Assignment 3

Group Members:

Feng Peng: 001086736

Jialin Wang: 001561878

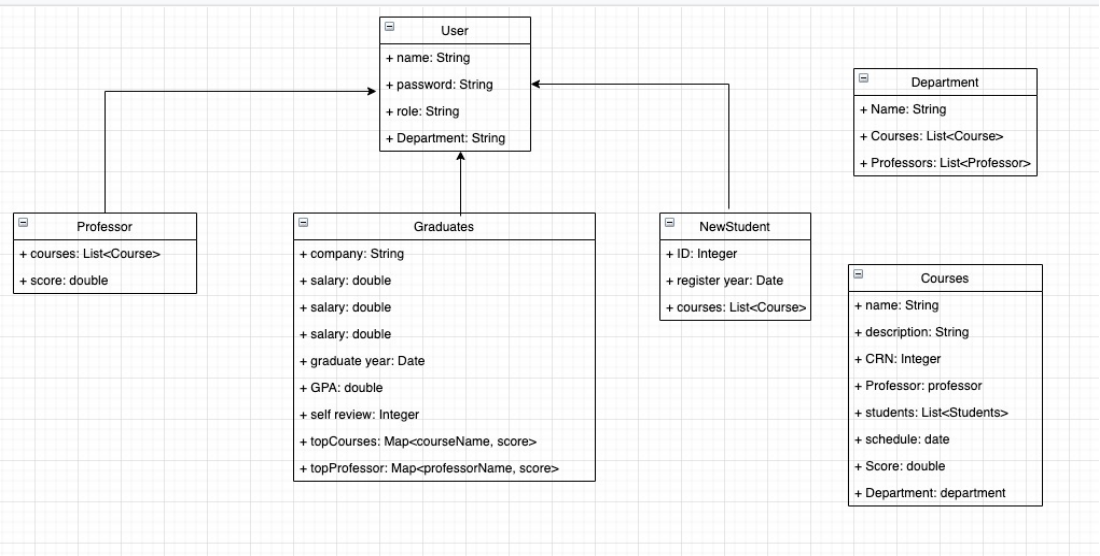
Jiaqi Sun: 001535397

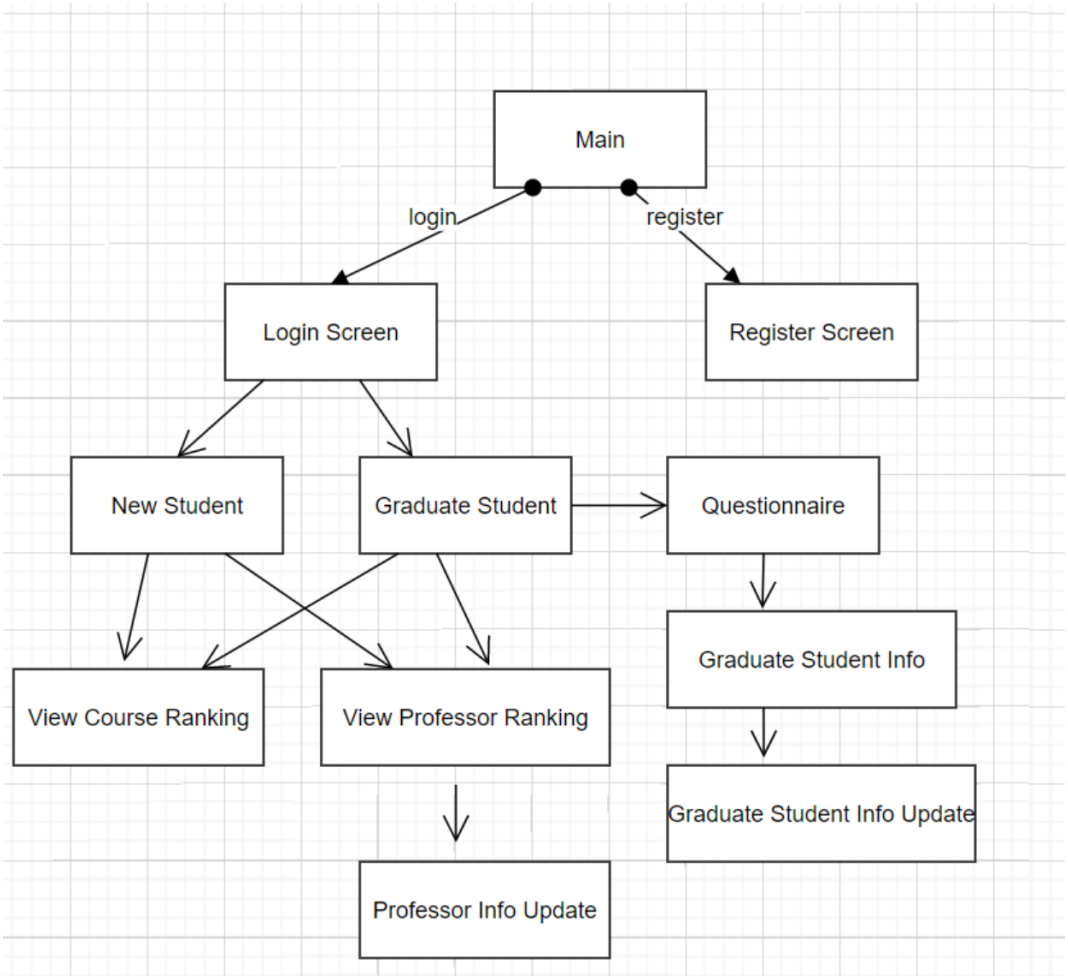
1.General Analysis

We are going to create a dashboard that shows ranking results of each departments' courses and professors based on the evaluations of the graduates, and the new students can also refer to these results in order to make decisions before they are going to register for a course. We hope to use this system to get timely feedback in each term so that we can improve the quality of our education system. Moreover, it's really important for our education system to know whether or not a course or a professor would contribute to the growth of a graduate over a five-year period. If there are some connections of courses and their relevance to graduates' growth indeed, the university or the specific departments could find a way out to help their current students do better in related majors.

