Detailed Design Document

<<VERSION 1.0>>

3C(Create Consummate Campus) System

——A voting evaluation system

Team Name: MissPoem

Name: Niannian Li, Shiyun Liu

Course: Advanced Software Paradigms

Professor: Dr. A. Bellaachia

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Document History and Distribution

1. Revision History

Revision #	Revision Date	Description of Change	Author
None			

2. Distribution

Recipient Name	Recipient Organization	Distribution Method

Table of Contents

1. Introduction

This project is named 3C (Create Consummate Campus) system. It's a voting evaluation system on campus. Users can cast votes and publish its own votes with many other operations by using this system.

1.1 Target Users

There are three groups of target users in this project: Students, Faculty and Administrators. Students and Faculty have the same authorities and functions. The reason of separating them into two different user groups is that some votes aim at only one group of them and the other group can not vote. For example, Faculty can not cast a vote whose topic is "Who is your favorite teacher". This kind of votes only aim at students.

(1) Students:
Students can present their opinions of their schools or faculty (professors) by voting and they can also add vote topics and waiting for others' voting in order to know more about their schools or faculty.

(2) Faculty:
Faculty can present their opinions of their schools or students by voting and they can also add vote topics and waiting for others' voting in order to know more about their schools and student.

(3) Administrators:
The administrators should manage the users' login information and the voting information like receiving delations and deleting the unqualified votes. Also, they can publish votes as a representative of the school and will get a lot of information which will help the school and the faculty to improve themselves.

1.2 Purpose

(1) Make students, faculty know more about the campus by using this voting system.

(2) Provide a platform of communication between students, faculty and school officials.

(3) Facilitate the improvment of the three groups of users and make a contribution to creating consummate campus.

1.3 Scope

This document contains seven sections. The seven sections are: Introduction, Level 0 Design Description, Level 1 Design Description, Level 2 Design Description, Database Design, User Interface Design and Reference.

2. Level 0 Design Description

2.1 Software System Context Definition

Fig 2.1 shows a diagram of this 3C system Context Definition.

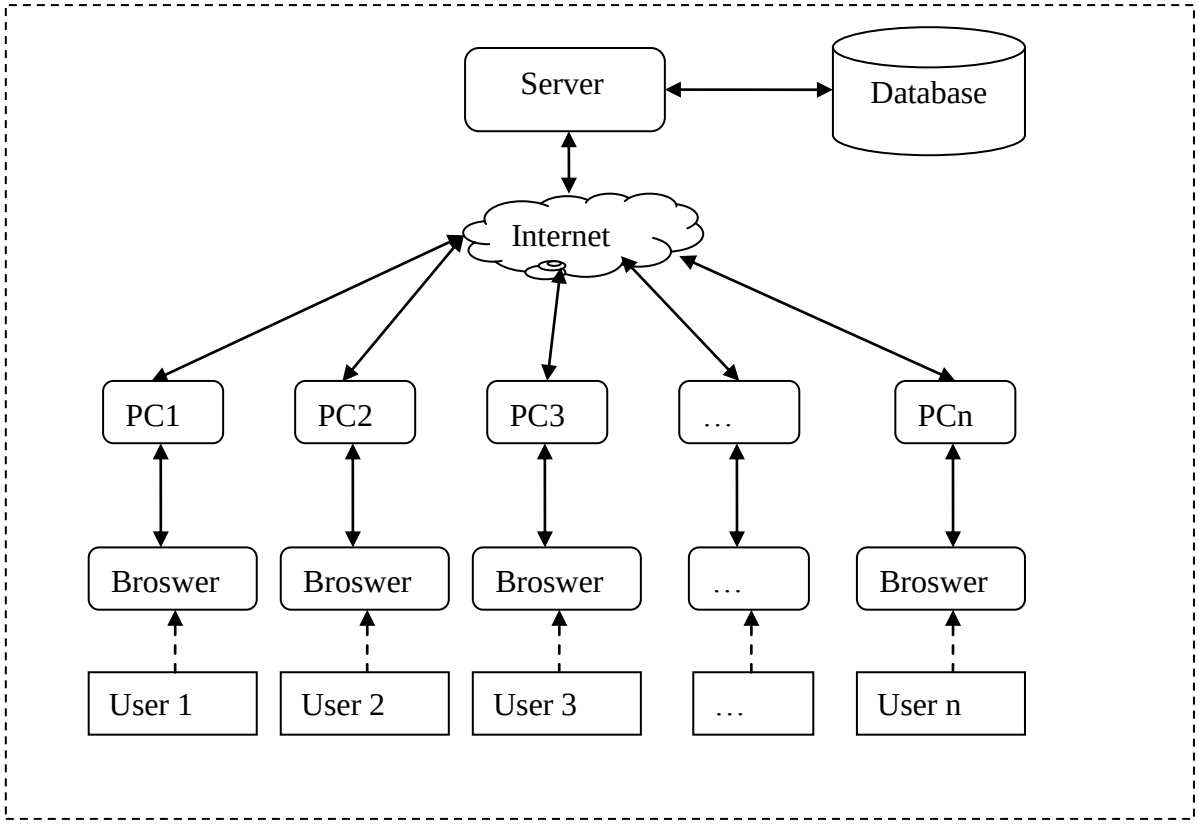

Fig. 2.1 Application Environment Diagram of 3C system

It's easy to find that
(1) Users should have a PC,
(2) The browser has been installed on the PC and now is available.
(3) The PC has been connected to the network successfully.
(4) Memory requirements of PC is more than 1G

2.2 Software Development Environment

(1) Dreamwaver: Design and landscape the front interface of webpages.
(2) myEclipse: Develop backgroud program by JAVA language.
(3) MySQL: Provide database service for this application.

3. Level 1 Design Description

3.1 System Architecture

This program is based on B/S architecture. B/S is short for Browser/Server, which is a variation or development of C/S (Client/Server) architecture. By using this architecture, user interface is realized by the www browser with a few behaviors of transaction logic. The main behaviors of the transaction logic are in the server.It simplifies the missions and reduces the heavy burdens of client-side. It also reduces the cost and workload of system maintainance. Fig. 3.1 shows the B/S architecture of this 3C system.

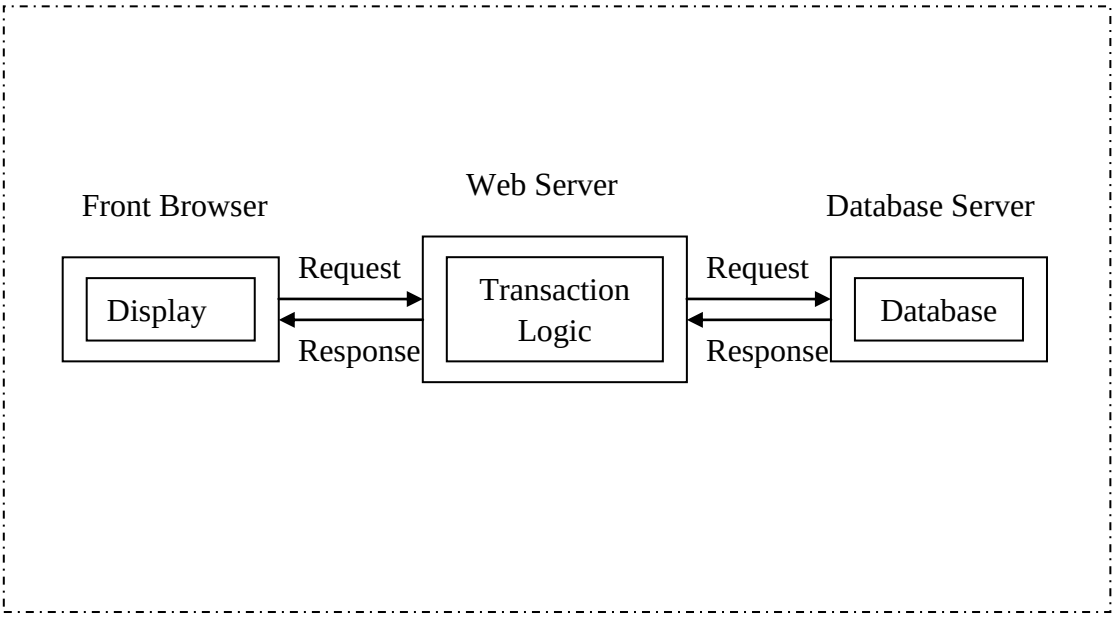

Fig. 3.1 Architecture Diagram of 3C system

It's a 3-tier architecture which contains Display layer, Transaction Logic Layer and Database Layer. There are some advantages of this structure:

(1) Open standards: Standards for B/S are all open and unspecialized which provides generality and cross-platform ability.
(2) Low cost of development and maintainance: Applications based on B/S are used on the browser, so users only need to install the generic browser. Maintainance and update operation will be taken on server.
(3) Easy use for users: The user interfaces of B/S applications are always user-friendly.

So we use B/S 3-tier architecture.

3.2 Description of System Process

In this document, student group and faculty group can be combined to be a general user group. So in order to describe the system process clearly, we use Business Flow diagram for the general users and sequence diagram for the administrators.

3.2.1 Business Flow Diagram for General Users

General user group has four functions. They are Login, Manage Personal Information, Vote and Manage Own Voting Information.

(1) Login

General users can login by their gwid and password. If they forgot their password, they can request to find their password back. Fig 3.2. shows the business flow diagram of the login process.

