p = new User(username, password, email);
77     users.push_back(p);
78 }
79 void Login::loginUser(std::string username, std::string password) {

```

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80     for (auto user : users) {
81         if (user->username == username) {
82             if (user->password == password) {
83                 LoggedUsers.push_back(user);
84                 break;
85             }
86         }
87     }
88 }
89
90 void Login::changeUsername(std::string username, std::string newUsername) {
91     int hasExsist = 0;
92     for (auto user : users) {
93         if (user->username == newUsername) {
94             hasExsist = 1;
95             break;
96         }
97     }
98     if (hasExsist == 1) return;
99     for (auto &user : users) {
100         if (user->username == username) {
101             user->username = newUsername;
102             break;
103         }
104     }
105 }
106
107 void Login::changePassword(std::string username, std::string newPassword) {
108     for (auto &user : users) {
109         if (user->username == username) {
110             user->password = newPassword;
111             break;
112         }
113     }
114 }
115
116 void Login::changeMail(std::string username, std::string newMail) {
117     for (auto &user : users) {
118         if (user->username == username) {
119             user->email = newMail;
120             break;
121         }
122     }
123 }
124
125 User* Login::getUser (std::string username) {

```

```

126     for (auto user : users) {
127         if (user->username == username) return user;
128     }
129     return nullptr;
130 }
131
132 void Login::removeUser(std::string username) {
133     User *p = getUser(username);
134     if (p != nullptr) {
135         auto it = std::find(LoginedUsers.begin(), LoginedUsers.end(), p);
136         if (it != LoginedUsers.end()) LoginedUsers.erase(it);
137         users.erase(std::find(users.begin(), users.end(), p));
138         delete p;
139     }
140 }
141
142 void Login::printUsers() {
143     for (auto user : users) {
144         user->print();
145     }
146     for (auto user : LoginedUsers) {
147         user->print();
148     }
149 }

```

2 运行结果

```

● root@32514c419ad2:/ws/assignment4-Login# ./main
[=====] Running 5 tests from 1 test suite.
[-----] Global test environment set-up.
[-----] 5 tests from LOGINTEST
[ RUN      ] LOGINTEST.checkRegistry
[          OK ] LOGINTEST.checkRegistry (0 ms)
[ RUN      ] LOGINTEST.checkSameMail
username already taken
username already taken
[          OK ] LOGINTEST.checkSameMail (0 ms)
[ RUN      ] LOGINTEST.checkremove
[          OK ] LOGINTEST.checkremove (0 ms)
[ RUN      ] LOGINTEST.checkLogin
[          OK ] LOGINTEST.checkLogin (0 ms)
[ RUN      ] LOGINTEST.checkPointer
[          OK ] LOGINTEST.checkPointer (0 ms)
[-----] 5 tests from LOGINTEST (0 ms total)

[-----] Global test environment tear-down
[=====] 5 tests from 1 test suite ran. (0 ms total)
[ PASSED ] 5 tests.
0

```

图 1: result