SCHOOL OF COMPUTER SCIENCE

COMPSCI5059 Software Engineering M

Team RP_CH Report

Team Member	Student ID
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Abstract

In this report, we have completed the partial development of the PTT management system. Due to time constraints, only the functions of class director adding, deleting and changing the teaching list and the administrator selecting the right teachers to start training were completed. In the development, we followed the principles of agile development and used Trello for development process planning. Finally, this task was completed in a limited time.

Team's contribution

Name	GUID	Allocation
Zihan Huang	2604046H	GUI class; Console class; UML class diagram; Report.
Tianshan Hou	2499878H	RequirementList class; Requirement class; Report.
Tianyang Jiang	2511892J	TeacherList class; Sequence Diagram; Report.
Wei Han	2512164H	RequirementList class; Teacher class; Trello; Report.

Form 1 task allocation

User Story

- ***Story 1:***

Description:

As a class director, I want to log in with right access which can read and write the Requirement List, as well as the Teacher List.

Conversation:	> Click button to access as class director; > We do not need use account and password to finish "log in" function.
Test:	> log in as a class director > open the Requirement List > can write the Requirement List, with add and delete access > close and save changes of the Requirement List
Priority:	Must
Time estimation:	4 DAY

Form 2 story 1

- ***Story 2:***

Description:

As an administrator, I want to log in with the access to read the Requirement List and Teacher List.

Conversation:	> Administrator only has the authority to read the Requirement List and the Teacher List. > The saved Requirement List and Teacher List are constant.
Test:	> log in as an administrator > open and close TeacherList > open and close RequirementList
Priority:	Must
Time estimation:	3 DAY

Form 3 story 2

- ***Story 3:***

Description:

As an administrator, I want to choose the right teacher to start train according to the teaching requirements.

Conversation	> Administrator has no authority to change the Requirement List and Teacher List. > The matched result can be outputted as the id and name of suited teacher.
Test	> log in as an administrator > start matching according to requirement list
Priority	Must
Time estimation	3 DAY

Form 4 story 3

Sequence Diagram

- ***Operations of User Story 1 :***

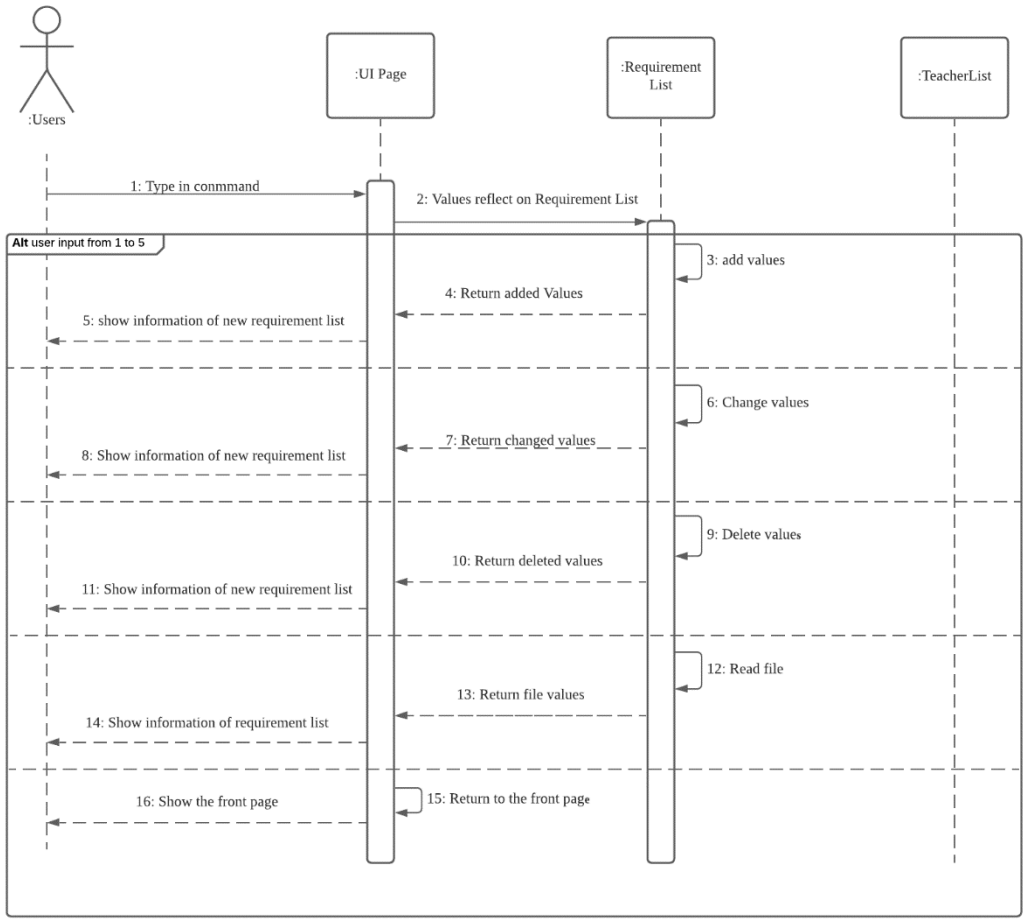

Figure 1 operations of User Story 1

> Users have the same operations on the Teacher List. Due to page restrictions, only operations on the Requirement List are allowed.

> Users subjectively identify their own identity and select the required operations;

> Class director can **read**, **add**, **change** or **delete** the requirement list;

> Administrator can **read** the requirement list.

- ***Operations of User Story 2 :***

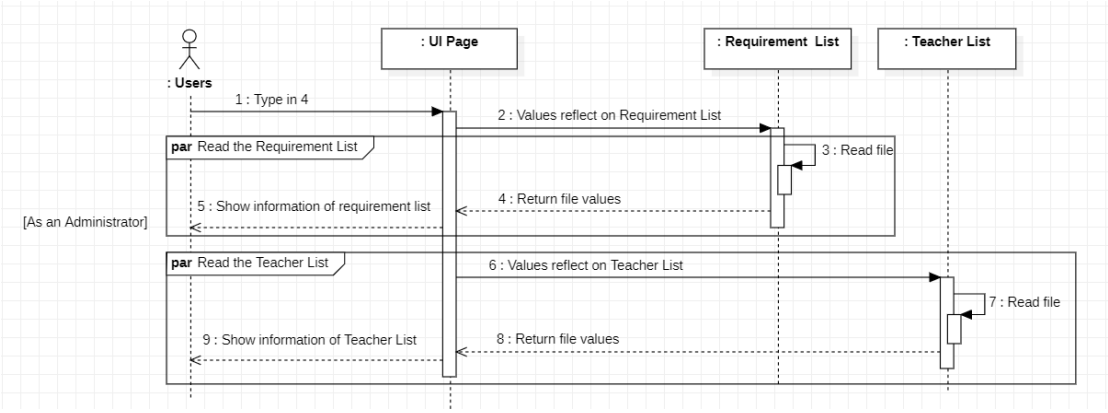

Figure 2 operations of User Story 2

> Users subjectively identify their own identity and select the required operation;

> Administrator can only **read** the teacher list and the Teacher List.