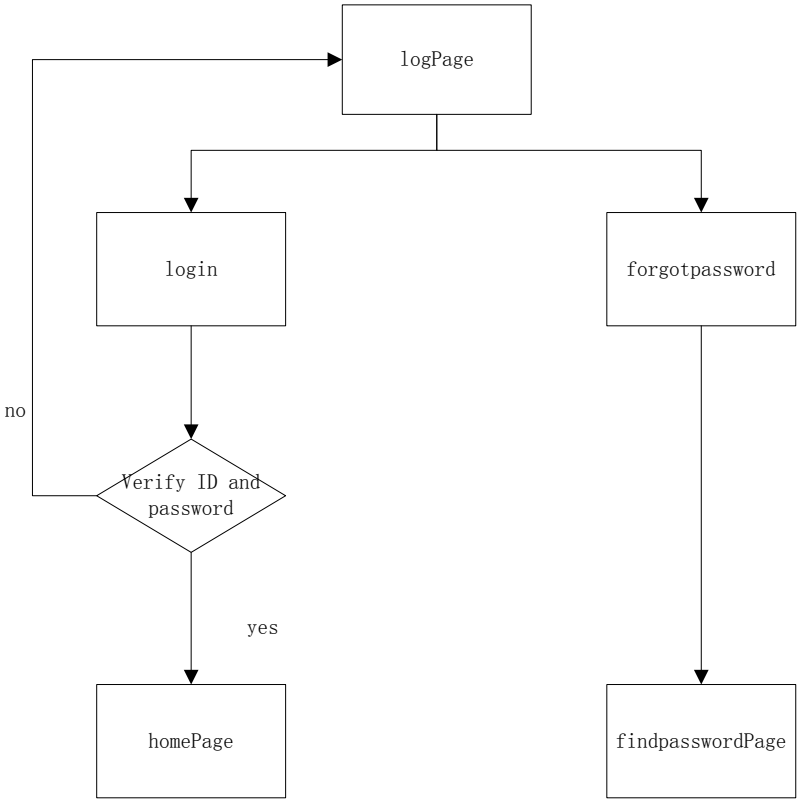

Fig. 3.2 Business Flow Diagram of Login

In this situation, there are also some operation to help people deal with exceptions, such as forgetting the password. So Fig. 3.3 shows the business flow diagram of the find password process.

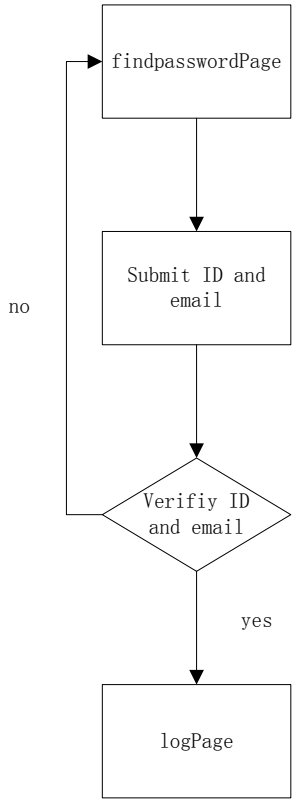

Fig. 3.3 Business Flow Diagram of Find Password

(2) Manage Personal Information

Only one function in this part, which is resetting password. General users input their current password and new password to change their password. Fig. 3.4 shows the business flow diagram of the reset password process.

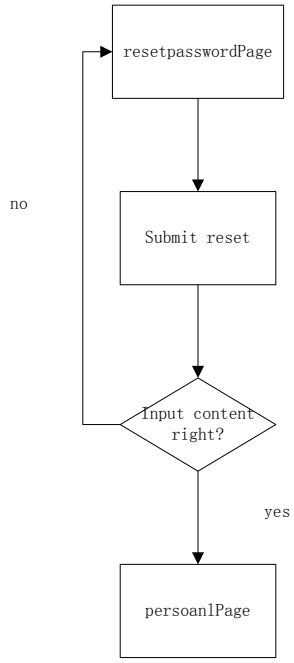

Fig. 3.4 Business Flow Diagram of Reset Password

(3) Vote

Voters can vast a vote and report current vote.

General users click the go to vote link, if the vote hasn't ended, they will go to the vote page to vote for the topic. If the vote has ended, the system will notice the user, then the user will stay in the current page.

If users think this topic is not appropriate, they can report the topic by sending a message to the administrator

Fig.3.5 shows the business flow diagram of view vote process.

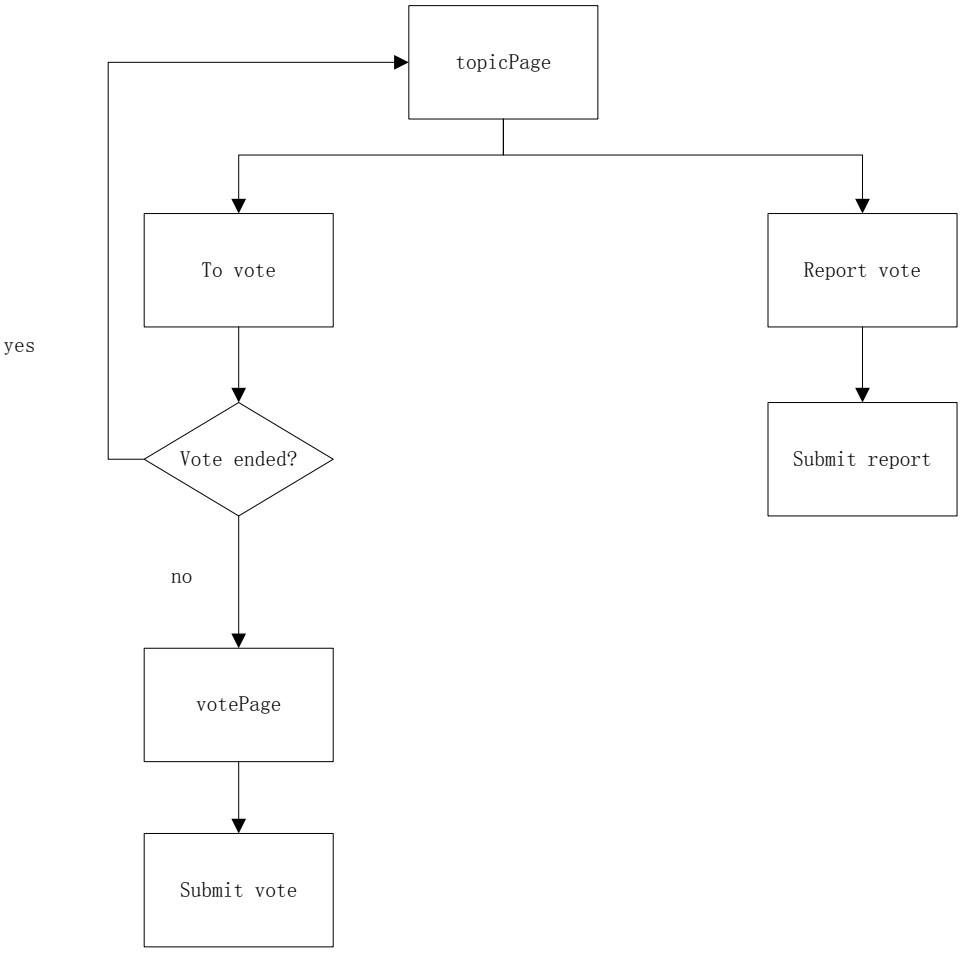

Fig. 3.5 Business Flow Diagram of View Vote

(4) Manage Own Voting Information

When managing own voting information, general users can launch votem edit launched vote, delete launched vote and view vote history.

Fig 3.6 shows the business flow diagram of launch a new vote process. General users can launch a new vote, input the information needed, then submit.

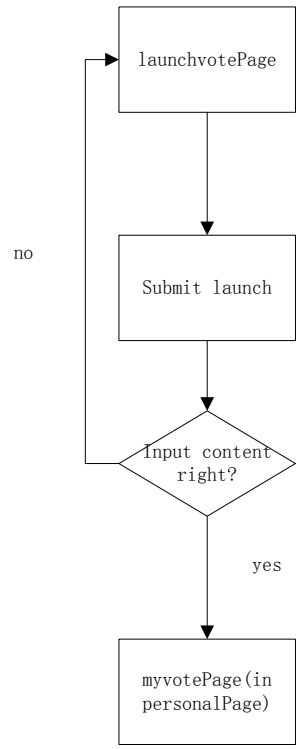

Fig. 3.6 Business Flow Diagram of Launch Vote

Fig 3.7 shows the business flow diagram of edit launched vote process. General users can change the vote information or even cancel the vote topic that haven't ended.

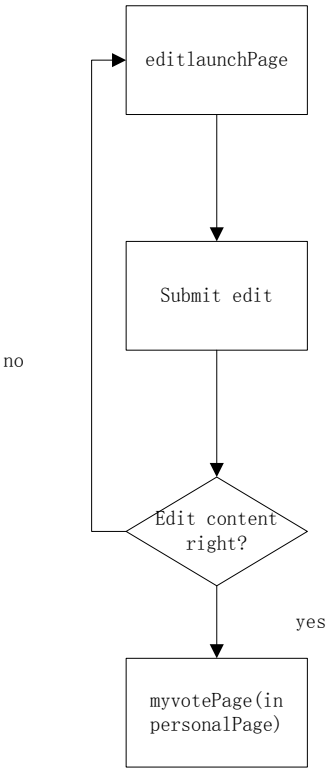

Fig. 3.7 Business Flow Diagram of Edit Launched Vote

(5) View Massage

If the user's votes were reported and administrators delete them, they will receive a system message about deleting votes.

After clicking on the message link, the general users can view all the messages they received, each page will list 10 messages.

Fig 3.8 shows the business flow diagram of view message process.

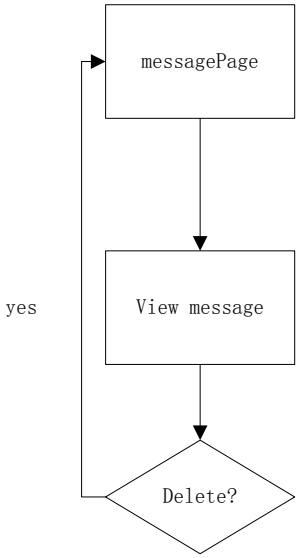

Fig. 3.8 Business Flow Diagram of View Message

3.2.2 Sequence Diagram for Administrators

Administrators have four functions. They are Login, Manage Personal Information, Manage Own Voting Information and Manage All Information.