2.Entity class Analysis and Object Model

Look at the graph below, we design some entities based on our system requirement analysis. In the User class, we created three roles that show different users: new student, graduate student, and professor. Each of these three classes is an instance of the user, which is also the abstract class. In addition, we have two other entities, Department and Courses. Department store all information of courses and professors in a specific department. And Courses show the information about this course.





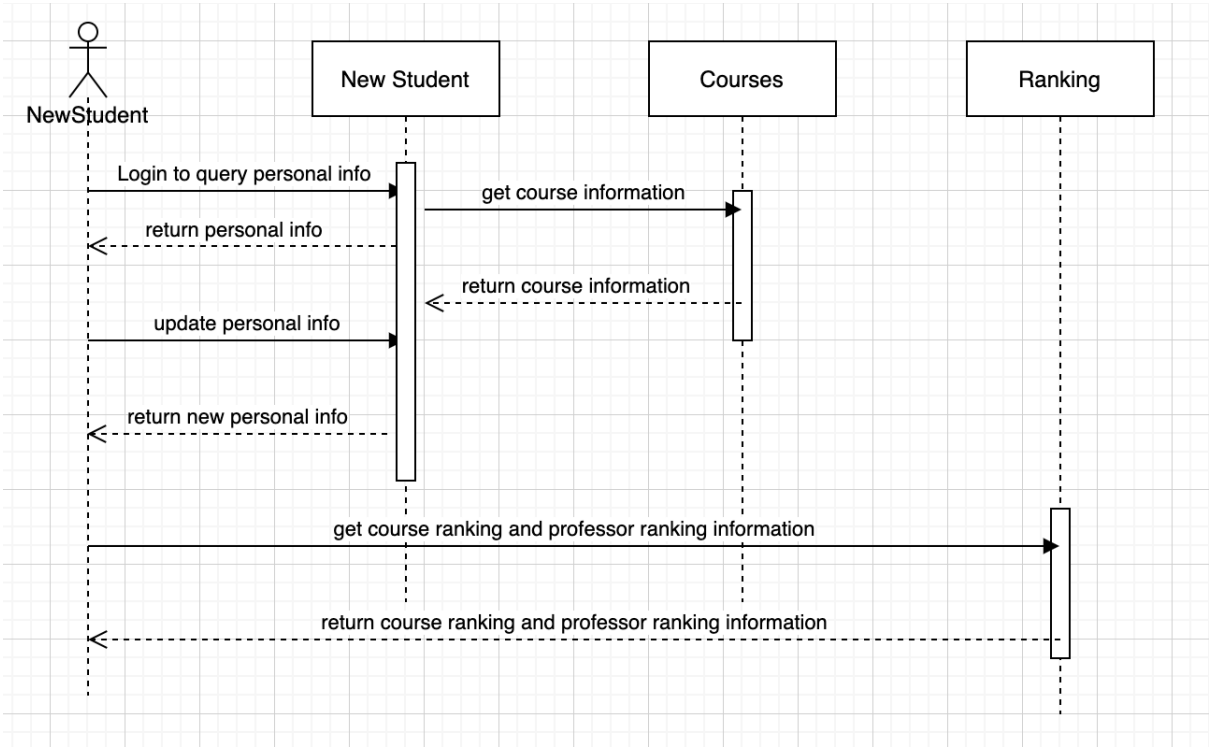
Object Model

3.Specific Implementation and Sequence Diagrams

For the whole system, since we have three different roles, we can login to the system with one of the roles. Once a user enters the right username and password, they can select to view the ranking information or go to their own interface.

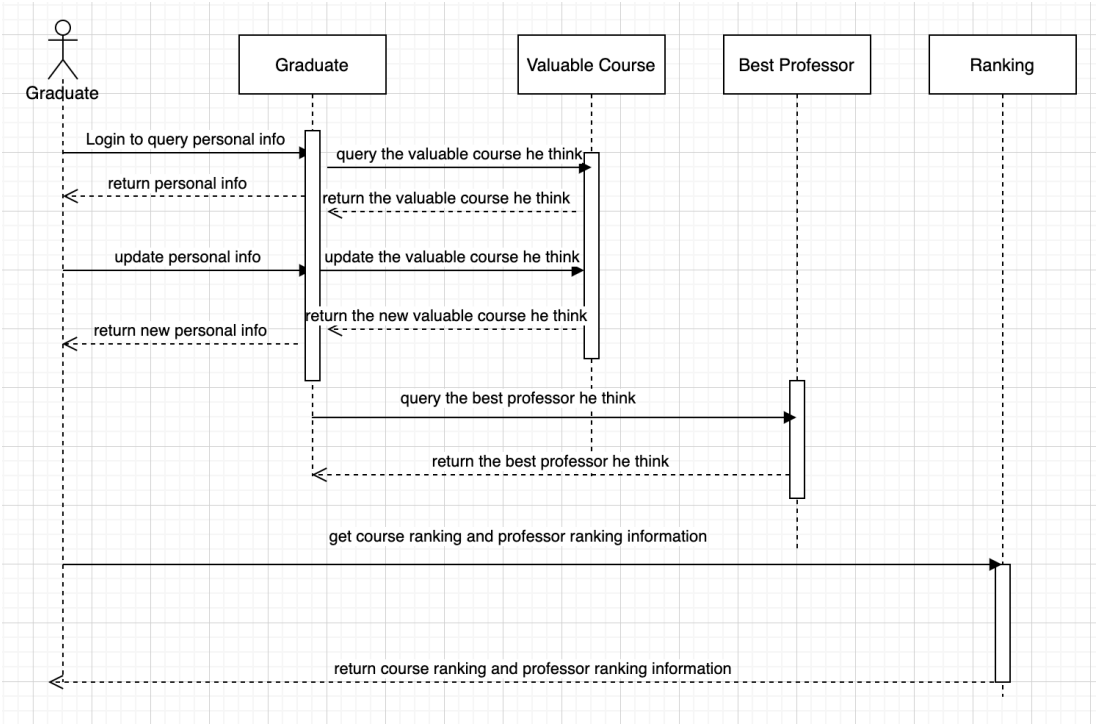
If we are not a user. We can simply click the “Register” button and go to **RegisterScreen**. Then we can fill out all the information such as username, password, our student ID, etc. After we registered for a user, we can go to the **LoginScreen**.