- ***Operations of User Story 3 :***

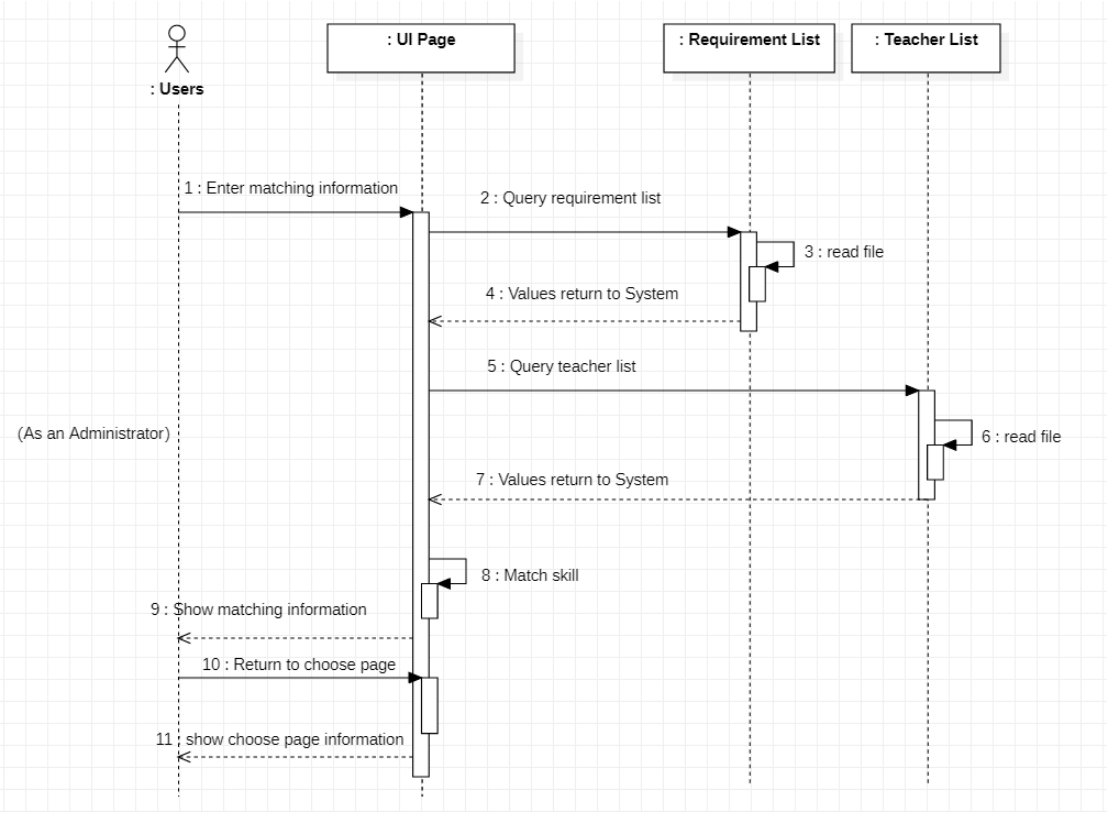

Figure 3 operations of User Story 3

> Users subjectively identify their own identity.

> Administrator can perform match operations.

- ***Note:***

> The message of the two users on the system is parallel;

> The message of the Class director on the two lists is alternative;

> The message of the Administrator on the two lists is weakly sequential (according to task logic).

Class Diagram

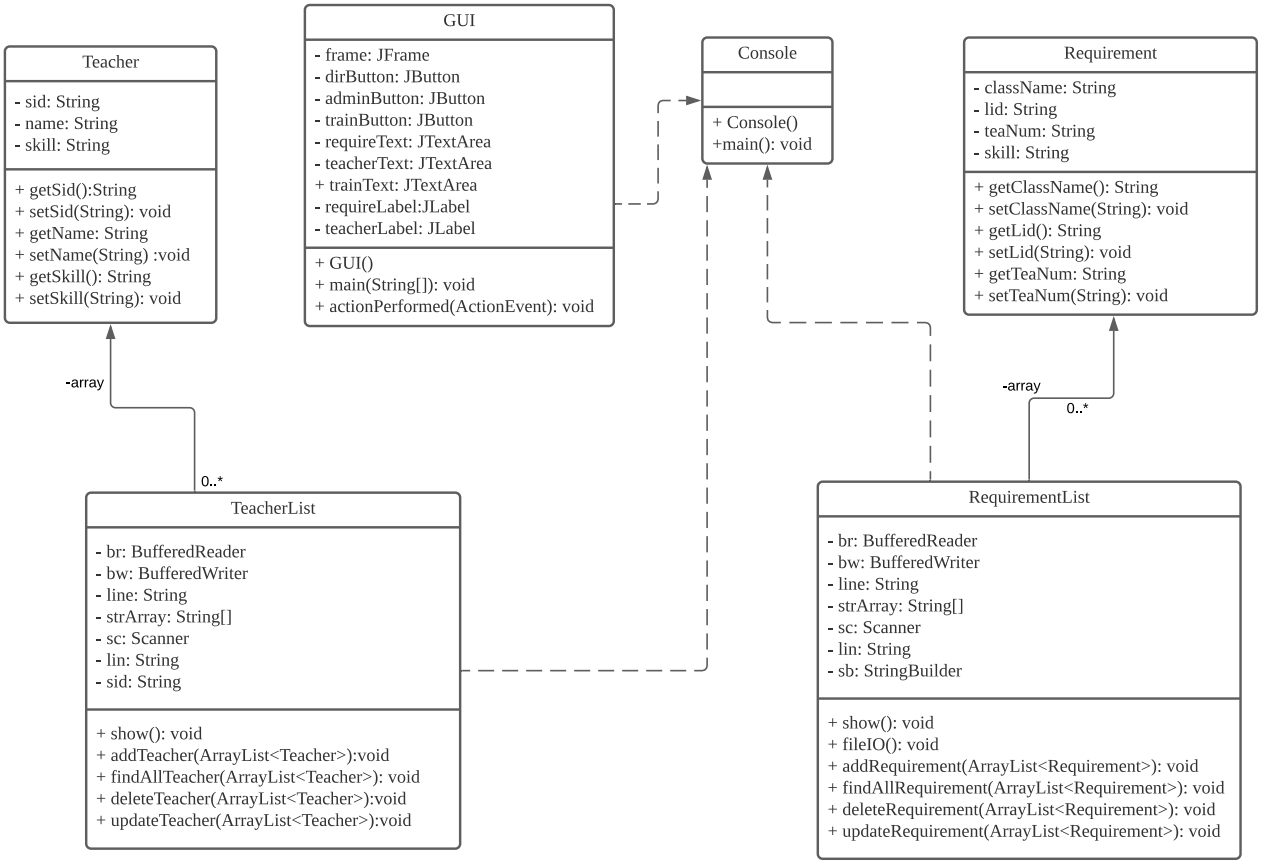

Figure 4 class Diagram

Trello

We used Trello to plan and organize our development process. A clear and visible plan would make development easier.