(1) Login

AdministrationUI denotes the user interface of administrator.
Administrator denotes the server for administrator.
PersonalInformation denotes the user information.

AdministrationUI call loggin function of Administrator with two parameters(userID and password) and then Administrator check the PersonalInformation.

Fig 3.9 shows the sequence diagram of login function.

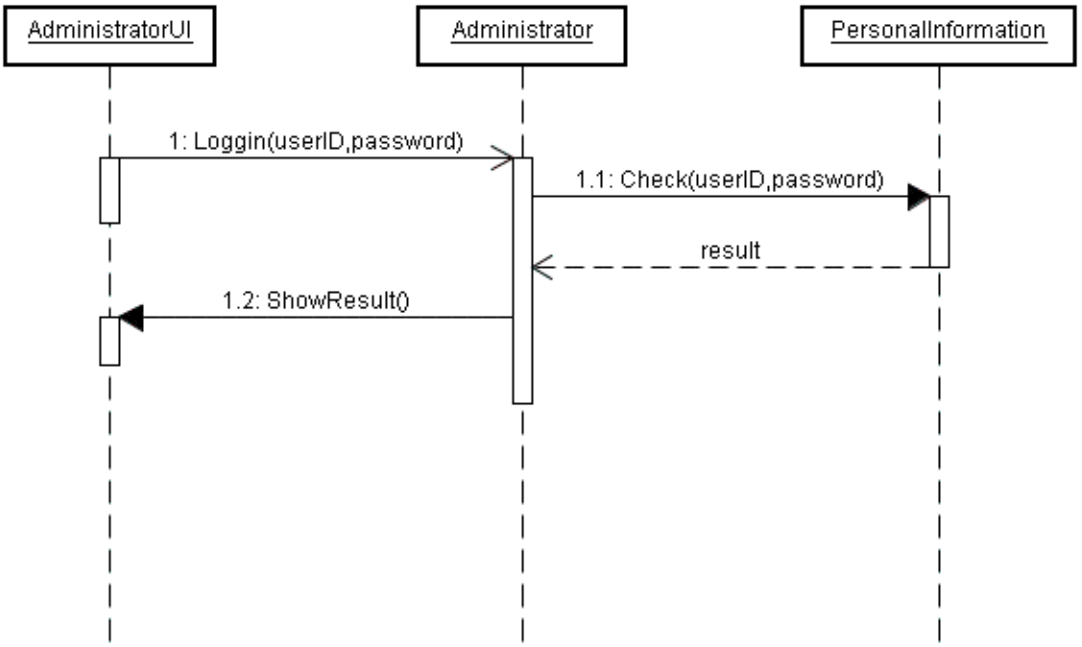

Fig. 3.9 Sequence Diagram of Login

(2) Manage Personal Information

There are two sub functions in this part. One is view personal information and the other is update the password. Fig 3.10 shows the sequence diagram of view personal information function and Fig 3.11 shows the sequence diagram of update password function

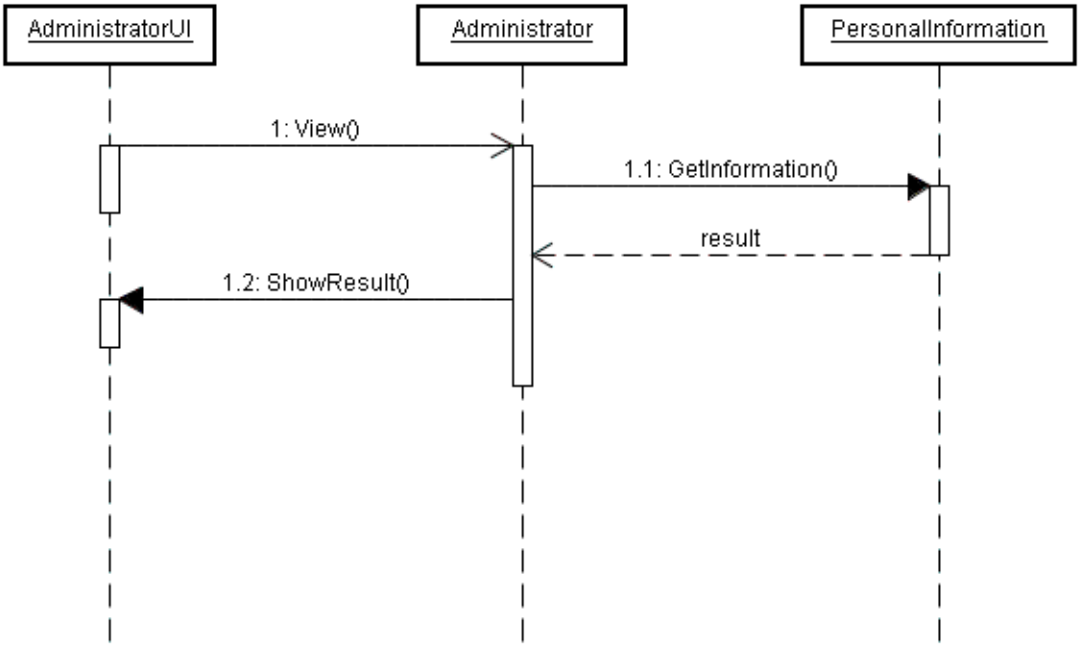

Fig. 3.10 Sequence Diagram of View Personal Information

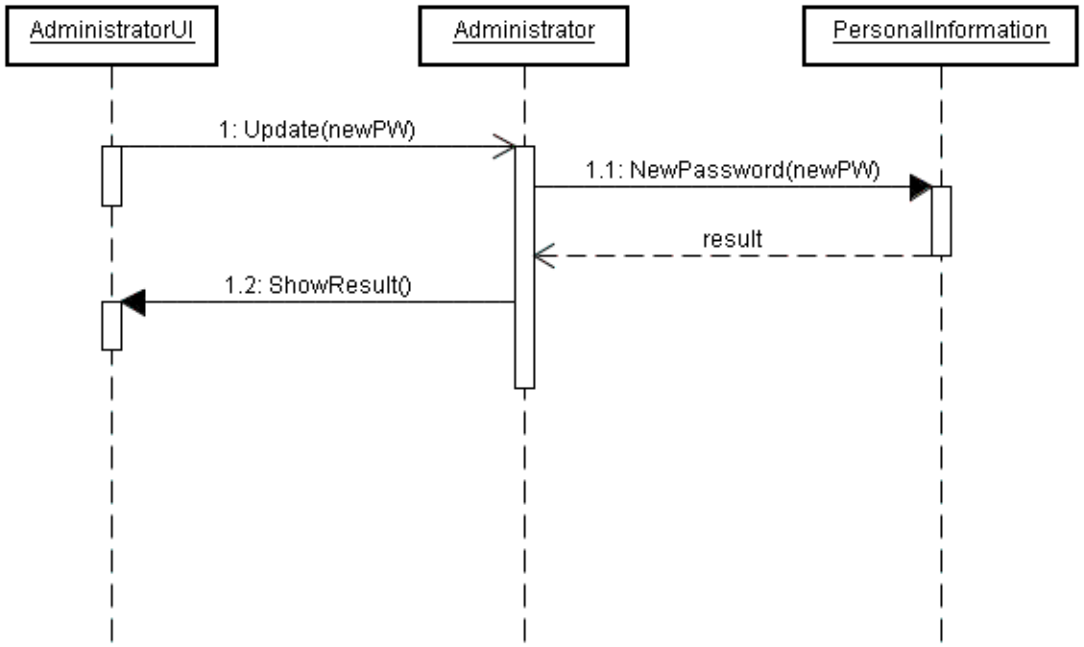

Fig. 3.11 Sequence Diagram of Update Password

(3) Manage Own Voting Information

VoteInformation denotes person own voting information.

AllVote denotes the whole vote repository of the system

Administrators can add, edit, remove and view history in this part. Their operation will affect their own voting information and the whole voting system. And Fig 3.12 shows the sequence diagram of manage own voting information function.

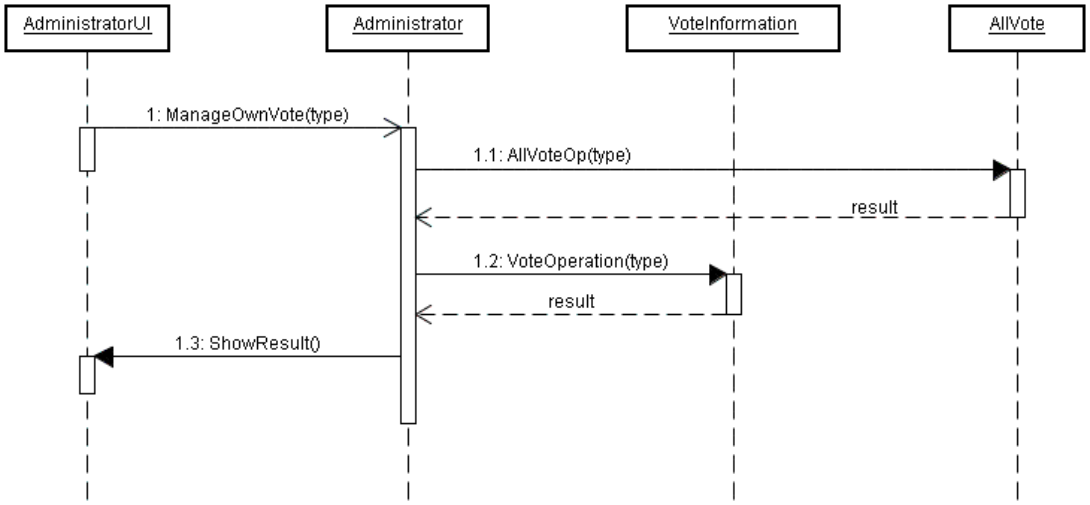

Fig. 3.12 Sequence Diagram of Manage Own Voting Information

(4) Manage All Information

ReportedVote denotes the votes which have been reported.

