Team: TeamCodeHater
Members: Xingxian Li, Ruizhe zhang, Shilian Hou

Background:

University wants to have a solution to analyze and rank the educational quality of all the courses they are offering in order to further provide better education to all the students. Also, the University does want to know their faculties' performance in each class in their teaching.

However, one of the most critical problems the University wants to figure out how to determine education quality? What kinds of criteria need to be put into the consideration of the measurement system the University wants to have?

To help the university reach the above demands, we design an education quality measurement system which will rank processors and course according to faculty and courses contribute to help their graduates over a 5-years period of time.

Ranking System:

In this ranking system, we choose **wages, promotions**, and **related work** as the criteria of the measurement. Each element has its weight which can be changed and update by an administrator.

We also want to know the relationship between GPAs and industrial success.

The ranking system will be able to rank the performance of each faculty as well as courses based on an adaptable measurement system which is able to be updated and edited by the administrator.

Measurements criteria:

Wage(average highest wage in 5 years period after graduation)

Promotion(Did students got promoted in 5 years period after graduation)

Related Works(Did students work in the courses' related fields after graduation)

Correlation with student performance(the relationship between GPAs and industrial success, does grade matter?) but this correlation will not be put in the ranking system.

Operating principle:

Wage: Average of all the student's average wages after they graduate.

Promotion: We are going to track whether an alumnus has a promotion after they graduate within 5 years. If students in a certain course get promoted, add 1 point to that course. If

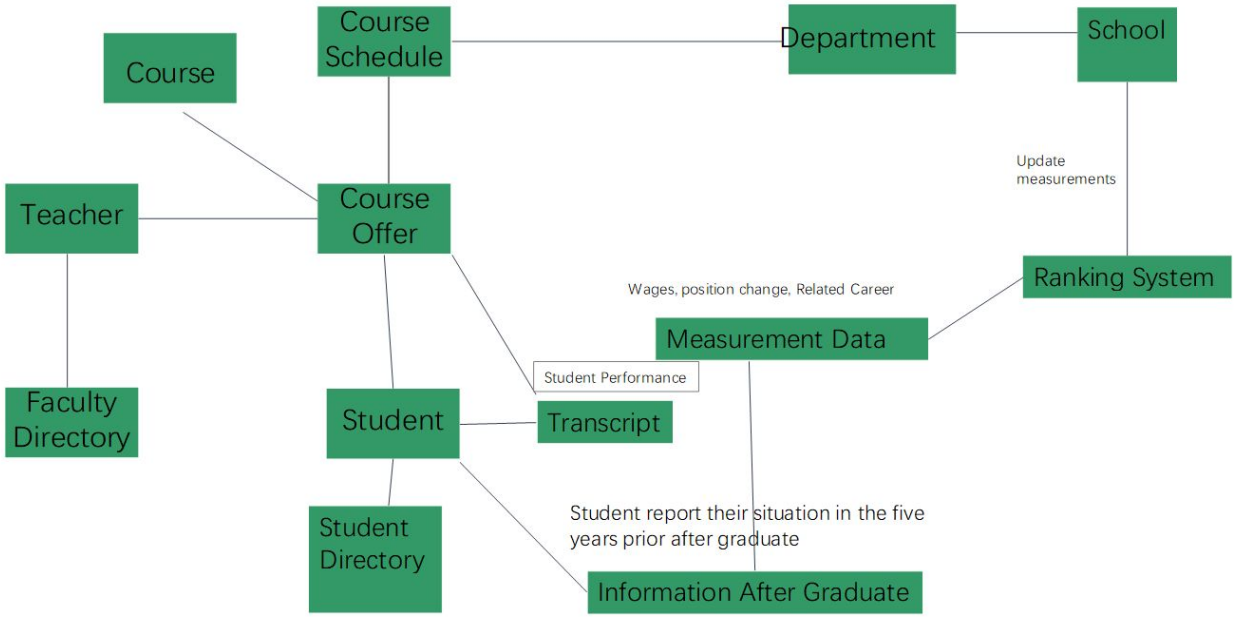
students take a certain professor's class get promoted, add 1 point to that certain professor. Then count the points in total for each course and professor.

