UNIVERSITY RANKING MODEL

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Abstract:

With a plethora of courses and universities to choose from, it can become quite overwhelming and difficult for the students to choose their best fit. Thus, in order to help students choose the best possible match, we have proposed a course ranking matrix solution that allows universities to measure the quality of education they deliver to their students and the way it facilitates them further in achieving their future endeavours

Model Assumptions:

- The factors which affect the rating of the course have been emphasized upon directly to the ranking of the university. Any undeclared condition and/or parameters would be a limitation to the scope of the university course's ranking model and its evaluation.
- The amalgamation of roles and responsibilities of namely Students, Faculty and employer outputs the factors affecting the ranking of the university model and it's course evaluation.

Design Model:

The following application has been designed as a feedback system for the prospective students to track the career growth of graduates(Alumni) after the course completion in the university up till 5 years in the job market. Considering the different characteristics and features of the courses offered by the university, we have concluded up to build a course ranking matrix.

This application ranking matrix will be used by students to access the course related information and ultimately find the most suitable course of the university.

Following are the factors that have been considered to design the application ranking system:

Student's GPA
Employment
Student's Past experience
Internships
Courses taken in relevance to the current job
Length of Job duration
Job Applications count and conversion

Interviews passed
Job Promotion
Job role switch
Pay, bonus, increments and incentives

User Category Breakdown:

In the following object model design, the work area for a student, employer, faculty and university are defined and portrayed. The interdependence of the different workspaces can clearly be observed. The user categories along with their rights and responsibilities in the application will be as follows:

Prospective Students:

Students aspired to get admission at the university.

Roles and Responsibilities:

- Apply for the university.
- Calculates the rank to get the best course.

Enrolled Students:

Students already enrolled with the courses offered by university.
Hold a transcript which contains the course taken and GPA.

Roles and Responsibilities:

- Add personal details
- Select courses as per their interest.
- Provide feedback to the admin regarding courses.
- Provide feedback to the admin regarding professors.

Alumni:

Students already completed the programs and received degree in their prospective fields from the university.

Roles and Responsibilities:

- Provides details to the administrative department regarding Current job, duration of job, total number of promotions and Salary.

Faculty:

Faculty conduct lectures for enrolled students.

Roles and Responsibilities:

- Should get the list of students enrolled for the course

- Responsible for involvement in research work relevant to their field

University:

University has all the information related to students, faculties and courses.

Roles and Responsibilities:

- University will maintain the data related to students like personal details.
- University will maintain the data related to faculties like personal, professional and educational details
- University will also maintain the data related to courses like list of courses, student registered for which course, number of students under one course and many more.

Administrator:

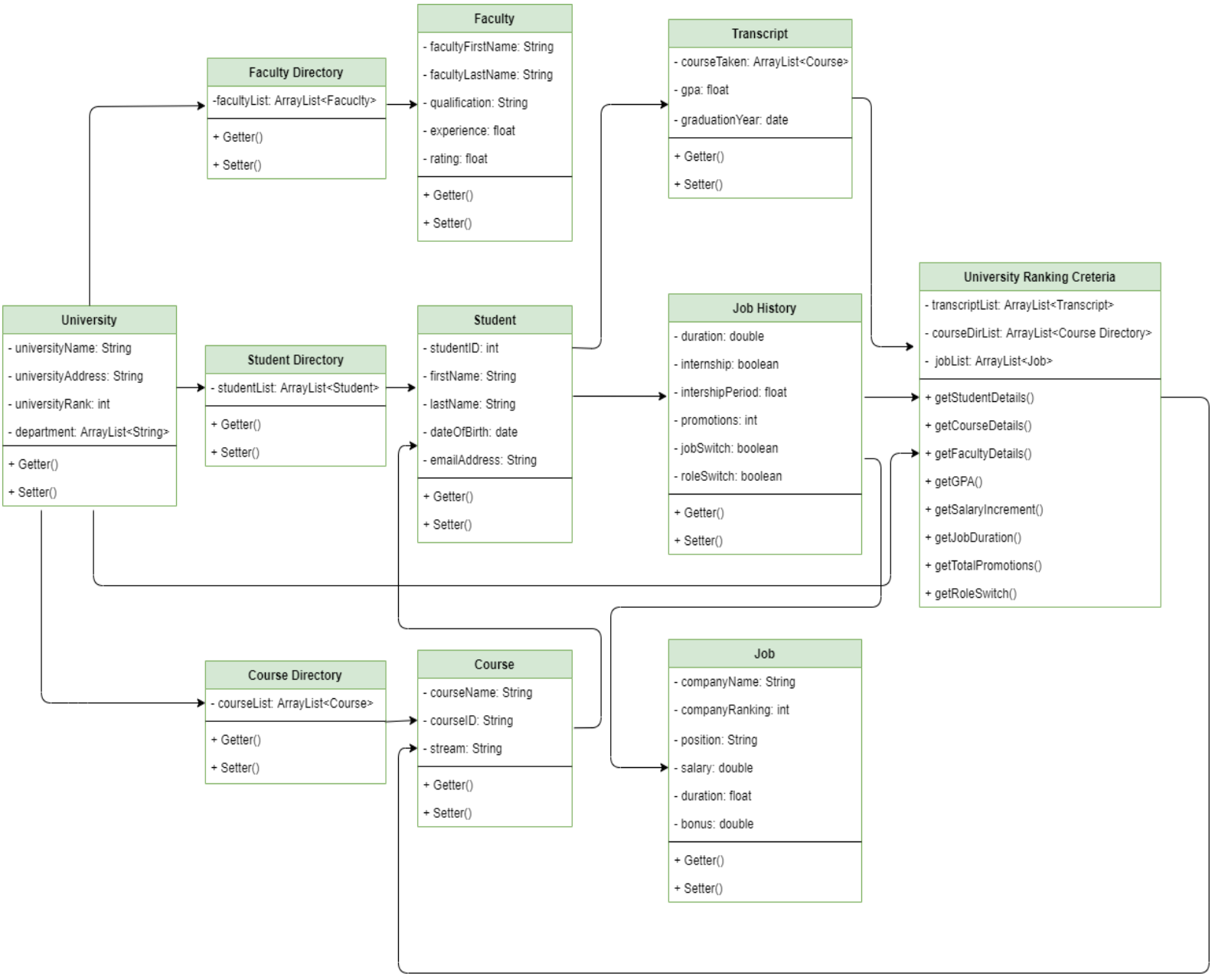
Administrators will keep tracking details used for the ranking system.

Roles and Responsibilities:

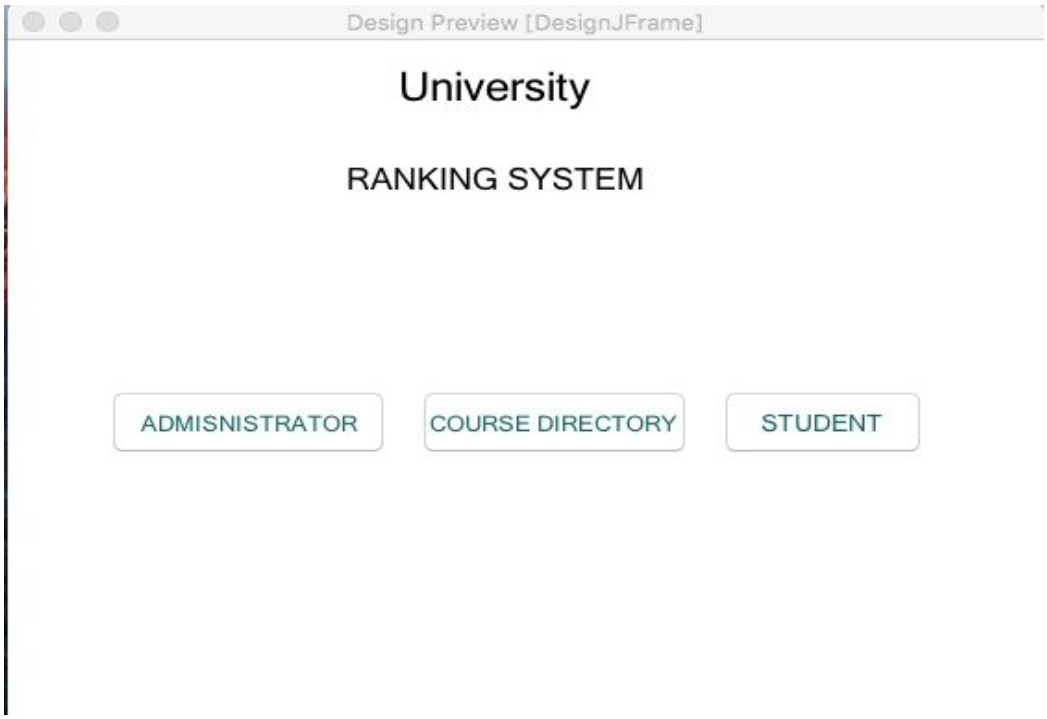
- Keep tracking growth of the enrolled students.
- Maintains the feedback of students regarding courses and faculties.
- Maintains the record of alumni's professional life.

