

Program Manual

2022 级计算机科学与技术（全英创新班）

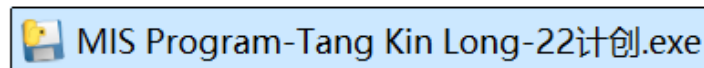
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Content

1 Login	1
2 Menu-Administrator.....	2
3 Menu-Teacher.....	19
4 Menu-Student	21
5 Query.....	22
6 Modify Password.....	27
7 Appendix.....	27

1 Login

Click “MIS Program-Tang Kin Long-22 计创.exe” and start running the program.



The login window will be shown.

A screenshot of a Windows-style login window titled "Login". It has a light gray background. At the top, it says "Welcome to MIS for Computer Science College of SCUT". Below that are two input fields: "User ID" and "Password". A "Login" button is at the bottom. At the very bottom, in small blue text, it says "Author: Tang Kin Long 2022级计算机科学与技术（全英创新班）".

Enter the correct User ID and password and click “Login” button. User character will be determined after successful login, including “Admin”, “Teacher” and “Student”. The program initializes some sample accounts, as shown in the table below.

User ID	User Character	Password
101	Admin	123456
20100	Teacher	123456
20200	Teacher	123456
3010000000	Student	123456
3020000000	Student	123456
3030000000	Student	123456

If entering wrong password or inexistent user ID, an error information will be displayed.

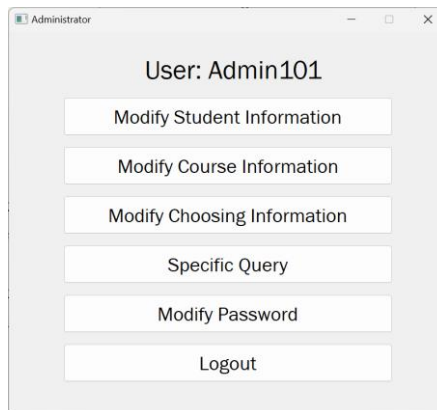


The image shows a 'Login' window titled 'Welcome to MIS for Computer Science College of SCUT'. It contains two input fields: 'User ID' with the value '102' and 'Password' with masked characters. Below the fields, a red error message reads 'Error: Inexistence ID or wrong password'. At the bottom, there is a 'Login' button and a footer line: 'Author: Tang Kin Long 2022级计算机科学与技术 (全英创新班)'.

If the user ID and password is correct, click “Login” button and jump to corresponding menu of different character. For administrator, please refer to **Section 2**; for teacher, please refer to **Section 3**; for student, please refer to **Section 4**.

2 Menu-Administrator

Take user ID=101 as sample account to login. The menu is shown below.

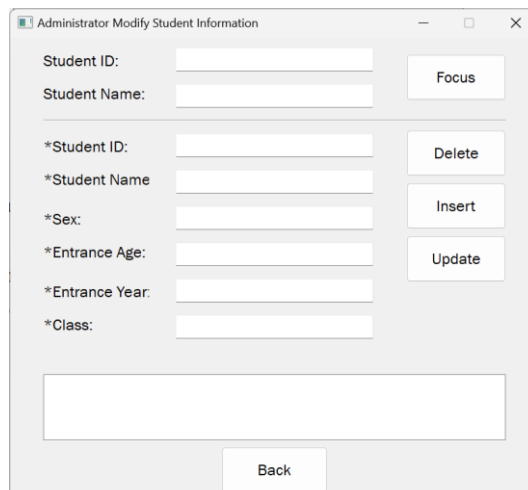


The image shows an 'Administrator' menu window. At the top, it says 'User: Admin101'. Below this, there are six buttons arranged vertically: 'Modify Student Information', 'Modify Course Information', 'Modify Choosing Information', 'Specific Query', 'Modify Password', and 'Logout'.

Click the button to achieve corresponding operation.

2.1 Modify Student Information

After clicking “Modify Student Information” button, jump to the window for modifying student information.



The image shows a window titled 'Administrator Modify Student Information'. It has two rows of input fields. The first row has 'Student ID:' and 'Student Name:' fields, followed by a 'Focus' button. The second row has fields for '*Student ID:', '*Student Name', '*Sex:', '*Entrance Age:', '*Entrance Year:', and '*Class:', followed by 'Delete', 'Insert', and 'Update' buttons. At the bottom, there is a large empty text area and a 'Back' button.

2.1.1 Focus Operation

Initially, for “delete” and “update” operation, user must complete a successful “focus” operation, which can focus on a piece of specific student information. That is, “delete” and “update” can only operate on one piece information once a time. Fill the upper two text blanks and click the “Focus” button for the program to search expected student information and display it on the bottom table. A “focus” operation is successful if and only if one piece of information is found in the database, and the message “Successful Catch.” will be displayed at the bottom.

The screenshot shows the 'Administrator Modify Student Information' window. The 'Student ID' field is filled with '3010000000' and the 'Student Name' field is filled with 'Kong'. The 'Focus' button is highlighted. Below these fields, there are fields for '*Student ID', '*Student Name', '*Sex', '*Entrance Age', '*Entrance Year', and '*Class', each with a corresponding button: 'Delete', 'Insert', and 'Update'. A red message 'Successful Catch.' is displayed above a table. The table has columns: sID, sName, sex, entrance_age, entrance_year, and cla. The first row of the table contains the values: 1, 3010000000, Kong, male, 18, 2022, CS. A 'Back' button is at the bottom.

	sID	sName	sex	entrance_age	entrance_year	cla
1	3010000000	Kong	male	18	2022	CS

It is recommended for user to input both “Student ID” and “Student Name” information for concrete focus. If either information is not input, the program will still try to search with the given information. If only one piece of information is returned, this can still be a successful focus. But if some students have same names, more than one piece are returned and the focus is not successful.

The two screenshots show the 'Administrator Modify Student Information' window. The left screenshot shows the 'Student ID' field filled with '3010000000' and the 'Student Name' field empty. The 'Focus' button is highlighted. The right screenshot shows the 'Student ID' field empty and the 'Student Name' field filled with 'Kong'. The 'Focus' button is highlighted. Both screenshots show a red message 'Successful Catch.' above a table with the same data as the first screenshot.

However, if user inputs inexistent or mismatched information, the focus is not successful. An error information is displayed.

The three screenshots show the 'Administrator Modify Student Information' window with failed focus operations. The first screenshot shows the 'Student ID' field filled with '3010000000' and the 'Student Name' field filled with 'Kon'. The 'Focus' button is highlighted. The second screenshot shows the 'Student ID' field filled with '30100' and the 'Student Name' field filled with 'Kong'. The 'Focus' button is highlighted. The third screenshot shows the 'Student ID' field filled with '30100' and the 'Student Name' field empty. The 'Focus' button is highlighted. All three screenshots show a red message 'Error: Item Not Exist. Fail to Catch.' above a table.

