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University Data Model

Problem Statement:

Use software engineering techniques to improve the quality of education anywhere and hold people accountable for improving the quality of life through education, learning to learn, and feedback. Your task is to study ways to create a performance measurement solution to enable universities to measure the quality of the education they deliver to their students.
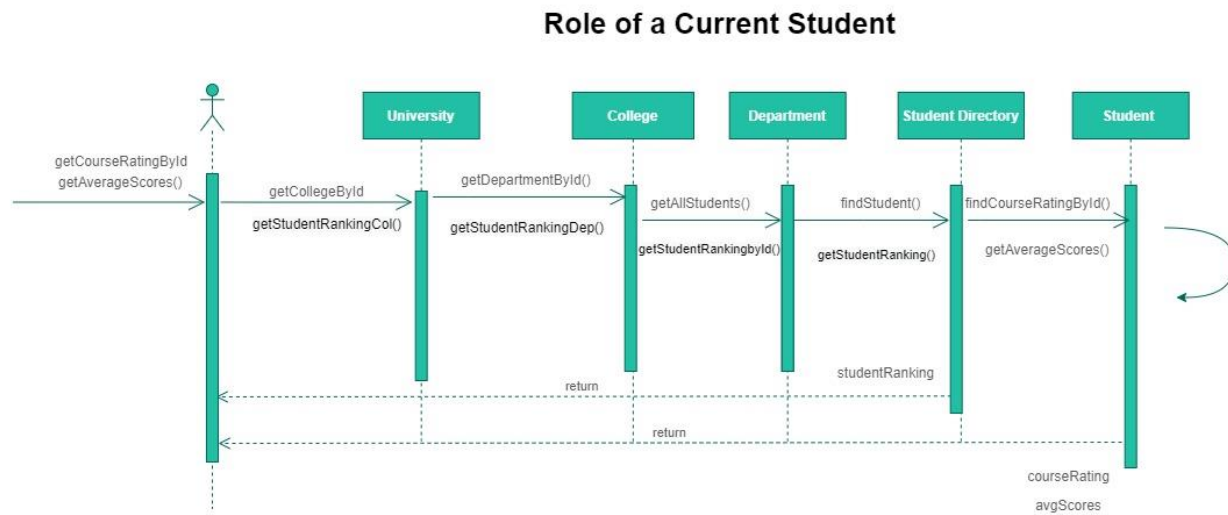
The approach will be to look into how an educational system in terms of faculty and courses contribute to the growth of their graduates over a 5-year period. You must figure out ways to track the jobs and promotions graduates get over time and assign rankings accordingly. In addition, track the connection of courses and their relevance to graduates' growth.

One of your deliverables will be to design a dashboard that enables college and university administrators to compare the performance of their academic units. One additional question is to consider ways to define your own ranking system for students to decide where they want to go for their studies. The current system is biased toward research.
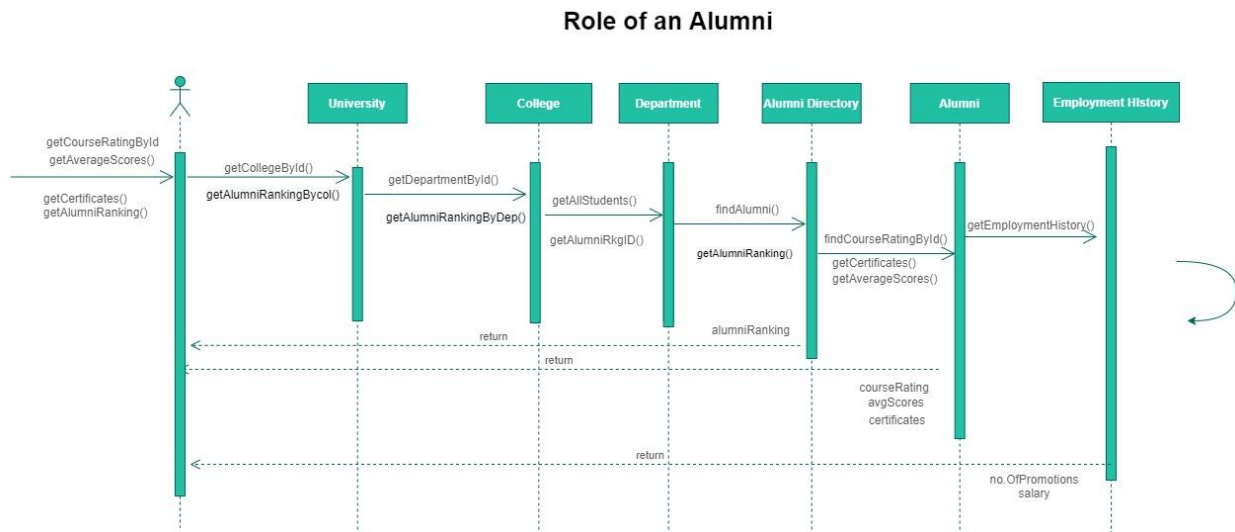
Proposed Solution

- The solution that we propose involves the rating of each course and the faculty by an alumnus of the university.

