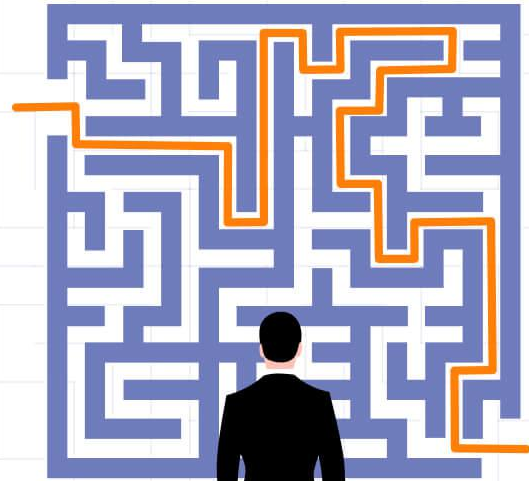


DBS Project 2 Report

Courses Selection System

H3Art



I CONTENTS

- Objective
- Introduction
- System Development Environment
- System Build
- Usage Guide
 - System Access
 - Student Operations
 - Administrator Operations



01

Objective



Objective

- Design and implement a database-driven partial application system for Teaching Administration Management, focusing on the "**Select-Courses**" feature.
- System should include essential helper functionalities such as **viewing available courses**, **monitoring selected courses**, and facilitating **adjustments to course selections**.
- Key constraints to consider include prerequisite course requirements, a credit limit of **no more than 21 credits per semester**, and the avoidance of scheduling conflicts among selected courses.
- Not impose any restrictions on the tools used.

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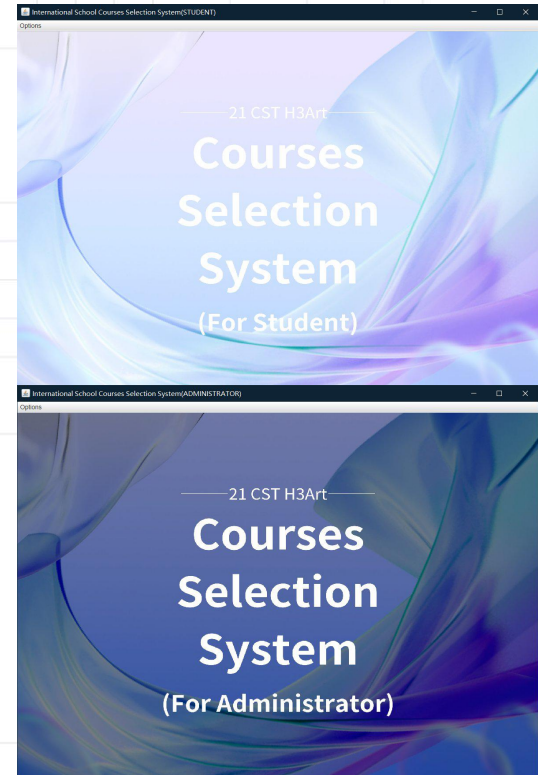
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Introduction

Introduction

- The system is a **database-driven** partial application for Teaching Administration Management, focusing on Course Selection. It features viewing and modifying course selections while adhering to constraints like prerequisite courses, a **21-credit** semester cap, and schedule conflict avoidance.
- Built with **Java**, **JDBC**, and **Swing** framework, the system offers distinct interfaces for students and administrators, each with tailored functionalities.
- **Student**-focused features include secure password modification, access to personal and academic information, streamlined course selection, and the flexibility to enroll in or quit courses as needed.
- For **administrators**, the system provides tools for managing course and student information, including updating course details, adding new courses, overseeing student records, and assisting with password management and security.



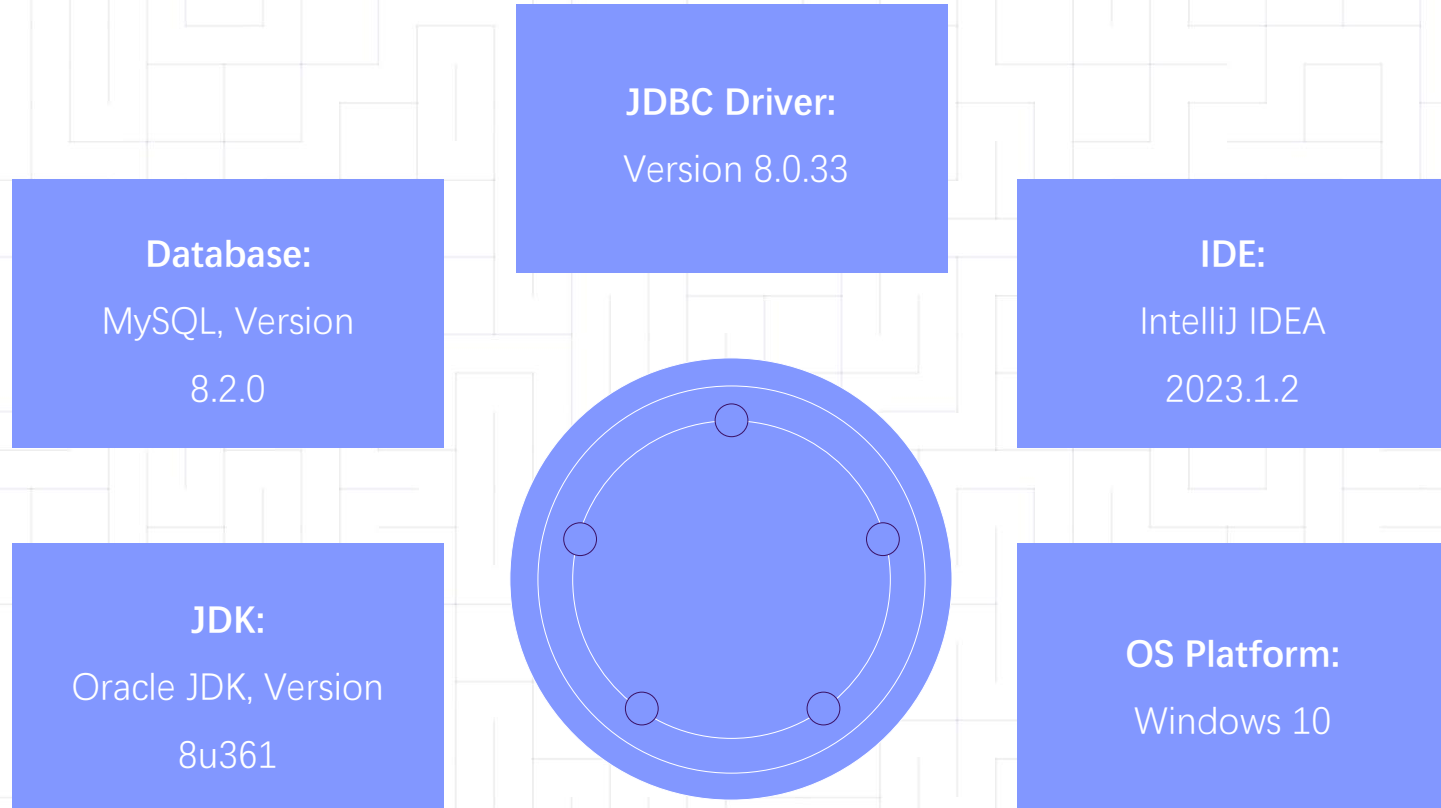
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03