GeneralUser denotes the general users.

Administrators can manage the users information and manage the reported votes.

When managing users information, administrators can also insert, delete, modify and view information.Fig 3.13 shows the sequence diagram of manage user information function.

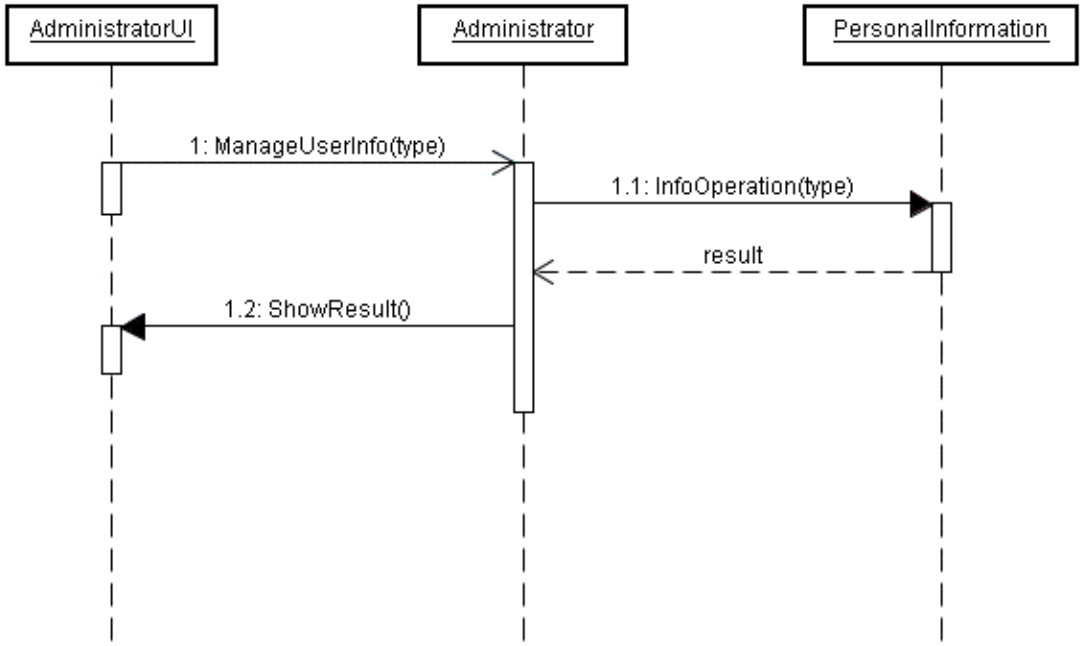

Fig. 3.13 Sequence Diagram of Manage User Information

When managing the reported vote information, administrator can view the vote details and judge if this vote will be deleted. If the vote is removed, the launcher will receive a message from the system. Otherwise, the cancel the report flag of this vote. Fig 3.14 shows the sequence diagram of manage reported vote function.

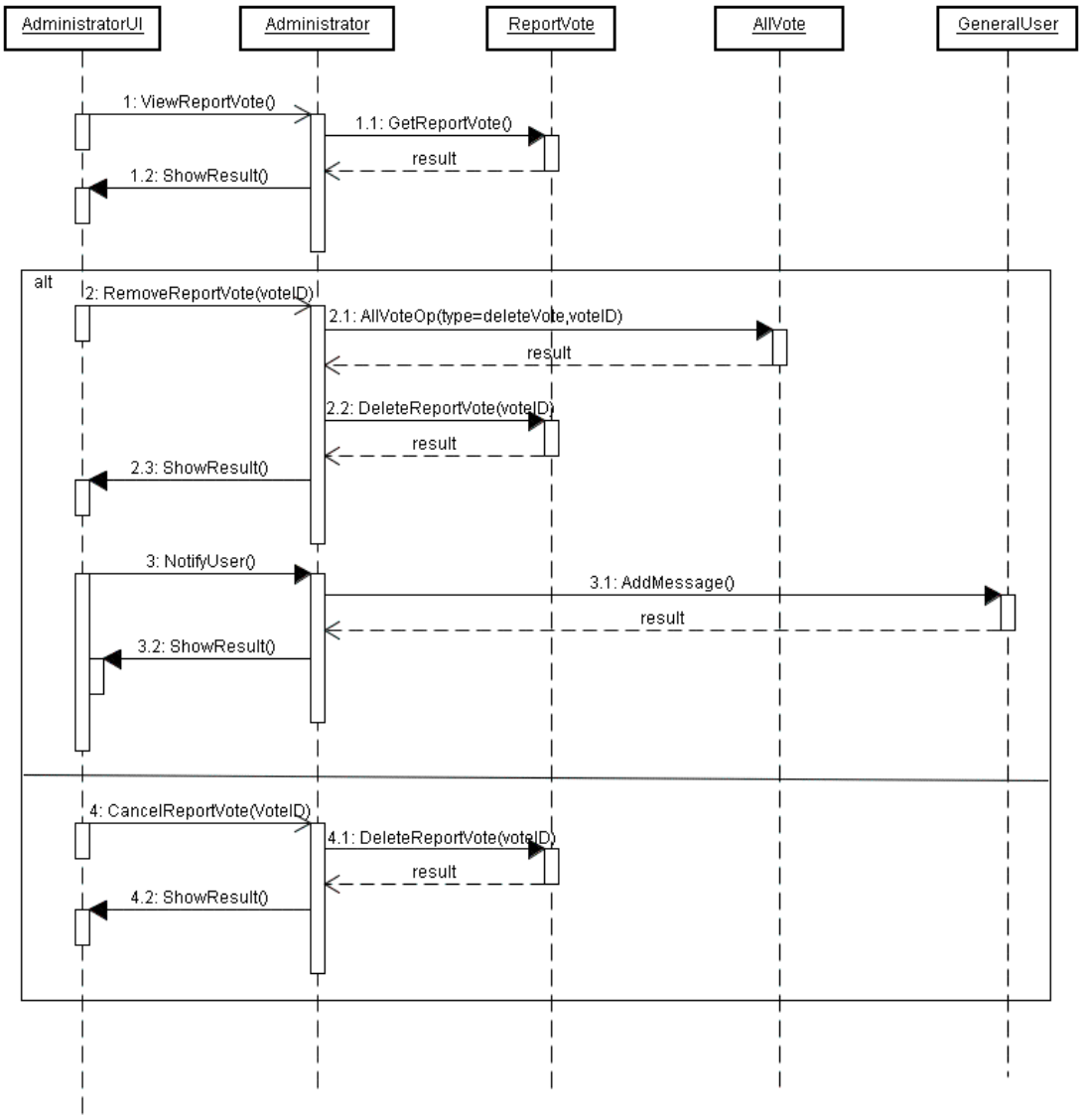

Fig. 3.14 Sequence Diagram of Manage Reported Vote

4. Level 2 Design Description

This project contains many function modules and the main is voting. The basic functions that we need to realize are as follows. And the extended functions which can be realized if allowing more time and energy are added behind the basic funcions.

4.1 Basic System Modules

Fig. 4.1 shows the basic system modules of 3C system.

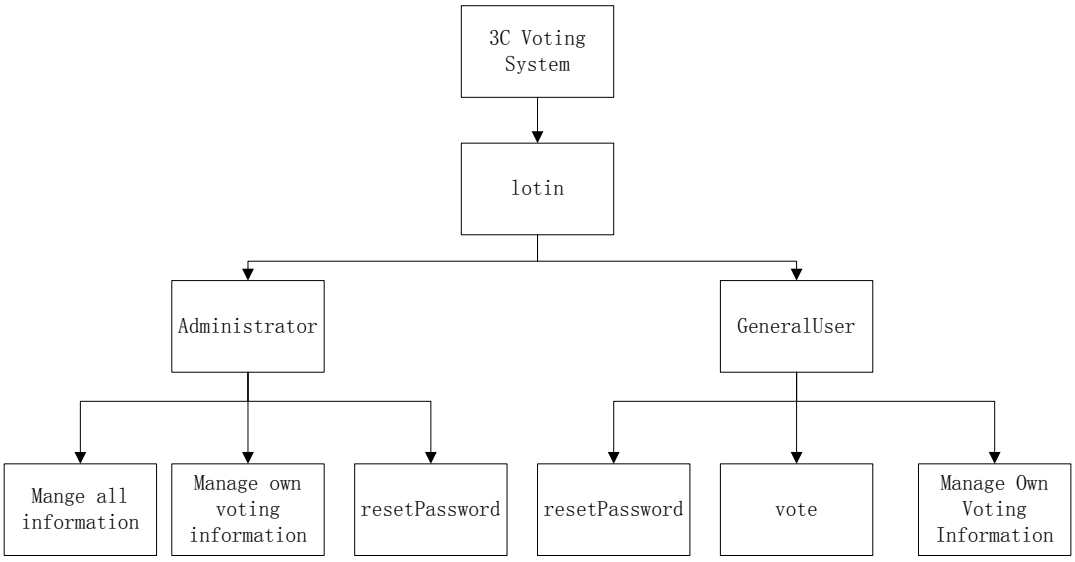

Fig. 4.1 Basic System Module Diagram of 3C system

After logging in, there are two main modules of the voting system:

(1) Administrators Module: Administrators can manage all informations of this system, manage own voting information and manage its personal information.

(2) General Users Module: General users can manage the personal information, cast votes and manage their own voting information.

4.2 Representation of Class Diagram

4.2.1 General Users Class Diagram

GeneralUser can launch a new vote for the topics launched by others. Vote topics can be edited and deleted. Every vote topic has its vote topic items.