If we log in as a new student. We can check our information like name, department and enrollment date, and a list of the courses we have learned. If we want to view the course details, we can simply select the course we want to view and click the “view details” button to go to **CourseDetailsScreen**. If we want to update our own information, we can click the “update” button to go to **NewStudentUpdateScreen** interface.



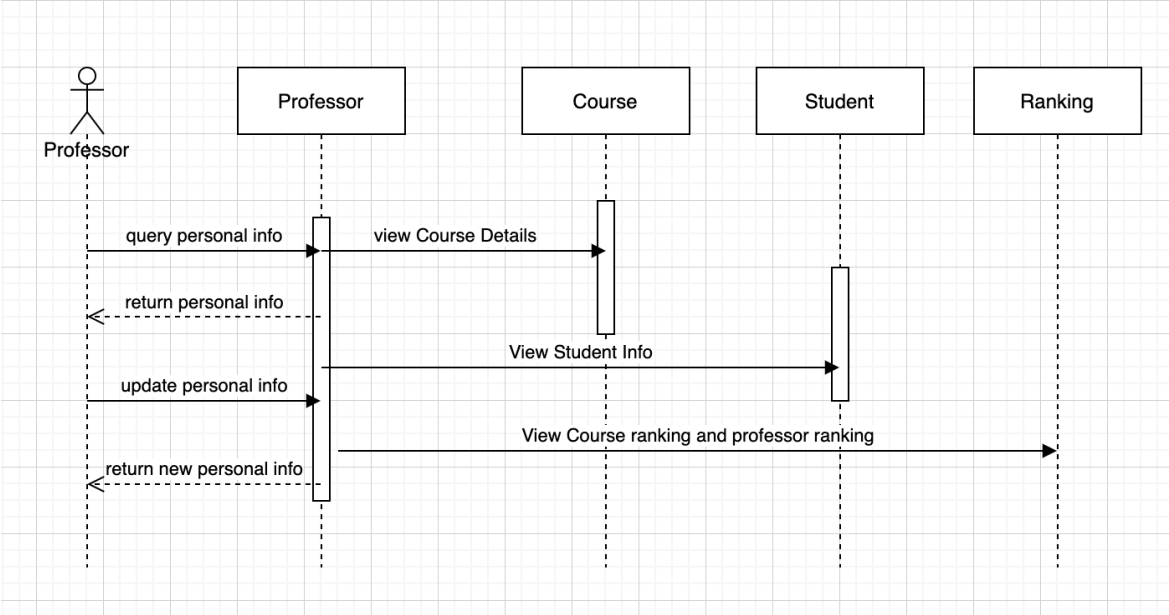
New Student Sequence Diagram

If we log in as a graduate. We will switch to **GraduatesInfoScreen** and then view all information about ourselves. As a graduate, we can fill the questionnaire form and tell the university what are the five most valuable courses you have taken and the five best professors you think and score them respectively. At the same time, if you want to view any details of courses or professors, you can select the row and click the “view” button to go to the correspondent screen.



Graduate Sequence Diagram

If we log in as a professor, we can check the professor’s name, department, score that students have taken for him/her, course lists that he/she have taught, and also some scores corresponding to each student who provided a score in the **ProfessorInfoScreen**. If we want to view any course details or students’ information, we can just click the “view course” button or “view student” button to switch to **CourseDetailScreen** or **GraduateInfoScreen**. And if we want to update the professor's information, we can just click the “update button” in **ProfessorInfoScreen** and then switch to the **ProfessorUpdateScreen**.



Professor Sequence Diagram

4. Analysis for Faculty and Course Ranking System

How do we track the connection of faculty and courses contribution with the growth of their graduates over a 5-year? We introduced an attribute, self-satisfaction. **For self-satisfaction**, it is hard to define how successful a person is. Because every person has a different starting point, a high starting point can help a person succeed. And a person needs to pay more effort to achieve if they are starting at a low starting point. Because of that, we believe the success of the people is decided by themselves. So, we chose the graduate students to give themselves a self-satisfaction grade from 1-10 to grade themself (10 is the highest grade, and 1 is the lowest grade). Then for the course ranking and professor ranking, we collected the scores of each graduate on the course and the professor, and then combined them with their self-satisfaction score to calculate the average score of each professor and each course.