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System Development Environment

System Development Environment





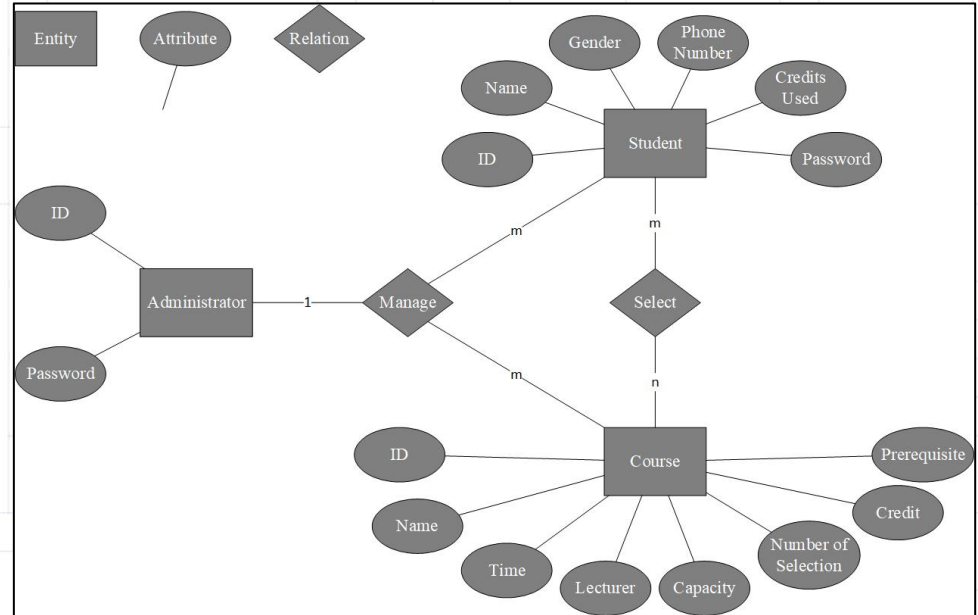
04

System Build



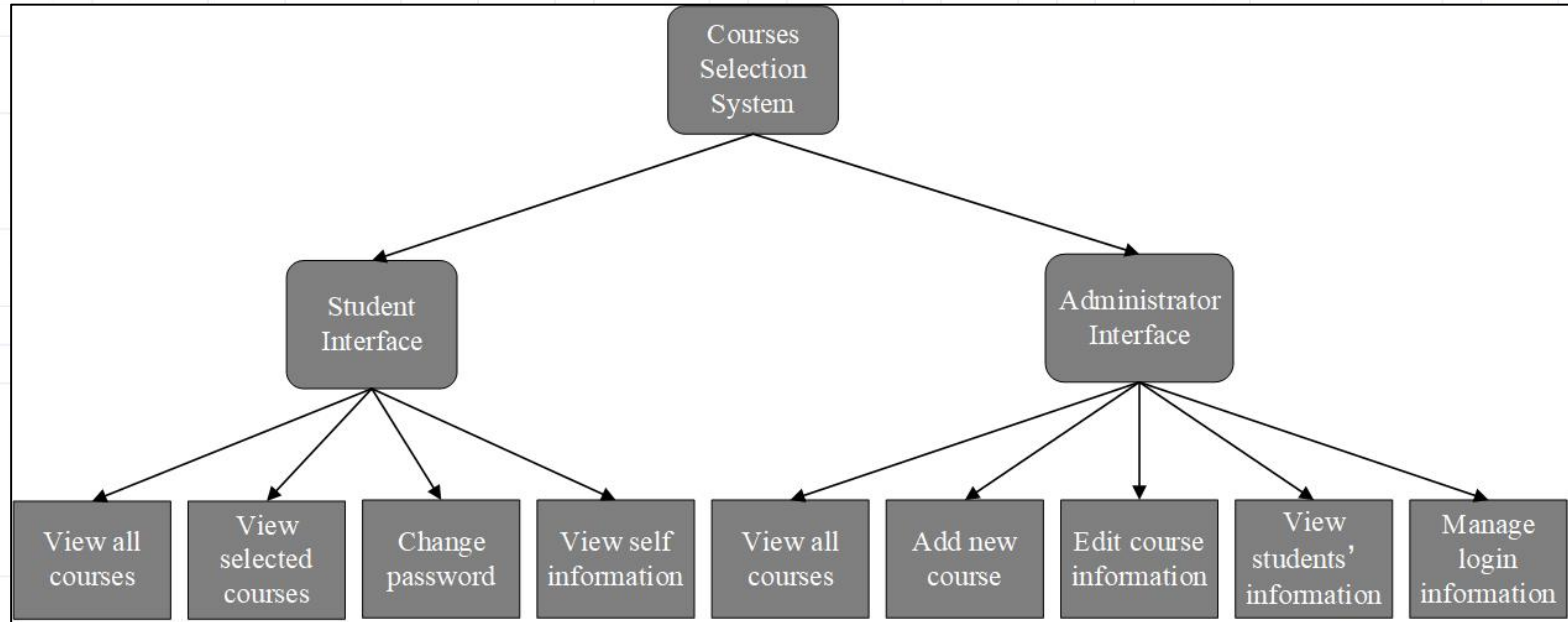
System Build

This **Entity-Relationship (ER) diagram** visually represents the database structure of a Teaching Administration System. It showcases entities like Students, Administrators, and Courses, detailing their attributes such as ID, name, and contact information for students, as well as course details including timings and prerequisites. Students are linked to Courses through a selection process, indicating a many-to-many relationship, as a student can enroll in multiple courses and a course can be chosen by multiple students. An Administrator entity is shown to manage multiple Students.