The 'Student' is the object of interest in our solution whereas the professors would be able to extract relevant information about the course from the entered instances of the alumni students. Moreover, The employer would also be able to view and modulate their relevant data in the given instances.

UML Diagram


Faculty
- facultyFirstName: String
- facultyLastName: String
- qualification: String
- experience: float
- rating: float
+ Getter()
+ Setter()
Faculty Directory
-facultyList: ArrayList<Faculty>
+ Getter()
+ Setter()
Transcript
- courseTaken: ArrayList<Course>
- gpa: float
- graduationYear: date
+ Getter()
+ Setter()
University Ranking Creteria
- transcriptList: ArrayList<Transcript>
- courseDirList: ArrayList<Course Directory>
- jobList: ArrayList<Job>
+ getStudentDetails()
+ getCourseDetails()
+ getFacultyDetails()
+ getGPA()
+ getSalaryIncrement()
+ getJobDuration()
+ getTotalPromotions()
+ getRoleSwitch()
University
- universityName: String
- universityAddress: String
- universityRank: int
- department: ArrayList<String>
+ Getter()
+ Setter()
Student Directory
- studentList: ArrayList<Student>
+ Getter()
+ Setter()
Student
- studentID: int
- firstName: String
- lastName: String
- dateOfBirth: date
- emailAddress: String
+ Getter()
+ Setter()
Job History
- duration: double
- internship: boolean
- intershipPeriod: float
- promotions: int
- jobSwitch: boolean
- roleSwitch: boolean
+ Getter()
+ Setter()
Course Directory
- courseList: ArrayList<Course>
+ Getter()
+ Setter()
Course
- courseName: String
- courseID: String
- stream: String
+ Getter()
+ Setter()
Job
- companyName: String
- companyRanking: int
- position: String
- salary: double
- duration: float
- bonus: double
+ Getter()
+ Setter()

Dashboard Design:



Classes and relevant functionalities(methods)

University

- universityName: string
- universityAddress: String
- universityRank: int
- department: ArrayList<String>

Faculty Directory

- facultyList: ArrayList<Faculty>

Faculty

- facultyFirstName: String
- facultyLastName: String
- qualification: String
- experience: float
- rating: float

Student Directory

- studentList: ArrayList<Student>

Student

- studentId: int
- firstName: String
- lastName: String
- dateOfBirth: date
- emailAddress: String

Course Directory

- courseList: ArrayList<Course>

Course

- courseName: String
- courseID: String
- stream: String

Transcript:

- courseTaken: ArrayList<course>
- gpa: float
- graduationYear: date

Job History

- duration: double
- internship: boolean
- internshipPeriod: float
- promotions: int
- jobSwitch: boolean
- roleSwitch: boolean

Job

- companyName: String
- companyRanking: int
- position: String
- salary: double
- duration: float
- bonus: double