For course score part, the function we decided to use is:

course score = (((studentList[1].self-score/10) * coursescoure) +((studentList[2].self-score/10) * coursescoure)+.((studentList[n].self-score/10) * coursescoure))/n

Because it is hard to decide how much benefit the specific course brings to the student. But we know the top five of the class indeed get the benefits to the students. In our thinking, the best

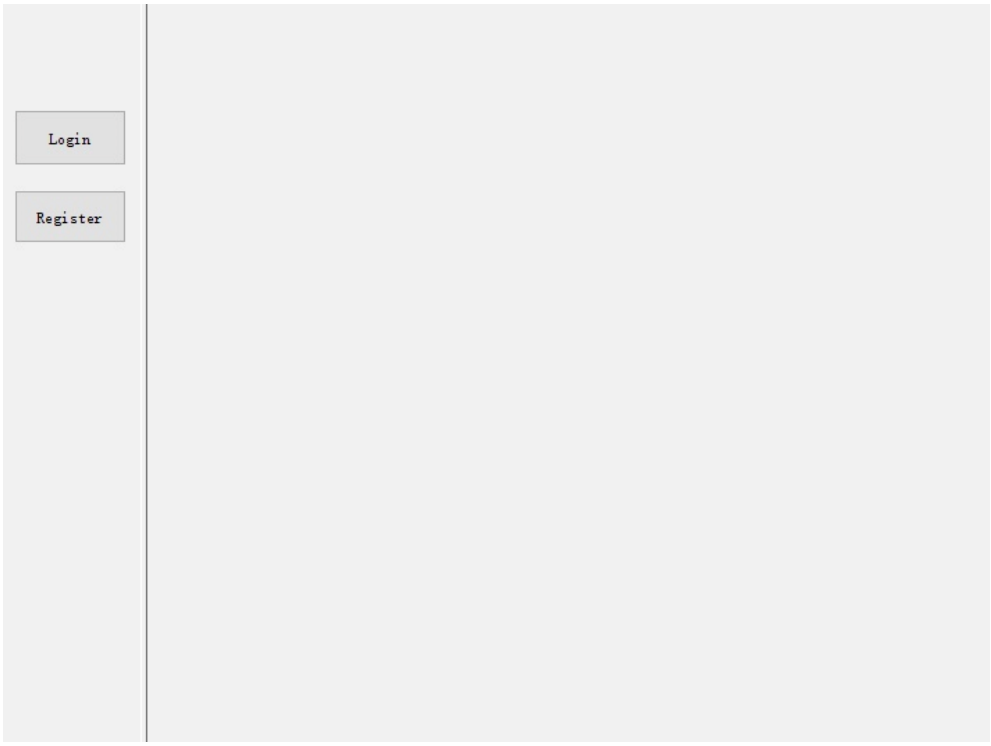
way to decide a class score is by using the average score from all of the students who grade this class multiple by their self grade. If a student thinks they are successful and this course has a high grade, we define this course as good.

For professor score part, the function we use is same as the course score:

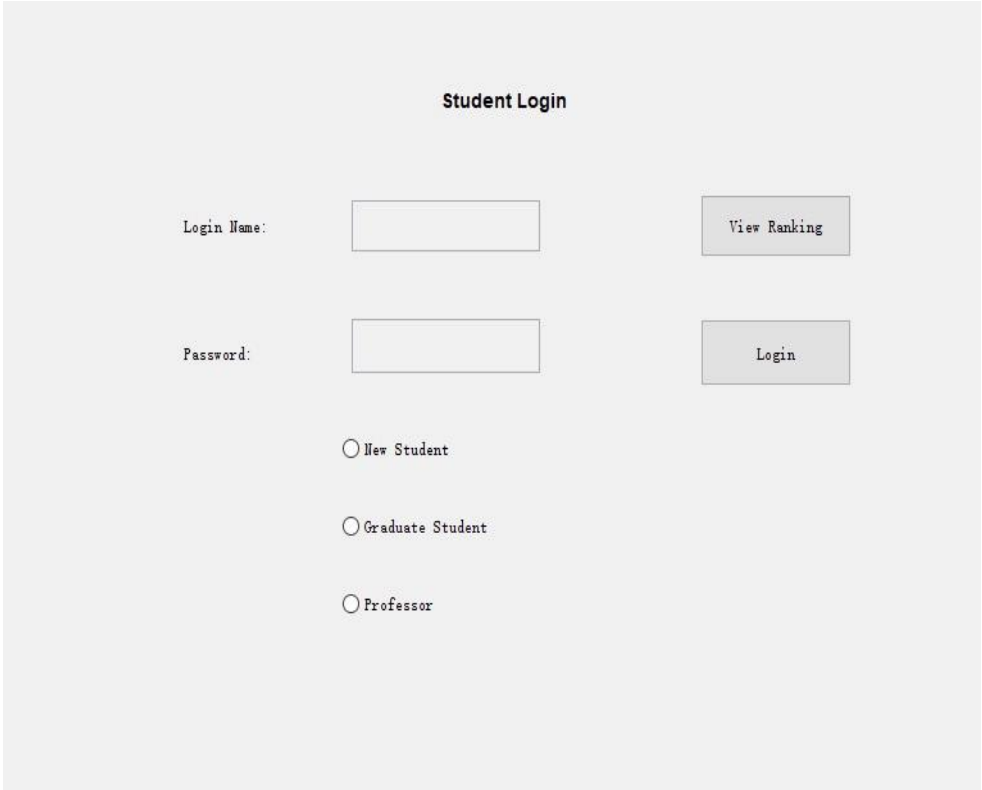
professor score = (((studentList[1].self-score/10) * professorscoure) +((studentList[2].self-score/10) * professorscoure)+.((studentList[n].self-score/10) * professorscoure))/n

Because it is hard to decide how much benefit the specific professor brings to the student. But we know the top five of the professors indeed get the benefits to the students. In our thinking, the best way to decide a class score is by using the average score from all of the students who grade this professor multiple by their self grade. If a student thinks they are successful, and this professor has a high grade, we define it as good.