- ***General project:***

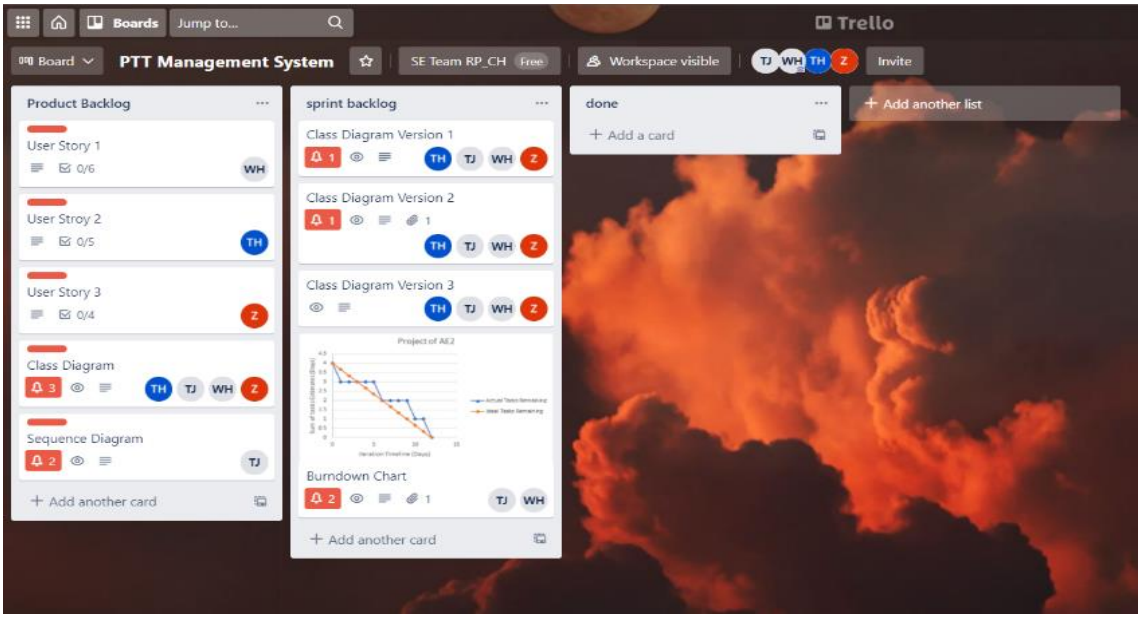

Figure 5 general project view

- ***Product Backlog:***

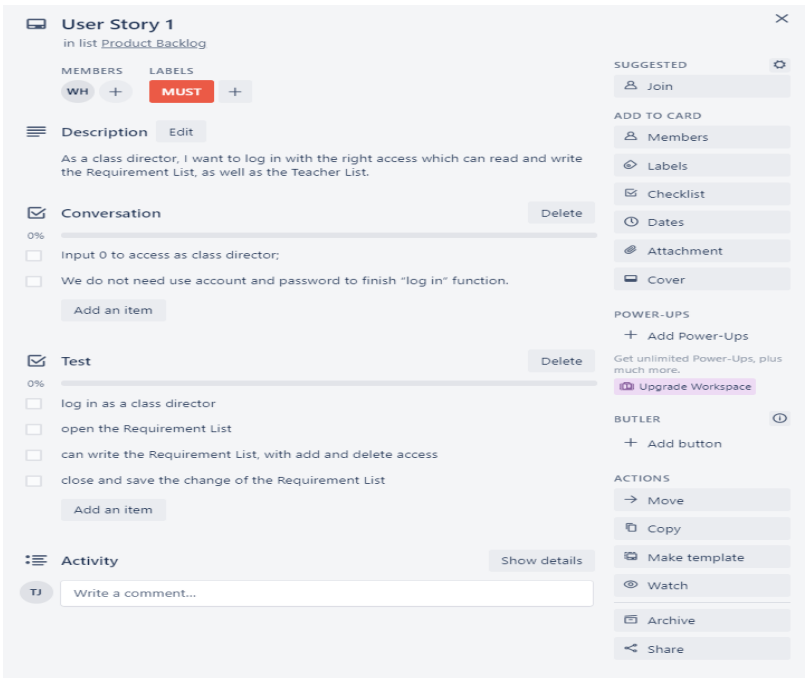

Figure 5 kanban of user story 1

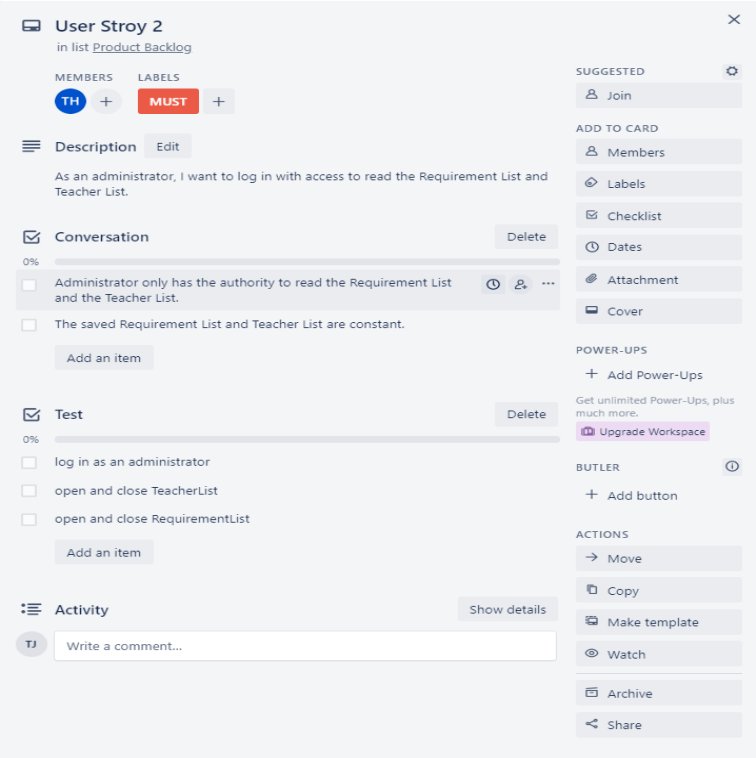

Figure 6 kanban of user story 2

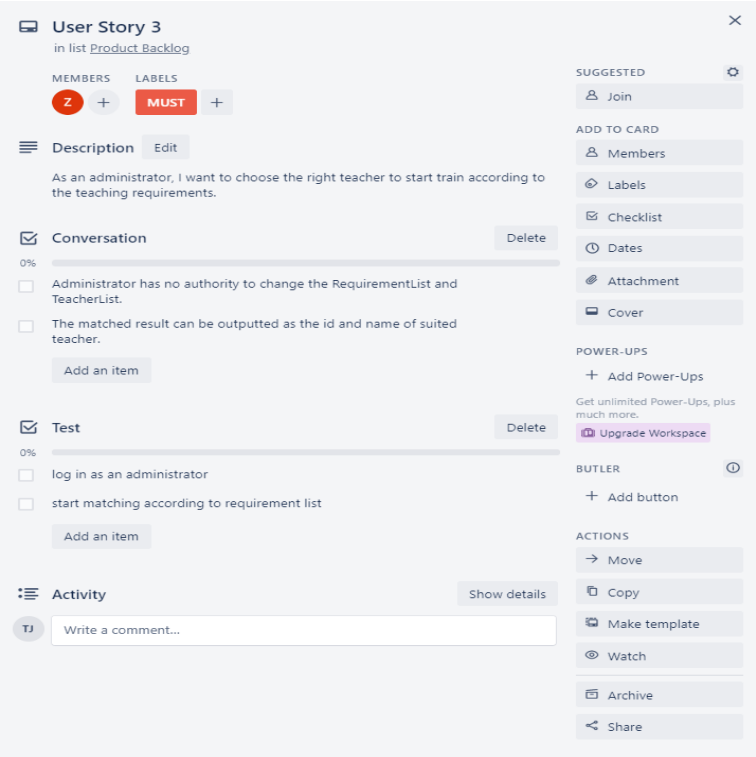

Figure 7 kanban of user story 3

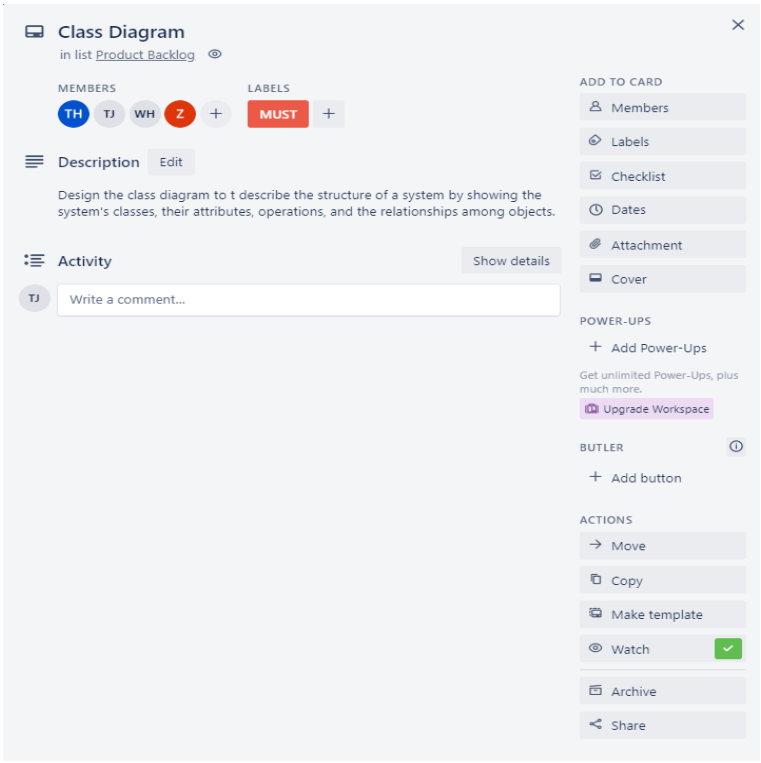

Figure 8 kanban of class diagram

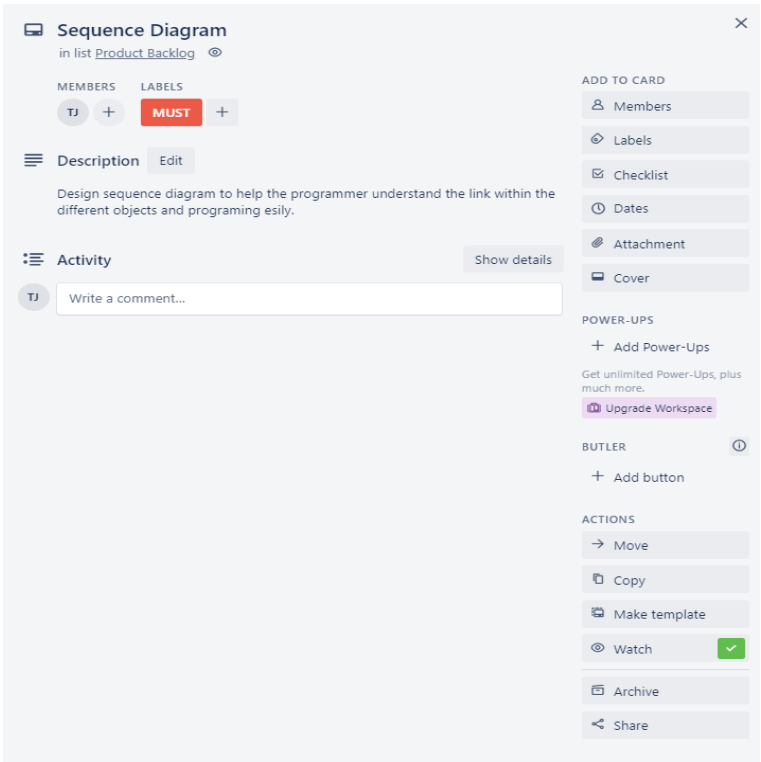

Figure 9 kanban of sequence diagram

- ***Sprint Backlog***

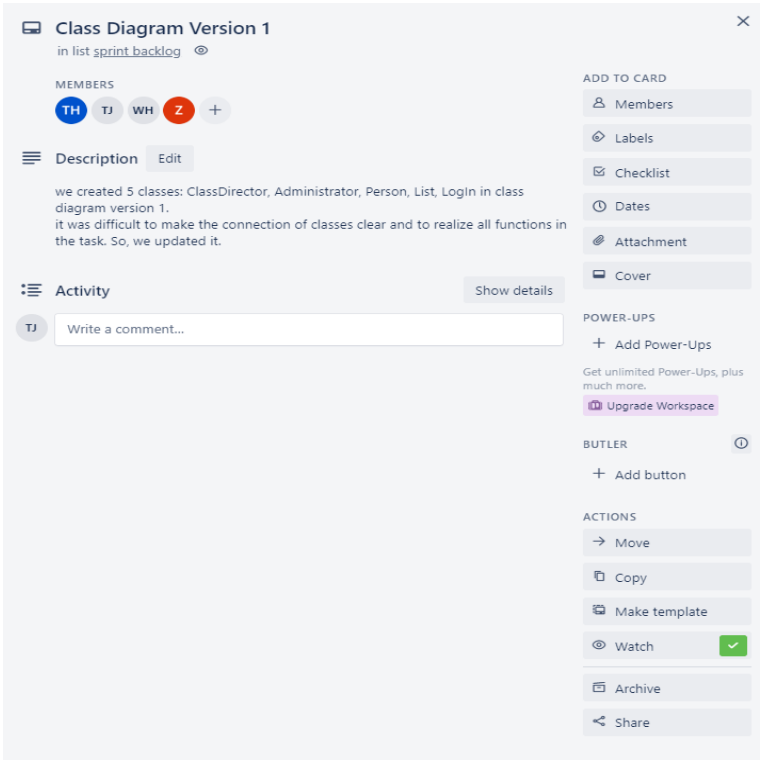

Figure 10 kanban of class diagram v1

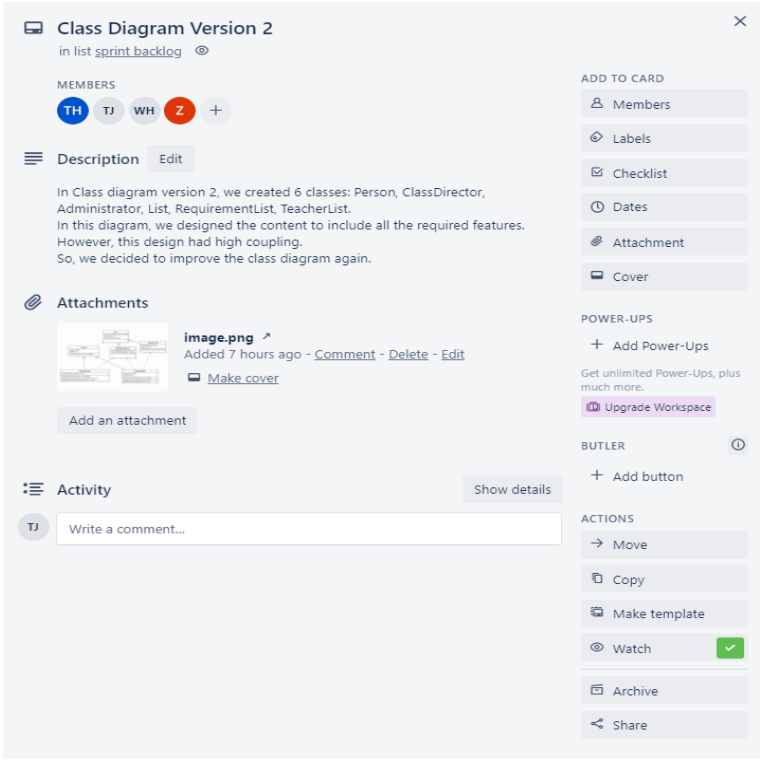

Figure 11 kanban of class diagram v2

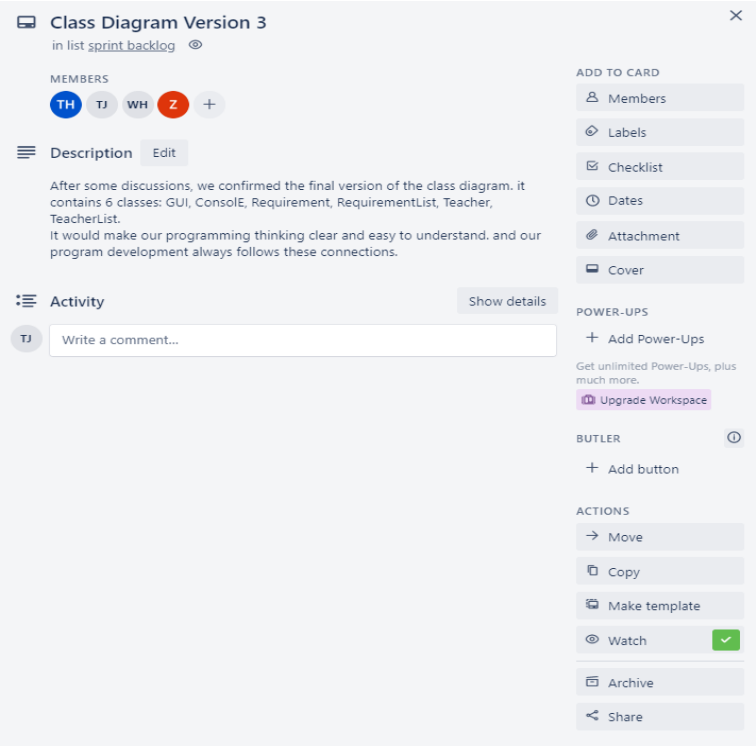

Figure 12 kanban of class diagram v3

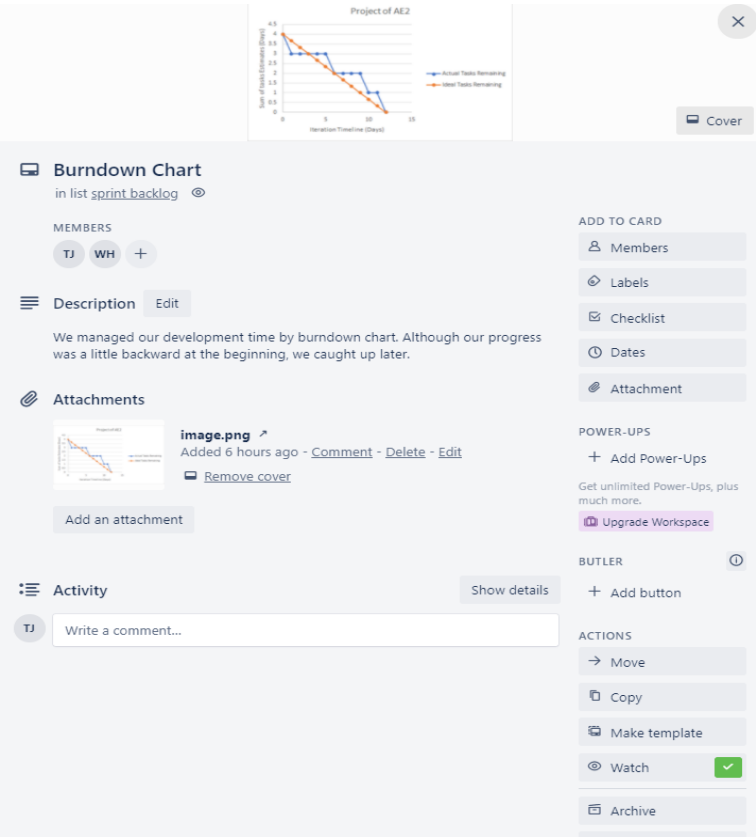

Figure 13 kanban of burndown chart

- ***Task completion***

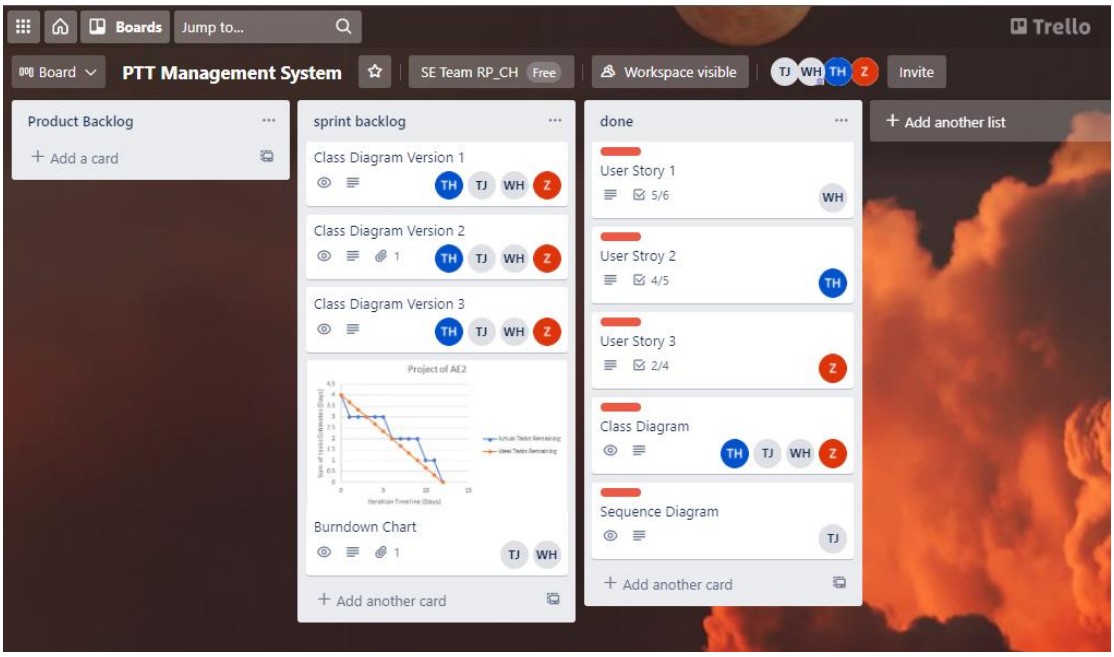

Figure 14 kanban of Task completion