The general users class diagram is as the Fig. 4.2 below.

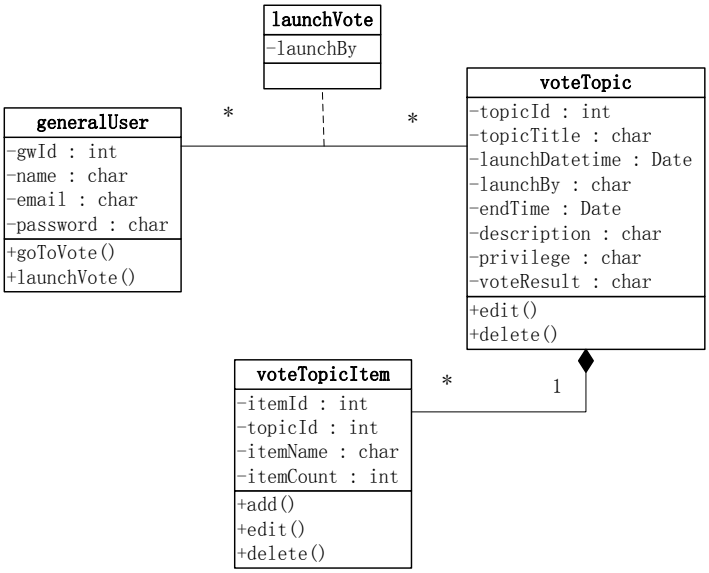

Fig. 4.2 General Users Class Diagram

GeneralUser denotes the general users.
VoteTopic denotes the vote information.
VoteTopicItem denotes the corresponding items of the vote.

4.2.2 Administrators Class Diagram

According to the sequence diagram, the administrators class diagram is as the Fig. 4.2 below.

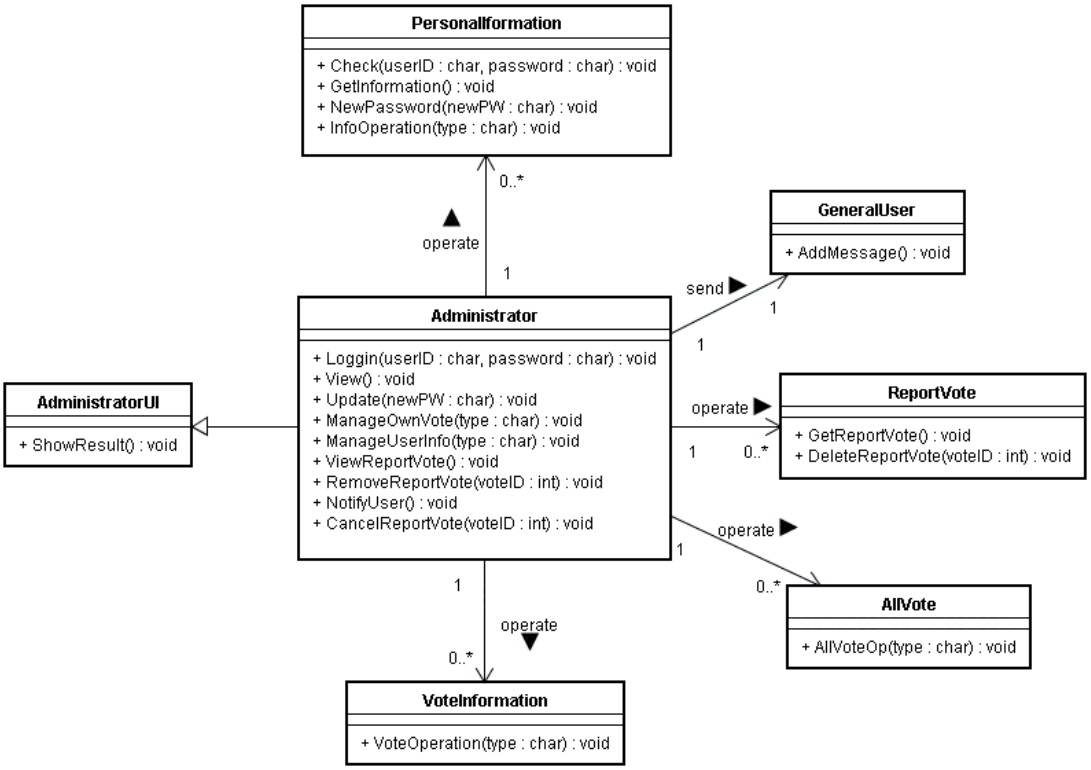

Fig. 4.3 Administrators Class Diagram

AdministrationUI denotes the user interface of administrator.
Administrator denotes the server for administrator.
PersonalInformation denotes the user information.
VoteInformation denotes person own voting information.
AllVote denotes the whole vote repository of the system
ReportedVote denotes the votes which have been reported.
GeneralUser denotes the general users.

5. Database Design

This system is a kind of information managing system. To manage information, database will surely be taken into use. Here are the tables of this 3C voting systems.

(1) ."User" Table

This table is created for fast logging in. User(UserID, Password) only contains two parameters. The original password of users is "0000000000". This table is dependent on the "Detail" Table below.

Table 5-1 Description of "User" Table

Field Name	**Data Type**	**Length**	**Whether Primary Key**	**Description**
UserID	int	10	Y	ID of user
Password	varchar	10	N	Corresponding password

(2) "Detail" Table

This table is the detail information of users. The information will be managed by the administrators. When one row of this table is added, the "User" table will add one row of the same UserID, too.

Table 5-2 Description of "Detail" Table

Field Name	**Data Type**	**Length**	**Whether Primary Key**	**Description**
UserID	int	10	Y	UserID
Name	varchar	50	N	Name of user
School	varchar	50	N	School of user
Major	varchar	50	N	Major of user
Grade	varchar	50	N	Grade of user
ClassNo.	int	10	N	Class of user
Identity	varchar	50	N	Identity of user, only have three values: student, faculty and administrator.

(3) "Vote" Table

Vote Table contains the vote information.

Table 5-3 Description of "Vote" Table

Field Name	**Data Type**	**Length**	**Whether Primary Key**	**Description**
VoteID	int	30	Y	ID of vote
UserID	int	10	N	ID of launcher(user)
Title	varchar	100	N	Title of vote
Question	varchar	500	N	Question content of vote
Classification	varchar	50	N	Classification of vote
PublishDate	varchar	50	N	Publish Date of vote

FinishDate	varchar	50	N	Estimate date that the vote will be unavailable
Avaliable	int	10	N	The status of vote. 1 means still available and 0 means unavaliable
Flag	int	10	N	Whether being reported. 1 means reported and 0 means not reported.

(4) "Authority" Table

This table is dependent on "Vote" table. It defines the limit of authority of the voters. Only the voters who satisfy the condition can vote this current vote. If no limits, all fields will set NULL values.

Table 5-4 Description of "Authority" Table

Field Name	**Data Type**	**Length**	**Whether Primary Key**	**Description**
VoteID	int	30	Y	ID of vote
School	varchar	50	N	School of voter
Major	varchar	50	N	Major of voter
Grade	varchar	50	N	Grade of voter
ClassNo.	int	10	N	Class of voter
Identity	varchar	50	N	Identity of voter, only have three values: student, faculty and administrator.

(5) "Item" Table

This table is also dependent on "Vote" table. A vote can have many items. When voters cast a vote on one item, the count number of this item will add one.

Table 5-5 Description of "Item" Table

Field Name	**Data Type**	**Length**	**Whether Primary Key**	**Description**
ItemID	int	100	Y	ID of item
Vote ID	Int	30	N	ID of corresponding vote
Label	varchar	10	N	Label of item
Content	varchar	500	N	Content of item
Count	int	20	N	The number of voters support this item

(6) "Report" Table

This table is created for reporting vote.

Table 5-6 Description of "Report" Table

Field Name	Data Type	Length	Whether Primary Key	Description
VoteID	int	30	Y	ID of vote
UserID	int	10	N	ID of launcher(user)

6. User Interface Design

Some user interface drafts are designed to represent our design idea.
Different groups have some pages in common and some in special.

(1) Common pages.