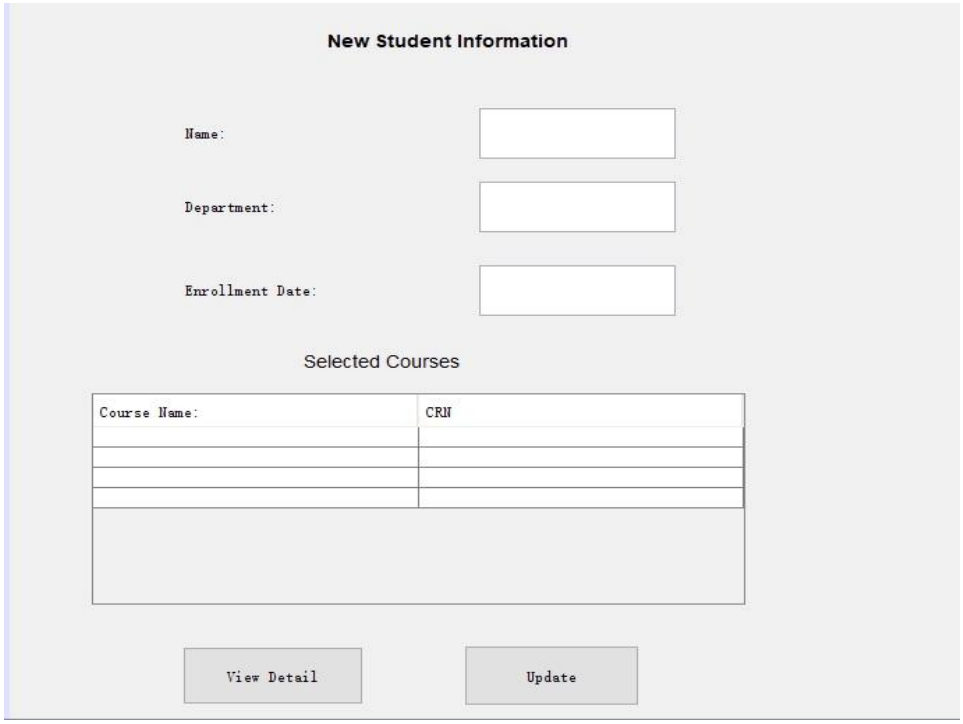
MainJFrame



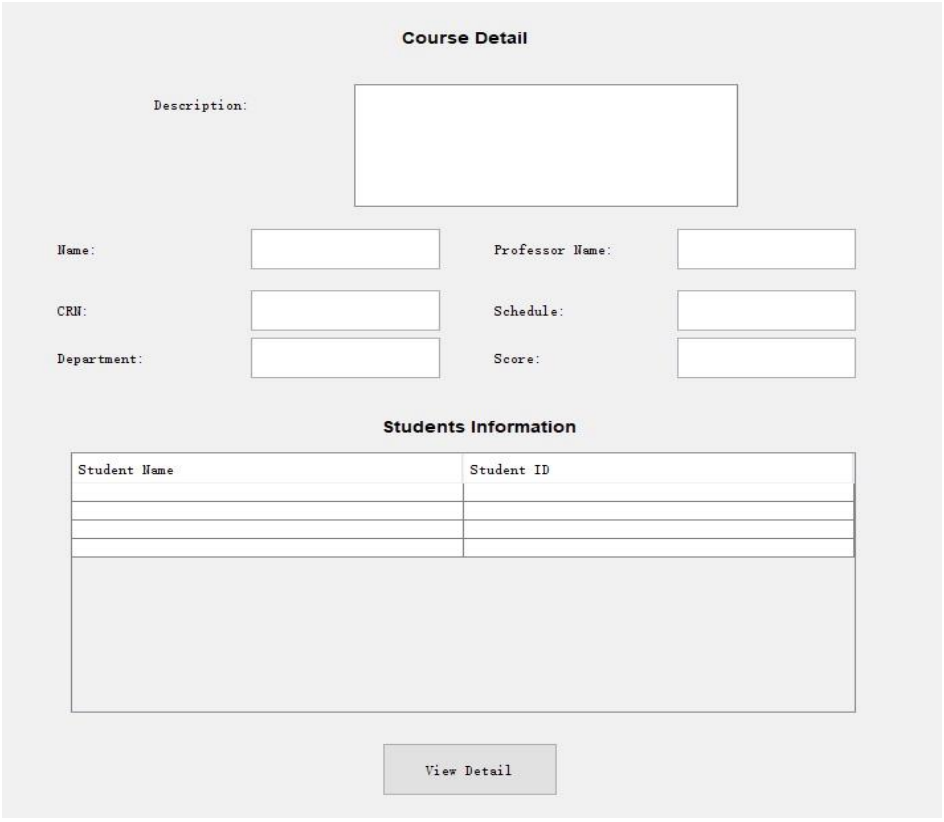
LoginScreen



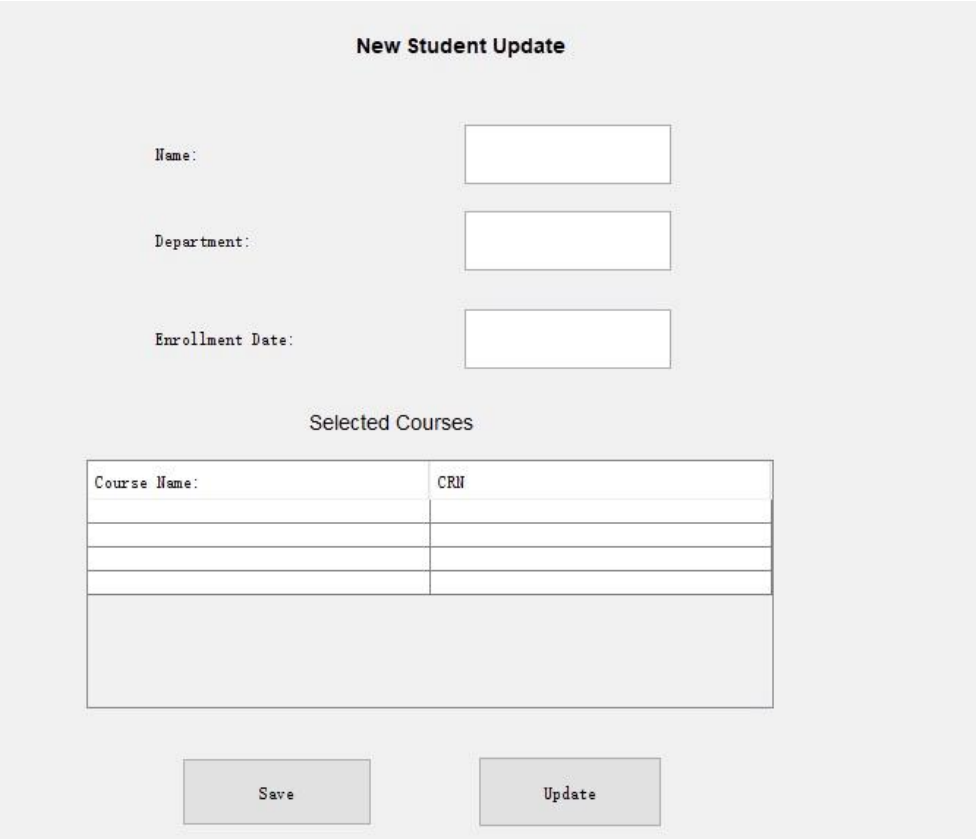