Related Works: For the related works, we are going to track it using the same method as Promotion.

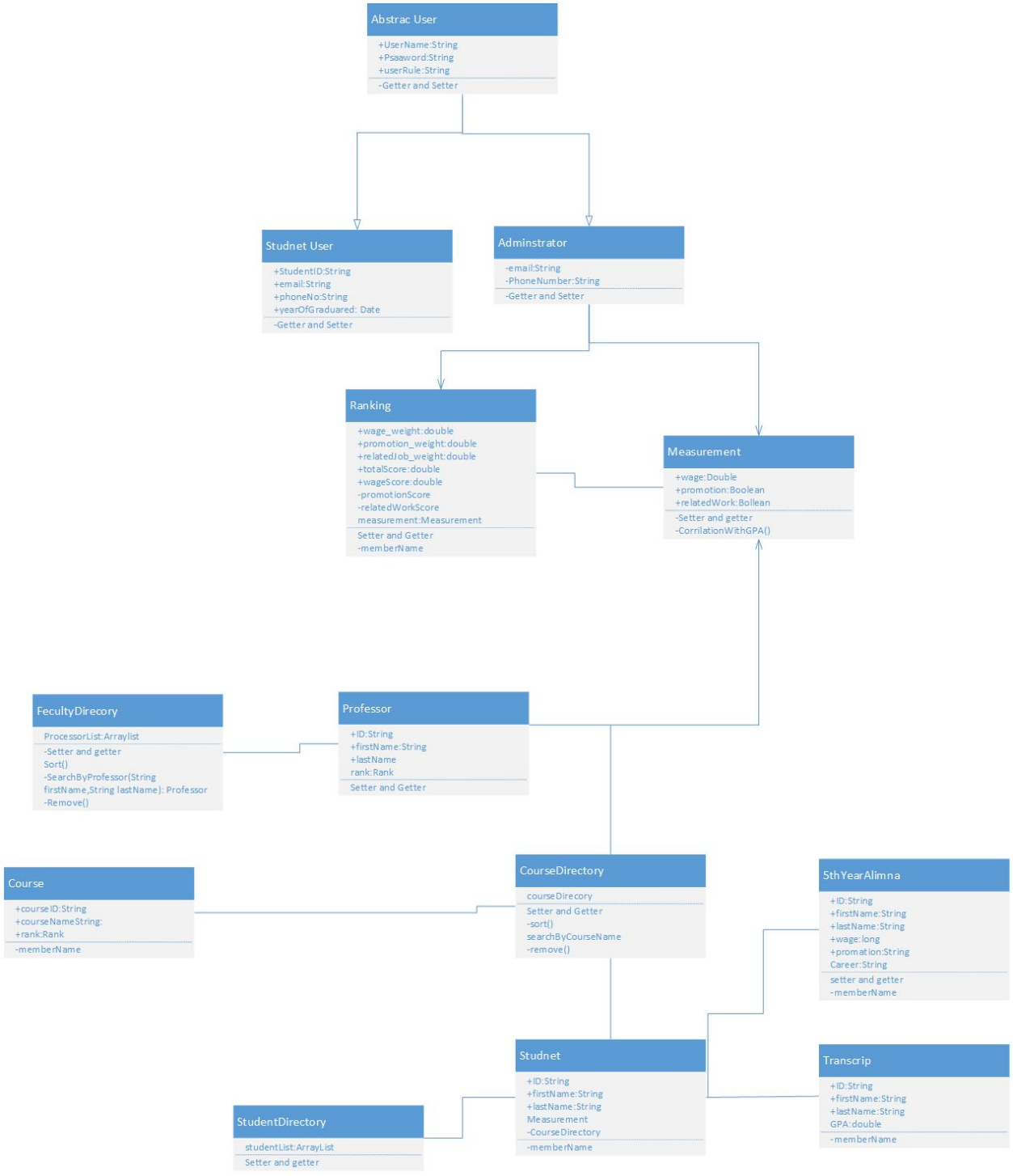
Additionally:

This model can also be used to measure the education quality of the K to 12 educational systems in developing countries by importing some new measurement criteria suck as the number of students who can get into college, the average income, even though we can use average lifetime as one of the measurement criteria.