If user inputs nothing, the program will return all student information. A message is displayed for more concrete focusing. It also occurs when only “Student Name” is input and returns more than one student with that name.

The screenshot shows the 'Administrator Modify Student Information' window. It has input fields for Student ID, Student Name, *Student ID, *Student Name, *Sex, *Entrance Age, *Entrance Year, and *Class. There are buttons for Focus, Delete, Insert, and Update. A red message 'Already Catch All. Please Focus On One Item.' is displayed. Below the message is a table with columns: sID, sName, sex, entrance_age, entrance_year, and cla. The table contains one row: 2, 3020000000, Zak, female, 18, 2023. A 'Back' button is at the bottom.

2.1.2 Delete Operation

For deletion, please successfully complete “focus” operation first. The student information being deleted will be shown in the lower six text blanks.

The screenshot shows the 'Administrator Modify Student Information' window. The input fields are filled with: Student ID: 3040000000, Student Name: (empty), *Student ID: 3040000000, *Student Name: Deletion, *Sex: Male, *Entrance Age: 20, *Entrance Year: 2023, and *Class: Test. The buttons are Focus, Delete, Insert, and Update. A red message 'Successful Catch.' is displayed. Below the message is a table with columns: sID, sName, sex, entrance_age, entrance_year, and cla. The table contains one row: 1, 3040000000, Deletion, Male, 20, 2023, Tes. A 'Back' button is at the bottom.

After clicking “Delete” button, a message “Successful Deletion.” is displayed and the deletion operation is completed.

The screenshot shows the 'Administrator Modify Student Information' window. The input fields are filled with: Student ID: 3040000000, Student Name: (empty), *Student ID: 3040000000, *Student Name: Deletion, *Sex: Male, *Entrance Age: 20, *Entrance Year: 2023, and *Class: Test. The buttons are Focus, Delete, Insert, and Update. A red message 'Successful Deletion' is displayed. Below the message is a table with columns: sID, sName, sex, entrance_age, entrance_year, and cla. The table contains one row: 1, 3040000000, Deletion, Male, 20, 2023, Tes. A 'Back' button is at the bottom.

If clicking the “Delete” button again, an error message is displayed for inexistent student information. Please click “Back” button and reopen this window, or try another focus operation.

Administrator Modify Student Information

Student ID: 3040000000 Focus

Student Name:

*Student ID: 3040000000 Delete

*Student Name: Deletion

*Sex: Male Insert

*Entrance Age: 20 Update

*Entrance Year: 2023

*Class: Test

Error: Student ID don't exist.

	sID	sName	sex	entrance_age	entrance_year	cla
1	3040000000	Deletion	Male	20	2023	Tes

Back

If user clicks the “Delete” button without a successful focus operation, an error message is displayed “Please Focus One Item First.”.

Administrator Modify Student Information

Student ID: Focus

Student Name:

*Student ID: Delete

*Student Name:

*Sex: Insert

*Entrance Age: Update

*Entrance Year:

*Class:

Please Focus One Item First.

Back

Administrator Modify Student Information

Student ID: Focus

Student Name:

*Student ID: Delete

*Student Name:

*Sex: Insert

*Entrance Age: Update

*Entrance Year:

*Class:

Please Focus One Item First.

	sID	sName	sex	entrance_age	entrance_year	cla
1	3010000000	Kong	male	18	2022	

Back

2.1.3 Insert Operation

For insertion, no focus operation is needed, please do not stay in the focusing state before insertion, or an error will be displayed “Don’t Focus For Insertion.”.

Administrator Modify Student Information

Student ID: 3010000000 Focus

Student Name: Kong

*Student ID: 3010000000 Delete

*Student Name: Kong

*Sex: male Insert

*Entrance Age: 18 Update

*Entrance Year: 2022

*Class: CS

Don't Focus For Insertion.

	sID	sName	sex	entrance_age	entrance_year	cla
1	3010000000	Kong	male	18	2022	CS

Back

For legal insertion, please enter the information in the lower six text blanks and obey the information constraints. Errors which go against constraints include “Sex must be male or female.”, “Entrance Age should between 10 and 50.”, “Student ID length should be 10.”, “Exist Empty or Illegal Information.”. Corresponding errors will be displayed in different illegal input conditions.

The figure displays four instances of the 'Administrator Modify Student Information' window, each showing a different validation error:

- Top-left:** The 'Sex' field is set to 'Null', triggering the error: "Error: Sex must be male or female."
- Top-right:** The 'Entrance Age' field is set to '-1', triggering the error: "Error: Entrance Age should between 10 and 50."
- Bottom-left:** The 'Student ID' field is set to '304', triggering the error: "Error: Student ID length should be 10."
- Bottom-right:** The 'Student ID' field is set to '3040000000', triggering the error: "Error: Exist Empty or Illegal Information."

After clicking “Insert” button, if the insertion operation is successful, a message will be shown at the bottom of the window “Successful Insertion.”.

The figure shows the 'Administrator Modify Student Information' window after a successful insertion. The fields are populated with the following data:

- Student ID: 3040000000
- Student Name: Zaap
- Sex: Male
- Entrance Age: 20
- Entrance Year: 2023
- Class: Test

The message "Successful Insertion." is displayed in red text at the bottom of the window.

2.1.4 Update Operation

For update, please successfully complete “focus” operation first. The student information being updated will be shown in the lower six text blanks.

Administrator Modify Student Information

Student ID:

Student Name:

*Student ID:

*Student Name:

*Sex:

*Entrance Age:

*Entrance Year:

*Class:

Successful Catch.

	sID	sName	sex	entrance_age	entrance_year	c
1	3020000000	Zak	female	18	2023	C

Then, user can modify the expected information in the these text blanks. After clicking “Update” button, if all new information are legal, a message “Successful Update.” is displayed and the update operation is completed.

Administrator Modify Student Information

Student ID:

Student Name:

*Student ID:

*Student Name:

*Sex:

*Entrance Age:

*Entrance Year:

*Class:

Successful Update.

	sID	sName	sex	entrance_age	entrance_year	c
1	3020000000	Zak	female	18	2023	C

If new information exists illegal input, the corresponding error message will be displayed, including "Error: Sex must be male or female.", "Error: Entrance Age should between 10 and 50.", "Error: Student ID length should be 10.", "Error: Exist Empty or Illegal Information.", "Error: Student ID is already exist."