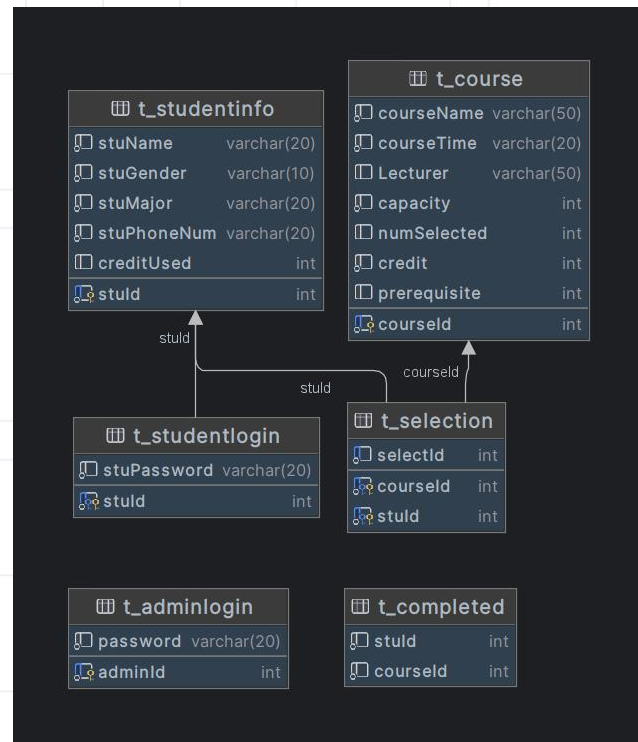
System Build

The functional design of the Courses Selection System is shown below:



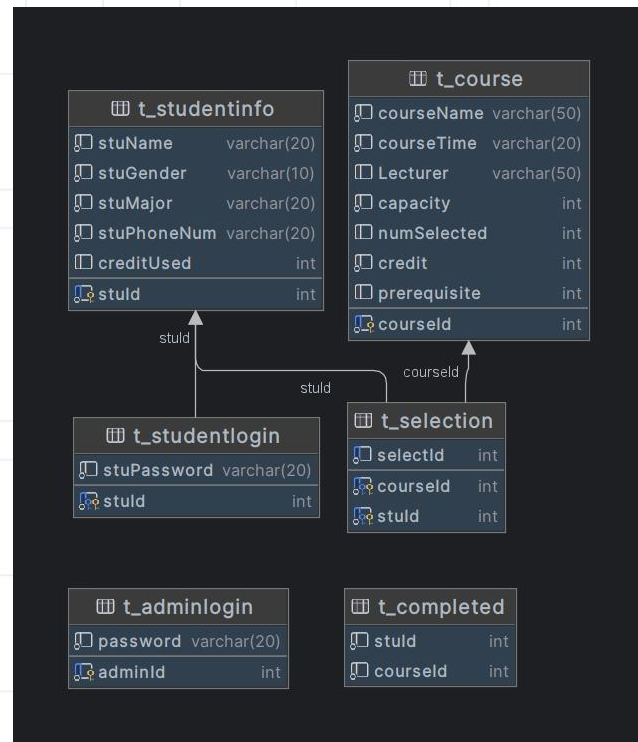
System Build

List Name	Statement	Data Type	Restrictions
Student information table(t_studentinfo)			
stuld	Student ID	int	not null
stuName	Student Name	varchar(20)	not null
stuGender	Student Gender	varchar(20)	not null
stuMajor	Student Major	varchar(20)	not null
stuPhoneNum	Student Phone Num	varchar(20)	not null
creditUsed	Credits Used	int	default '0'
Student login table(t_studentlogin)			
stuld	Student ID	int	not null
stuPassword	Student Password	varchar(20)	not null