Object Model



UML


Abstrac User
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+Psaaword:String
+userRule:String
-Getter and Setter
Studnet User
+StudentID:String
+email:String
+phoneNo:String
+yearOfGraduared: Date
-Getter and Setter
Adminstrator
-email:String
-PhoneNumber:String
-Getter and Setter
Ranking
+wage_weight:double
+promotion_weight:double
+relatedJob_weight:double
+totalScore:double
+wageScore:double
-promotionScore
-relatedWorkScore
measurement:Measurement
Setter and Getter
-memberName
Measurement
+wage:Double
+promotion:Boolean
+relatedWork:Bollean
-Setter and getter
-CorrilationWithGPA()
FecultyDirecory
ProcessorList:Arraylist
-Setter and getter
Sort()
-SearchByProfessor(String
firstName,String lastName): Professor
-Remove()
Professor
+ID:String
+firstName:String
+lastName
rank:Rank
Setter and Getter
Course
+courseID:String
+courseNameString:
+rank:Rank
-memberName
CourseDirectory
courseDirecory
Setter and Getter
-sort()
searchByCourseName
-remove()
5thYearAlimna
+ID:String
+firstName:String
+lastName:String
+wage:long
+promation:String
Career:String
setter and getter
-memberName
Studnet
+ID:String
+firstName:String
+lastName:String
Measurement
-CourseDirectory
-memberName
Transcrip
+ID:String
+firstName:String
+lastName:String
GPA:double
-memberName
StudentDirectory
studentList:ArrayList
Setter and getter

abstract User: This is an abstract class, student user and administrator will inherit this class. Authority is used for distinguishing a student account or an administrator account. For a student user, the value of authority is false, otherwise, it is true.

Student User: This class is created for current students, who can only view the ranking result.

Administrator: The admin has access to modify the weight of each measurement criteria, which is used for calculating the ranking score.

Ranking: This class is used for getting the ranking score. Through different weights and the measurement object, it can calculate the ranking score by using countScore method.

Measurement: This class is to store the 5-year graduate student's measurement, including wage, promotion, and related work. It also includes the correlationWithStudnetProformance which will calculate the correlation between the student performance

Course: This class is storing basic information on a course and graduated students who select these courses. It also contains class Ranking to get its ranking score.

Professor: This class contains the professor's information and graduated students who were taught by the teacher. It also contains class Ranking to get its ranking score.