Administrator Modify Student Information

Student ID:

Student Name:

*Student ID:

*Student Name:

*Sex:

*Entrance Age:

*Entrance Year:

*Class:

Error: Sex must be male or female.

	sID	sName	sex	entrance_age	entrance_year	c
1	3020000000	Zakgan	male	17	2024	CS-

Administrator Modify Student Information

Student ID:

Student Name:

*Student ID:

*Student Name:

*Sex:

*Entrance Age:

*Entrance Year:

*Class:

Error: Entrance Age should between 10 and 50.

	sID	sName	sex	entrance_age	entrance_year	c
1	3020000000	Zakgan	male	17	2024	CS-

The first two screenshots show the initial state of the form with fields for Student ID, Name, Sex, Entrance Age, Entrance Year, and Class. The first screenshot displays an error: "Error: Student ID length should be 10." The second screenshot displays an error: "Error: Exist Empty or Illegal Information." The next two screenshots show the form with a table of student data. The third screenshot displays an error: "Error: Exist Empty or Illegal Information." The fourth screenshot displays an error: "Error: Student ID is already exist."

Administrator Modify Student Information

Student ID: Focus

Student Name:

*Student ID: Delete

*Student Name: Insert

*Sex: Update

*Entrance Age:

*Entrance Year:

*Class:

Error: Student ID length should be 10.

	sID	sName	sex	entrance_age	entrance_year	c
1	3020000000	Zakgan	male	17	2024	CS

Back

Administrator Modify Student Information

Student ID: Focus

Student Name:

*Student ID: Delete

*Student Name: Insert

*Sex: Update

*Entrance Age:

*Entrance Year:

*Class:

Error: Exist Empty or Illegal Information.

	sID	sName	sex	entrance_age	entrance_year	c
1	3020000000	Zakgan	male	17	2024	CS

Back

Administrator Modify Student Information

Student ID: Focus

Student Name:

*Student ID: Delete

*Student Name: Insert

*Sex: Update

*Entrance Age:

*Entrance Year:

*Class:

Error: Exist Empty or Illegal Information.

	sID	sName	sex	entrance_age	entrance_year	c
1	3020000000	Zakgan	female	18	2023	C

Back

Administrator Modify Student Information

Student ID: Focus

Student Name:

*Student ID: Delete

*Student Name: Insert

*Sex: Update

*Entrance Age:

*Entrance Year:

*Class:

Error: Student ID is already exist.

	sID	sName	sex	entrance_age	entrance_year	c
1	3020000000	Zakgan	female	18	2023	C

Back

If user click the “Update” button without a successful focus operation, an error message is displayed “Please Focus One Item First.”.

The first screenshot shows the form with the error message "Please Focus One Item First." displayed. The second screenshot shows the form with the error message "Please Focus One Item First." displayed, and the 'Update' button is highlighted.

Administrator Modify Student Information

Student ID: Focus

Student Name:

*Student ID: Delete

*Student Name: Insert

*Sex: Update

*Entrance Age:

*Entrance Year:

*Class:

Please Focus One Item First.

Back

Administrator Modify Student Information

Student ID: Focus

Student Name:

*Student ID: Delete

*Student Name: Insert

*Sex: Update

*Entrance Age:

*Entrance Year:

*Class:

Please Focus One Item First.

	sID	sName	sex	entrance_age	entrance_year	c
1	3010000000	Kong	male	18	2022	

Back

2.2 Modify Course Information

After clicking “Modify Course Information” button, jump to the window for modifying course information.

Administrator Modify Course Information

Course ID:

Course Name:

*Course ID:

*Course Name:

*Teacher ID:

*Credit:

*Grade:

*Canceled Year:

2.2.1 Focus Operation

Initially, for “delete” and “update” operation, user must complete a successful “focus” operation. The operation is same to the content in **Section 2.1.1**, user can refer to that section for detailed introduction and this section is skipped.

2.2.2 Delete Operation

For deletion, please successfully complete “focus” operation first. The course information being deleted will be shown in the lower six text blanks.

Administrator Modify Course Information

Course ID:

Course Name:

*Course ID:

*Course Name:

*Teacher ID:

*Credit:

*Grade:

*Canceled Year:

Successful Catch.

	cID	cName	tID	credit	grade	canceled_year
1	4090000	Algorithm	20200	0	2024	

After clicking “Delete” button, a message “Successful Deletion.” is displayed and the deletion operation is completed.

Administrator Modify Course Information

Course ID: 4090000

Course Name:

Focus

*Course ID: 4090000

*Course Name: Algorithm

*Teacher ID: 20200

*Credit: 0

*Grade: 2024

*Canceled Year:

Delete

Insert

Update

Successful Deletion

	cID	cName	tID	credit	grade	canceled_year
1	4090000	Algorithm	20200	0	2024	

Back

If clicking the “Delete” button again, an error message is displayed for inexistent student information. Please click “Back” button and reopen this window, or try another focus operation.

Administrator Modify Course Information

Course ID: 4090000

Course Name:

Focus

*Course ID: 4090000

*Course Name: Algorithm

*Teacher ID: 20200

*Credit: 0

*Grade: 2024

*Canceled Year:

Delete

Insert

Update

Error: Course ID don't exist.

	cID	cName	tID	credit	grade	canceled_year
1	4090000	Algorithm	20200	0	2024	

Back

If user clicks the “Delete” button without a successful focus operation, an error message is displayed “Please Focus One Item First.”.

Administrator Modify Course Information

Course ID:

Course Name:

Focus

*Course ID:

*Course Name:

*Teacher ID:

*Credit:

*Grade:

*Canceled Year:

Delete

Insert

Update

Please Focus One Item First.

Back

Administrator Modify Course Information

Course ID:

Course Name:

Focus

*Course ID:

*Course Name:

*Teacher ID:

*Credit:

*Grade:

*Canceled Year:

Delete

Insert

Update

Please Focus One Item First.

	cID	cName	tID	credit	grade
1	4010000	Computer Science Introduction	20100	2	2019

Back

2.2.3 Insert Operation

For insertion, no focus operation is needed, please do not stay in the focusing state before insertion, or an error will be displayed “Don’t Focus For Insertion.”.

The window displays the following fields and values:

- Course ID: 4010000
- Course Name:
- *Course ID: 4010000
- *Course Name: Computer Science Introduction
- *Teacher ID: 20100
- *Credit: 2
- *Grade: 2019
- *Canceled Year: 2026

Buttons: Focus, Delete, Insert, Update.