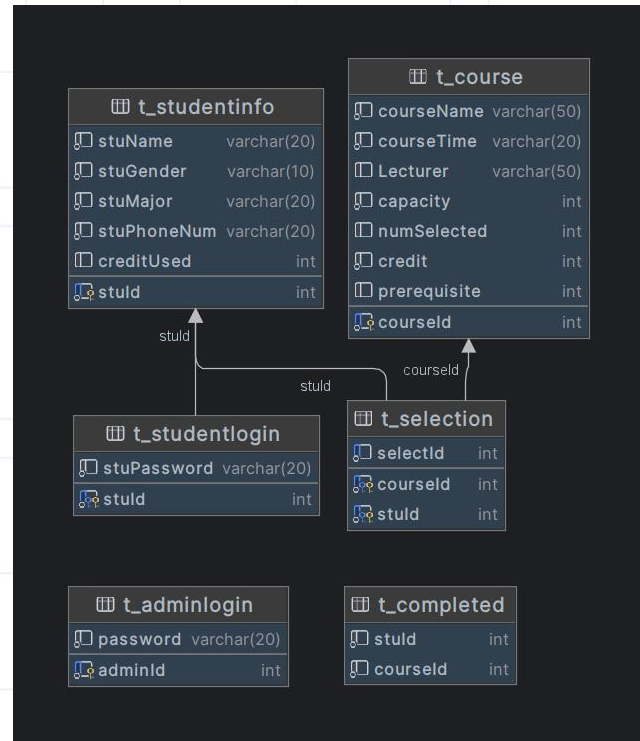
System Build

List Name	Statement	Data Type	Restrictions
Course table(t_course)			
courseId	Course ID	int	not null, auto_increment
courseName	Course Name	varchar(50)	not null
courseTime	Course Time	varchar(20)	not null
lecturer	Lecturer	varchar(50)	not null
capacity	Capacity	int	not null
numSelected	Number Selected	int	default '0'
credit	Credit	int	not null
prerequisite	Prerequisite	int	default '0'



System Build

List Name	Statement	Data Type	Restrictions
Administrator login table(t_adminlogin)			
adminId	Admin ID	int	not null
password	Password	varchar(20)	not null
Completed course table(t_completed)			
stuld	Student ID	int	not null
courseld	Course ID	int	not null
Selection table(t_selection)			
selectId	Selection ID	int	not null, auto_increment
courseld	Course ID	int	not null
stuld	Student ID	int	not null





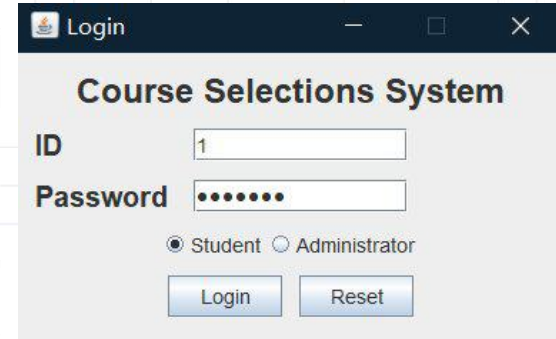
05

Usage Guide (System Access)

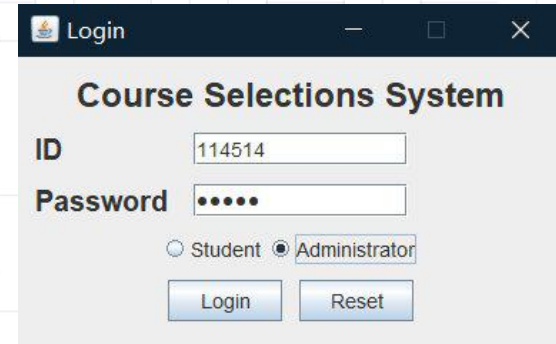


System Access

- At the first moment you start the Course Selection System, you will see the login page of the system, where you can choose to enter the system as a student or administrator.
- The two identities correspond to different account and passwords, and they will not access the same database table entry. Here, the administrator has only one account, the account number is **114514**, and the password is **admin**.



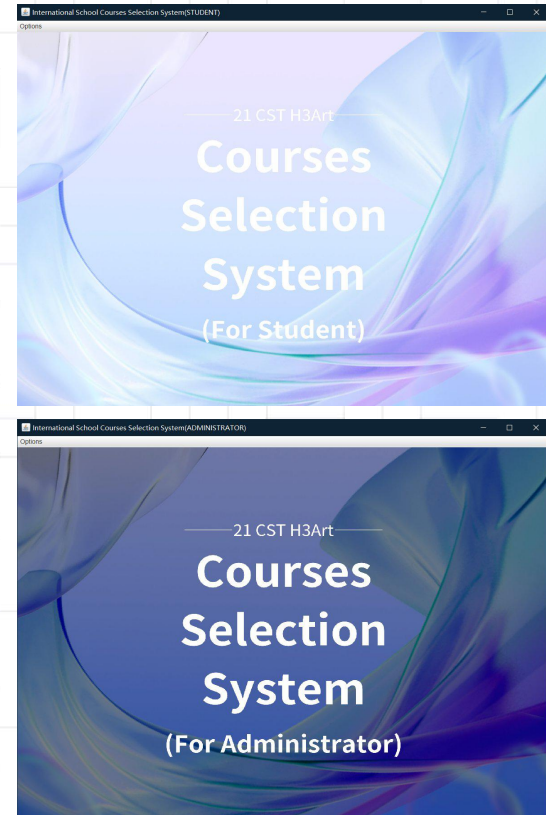
A screenshot of a web browser window titled "Login" with a small icon of a person. The main heading is "Course Selections System". Below it, there is an "ID" field containing the number "1" and a "Password" field with six dots. Under the password field, there are two radio buttons: "Student" (which is selected) and "Administrator". At the bottom, there are two buttons: "Login" and "Reset".



