

## Final Project Group13 陳柏駿 李原廷 陳宣羽 周經倫

### Description:

In Chinese society, grade is of paramount importance. Thus, how to safely store or check score are necessary to all the member in school.

### Problem description

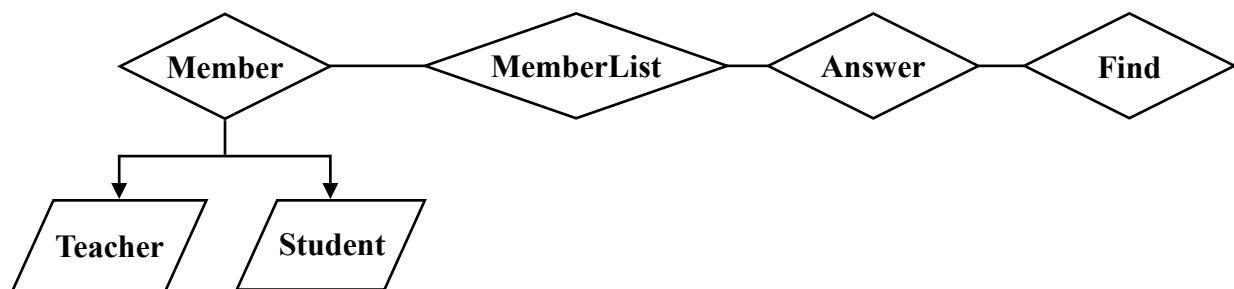
- I. Nowadays, People put emphasis on their privacy.
- II. Students want to safeguard their rights and interests in school performance.
- III. Teachers need to control students' data and know their studying effectiveness.
- IV. Some poor Teachers have to deal with a myriad of problems and chores. They have no choices but to spare their leisure time completing their work.

### Solution Description

- I. For both student and teacher, they can change their password after teacher set up it.
- II. Students can find out their score and how many questions they responded by error to clearly understand their score.
- III. Teachers can set up students information and find out the original answers they wrote as well as their score.
- IV. Teachers can also load correct answers in order to check students' answers

### Relationship:

There are total six classes in the project. Named as *Member*, *Teacher*, *Student*, *MemberList*, *Answer*, *Find* and *Project(main method)*. The below is the relation between classes.



## Inheritance:

*Student* and *Teacher* classes are inherited from the *Member* class, they share the same attributes and some same method.

Member
id : String password : String name : String
login(String id, String password) : byte changePassword(String id, String oldPassword, String newPassword) : void checkPassword(String id, String oldPassword, String newPassword) : boolean isNumber(String s) : boolean



Teacher	Student
-	-
input(String id, String password, String name) : void changePassword(String id, String password, String name) : void	changePassword(String id, String oldPassword, String newPassword) : void

## Member Class

Member	
Modifier and Type	Method (or Variable) and Description
<b>Instance Variable</b>	
<b>String</b>	id The name of the member.
<b>String</b>	password The password of the member.
<b>String</b>	name The name of the member.
<b>Constructor</b>	

<b>Member(String id, String password, String name)</b> Instantiate the object of Member with a given password and name.	
<b>Member()</b> An empty constructor.	
<b>Instance Methods</b>	
<b>byte</b>	login(String id, String password) Checking if the password inputed is the same as the data in the ArrayList name “members.” Return “0” when login failed. “1” when login as teacher, “2” when login as student.
<b>boolean</b>	checkPassword(String id, String oldPassword, String newPassword) Check the password if it conforms the situation below : 1. longer than five characters 2. contains at least one English character 3. different from the old password 4. different from the id of the member Return “true” when the new password conforms all the situation, “false” when not conform any of the above situation.
<b>boolean</b>	isNumber(String s) Checking if the String is a number. Return “true” when input is a number, “false” when

## Teacher class

Teacher	
Modifier and Type	Method (or Variable) and Description
<b>Instance Variable</b>	
-	-
<b>Constructor</b>	
<b>Teacher(String id, String password, String name)</b> Instantiate the object of Teacher with a given id, password and name.	
<b>Teacher()</b> An empty constructor.	
<b>Instance Method</b>	

<b>void</b>	input(String id, String password, String name) Input a Student with a given id, password and name into the ArrayList named “members” and write the new Student into the file named “student_info.txt.”
<b>void</b>	changePassword(String id, String old password, String newPassword) Inherit the method “changePassword()” in the. Superclass named “Member”. Rewrite the teacher list with new password into the file named “teachers_info.txt.”