Message: Don't Focus For Insertion.

	clD	cName	tlD	credit	grade	c
1	4010000	Computer Science Introduction	20100	2	2019	2

Back

For legal insertion, please enter the information in the lower six text blanks and obey the information constraints. Errors which go against constraints include “Error: Teacher ID length should be 5.”, “Error: Course ID length should be 7.”, “Error: Exist Empty or Illegal Information.”, “Error: Course Canceled Year Below Grade.”, “Error: Course ID is already exist.”, "Error: New Teacher ID Not Exist.", "Error: New Class Name Not Match Teacher.". Corresponding errors will be displayed in different illegal input conditions.

The four windows show the following error messages:

- Top Left: Error: Teacher ID length should be 5.
- Top Right: Error: Course ID length should be 7.
- Bottom Left: Error: Exist Empty or Illegal Information.
- Bottom Right: Error: Exist Empty or Illegal Information.

The figure displays four screenshots of the 'Administrator Modify Course Information' window, illustrating different error scenarios during the insertion process:

- Top Left:** The window shows the 'Insert' button highlighted. The error message at the bottom is "Error: Course Canceled Year Below Grade." The fields are: Course ID (empty), Course Name (empty), *Course ID (4090000), *Course Name (Algorithm), *Teacher ID (20200), *Credit (4), *Grade (2024), and *Canceled Year (2023).
- Top Right:** The window shows the 'Insert' button highlighted. The error message at the bottom is "Error: Course ID is already exist." The fields are: Course ID (empty), Course Name (empty), *Course ID (4020000), *Course Name (Algorithm), *Teacher ID (20200), *Credit (4), *Grade (2024), and *Canceled Year (empty).
- Bottom Left:** The window shows the 'Insert' button highlighted. The error message at the bottom is "Error: New Teacher ID Not Exist." The fields are: Course ID (empty), Course Name (empty), *Course ID (4090000), *Course Name (Algorithm), *Teacher ID (20300), *Credit (4), *Grade (2024), and *Canceled Year (empty).
- Bottom Right:** The window shows the 'Insert' button highlighted. The error message at the bottom is "Error: New Class Name Not Match Teacher." The fields are: Course ID (empty), Course Name (empty), *Course ID (4090000), *Course Name (Algorithm), *Teacher ID (20100), *Credit (4), *Grade (2024), and *Canceled Year (empty).

After clicking “Insert” button, if the insertion operation is successful, a message will be shown at the bottom of the window “Successful Insertion.”.

The screenshot shows the 'Administrator Modify Course Information' window with the 'Insert' button highlighted. The error message at the bottom is "Successful Insertion." The fields are: Course ID (empty), Course Name (empty), *Course ID (4090000), *Course Name (Algorithm), *Teacher ID (20200), *Credit (4), *Grade (2026), and *Canceled Year (empty).

2.2.4 Update Operation

For update, please successfully complete “focus” operation first. The course information being updated will be shown in the lower six text blanks.

Administrator Modify Course Information

Course ID: 4030000 Course Name: Focus

*Course ID: 4030000 Delete

*Course Name: Algorithm Insert

*Teacher ID: 20200 Update

*Credit: 4

*Grade: 2019

*Canceled Year: 2024

Successful Catch.

	cID	cName	tID	credit	grade	canceled_year
1	4030000	Algorithm	20200	4	2019	2024

Back

Then, user can modify the expected information in the these text blanks. After clicking “Update” button, if all new information are legal, a message “Successful Update.” is displayed and the update operation is completed.

Administrator Modify Course Information

Course ID: 4030000 Course Name: Focus

*Course ID: 4030000 Delete

*Course Name: Algorithm Insert

*Teacher ID: 20200 Update

*Credit: 6

*Grade: 2019

*Canceled Year: 2024

Successful Update.

	cID	cName	tID	credit	grade	canceled_year
1	4030000	Algorithm	20200	4	2019	2024

Back

If new information exists illegal input, the corresponding error message will be displayed, including “Error: Teacher ID length should be 5.”, “Error: Course ID length should be 7.”, “Error: Exist Empty or Illegal Information.”, “Error: Course Canceled Year Below Grade.”, “Error: Course ID is already exist.”, "Error: New Teacher ID Not Exist.", "Error: New Class Name Not Match Teacher.", “Error: Some Choosing Year Out Of Grade-Canceled Year Range.”. Except the last error, each error has same examples in **Section 2.1.4**, and here only shows example for the last error. If user has to modify canceled year in this condition, please modify course-choosing information first, see **Section 2.3**.

Administrator Modify Course Information

Course ID: 4030000 Course Name: Focus

*Course ID: 4030000 Delete

*Course Name: Algorithm Insert

*Teacher ID: 20200 Update

*Credit: 6

*Grade: 2019

*Canceled Year: 2021

Error: Some Choosing Year Out Of Grade-Canceled Year Range.

	cID	cName	tID	credit	grade	canceled_year
1	4030000	Algorithm	20200	4	2019	2024

Back

If user click the “Update” button without a successful focus operation, an error message is displayed “Please Focus One Item First.”.

2.3 Modify Course Choosing Information

After clicking “Modify Choosing Information” button, jump to the window for modifying course choosing information.

2.3.1 Focus Operation

Initially, for “delete” and “update” operation, user must complete a successful “focus” operation. The operation is same to the content in **Section 2.1.1**, user can refer to that section for detailed introduction and this section is skipped.

2.3.2 Delete Operation

For deletion, please successfully complete “focus” operation first. The course choosing information being deleted will be shown in the lower four text blanks.

Administrator Modify Course Choosing Information

Student ID: 3010000000
 Student Name:
 Course ID: 4020000
 Course Name:
 Focus

*Student ID: 3010000000
 *Course ID: 4020000
 *Teacher ID: 20100
 *Chosen Year: 2023
 Delete
 Insert
 Update

Successful Catch.

	sID	cID	tID	choose_year
1	3010000000	4020000	20100	2023

Back

After clicking “Delete” button, a message “Successful Deletion.” is displayed and the deletion operation is completed.

Administrator Modify Course Choosing Information

Student ID: 3010000000
 Student Name:
 Course ID: 4020000
 Course Name:
 Focus

*Student ID: 3010000000
 *Course ID: 4020000
 *Teacher ID: 20100
 *Chosen Year: 2023
 Delete
 Insert
 Update

Successful Deletion.

	sID	cID	tID	choose_year
1	3010000000	4020000	20100	2023

Back

If user clicks the “Delete” button without a successful focus operation, an error message is displayed “Please Focus One Item First.”.

Administrator Modify Course Choosing Information

Student ID:
 Student Name:
 Course ID:
 Course Name:
 Focus

*Student ID:
 *Course ID:
 *Teacher ID:
 *Chosen Year:
 Delete
 Insert
 Update

Please Focus One Item First.