University Ranking Criteria

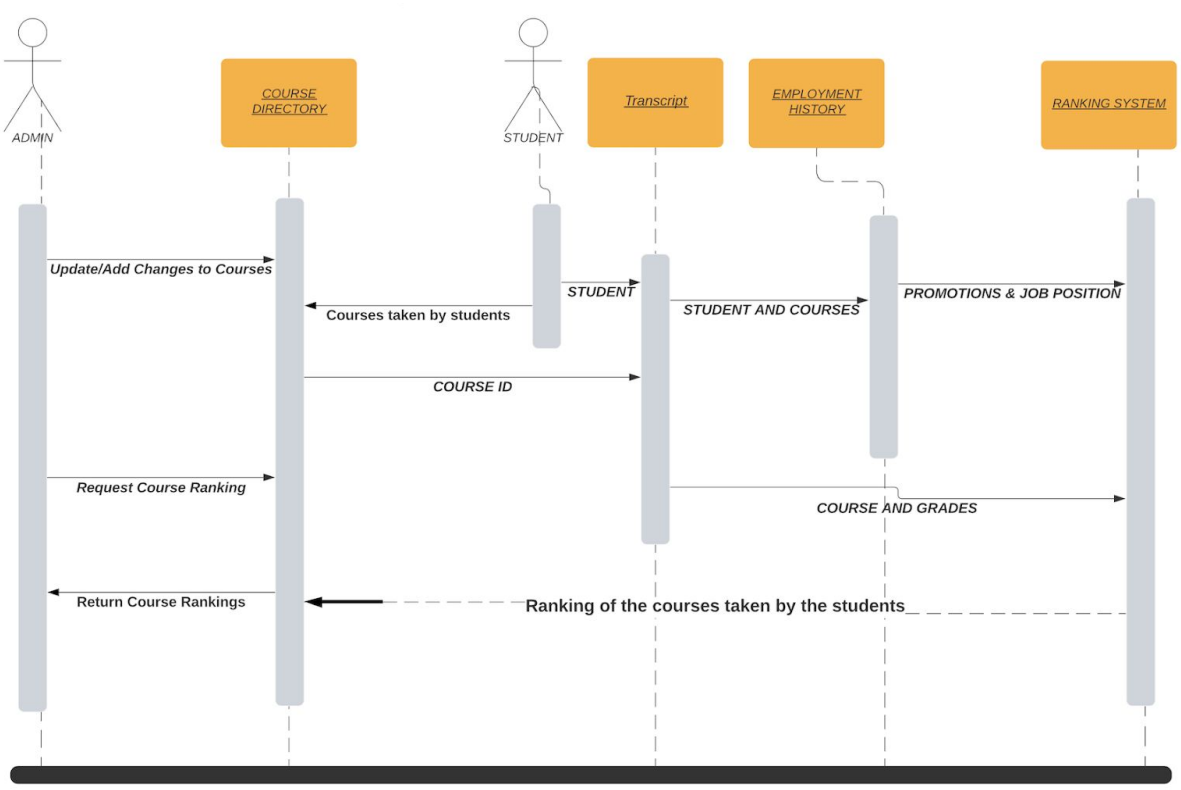
- transcriptList: ArrayList<Transcript>
- courseDirList: ArrayList<Course Directory>
- jobList: ArrayList<Job>

The University Ranking Criteria class has various other getter and setter methods to fulfill the role of the ranking system.

- *getStudentDetails()*
- *getCourseDetails()*

- *getFacultyDetails()*
- *getGPA()*
- *getSalaryIncrement()*
- *getJobDuration()*
- *getTotalPromotion()*
- *getRoleSwitch()*

Sequence Diagram:



University's Course Ranking overview-

There are various considerations to the proposed solution to find out course rankings of the University by analyzing the contributions of a faculty and courses in the growth of a graduate's career.

Following are the factors to consider for the course ranking system-

- ➢ The count of current students enrolled in a course under a Faculty.
- ➢ Internship offers of the current students and the relevance of the position with the courses taken.
- ➢ The experience, research work and connection in the industry of the Faculty in consideration.
- ➢ The most important consideration is the performance of the alumni who had taken the courses under the faculty.
- ➢ The alumni performance will be tracked by considering, the relevance of job profile with the course, the number of promotions they received, the company they are working for e.g. whether the company is a Fortune 500 company or if it's one of the FAANG companies etc.
- ➢ The time taken to acquire a Full-time position.
- ➢ Location and Salary and checking if the salary is higher or lower than the average salary for that location.

The course description, the topics covered, the skills the student will develop, the industry relevance of assignments and projects and duration of the course offered are also significant from the viewpoint when the student will evaluate the ranking. University's industrial connect with the businesses and job prospects based on the location are vital signs that contribute from the job perspective for calculating the ranking of the university. Thereafter, there are some other parameters such as weather, diversity, college societies and festivals which can be considered by students while choosing the university.