Note：Some test functions are still in the debugging stage.

Team Retrospectives

- ***Task score:***

Challenges / Completion	Demand Analysis	Making Plans	Goal Achieved	Team work	Time management
Excellent	√			√	
Good		√	√		√
Qualified					
Failed					

Form 5 task sore

1. Challenges

To sum up, the team members have basically completed the realization of the system functions. In fact, it was not a smooth process because we faced some challenging problems：

a. Unreasonable allocation of class diagrams

At first, we tried to use the two parent classes Person and List. Later, we found that it was unnecessary and the system was more complicated. It would result in too many dependencies between classes and thus it would not conform to the standards of agile development. To approve our class diagram, we had held much online meetings and got the second version of class diagram.

b. Modify the class diagram again after the actual attempt

We ever tried to realize all function in two class: Teacher and TeacherManager. It made our programs extremely bloated and the development process more confusing and complex. It is difficult to achieve cohesion of the program. So, after some discussion, we confirmed the final class diagram and start our code writing according to the class diagram.

c. Choose how to output the results

Later， we found that it was difficult for us to choose to output result in GUI or console. Both output methods have their own advantages and disadvantages. If we choose use GUI totally, it would spend more time and energy and it is not what the mandate requires. In fact, it was difficult for our programming skills to achieve logical and porcelain GUI interface. However, pure console output can make the input more complex and the output will look scattered. After the discussion, we decided to combine simple GUI interface and console output method.