Back

Administrator Modify Course Choosing Information

Student ID:
 Student Name:
 Course ID:
 Course Name:
 Focus

*Student ID:
 *Course ID:
 *Teacher ID:
 *Chosen Year:
 Delete
 Insert
 Update

Please Focus One Item First.

	sID	cID	tID	choose_year
1	3010000000	4040000	20200	2023

Back

2.3.3 Insert Operation

For insertion, no focus operation is needed, please do not stay in the focusing state before insertion, or an error will be displayed “Don’t Focus For Insertion.”.

The window displays the following fields and values:

- Student ID: 3010000000
- Student Name: (empty)
- Course ID: 4010000
- Course Name: (empty)
- *Student ID: 3010000000
- *Course ID: 4010000
- *Teacher ID: 20100
- *Chosen Year: 2022

Buttons: Focus, Delete, Insert, Update, Back.

Red text: Don't Focus For Insertion.

	sID	cID	tID	choose_year
1	3010000000	4010000	20100	2022

For legal insertion, please enter the information in the lower four text blanks and obey the information constraints. Errors which go against constraints include "Exist Empty Information.", "Student ID Not Exist.", "Course ID Not Exist.", "No Matching Teacher For Course.", "Illegal Chosen Year.", "Exist Same Item.". Corresponding errors will be displayed in different illegal input conditions.

The four screenshots show the following error messages:

- Top Left: Exist Empty Information.
- Top Right: Student ID Not Exist.
- Bottom Left: Course ID Not Exist.
- Bottom Right: No Matching Teacher For Course.

Each screenshot shows the same form layout as the first image, but with different values entered to trigger the errors.

Administrator Modify Course Choosing Information

Student ID:
Student Name:
Course ID:
Course Name:

Focus

*Student ID: 3010000000
*Course ID: 4020000
*Teacher ID: 20100
*Chosen Year: 2026

Delete
Insert
Update

Illegal Chosen Year.

Back

Administrator Modify Course Choosing Information

Student ID:
Student Name:
Course ID:
Course Name:

Focus

*Student ID: 3010000000
*Course ID: 4040000
*Teacher ID: 20200
*Chosen Year: 2024

Delete
Insert
Update

Exist Same Item.

Back

After clicking “Insert” button, if the insertion operation is successful, a message will be shown at the bottom of the window “Successful Insertion.”.

Administrator Modify Course Choosing Information

Student ID:
Student Name:
Course ID:
Course Name:

Focus

*Student ID: 3010000000
*Course ID: 4020000
*Teacher ID: 20100
*Chosen Year: 2022

Delete
Insert
Update

Successful Insert.

Back

2.3.4 Update Operation

For update, please successfully complete “focus” operation first. The course choosing information being updated will be shown in the lower four text blanks.

Administrator Modify Course Choosing Information

Student ID:
Student Name: Kong
Course ID: 4020000
Course Name:

Focus

*Student ID: 3010000000
*Course ID: 4020000
*Teacher ID: 20100
*Chosen Year: 2022

Delete
Insert
Update

Successful Catch.

	sID	clD	tlD	choose_year
1	3010000000	4020000	20100	2022

Back

Then, user can modify the expected information in these text blanks. After clicking “Update” button, if all new information is legal, a message “Successful Update.” is displayed and the update operation is completed.

The screenshot shows a window titled "Administrator Modify Course Choosing Information". It contains several input fields and buttons. The "Student ID" field is empty. The "Student Name" field contains "Kong". The "Course ID" field contains "4020000". The "Course Name" field is empty. There is a "Focus" button. Below these, there are fields for "*Student ID" (3010000000), "*Course ID" (4020000), "*Teacher ID" (20100), and "*Chosen Year" (2023). There are buttons for "Delete", "Insert", and "Update". A red message "Successful Update." is displayed. Below the message is a table with columns "sID", "cID", "tID", and "choose_year". The table contains one row with values "1", "3010000000", "4020000", "20100", and "2022". There is a "Back" button at the bottom.

sID	cID	tID	choose_year
1	3010000000	4020000	20100 2022

If new information exists illegal input, the corresponding error message will be displayed, including "Exist Empty Information.", "Student ID Not Exist.", "Course ID Not Exist.", "No Matching Teacher For Course.", "Illegal Chosen Year.", "Exist Same Item.". Each error has same examples in **Section 2.3.4**.

If user click the “Update” button without a successful focus operation, an error message is displayed “Please Focus One Item First.”.

The two screenshots show the same window as the previous one, but with an error message "Please Focus One Item First." displayed in red. The "Student ID" field is empty. The "Student Name" field is empty. The "Course ID" field is empty. The "Course Name" field is empty. There is a "Focus" button. Below these, there are fields for "*Student ID", "*Course ID", "*Teacher ID", and "*Chosen Year". There are buttons for "Delete", "Insert", and "Update". The table below the message is empty. There is a "Back" button at the bottom.

2.4 Query

After clicking “Specific Query” button, jump to the window for different query demand. Please refer to **Section 5** for detailed introduction.

2.5 Modify Password

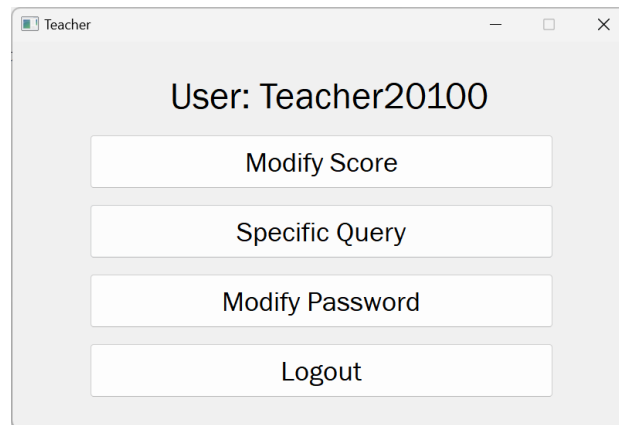
After clicking “Modify Password” button, jump to the window for modifying password. Please refer to **Section 6** for detailed information.

2.6 Logout

After clicking “Logout” button, jump back to the login window. See **Section 1**.