<1> Login

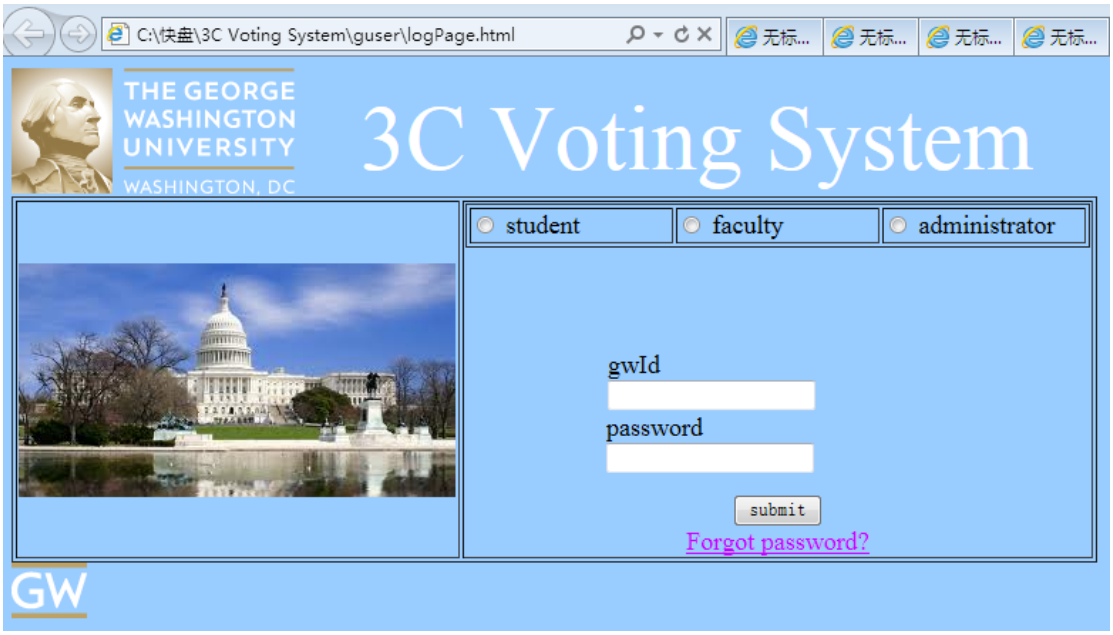

Fig. 6.1 Login User Interface

<2> Find Password

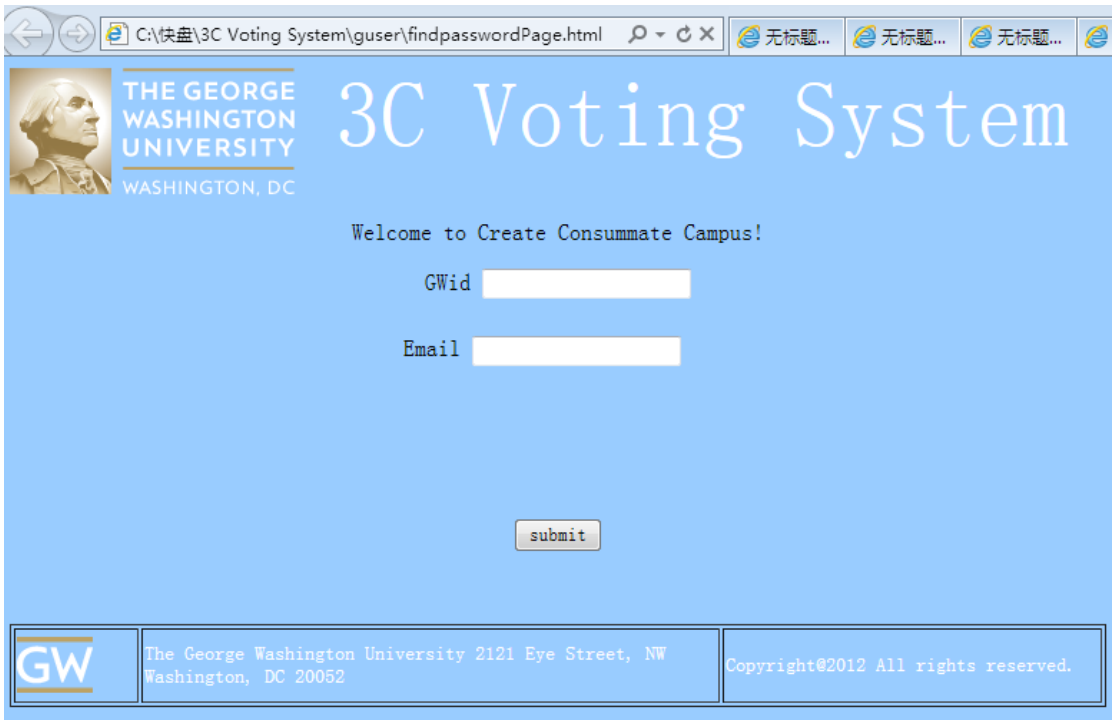

Fig. 6.2 Find Password User Interface

<3> Home Page

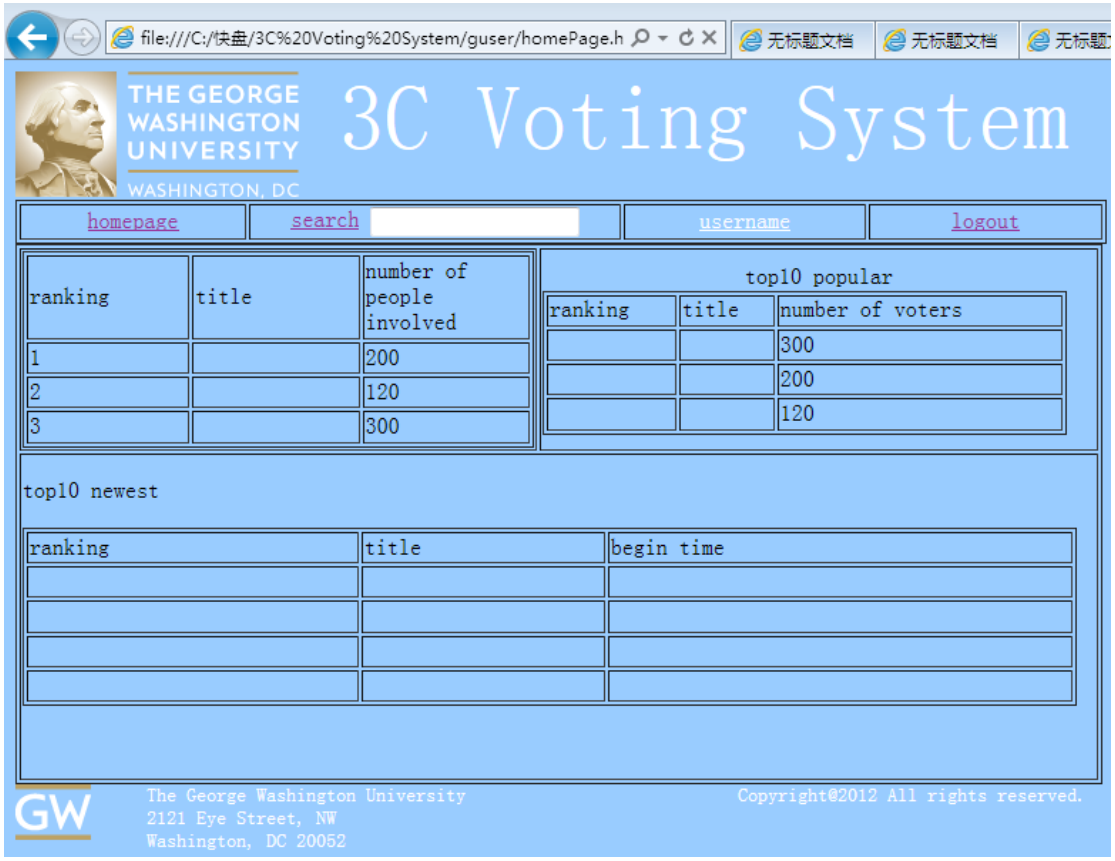

Fig. 6.3 Home Page User Interface

<4> Search Result Page

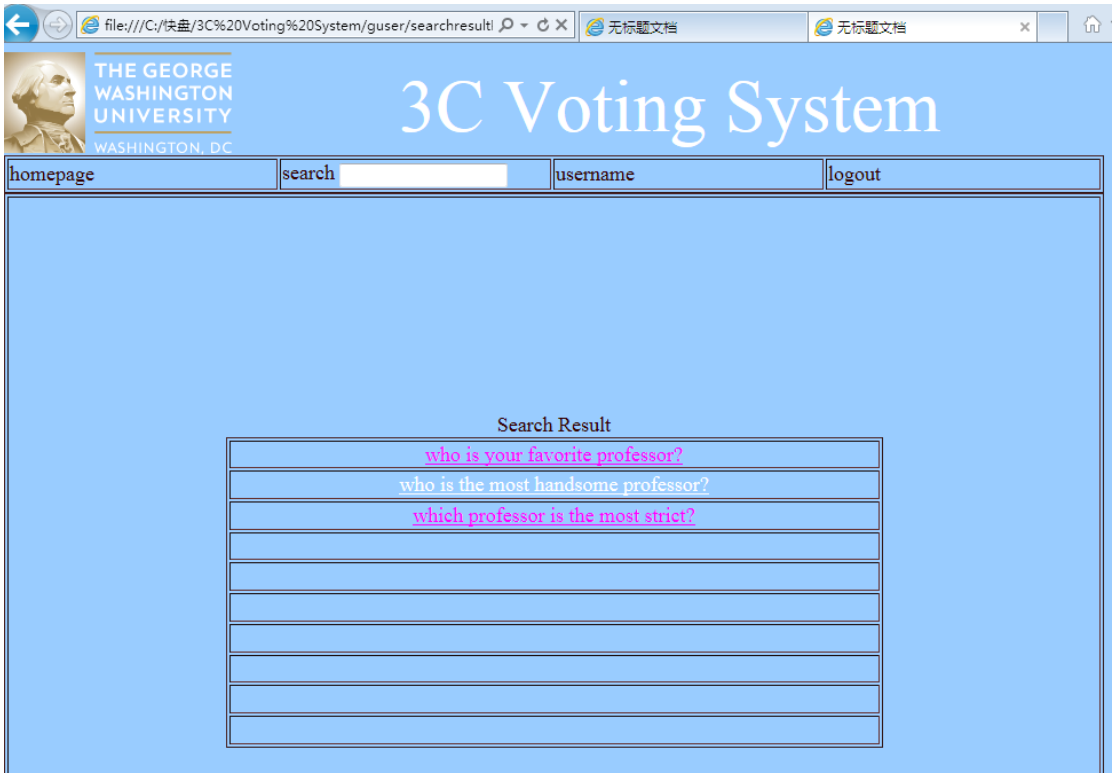

Fig. 6,4 Search Result Page User Interface

<5> Launch Vote Page

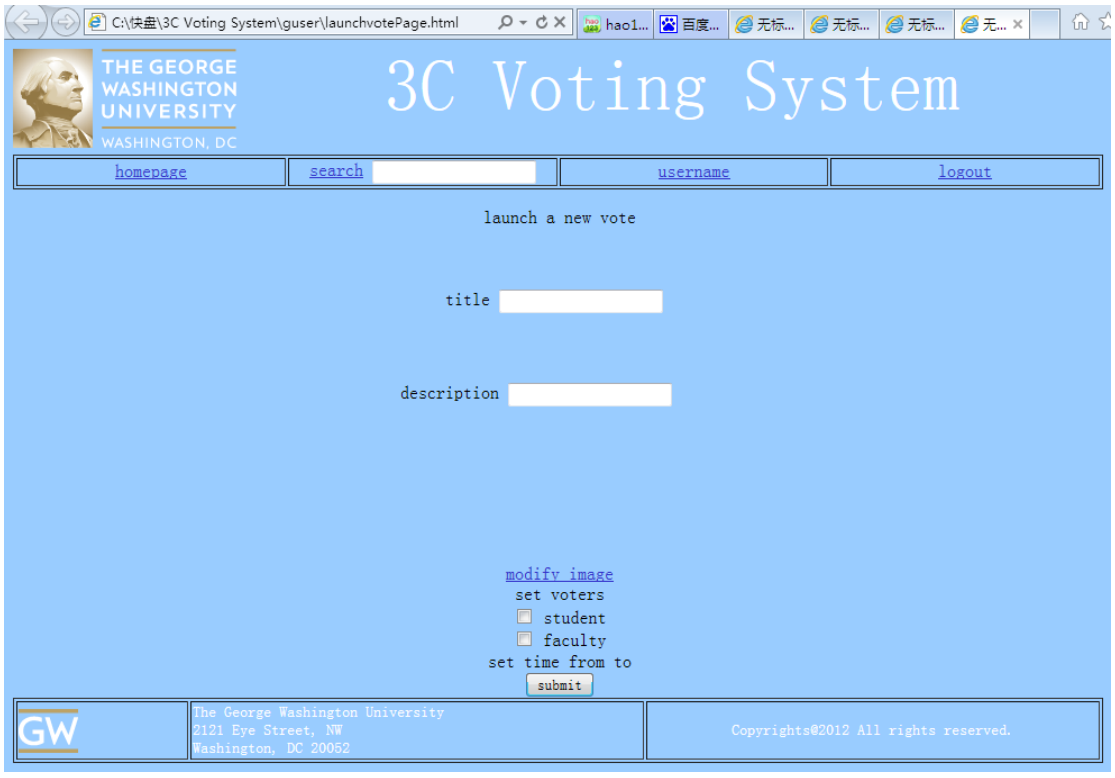

Fig. 6.5 Launch Vote Page User Interface

<6> Update Password Page