2. Things went well

Although we faced much difficult problems, we also went well on some areas:

a. Participation

During the assignment period, each member of the group actively participated in every discussion and communication, and presented their individual views. There was a lot of brainstorming at each group meetings, which provided us with great ideas for solving some difficulties.

b. Continuously optimize existing solutions

We have always been aware of the importance of agile development principles and followed them. Although our process was slow at beginning, we still updated our class diagram repeatedly to achieve high cohesion and low coupling of program.

c. Time management

We also went well in in planning the project schedule. Before the project is completed, we used a burndown chart to provide a visual representation of the work that needs to be finished.

- ***Task time evaluation:***

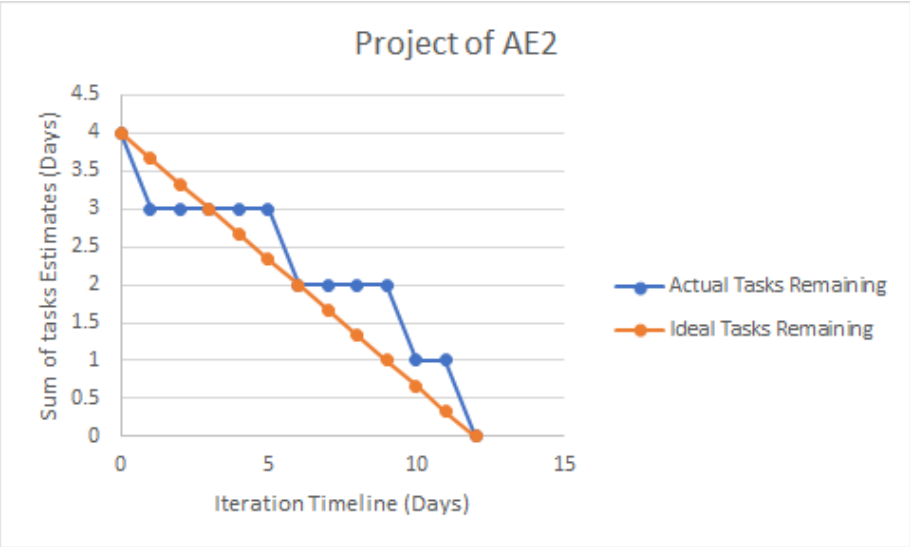

Figure 15 burn down chart

We basically divided the task into four parts:

a. analyzing user stories;

b. assigning classes;

c. designing sequence diagrams and writing codes;

d. writing reports and debugging.

The task took 12 days in total. Ideally, an average task is completed in 3 days. Taking into account the difficulty of the task, time spent of task a. can be reduced. In reality, task a. takes 1 day to complete, task b. takes 5 days to complete, task c. takes 4 days to complete, and task d. takes 2 days to complete, totaling 12 days. All tasks are completed within the expected time.

Appendix A

Output:

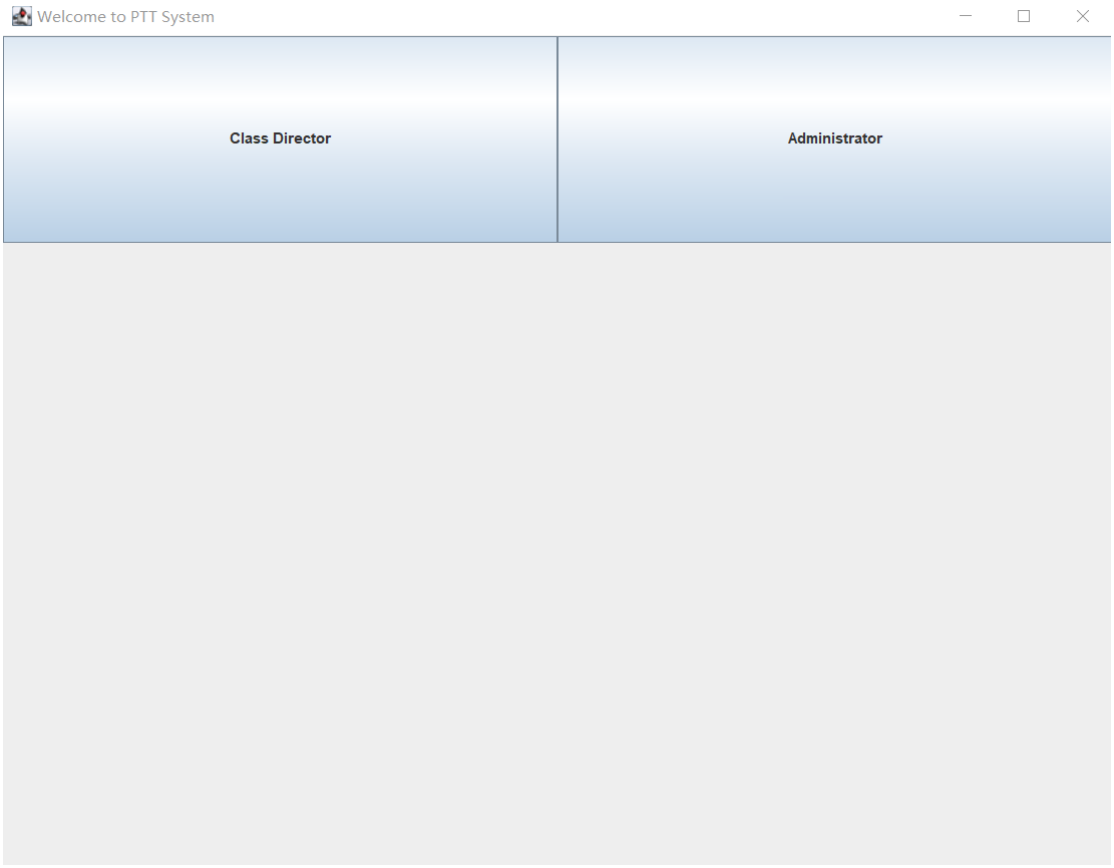

Figure Appendix.1

Click button to access the system as Class Director or Administrator.

```
Please INPUT 1/2 to view teacher list or teaching requirement list:
1 for teacher list
2 for teaching requirement list
3 quit system
1
--------Welcome to PTT Management System --------
1 Add teacher information
2 Change teacher information
3 Delete teacher information
4 Read teacher information
5 return
Please enter your choice:
1
Please enter teacher ID:
001
The ID has been used, please enter again!
Please enter teacher ID:
006
Please enter teacher's name:
Kinge
Please enter teacher's skill:
C#
Successfully added!
--------Welcome to PTT Management System --------
1 Add teacher information
2 Change teacher information
3 Delete teacher information
4 Read teacher information
5 return
Please enter your choice:
4
ID      Name        Skill
001     Tommy       Java
002     Timya       C++
003     Alice       java
004     Bobby       python
005     David       English
006     Kinge       C#
```

Figure Appendix.2

Input 1, access the teacher list module.