A screenshot of a web browser window titled "Login" with a small icon of a person. The main heading is "Course Selections System". Below it, there is an "ID" field containing the number "114514" and a "Password" field with four dots. Under the password field, there are two radio buttons: "Student" and "Administrator" (which is selected). At the bottom, there are two buttons: "Login" and "Reset".

System Access

- When you log in successfully, you will see different interfaces.
- The background picture of the student user interface has a brighter and lighter color, and the background picture of the administrator user interface is darker and more contrasting.



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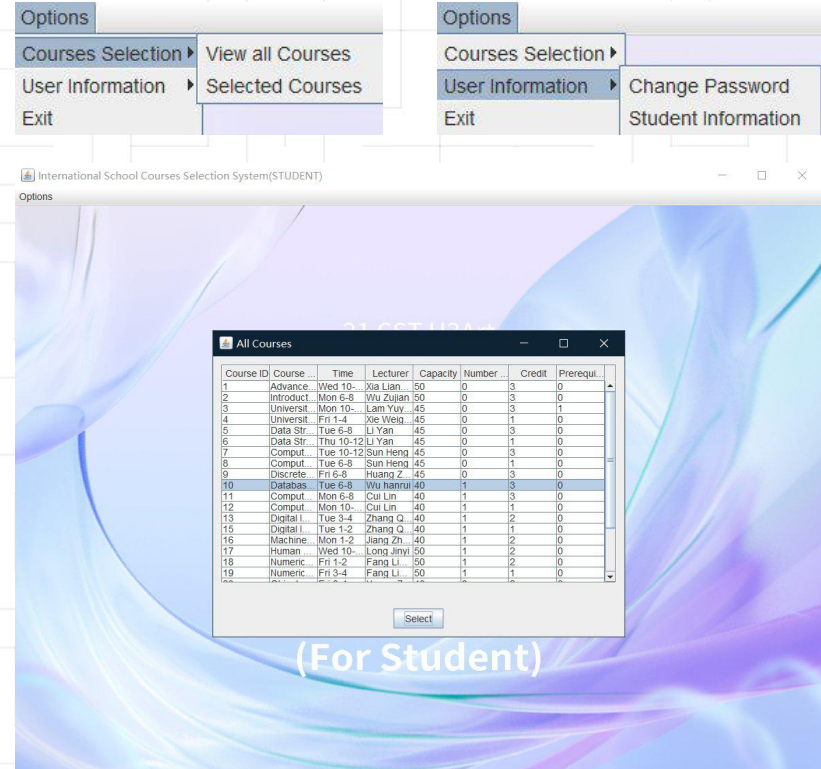
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Usage Guide (Student Operations)

Student Operation

In the student account operation interface, the system provides functions such as **viewing all courses**, **viewing selected courses**, **viewing the student's personal information** and **changing the login password** of the student account.

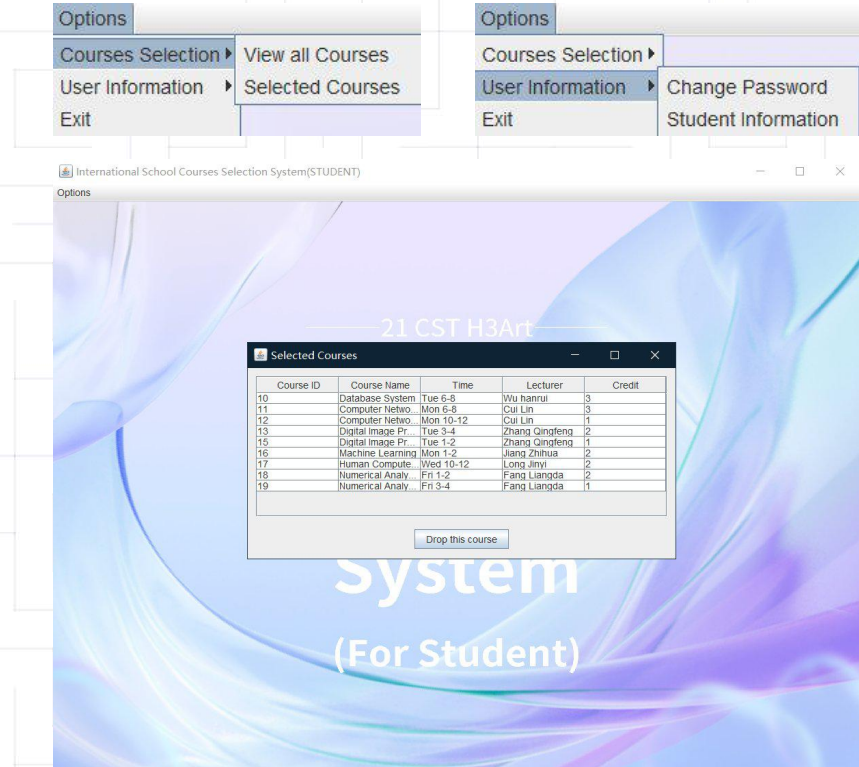
- In the view all courses function, students can view all courses and add course selections. The system will judge the students' course selection status. If the current selected course overlap with the selected courses, the prerequisite courses are not met, or the course capacity is insufficient, etc. , the system will prohibit students from choosing this course.