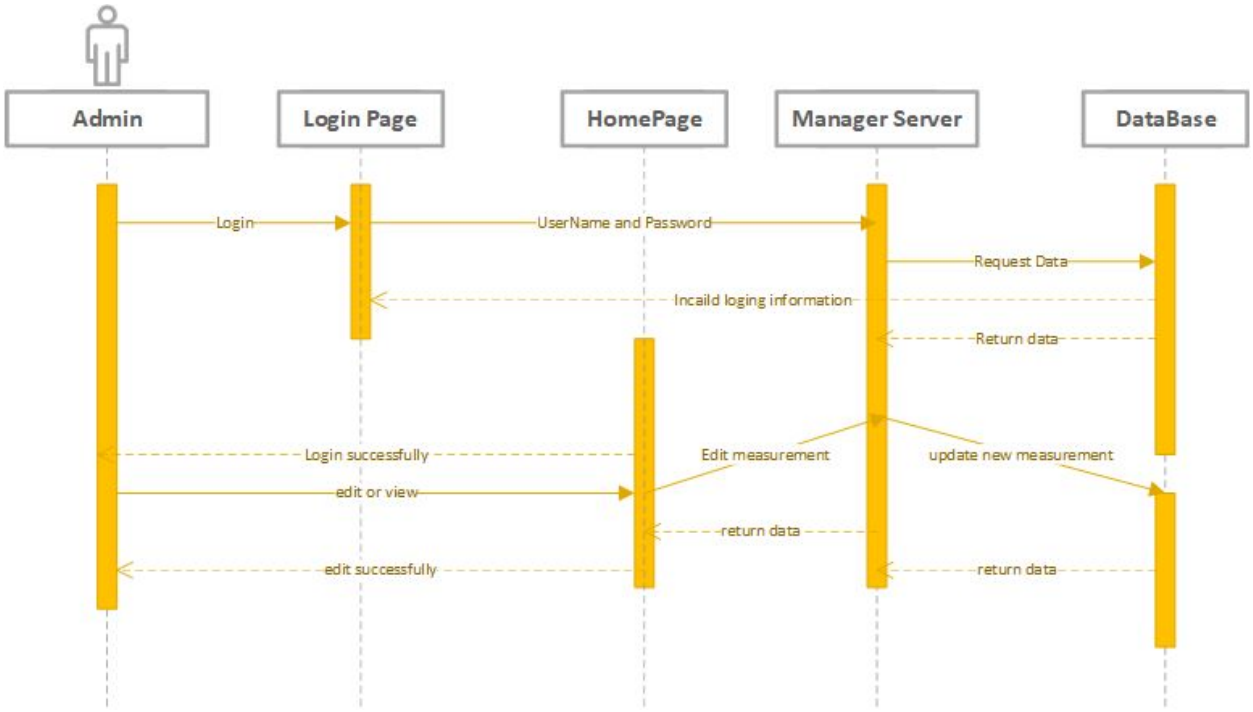
CourseDirectory: CourseList is used for storing all courses in ArrayList, which is easy to manipulate(e.g. Add, delete, search and modify).

ProfessorDirectory: ProfessorList is used for storing all professors in ArrayList, which is easy to manipulate(e.g. Add, delete, search and modify).

Student: This class represents the students. In this class, it has every course that each student had taken, and every professor that each student was taught. It also associates the 5thYearsAlumna class.