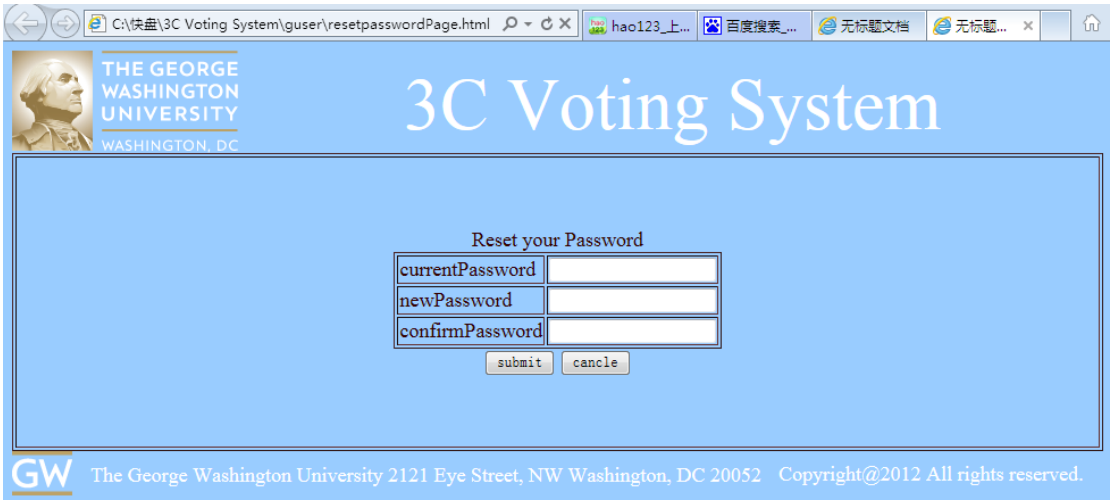

Fig. 6.6 Update Password Page User Interface

(2) General Users Special Pages

<1> Personal Page

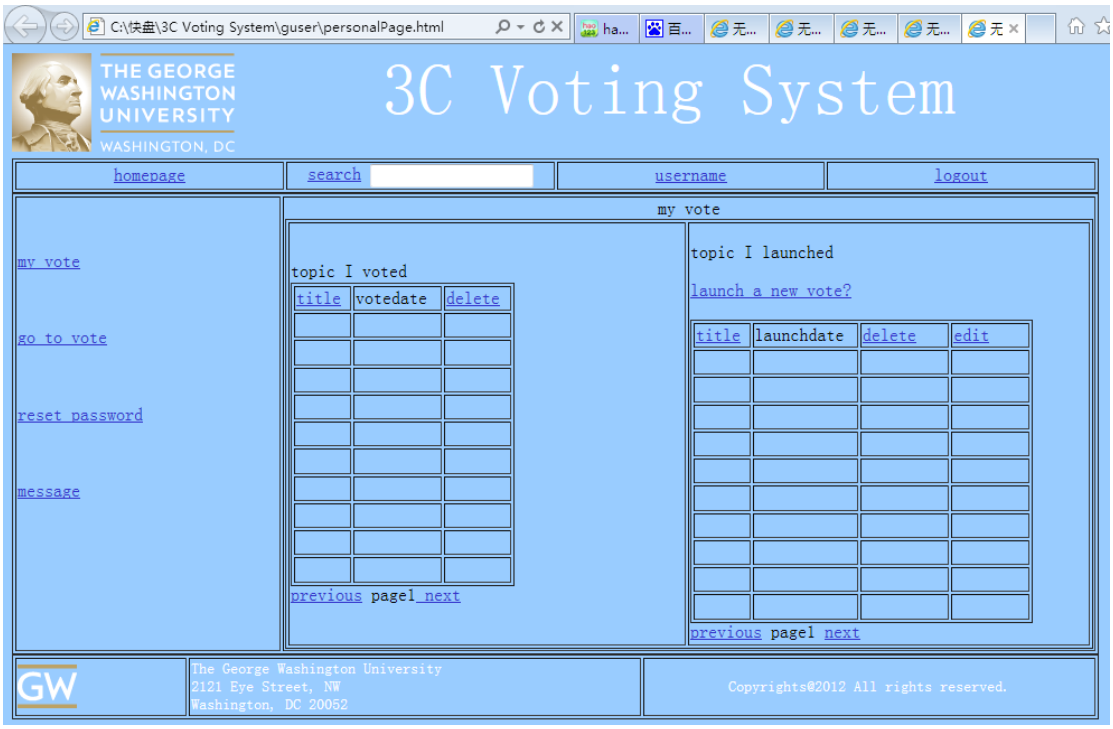

Fig. 6.7 Personal Page of General Users

<2> Vote Page

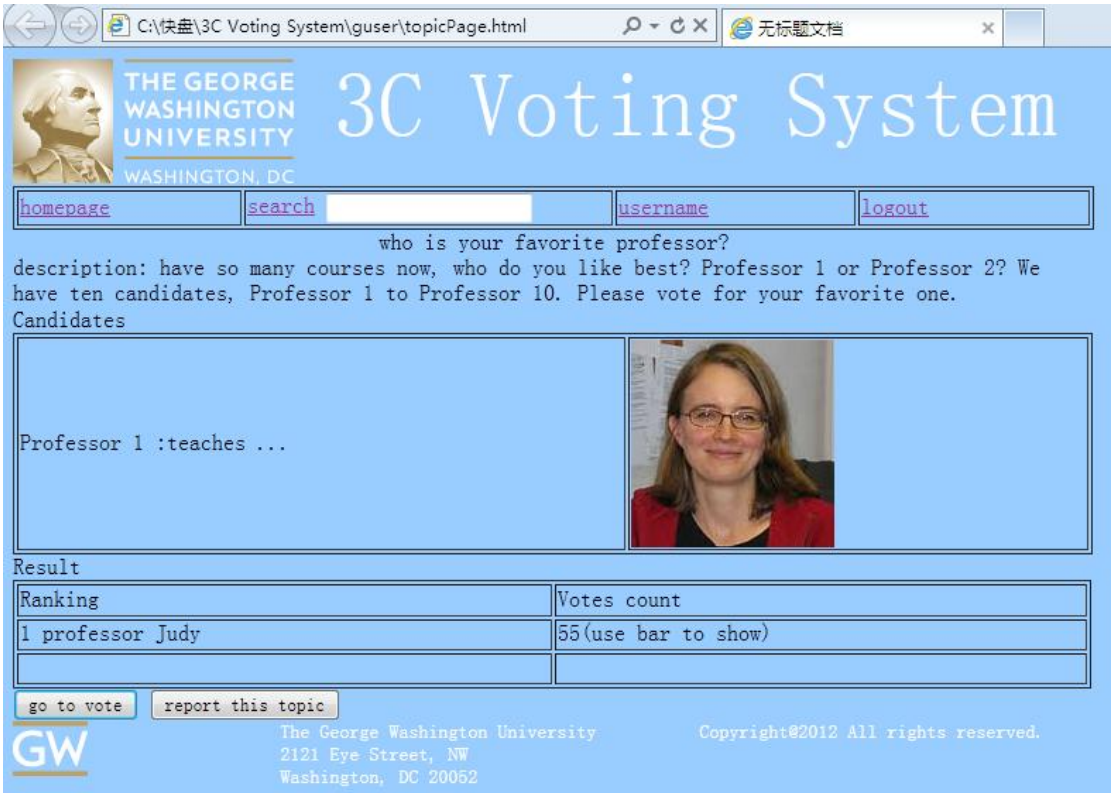

Fig. 6.8 Vote Page of General Users

<3> Massage Page

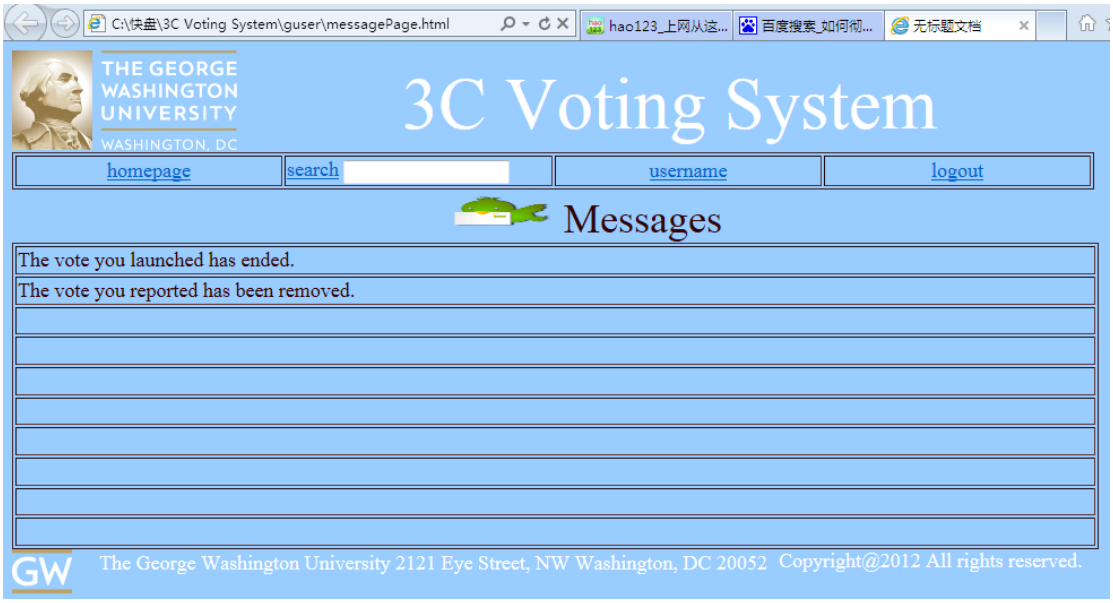

Fig. 6.9 Message Page of General Users

(3) Administrators Special Pages

<1> Personal Page

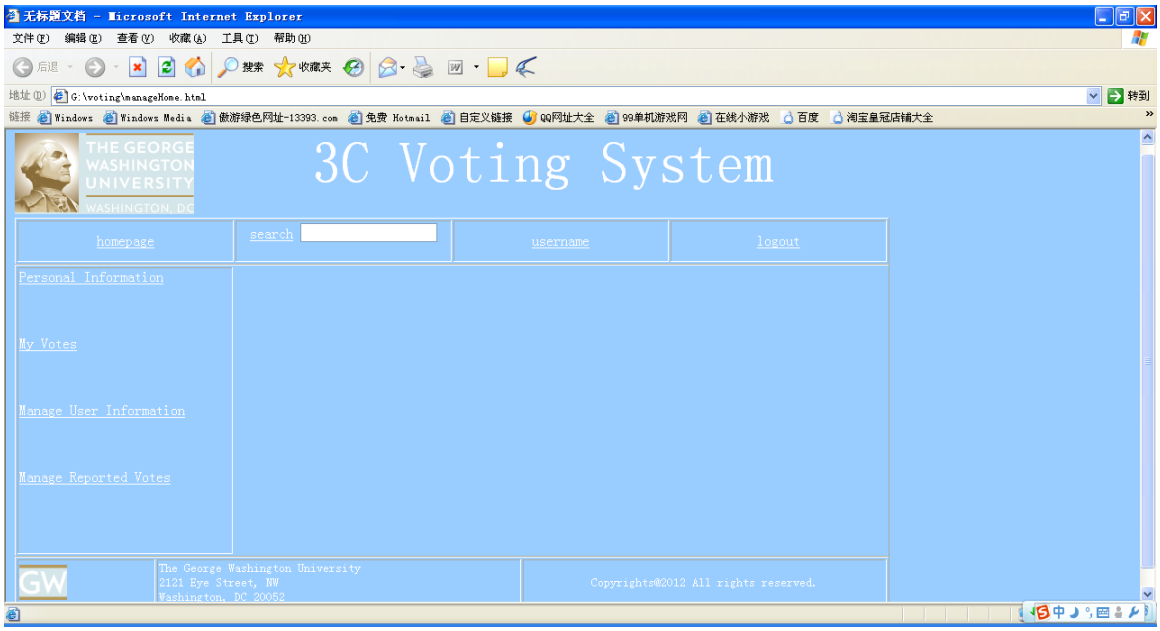