Student Operation

In the student account operation interface, the system provides functions such as **viewing all courses**, **viewing selected courses**, **viewing the student's personal information** and **changing the login password** of the student account.

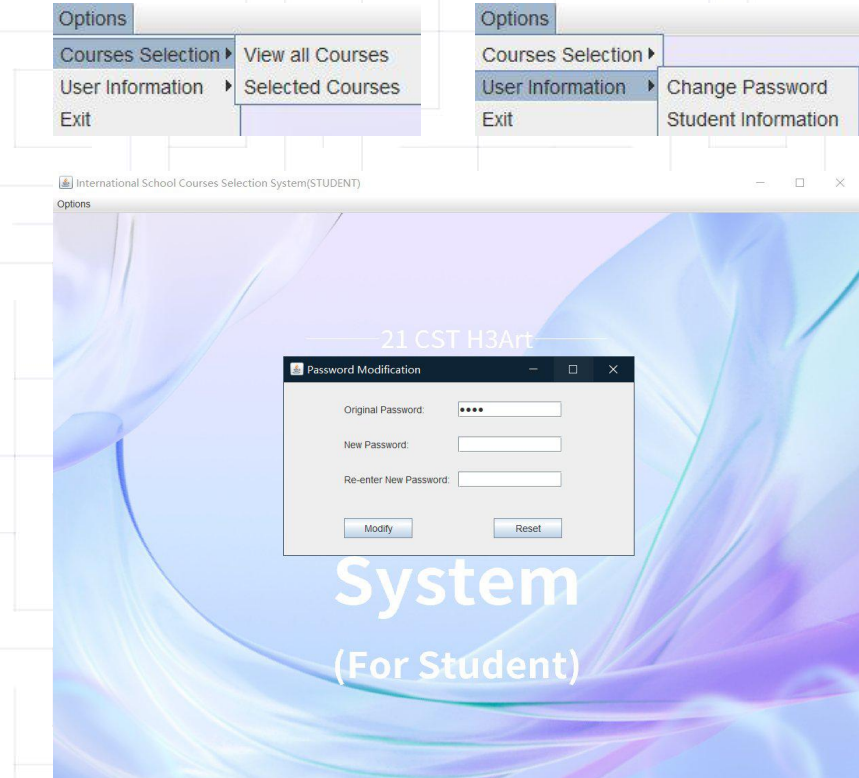
- In the function of viewing selected courses, students can see the courses they have selected. The only operation that can be actively performed is to unsubscribe from a selected course.



Student Operation

In the student account operation interface, the system provides functions such as **viewing all courses**, **viewing selected courses**, **viewing the student's personal information** and **changing the login password** of the student account.

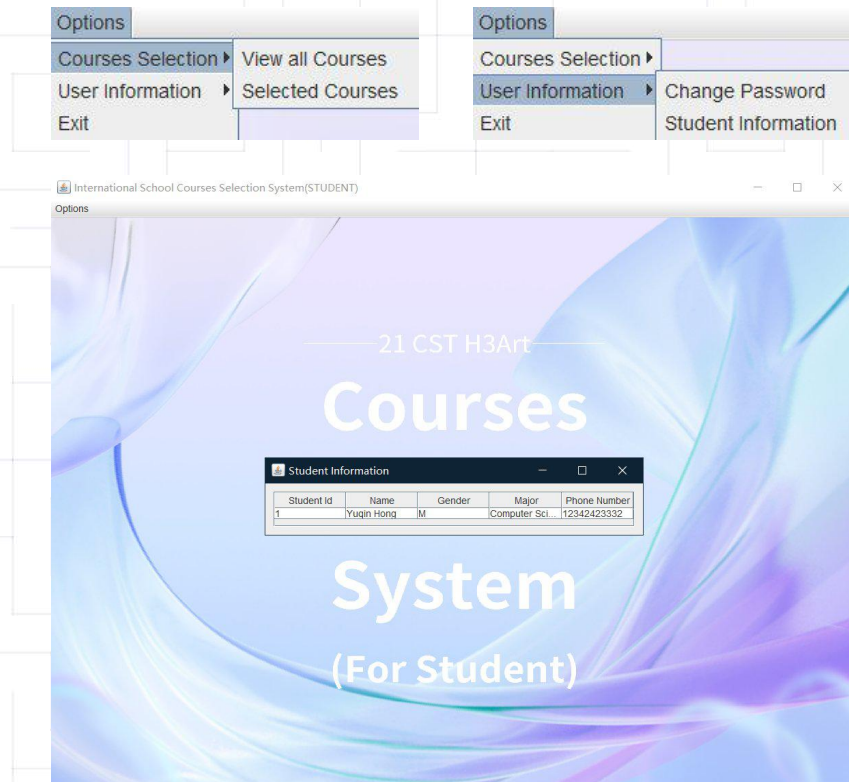
- In the password change function, students need to verify their original password and enter the new password twice to complete the change of the password for this account.



Student Operation


In the student account operation interface, the system provides functions such as **viewing all courses**, **viewing selected courses**, **viewing the student's personal information** and **changing the login password** of the student account.

- In the function of viewing student personal information, you can see the student ID, name, gender, major and mobile phone number information of the corresponding student under this student account.