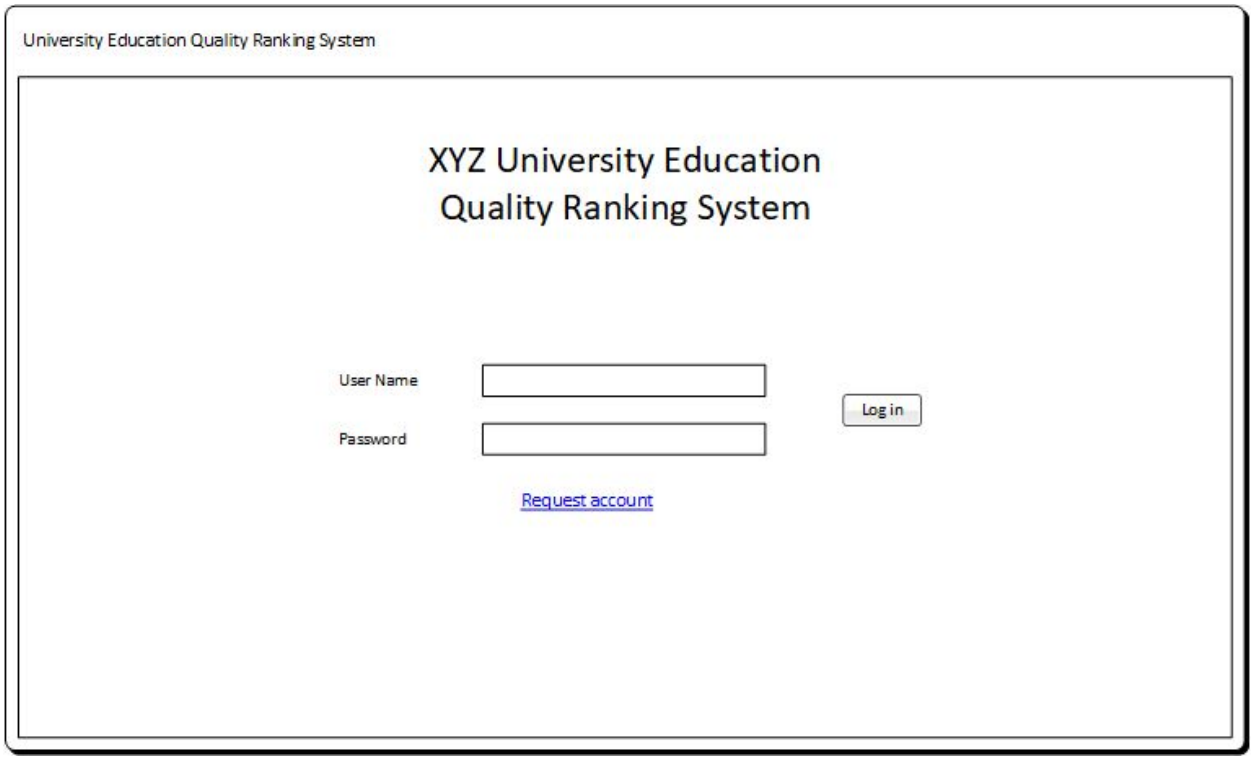
5thYearsAlumna: This class represents a 5thYearsAlumna which includes the career performance of a student.