3 Menu-Teacher

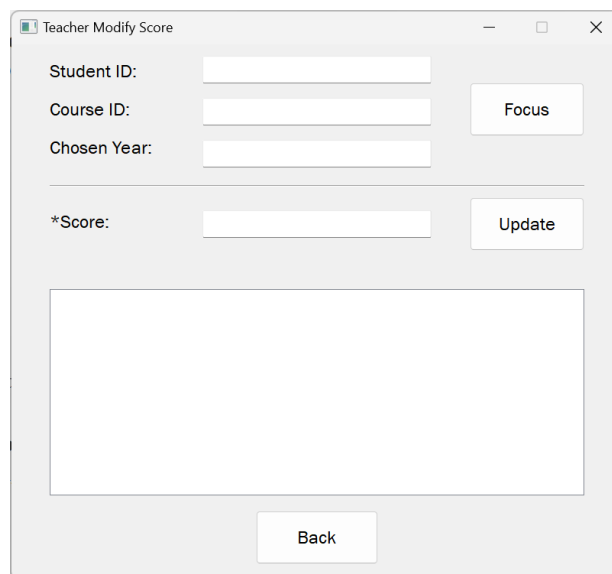
Take user ID=20100 as sample account to login. The menu is shown below.



Click the button to achieve corresponding operation.

3.1 Modify Score

After clicking “Modify Score” button, jump to the window for modifying student score.



3.1.1 Focus Operation

For “update” operation, user must complete a successful “focus” operation. The operation is same to the content in **Section 2.1.1**, user can refer to that section for detailed introduction and this section is skipped.

3.1.2 Update Operation

For update, please successfully complete “focus” operation first. The score information being updated will be shown in the lower text blanks.

Teacher Modify Score

Student ID: 3010000000

Course ID: 4010000

Chosen Year:

*Score: 92

Update

Successful Catch.

	sID	cID	tID	choose_year	score
1	3010000000	4010000	20100	2022	92

Back

Then, user can modify the score in the text blanks. After clicking “Update” button, if new score information is legal, a message “Successful Update.” is displayed and the update operation is completed.

Teacher Modify Score

Student ID: 3010000000

Course ID: 4010000

Chosen Year:

*Score: 97

Update

Successful Update.

	sID	cID	tID	choose_year	score
1	3010000000	4010000	20100	2022	92

Back

If new score information is illegal, the corresponding error message will be displayed, including "Error: Empty or Illegal New Score.", "Error: New Score Out of Range 0 to 100.".

Teacher Modify Score

Student ID: 3010000000

Course ID: 4010000

Chosen Year:

*Score:

Update

Error: Empty or Illegal New Score.

	sID	cID	tID	choose_year	score
1	3010000000	4010000	20100	2022	92

Back

Teacher Modify Score

Student ID: 3010000000

Course ID: 4010000

Chosen Year:

*Score: 150

Update

Error: New Score Out of Range 0 to 100.

	sID	cID	tID	choose_year	score
1	3010000000	4010000	20100	2022	92

Back

If user click the “Update” button without a successful focus operation, an error message is displayed “Please Focus One Item First.”.

The 'Teacher Modify Score' window contains the following fields and buttons:

- Student ID:
- Course ID:
- Chosen Year:
- Focus:
- *Score:
- Update:
- Back:

The error message "Please Focus One Item First." is displayed in red text below the *Score field.

The table shown in the right screenshot is:

	sID	cID	tID	choose_year	score
1	3010000000	4040000	20200	2023	97
2	3020000000	4040000	20200	2023	89
3	3030000000	4010000	20100	2022	88
4	3030000000	4040000	20200	2023	94
5	3010000000	4010000	20100	2022	97

3.2 Query

After clicking “Specific Query” button, jump to the window for different query demand. Please refer to **Section 5** for detailed introduction.

3.3 Modify Password

After clicking “Modify Password” button, jump to the window for modifying password. Please refer to **Section 6** for detailed information.

3.4 Logout

After clicking “Logout” button, jump back to the login window. See **Section 1**.

4 Menu-Student

Take user ID=3010000000 as sample account to login. The menu is shown below.

The 'Student' menu window displays the following information and buttons:

- User: Student3010000000
- Specific Query:
- Modify Password:
- Logout:

Click the button to achieve corresponding operation.

4.1 Query

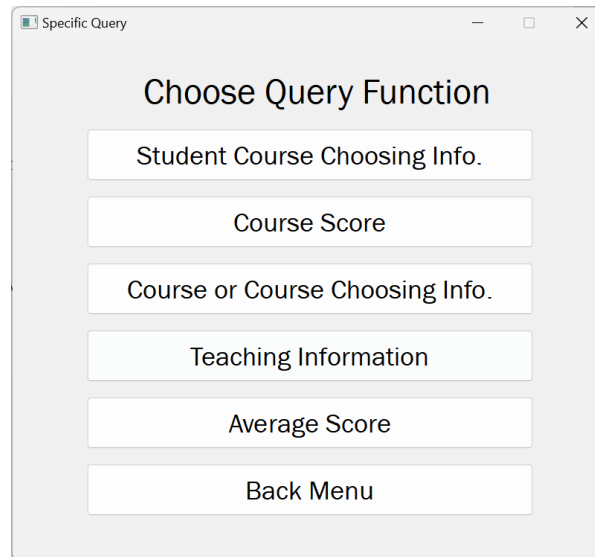
After clicking “Specific Query” button, jump to the window for different query demand. Please refer to **Section 5** for detailed introduction.

4.2 Modify Password

After clicking “Modify Password” button, jump to the window for modifying password. Please refer to **Section 6** for detailed information.

5 Query

Clicking “Specific Query” button will show the window for different queries.



Specific Query

Choose Query Function

Student Course Choosing Info.

Course Score

Course or Course Choosing Info.

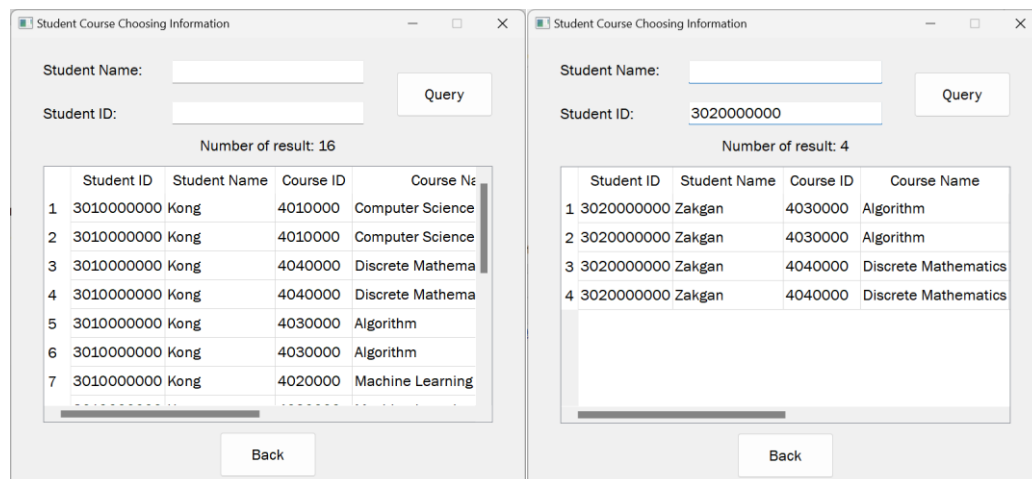
Teaching Information

Average Score

Back Menu

5.1 Query-Student Course Choosing Information

Information about student and chose courses can be queried based on a student’s ID or Name. If ID and Name are not given, all students’ and their courses information are shown. Input the expected index in the text blanks, click “Query” button and the results will be displayed in the table below. Number of results are displayed in the label.