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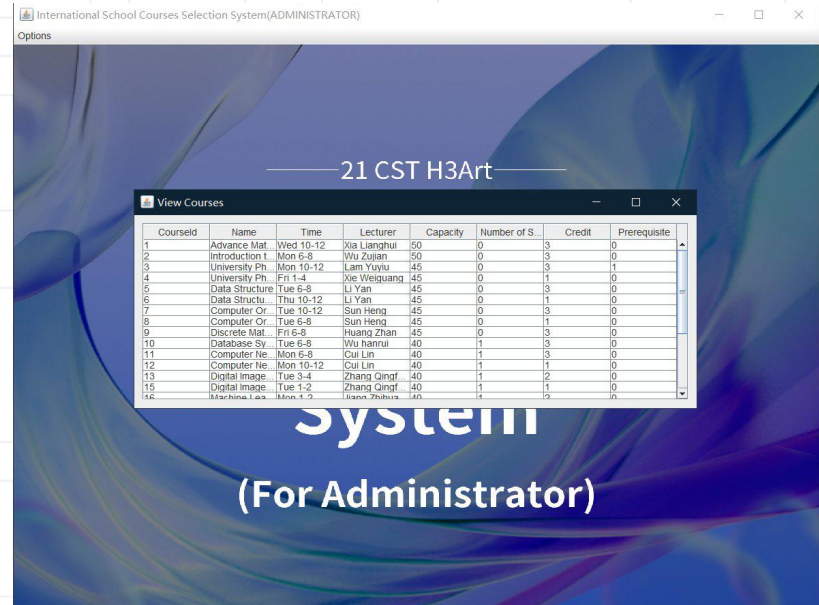
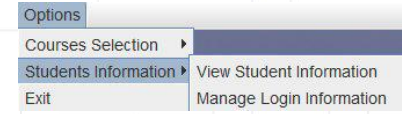
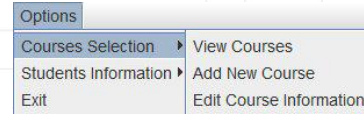
Usage Guide (Administrator Operations)

Administrator Operation

In the administrator account operation interface, the five main functions provided by this system include **viewing all courses, adding new courses, editing course information, viewing all student information, and managing student login information.**

- In the view all courses function, administrators are not provided with the ability to select courses.

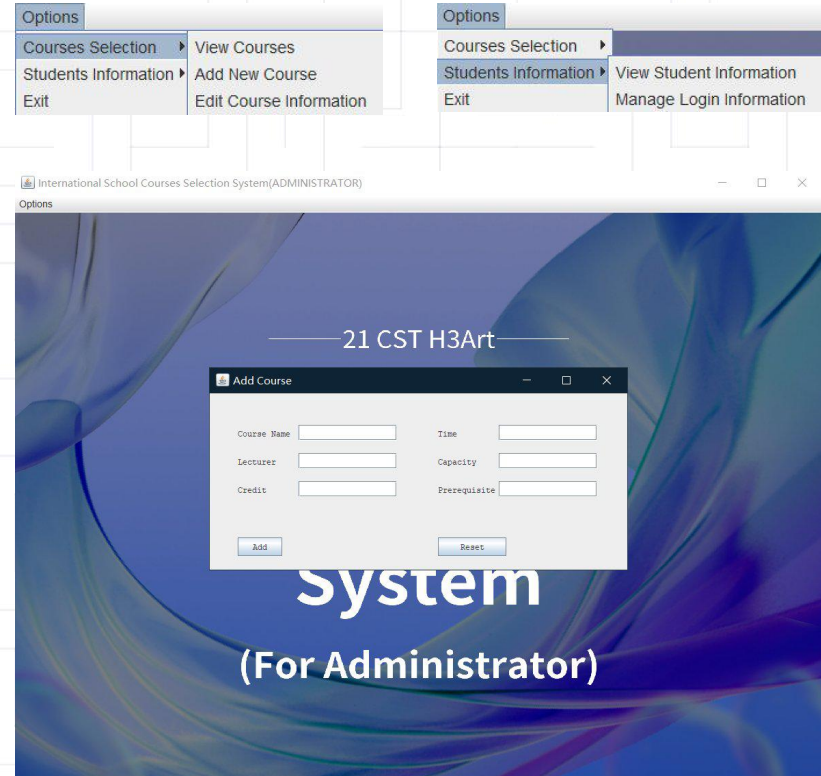
Administrators on this page cannot perform any operations. Administrator can only view course information, including course number, course ID, course time, lecturer, course capacity, and selected number, course credit requirements and prerequisite course requirements.



Administrator Operation

In the administrator account operation interface, the five main functions provided by this system include **viewing all courses, adding new courses, editing course information, viewing all student information, and managing student login information.**

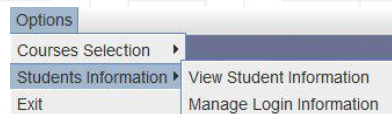
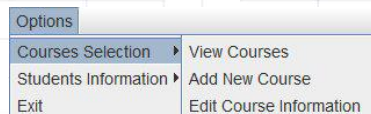
- In the add course function, except for the course ID and selected number fields that do not need to be set, other course information fields need to be filled in. After completing the filling, click the **Add** option to add the course to the database.



Administrator Operation

In the administrator account operation interface, the five main functions provided by this system include **viewing all courses, adding new courses, editing course information, viewing all student information, and managing student login information.**

- The design of the edit course function is relatively complex. It provides a search function for courses. You can easily use the course name, speaker and course time fields to find courses. After selecting the course you want to edit, you need to fill in the necessary fields as you did before adding the course function. 6 fields to complete the modification of course information.