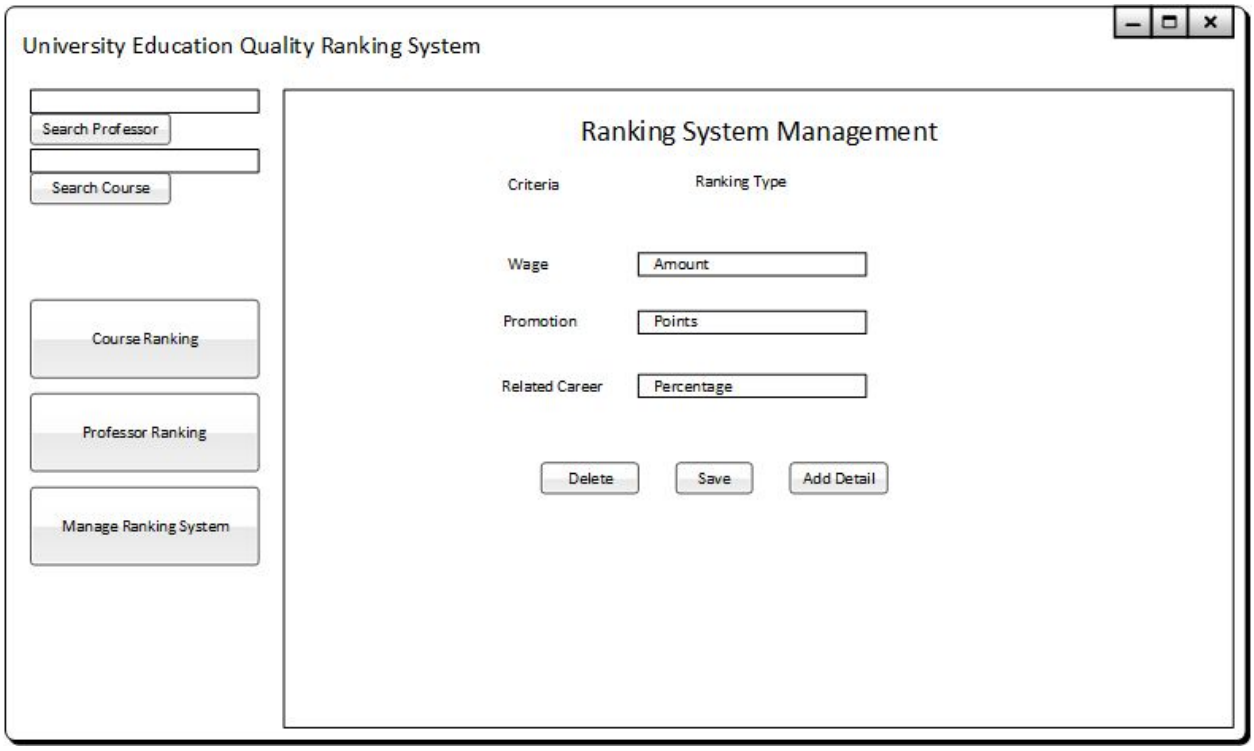
Sequence diagrams for Administrator

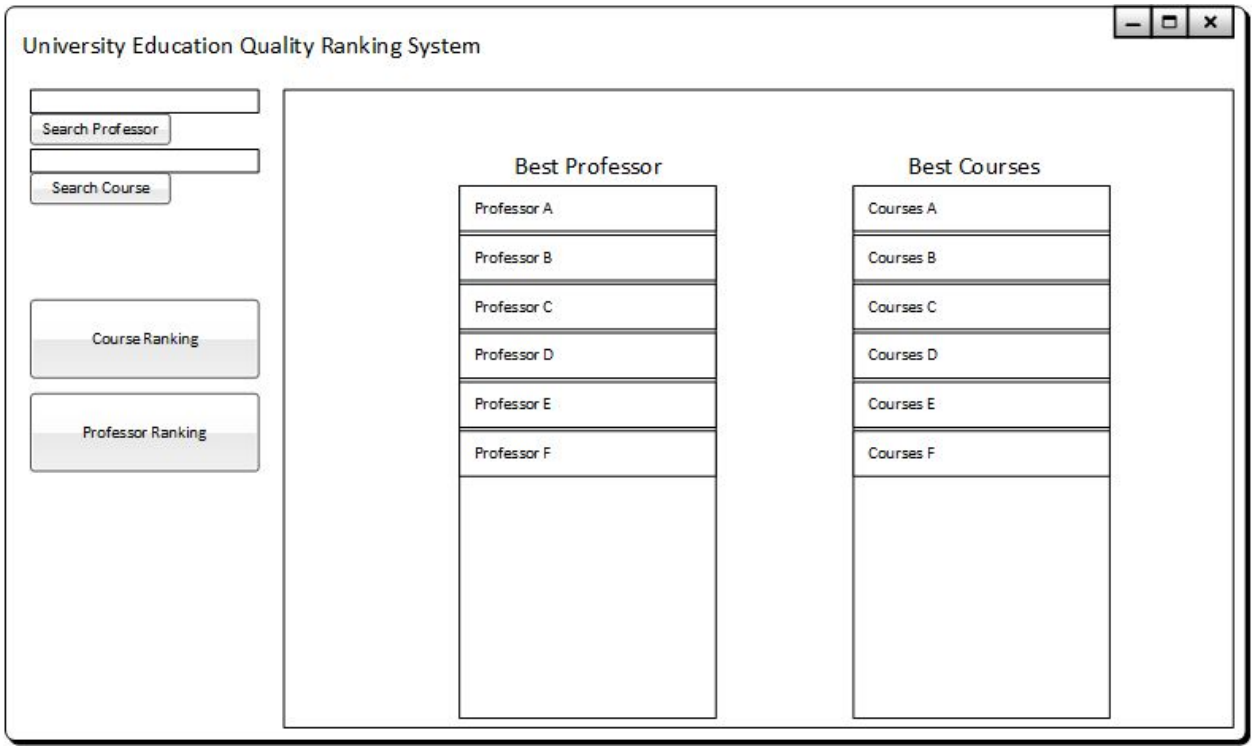


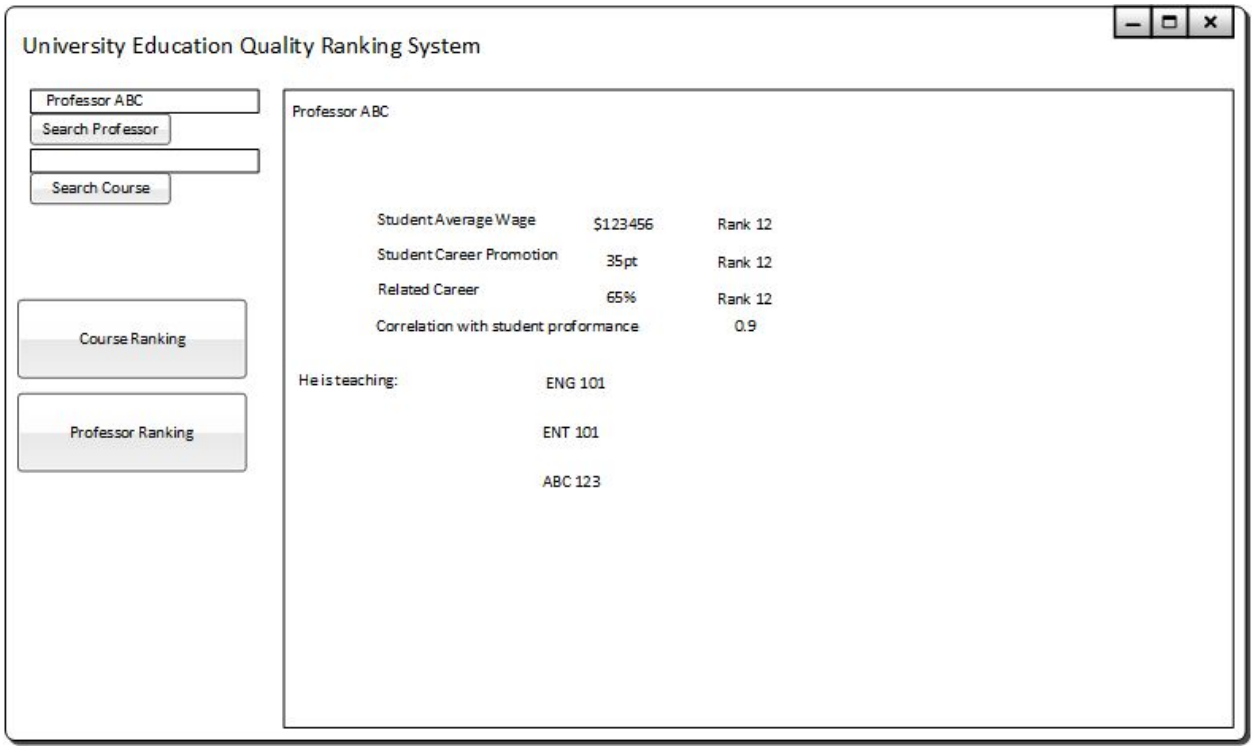
This sequence diagram shows the flow of the application. The admin will be able to view the ranking information and edit the ranking measurement criteria after successfully login in.