Then input1 to add teacher's data.

```
--------Welcome to PTT Management System --------
1 Add teacher information
2 Change teacher information
3 Delete teacher information
4 Read teacher information
5 return
Please enter your choice:
2
Please enter the ID you want to change
006
Please enter teacher's new name:
Alist
Please enter teacher's new skill:
.NET
Successfully changed!
--------Welcome to PTT Management System --------
1 Add teacher information
2 Change teacher information
3 Delete teacher information
4 Read teacher information
5 return
Please enter your choice:
4
ID      Name        Skill
001     Tommy       Java
002     Timya       C++
003     Alice       java
004     Bobby       python
005     David       English
006     Alist       .NET
```

Figure Appendix.3

Input 2 to change teacher's data.

```
--------Welcome to PTT Management System --------
1 Add teacher information
2 Change teacher information
3 Delete teacher information
4 Read teacher information
5 return
Please enter your choice:
3
Please enter the ID which you want to delete:
005
Successfully deleted!
--------Welcome to PTT Management System --------
1 Add teacher information
2 Change teacher information
3 Delete teacher information
4 Read teacher information
5 return
Please enter your choice:
4
ID      Name        Skill
001     Tommy       Java
002     Timya       C++
003     Alice       java
004     Bobby       python
006     Alist       .NET
```

Figure Appendix.4

Input 3 to delete teacher's data.

```
--------Welcome to PTT Management System --------
1 Add teacher information
2 Change teacher information
3 Delete teacher information
4 Read teacher information
5 return
Please enter your choice:
5
Please INPUT 1/2 to view teacher list or teaching requirement list:
1 for teacher list
2 for teaching requirement list
3 quit system
```

Figure Appendix.5

Input 5, return the previous page.

```
Please INPUT 1/2 to view teacher list or teaching requirement list:
1 for teacher list
2 for teaching requirement list
3 quit system
2
--------Welcome to PTT Management System--------
1 Add requirement list
2 Change requirement list
3 Delete requirement list
4 Read requirement list
5 Return
Please enter your choice:
1
Please enter course name:
class6
Please enter Lab ID:
001
Please enter the required teacher number:
2
Please enter the required skill:
C#
add information Successfully!
--------Welcome to PTT Management System--------
1 Add requirement list
2 Change requirement list
3 Delete requirement list
4 Read requirement list
5 Return
Please enter your choice:
4
ClassName   Lab     Required teacher number     Required skill
class1      001     2                           java
class2      001     1                           python
class3      002     4                           english
class4      001     1                           HTML
Class5      001     3                           C++
class6      001     2                           C#
```

Figure Appendix.6

Input 2, enter the requirement list module.

Then input 1 to add requirement data.

```
--------Welcome to PTT Management System--------
1 Add requirement list
2 Change requirement list
3 Delete requirement list
4 Read requirement list
5 Return
Please enter your choice:
2
Please enter the course name you want to change
Class3
This course name not found, please enter again
--------Welcome to PTT Management System--------
1 Add requirement list
2 Change requirement list
3 Delete requirement list
4 Read requirement list
5 Return
Please enter your choice:
2
Please enter the course name you want to change
class3
Please enter the lab ID
001
Please enter the new required teacher number
3
Please enter the new required skill
.NET
Successfully Changed!
```

Figure Appendix.7

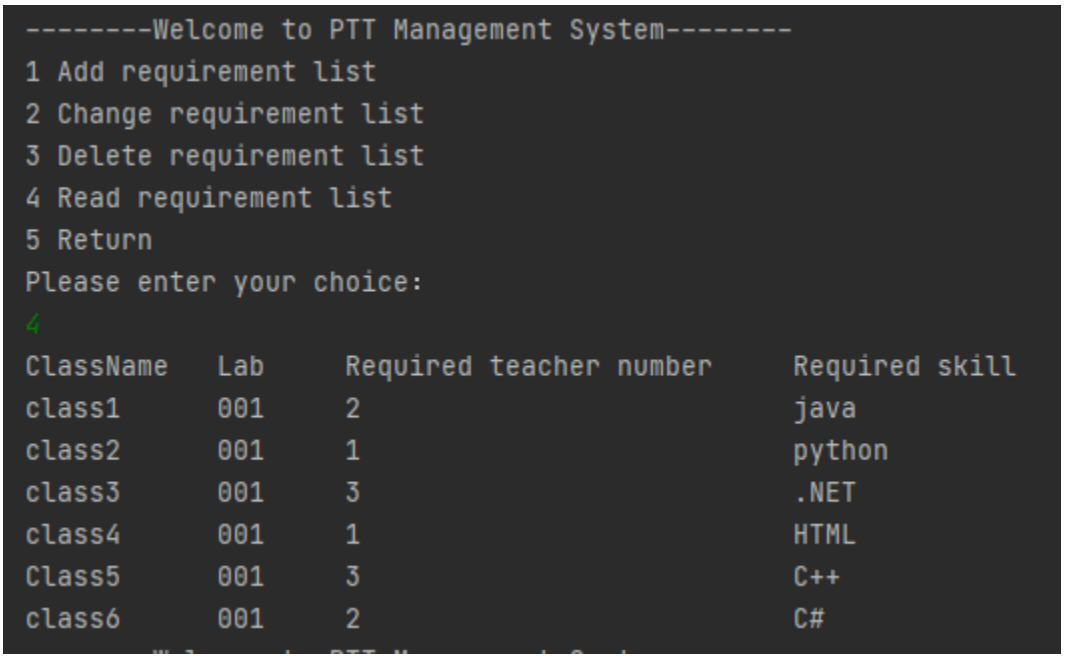

Figure Appendix.8

Input 2 to change requirement data.

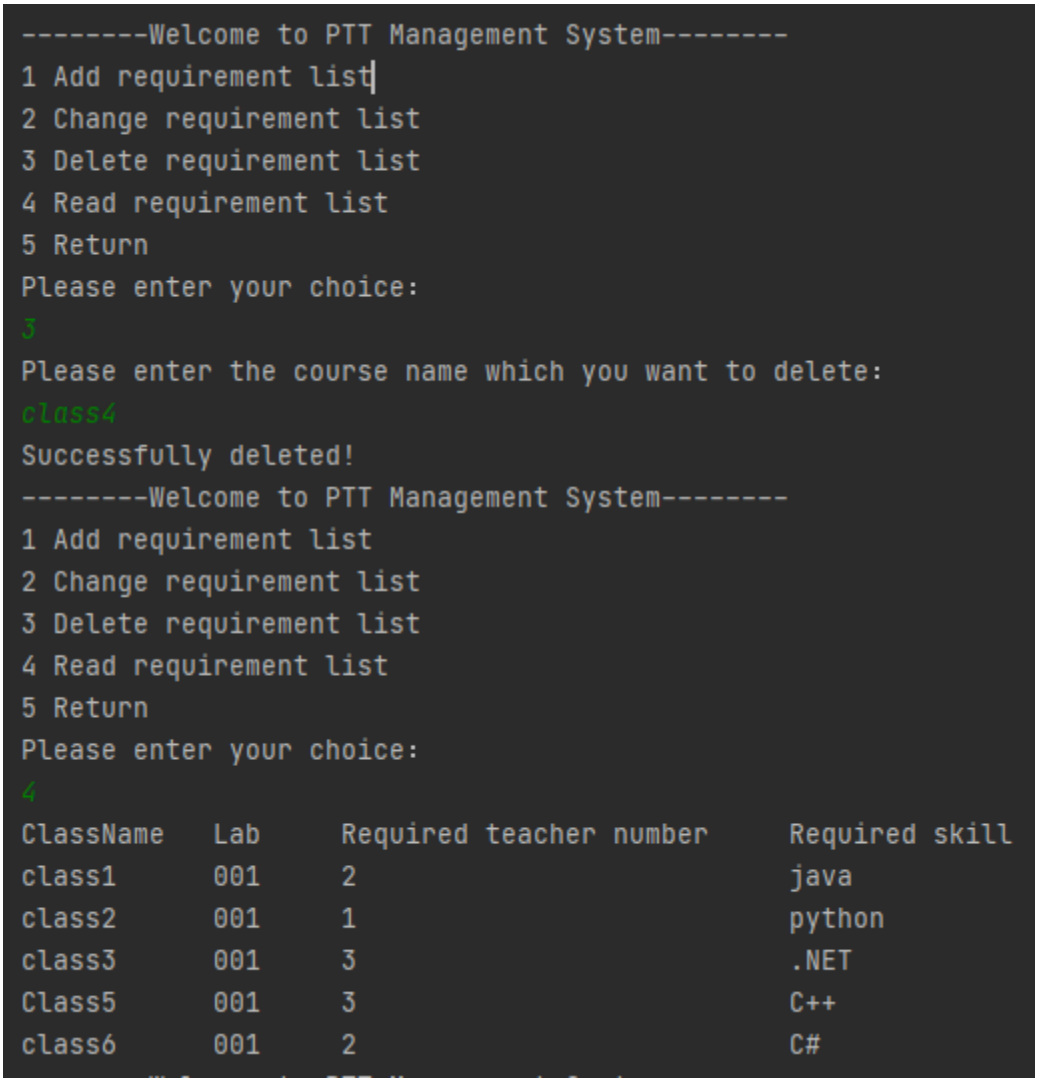

Figure Appendix.9

Input 3 to delete requirement data.