Student Course Choosing Information

Student Name: Student ID: Query

Number of result: 16

	Student ID	Student Name	Course ID	Course Name
1	3010000000	Kong	4010000	Computer Science
2	3010000000	Kong	4010000	Computer Science
3	3010000000	Kong	4040000	Discrete Mathema
4	3010000000	Kong	4040000	Discrete Mathema
5	3010000000	Kong	4030000	Algorithm
6	3010000000	Kong	4030000	Algorithm
7	3010000000	Kong	4020000	Machine Learning

Back

Student Course Choosing Information

Student Name: Student ID: Query

Number of result: 4

	Student ID	Student Name	Course ID	Course Name
1	3020000000	Zakgan	4030000	Algorithm
2	3020000000	Zakgan	4030000	Algorithm
3	3020000000	Zakgan	4040000	Discrete Mathematics
4	3020000000	Zakgan	4040000	Discrete Mathematics

Back

Student Course Choosing Information

Student Name: Maan

Student ID:

Query

Number of result: 4

	Student ID	Student Name	Course ID	Course Name
1	3030000000	Maan	4010000	Computer Science Intr
2	3030000000	Maan	4010000	Computer Science Intr
3	3030000000	Maan	4040000	Discrete Mathematics
4	3030000000	Maan	4040000	Discrete Mathematics

Back

Student Course Choosing Information

Student Name: Kong

Student ID: 3010000000

Query

Number of result: 8

	Student ID	Student Name	Course ID	Course Name
1	3010000000	Kong	4010000	Computer Science Ir
2	3010000000	Kong	4010000	Computer Science Ir
3	3010000000	Kong	4020000	Machine Learning
4	3010000000	Kong	4020000	Machine Learning
5	3010000000	Kong	4030000	Algorithm
6	3010000000	Kong	4030000	Algorithm
7	3010000000	Kong	4040000	Discrete Mathemati

Back

If the name and ID are not matched, or the input name, ID is not exist in the database, no result is returned and the label will display “Number of results: 0”. That is, no other error message will be return in these conditions.

Student Course Choosing Information

Student Name: Gan

Student ID:

Query

Number of result: 0

Back

5.2 Query-Course Score

The score of a course that a student chose can be queried based on a student’s Name (or ID) and a course’s Name (or ID). If no student’s and course’s ID or Name are given, all scores of all students’ courses are shown. Input the expected index in the text blanks, click “Query” button and the results will be displayed in the table below. Number of results are displayed in the label.

Course Score

Student Name:

Student ID:

Course Name:

Course ID:

Query

Number of result: 8

	Student ID	Student Name	Course ID	Course Name
1	3010000000	Kong	4010000	Computer Science Ir
2	3010000000	Kong	4040000	Discrete Mathemati
3	3010000000	Kong	4030000	Algorithm
4	3010000000	Kong	4020000	Machine Learning
5	3020000000	Zakgan	4040000	Discrete Mathemati
6	3020000000	Zakgan	4030000	Algorithm

Back

Course Score

Student Name: Kong

Student ID:

Course Name:

Course ID:

Query

Number of result: 4

	Student ID	Student Name	Course ID	Course Name
1	3010000000	Kong	4010000	Computer Science Intr
2	3010000000	Kong	4020000	Machine Learning
3	3010000000	Kong	4030000	Algorithm
4	3010000000	Kong	4040000	Discrete Mathematics

Back

Student Name:

Student ID:

Course Name:

Course ID:

4040000

Query

Number of result: 3

	Student ID	Student Name	Course ID	Course Name
1	3010000000	Kong	4040000	Discrete Mathematics
2	3020000000	Zakgan	4040000	Discrete Mathematics
3	3030000000	Maan	4040000	Discrete Mathematics

Back

Student Name:

Student ID:

Course Name:

Course ID:

Kong

Discrete Mathematics

Query

Number of result: 1

Back

If some input indexes are not matched or not exist in the database, no result is returned and the label will display “Number of results: 0”. That is, no other error message will be return in these conditions. Example has been given in [Section 5.1](#).

5.3 Query-Course or Course Choosing Information

Information about course or course choosing can be queried based on course’s Name or ID. If no course’s Name or ID is given, information about all courses or all course choosing are shown. Input the expected index in the text blanks, click “Query” button and the results will be displayed in the table below. Number of results are displayed in the label.

Course Name:

Course ID:

Query

Number of result: 16

	Course ID	Course Name	Teacher Name	credit	grade	cancel
1	4010000	Computer Science Introduction	Wing	2		
2	4010000	Computer Science Introduction	Wing	2		
3	4010000	Computer Science Introduction	Wing	2		
4	4010000	Computer Science Introduction	Wing	2		
5	4020000	Machine Learning	Wing	1		
6	4020000	Machine Learning	Wing	1		
7	4030000	Algorithm	Ngan	6		

Back

Course Name:

Course ID:

Algorithm

Query

Number of result: 4

Back

Course Name:

Course ID:

4030000

Query

Number of result: 4

Back

Course Name:

Course ID:

Algorithm

4030000

Query

Number of result: 4

Back

If some input indexes are not matched or not exist in the database, no result is returned and the label will display “Number of results: 0”. That is, no other error message will be return in these conditions. Example has been given in **Section 5.1**.

5.4 Query-Teaching Information

Information about teacher or courses a teacher teaches can be queried based on a teacher’s Name or ID. If no teacher’s Name or ID is given, information about all teachers or all courses they teach are shown. Input the expected index in the text blanks, click “Query” button and the results will be displayed in the table below. Number of results are displayed in the label.

The figure displays four screenshots of the 'Teaching Information' application window, each showing a different query result. Each window has a 'Teacher Name' and 'Teacher ID' input field, a 'Query' button, and a 'Back' button. The results are displayed in a table with columns: tID, tName, cID, and courses.