NewStudentInfoScreen



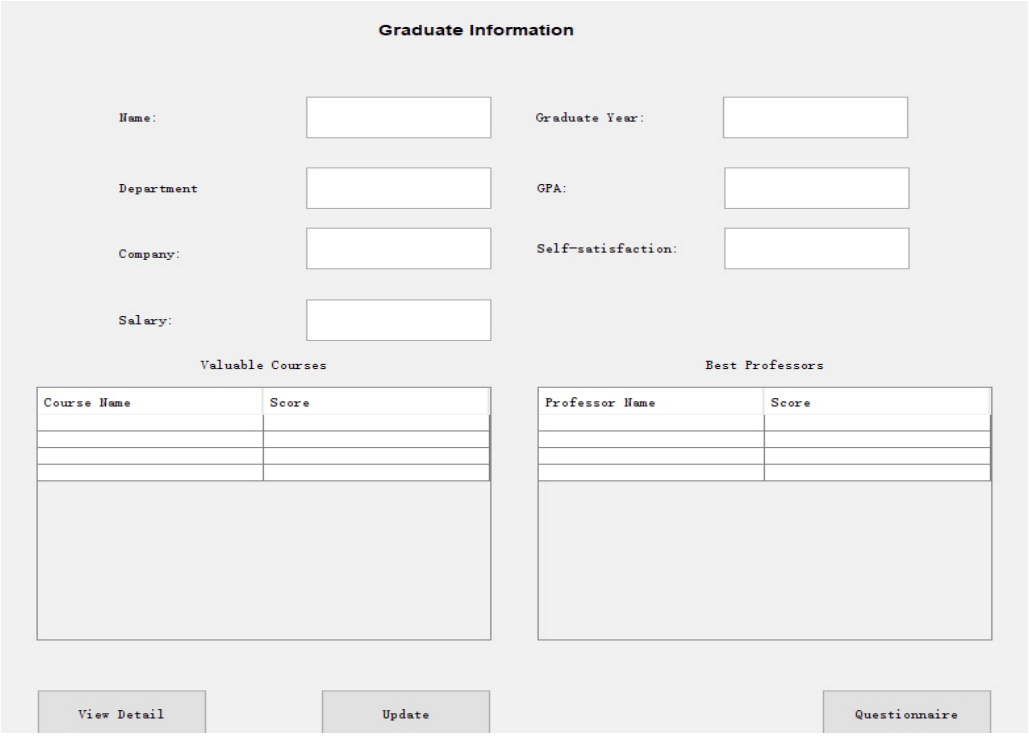
CourseDetailScreen



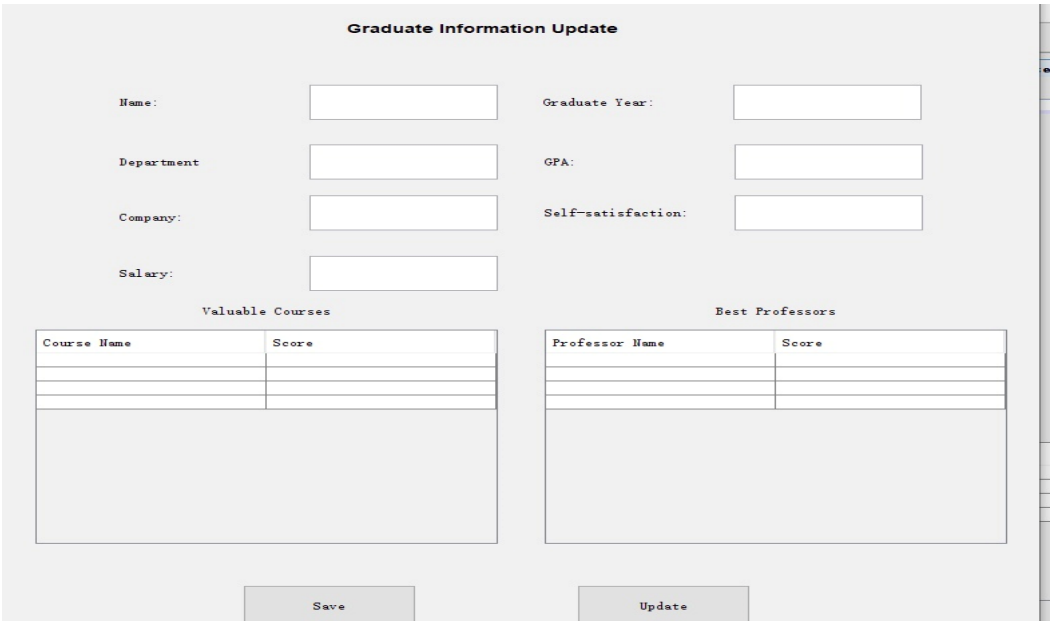
NewStudentUpdateScreen