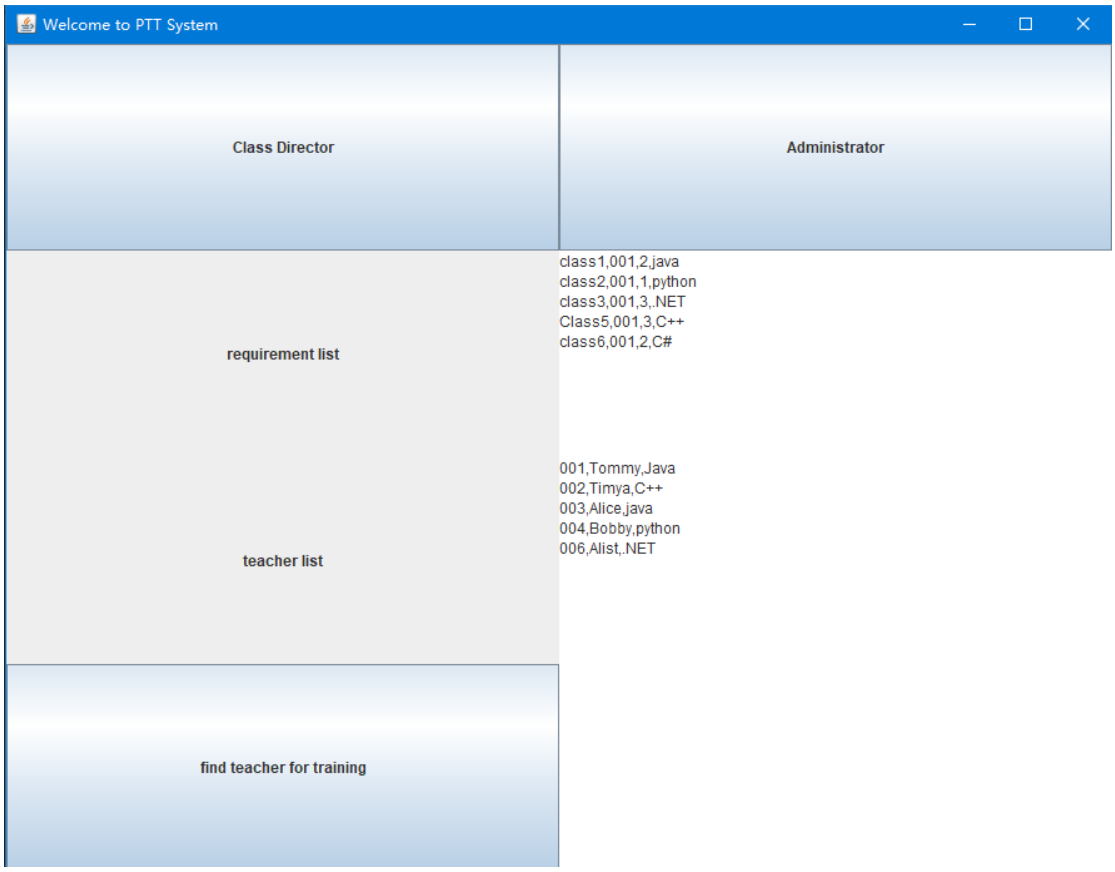

Figure Appendix.10

Administrator enter system can read the requirement list and teacher list in this page.

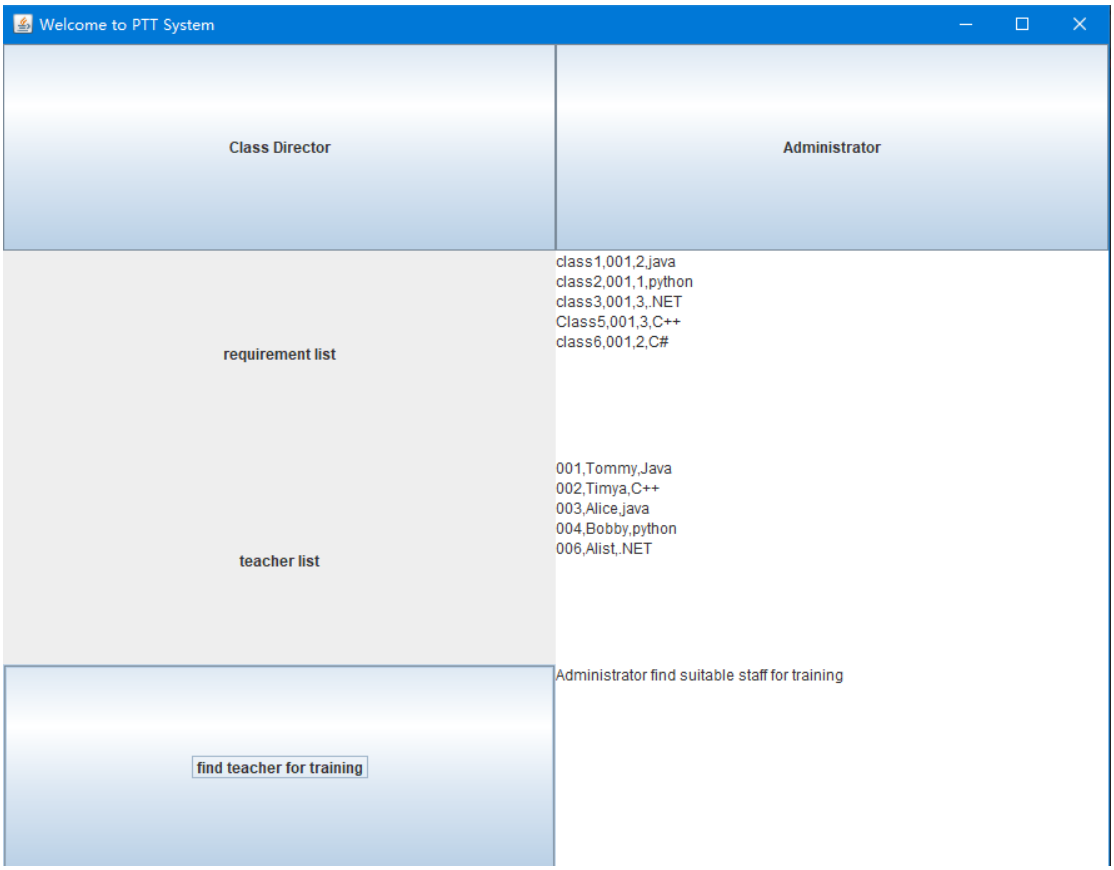

Figure Appendix.11

The finial result page for administrator.

```
--------Welcome to PTT Management System--------
1 Add requirement list
2 Change requirement list
3 Delete requirement list
4 Read requirement list
5 Return
Please enter your choice:
5
Please INPUT 1/2 to view teacher list or teaching requirement list:
1 for teacher list
2 for teaching requirement list
3 quit system
3
Thanks for using PTT system!
```

Figure Appendix.12

Input 3, exit system.