Edit Course Information

Search Criteria

Course Name Lecturer Time

Course Id	Name	Time	Lecturer	Capacity	Number of Selected	Credit	Prerequisite
1	Advance Mathematics II	Tue 10-12	Xia Lianghui	50	0	3	0
2	Introduction to Comp.	Mon 6-8	Wu Zujian	50	0	3	0
3	University Physics	Mon 10-12	Lam Yuyiu	45	0	3	1
4	University Physics Lab	Fri 1-4	Xie Weiquang	45	0	1	0
5	Data Structure	Tue 6-8	Li Yan	45	0	3	0
6	Data Structure Lab	Thu 10-12	Li Yan	45	0	1	0
7	Computer Organizati	Tue 10-12	Sun Heng	45	0	3	0
8	Computer Organizati	Tue 6-8	Sun Heng	45	0	1	0
9	Discrete Mathematics II	Fri 6-8	Huang Zhan	45	0	3	0

Form Action

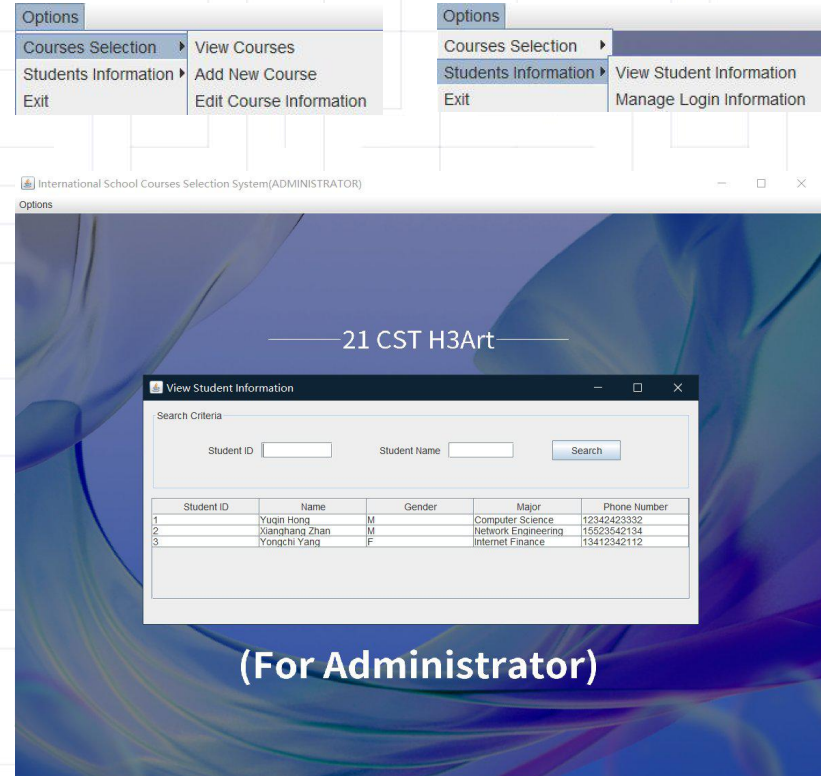
Course Id Course Name Time Lecturer

Capacity Number of Selected Credit Prerequisite

Administrator Operation

In the administrator account operation interface, the five main functions provided by this system include **viewing all courses, adding new courses, editing course information, viewing all student information, and managing student login information.**

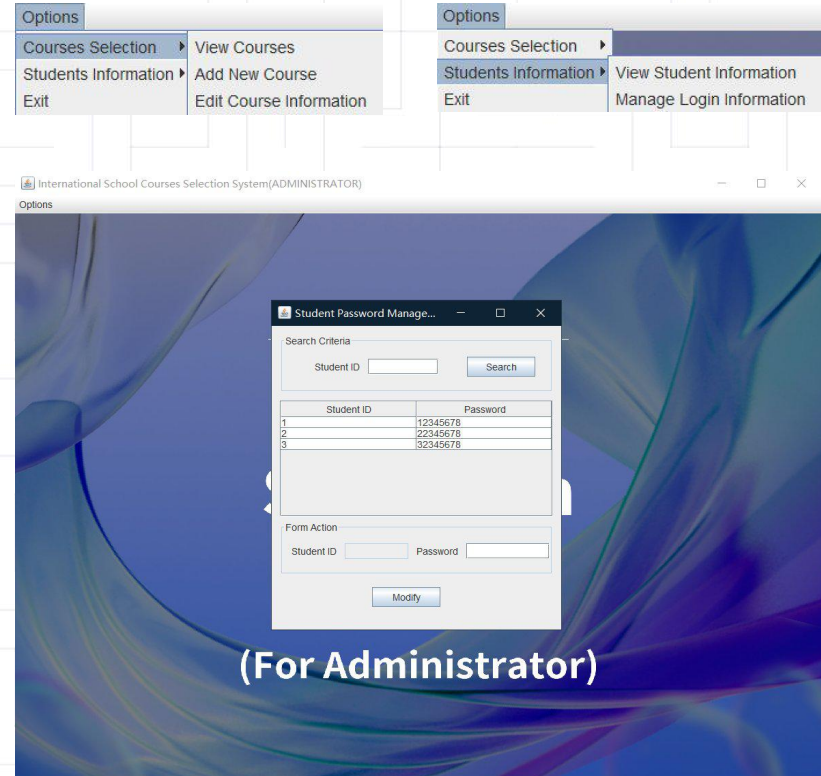
- Next is the function of viewing students' personal information. It provides the ability to view the personal information of all students entered in the database (including the student's ID, name, gender, major and phone number). It also supports querying based on student ID and name.



Administrator Operation

In the administrator account operation interface, the five main functions provided by this system include **viewing all courses, adding new courses, editing course information, viewing all student information, and managing student login information.**

- The last function provided is the function of modifying the student account login information. In this interface, administrator can search for students by student ID and modify the password of the student account.





THE END

THANKS

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