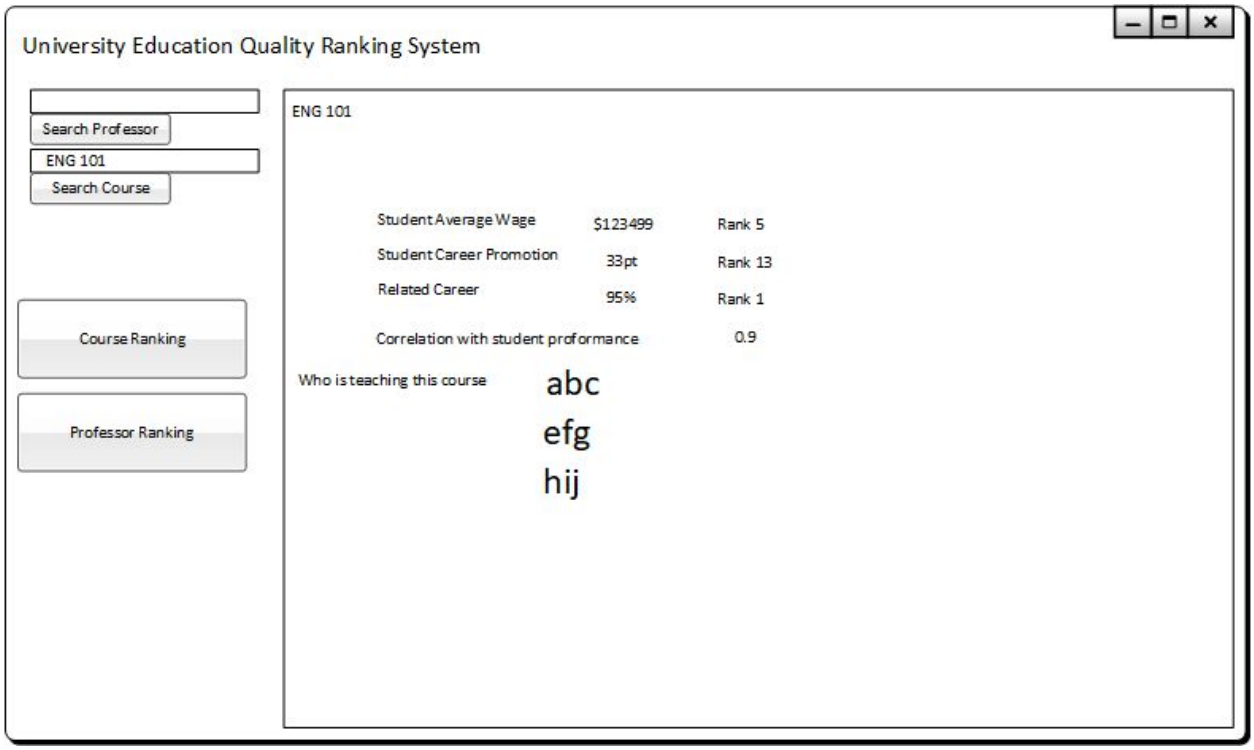
User interface(Dashboard)


University Education Quality Ranking System
XYZ University Education
Quality Ranking System
User Name
Password
Log in
Request account


University Education Quality Ranking System
Search Professor
Search Course
Course Ranking
Professor Ranking
Manage Ranking System
Ranking System Management
Criteria
Ranking Type
Wage
Amount
Promotion
Points
Related Career
Percentage
Delete
Save
Add Detail


University Education Quality Ranking System
Search Professor
Search Course
Course Ranking
Professor Ranking
Best Professor
Professor A
Professor B
Professor C
Professor D
Professor E
Professor F
Best Courses
Courses A
Courses B
Courses C
Courses D
Courses E
Courses F


University Education Quality Ranking System
Professor ABC
Search Professor
Search Course
Course Ranking
Professor Ranking
Professor ABC
Student Average Wage $123456 Rank 12
Student Career Promotion 35pt Rank 12
Related Career 65% Rank 12
Correlation with student proformance 0.9
He is teaching:
ENG 101
ENT 101
ABC 123


University Education Quality Ranking System
Search Professor
ENG 101
Search Course
Course Ranking
Professor Ranking
ENG 101
Student Average Wage
$123499
Rank 5
Student Career Promotion
33pt
Rank 13
Related Career
95%
Rank 1
Correlation with student proformance
0.9
Who is teaching this course
abc
efg
hij