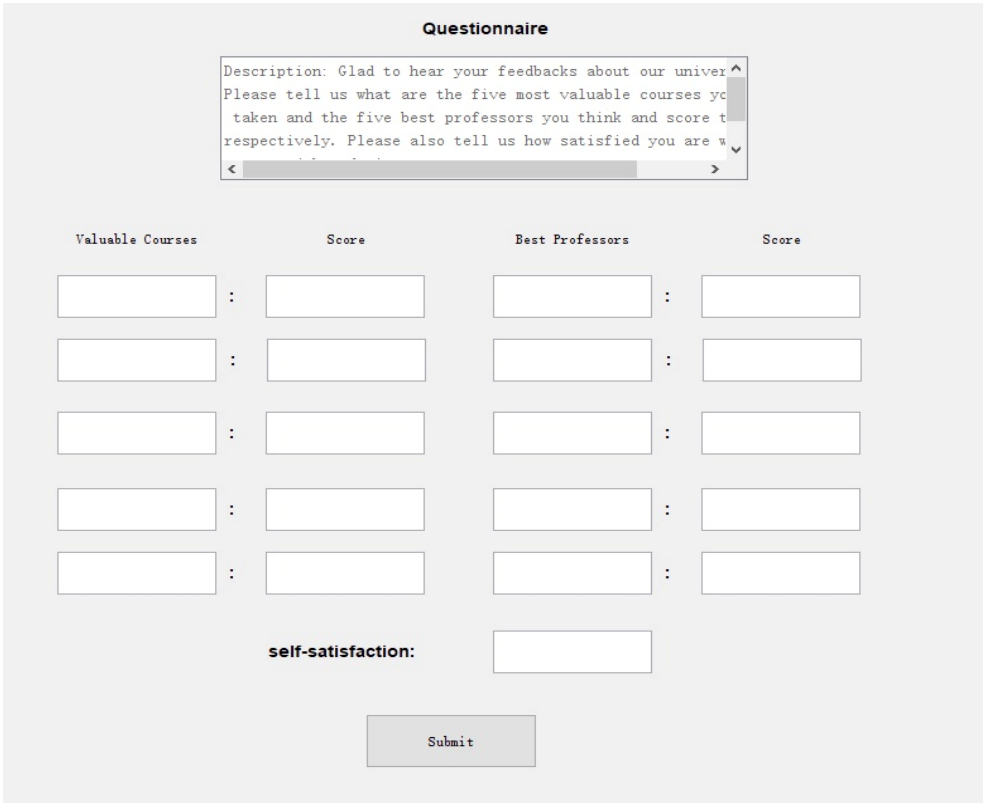
GraduatesInfoScreen



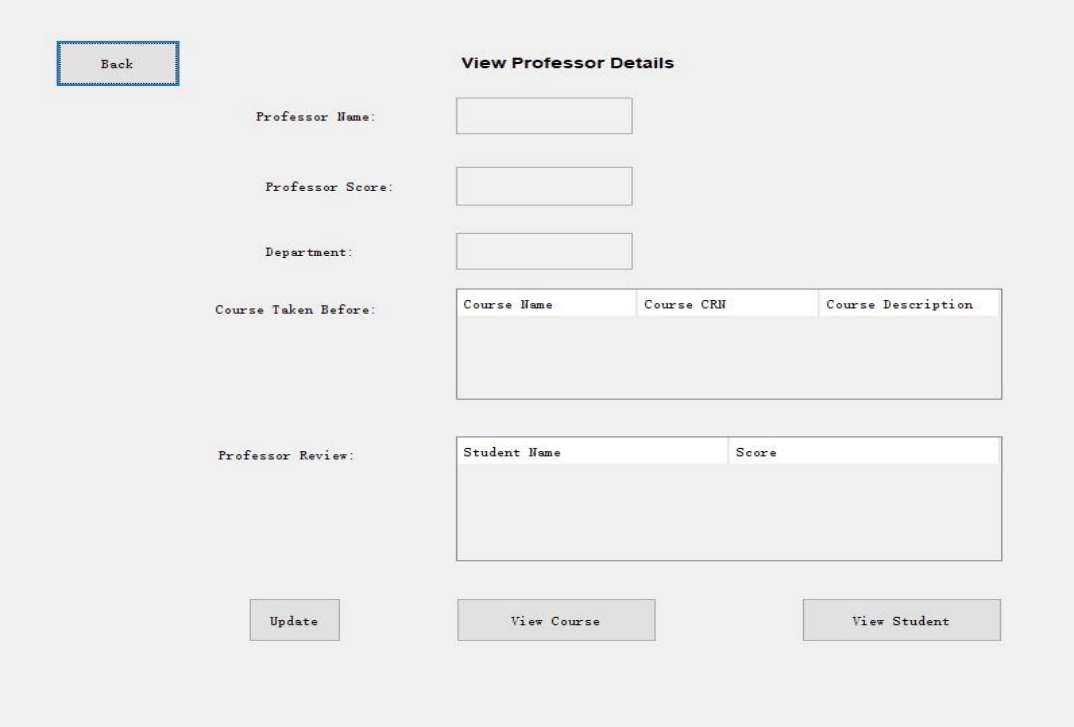
GraduateinfoUpdateScreen



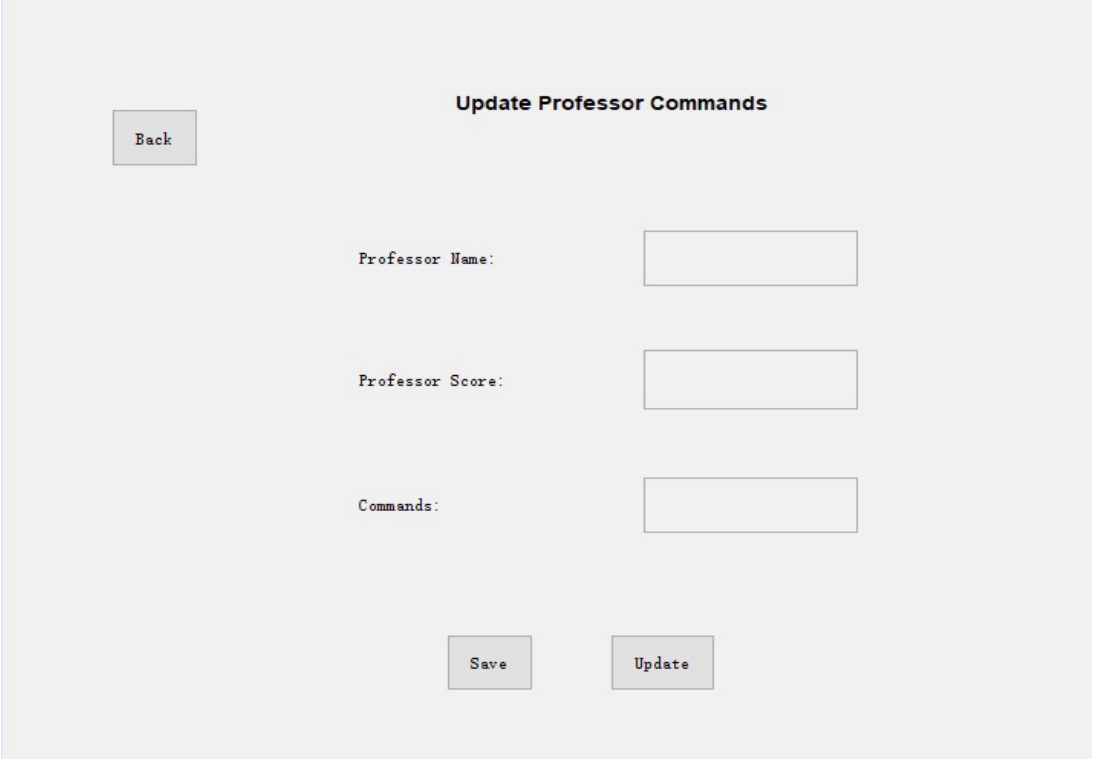