Top Left Screenshot: Teacher Name is empty, Teacher ID is empty. Number of result: 4.

	tID	tName	cID	courses
1	20100	Wing	4010000	Computer Science Introduction
2	20100	Wing	4020000	Machine Learning
3	20200	Ngan	4030000	Algorithm
4	20200	Ngan	4040000	Discrete Mathematics

Top Right Screenshot: Teacher Name is Ngan, Teacher ID is empty. Number of result: 2.

	tID	tName	cID	courses
1	20200	Ngan	4030000	Algorithm
2	20200	Ngan	4040000	Discrete Mathematics

Bottom Left Screenshot: Teacher Name is empty, Teacher ID is 20100. Number of result: 2.

	tID	tName	cID	courses
1	20100	Wing	4010000	Computer Science Introduction
2	20100	Wing	4020000	Machine Learning

Bottom Right Screenshot: Teacher Name is Wing, Teacher ID is 20100. Number of result: 2.

	tID	tName	cID	courses
1	20100	Wing	4010000	Computer Science Introduction
2	20100	Wing	4020000	Machine Learning

If some input indexes are not matched or not exist in the database, no result is returned and the label will display “Number of results: 0”. That is, no other error message will be return in these conditions. Example has been given in **Section 5.1**.

5.5 Query-Average Score

Average scores of a student, all students, students in the same class and a course can be queried. Input the expected index in the text blanks, click “Query” button and the results will be displayed in the table below. Number of results are displayed in the label.

It should be reminded that if “Student Name” or “Student ID” are not empty, the “Class” and “Course” information are useless because the program directly returns the average score of all courses of this student.

In addition, if the score is not assigned by teacher, that is, it is the default value -1 from course choosing information, it will not be counted into the average score.

The application window 'Average Score' displays a form with fields for Student Name, Student ID, Class, and Course, along with a 'Query' button. Below the form, it shows the 'Number of result' and a table of results. Each screenshot shows a different combination of filters and the resulting average score.

Screenshot 1 (Top Left): All fields are empty. Number of result: 1. Table shows Student ID 1, All, All, All, All, Average Score 90.16666666666666.

Screenshot 2 (Top Right): Class is 'CS'. Number of result: 1. Table shows Student ID 1, All, All, CS, All, Average Score 89.75.

Screenshot 3 (Middle Left): Class is 'CS', Course is 'Algorithm'. Number of result: 1. Table shows Student ID 1, All, All, CS, Algorithm, Average Score 76.0.

Screenshot 4 (Middle Right): Course is 'Discrete Mathematics'. Number of result: 1. Table shows Student ID 1, All, All, All, Discrete Mathematics, Average Score 93.33.

Screenshot 5 (Bottom Left): Student Name is 'Kong'. Number of result: 1. Table shows Student ID 1, 3010000000, Kong, All, All, Average Score 90.0.

Screenshot 6 (Bottom Right): Student ID is '3030000000'. Number of result: 1. Table shows Student ID 1, 3030000000, Maan, All, All, Average Score 91.0.

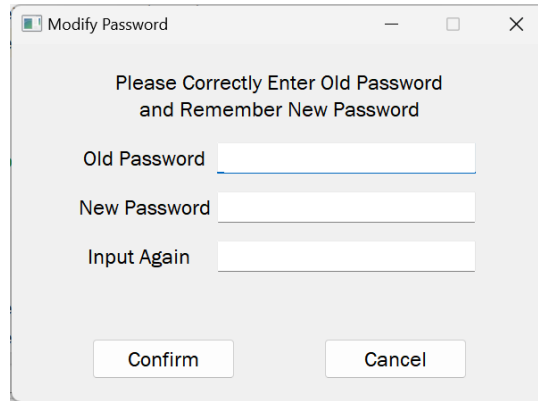
If some input indexes are not matched or not exist in the database, no result is returned and the label will display “Number of results: 0”, and in this section, the average score will show “None” as well. That is, no other error message will be return in these conditions. Example has been given in **Section 5.1**.

5.6 Back Menu

Clicking “Back Menu” button and return to the user menu.

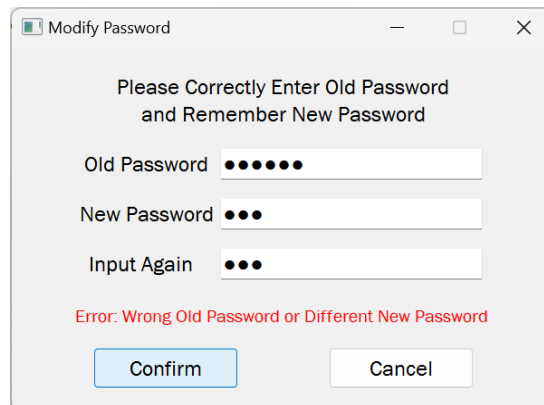
6 Modify Password

Clicking “Modify Password” button will show the window for modifying password.



If user wants to give up modifying, please click “Cancel” button and return to the user menu.

If user decides to modify password, please enter the old password correctly in the first text blank; enter new password in the second text blank; enter new password correctly again in the third text blank; click “Confirm” button to submit. Error will be displayed if the old password is incorrect or the twice new password input is not same.



If the password modification is successful, the window will automatically return to the menu.

7 Appendix

The latest sample data of each table in this program manual are shown below.

7.1 “Student” Table

sID	sName	sex	enAge	enYear	Class
3010000000	Kong	male	18	2022	CS
3020000000	Zakgan	female	18	2023	CS
3030000000	Maan	male	17	2022	Web
3040000000	Zaap	male	20	2023	Test

7.2 “Teacher” Table

tID	tName	cID	cName
20100	Wing	4010000	Computer Science Introduction
20100	Wing	4020000	Machine Learning
20200	Ngan	4030000	Algorithm
20200	Ngan	4040000	Discrete Mathematics

7.3 “Course” Table

cID	cName	tID	credit	grade	canceled_year
4010000	Computer Science Introduction	20100	2	2019	2026
4020000	Machine Learning	20100	1	2021	2023
4030000	Algorithm	20200	6	2019	2024
4040000	Discrete Mathematics	20200	4	2020	None

7.4 “Course_Choosing” Table

sID	cID	tID	choose_year	score
3010000000	4040000	20200	2023	97
3020000000	4040000	20200	2023	89
3030000000	4010000	20100	2022	88
3030000000	4040000	20200	2023	94
3010000000	4010000	20100	2022	97
3010000000	4030000	20200	2023	76
3020000000	4030000	20200	2022	-1
3010000000	4020000	20100	2023	-1

7.5 “user_info” Table

ID	Character	Password
101	Admin	123456
20100	Teacher	
20200		
3010000000	Student	
3020000000		
3030000000		
3040000000		