### Student class

Student	
Modifier and Type	Method (or Variable) and Description
<b>Instance Variable</b>	
-	-
<b>Constructor</b>	
<b>Student(String id ,String password, String name)</b> Instantiate the object of Student with a given id, password and name.	
<b>Student()</b> An empty constructor.	
<b>Instance Method</b>	
<b>void</b>	changePassword(String id, String oldPassword, String newPassword) Inherit the method “changePassword()” in the superclass named “Member.” Rewrite the student list with new password into the file named “students_info.txt.”

### Answer class

Answer	
Modifier and Type	Method (or Variable) and Description
<b>Instance Variable</b>	
<b>MemberList</b>	memberList A MemberList class object named memberList.

<b>ArrayList&lt;Character&gt;</b>	correctAnswer An ArrayList that contains the correct answer of the given subject.
<b>ArrayList&lt;String&gt;</b>	result An ArrayList that contains the test result.
<b>String</b>	subject The subject that is checking
<b>Constructor</b>	
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<b>Instance Method</b>	
<b>void</b>	setSubject(String subject) Setter of the subject and load the correct answer of the subject with the method named “load_correctAnswer().”
<b>void</b>	load_correctAnswer() Loading the correct answer by the character into the ArrayList named “correctAnswer.”
<b>void</b>	checkAnswer(String id, String answers) Check the answers inputed with the ArrayList named “correctAnswer” and wrote the result into the file of the subject result. The result contains the number of the correct question, the number of the wrong question and the consequence which “-“ with answer correct and the correct answer with wrong.

## Find class

Find	
Modifier and Type	Method (or Variable) and Description
<b>Instance Variable</b>	
<b>ArrayList&lt;String&gt;</b>	score An ArrayList that contains the test result of the students.
<b>String</b>	subject The subject that is going to find.
<b>Constructor</b>	
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<b>Instance Method</b>	

<b>void</b>	setSubject(String subject) Setter of the subject and load the test result of the subject into the ArrayList named “score” with the method “load().”
<b>void</b>	load() Loading the test result of the given subject into the ArrayList named “score.”
<b>void</b>	find(String id) Find the student with the id. Print the information in the subject result file.

#### Project Class (for main method)

- I. Create a MemberList object named memberList and a Member object named m.  
 Use the load() method in MemberList class to load in the information of teachers and students.  
 Create a Scanner to scan in the user input.
- II. Outpoint “ 請輸入帳號: ” 和 “ 請輸入密碼: ” scan in the id and password inputed.  
 Use a Ternary Operator to check if the password is null.  
 Use the login() method in the Member class to check if the login is success and output the login result.
- III. When login as a Teacher, print the line “請輸入欲執行功能：建檔、批改、查詢、更改密碼 或輸入 \"end\" 以結束程式” and use the scanner to scan the input of Teacher.  
 When login as a Student, print the line “請選擇欲執行功能：查詢、更改密碼 或輸入 \"end\" 以結束程式” and use the scanner to scan the input of the Student.
- IV. Do the function in each class created as the input.  
 For 建檔, use a scanner to scan the student id and password input by the teacher, and use the method named “checkPassword()” to check if the password fits the request of the system.  
 When checked, use the method “uploadPassword()” to write the new profile in to the text file.  
 For 批改, use a scanner to scan the subject, and scan student id and the answer the student write, print the line "請輸入科目"and "請輸入學生編號與學生答案，輸入 \"end\" 以返回主選單"

- V. For 查詢, use the scanner to scan subject and student id, and use the method named "setSubject()" to find the score in that subject, and then out print "請輸入欲查詢學生編號，輸入 \"end\" 以返回主選單"to ask users to input the student ID they want to know.
- VI. For 更改密碼, use the scanner to scan to scan the old password and print the line "請輸入舊密碼" if the old password is equal to the input, print the line"請輸入新密碼(至少五個位元 且包含英文字母)"and reset the new password
- VII.End the process and print the line "系統結束".

分工表

陳宣羽	陳柏駿	李原廷	周經倫
code	想法與資料查詢	統籌和招集	題目討論
Javadoc	Other content of Documentation	報告	PPT
	商量程式碼可行性	商量程式碼可行性	