Fig. 6.10 Personal Page of Administrators

<2> Manage User Information Page

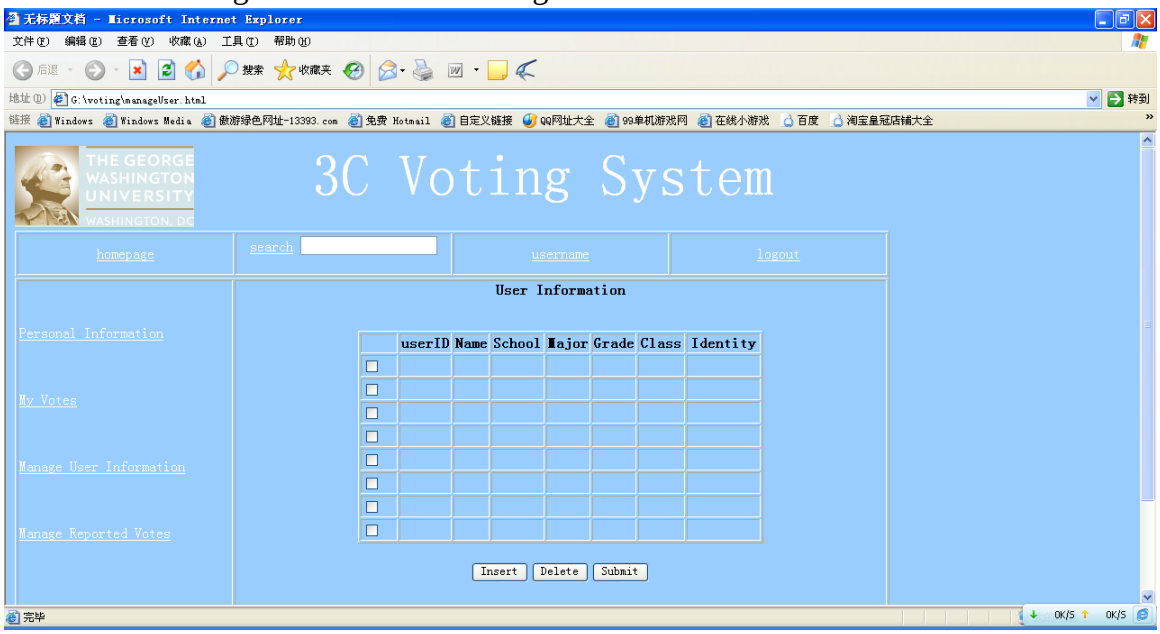

Fig. 6.11 Manage User Information Page of Administrators

<3> Manage Reported Votes Page

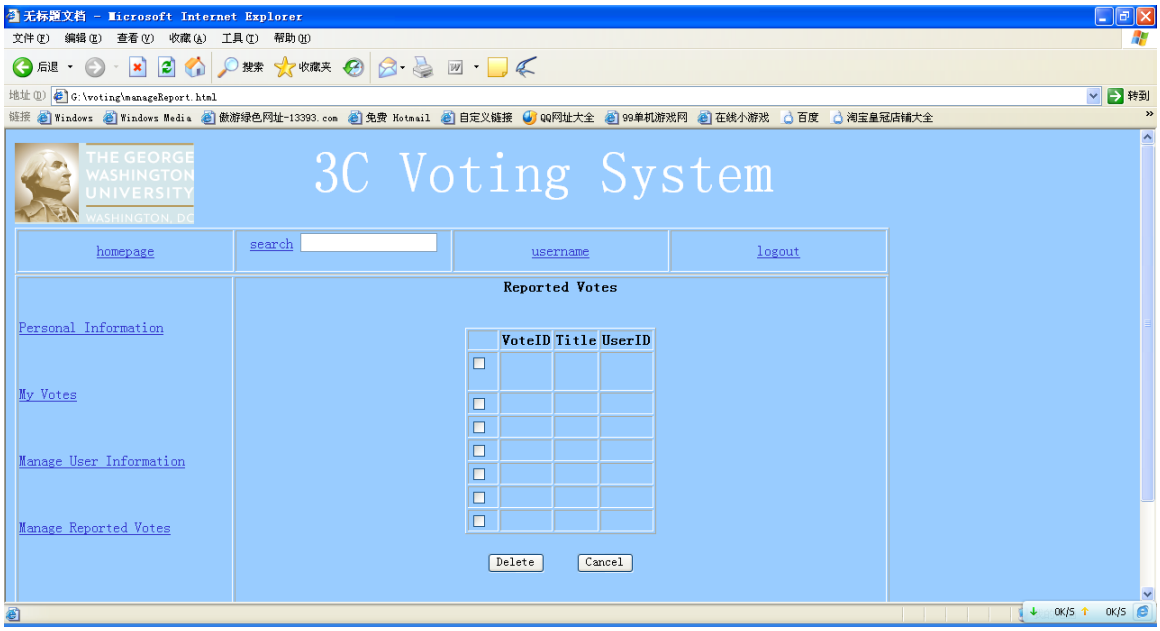

Fig. 6.12 Manage Reported Votes Page of Administrators

7. Reference

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[5] CGI Programming on the World Wide Web (first edition, 1996) by Shishir Gundavaram (illustrated HTML at oreilly.com)

[6]Wiki

[7] Google and Baidu search engine