QuestionnaireScreen



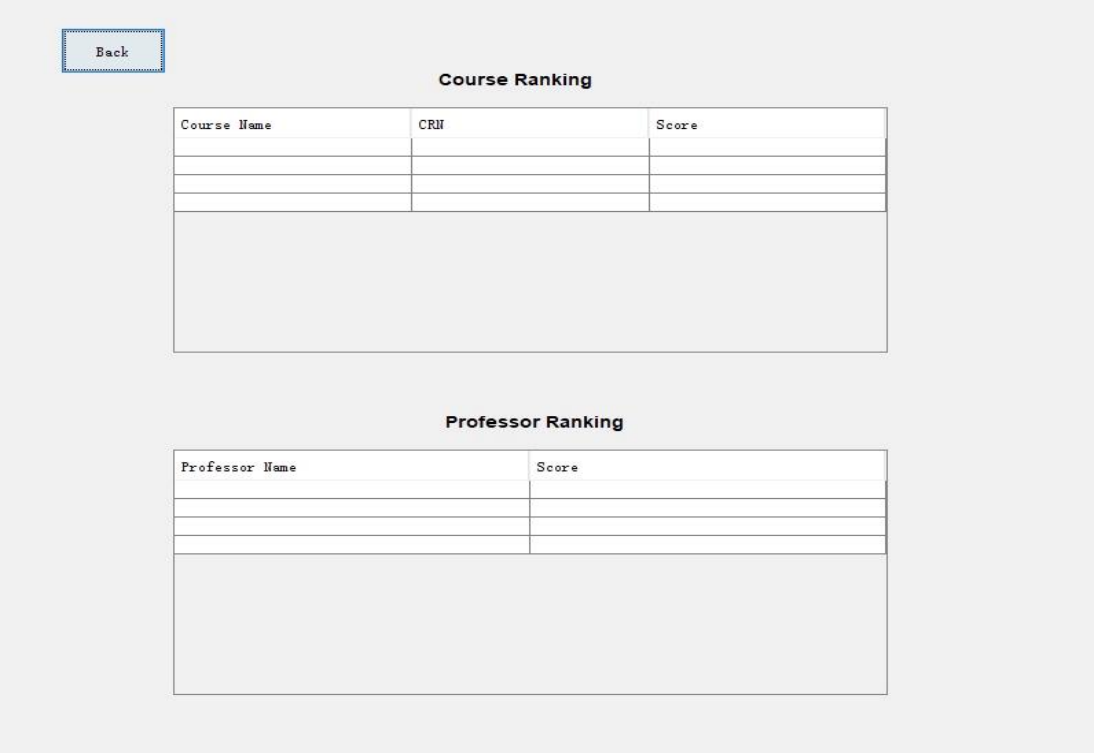
ProfessorInfoScreen



ProfessorUpdateScreen



RankingScreen



RegisterScreen