- Since an alumnus have already completed their graduation and are implementing their learnings from these courses to solve real world problems, their measure of performance can help us determine how the courses that they took up in the university have influenced them.

- We intend to have an Alumni class which has attributes as follows: Job Title, position, employer details, Pay Range, Certifications.

- Also, the ranking of current students and Alumni plays an important role in determining their performance over the courses and their employment history over five years.

- Each alumnus must provide all the details related to their work and scale from 1 to 5 each of their courses that they took according to the relevance of their work.

- Additionally, with the help of Alumni data for each of the course and their feedback, we would find out courses that are very much sort after in the current industry. This could also help us rank the courses in a particular department and in-turn rank a particular department in a college and a College in a University.

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Sequence Diagram for Student rating and feedback.
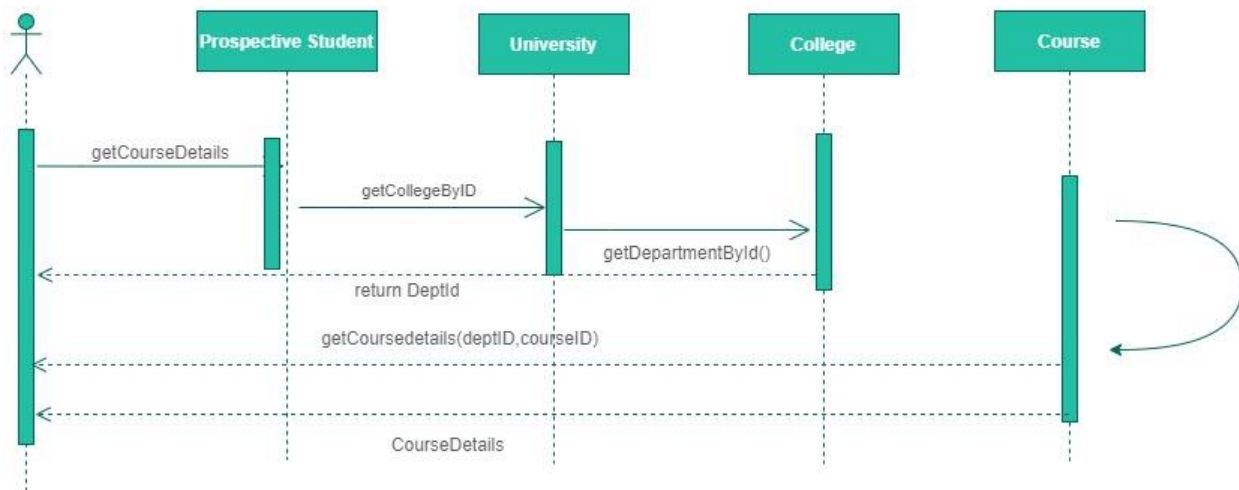
Role of a Current Student

- One of the criteria to measure the performance of a university is to get the average scores and feedback from the current student of all the colleges and departments on all the courses. A student who has taken up a course will have to rate it according to the course curriculum and rate the professor who is teaching the course. This will help rank a particular course in a department and in-turn get the department ranking according to the number of courses that have the highest rating from all the departments. This rating will be visible to all students which will help them select the right course. The above sequence diagram explains how a student who wishes to take a particular course can request for its ratings and the average scores of the previous class.

- Based on the students' performance on a particular course, ranks will be allocated, and these will be relative to entire class. With the count of students in the top ranks in a course, we would be able to determine how the course is on the difficulty level and also will be useful to check if there is a need for change in the curriculum of the course.

- This model can also help university understand the performance of each course and get a detail insight on how the students are getting involved in the learning, and if any course curriculum has to be revised based on the feedback from students.

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Sequence Diagram for Alumni rating and feedback.

Role of an Alumni

- In our proposed solutions, Alumni ratings, and feedback for each course they took up plays a major role. We intend to not only get the feedback on all the courses taken by the alumni, but also the relevance of each course on the current and past job role they have worked upon. With this insight, we would be able to review on how industry oriented all our course offerings are.
- By including the employment history of all the alumni, we get a better understanding of how our courses have helped them reach their career goals. This can be considered as a factor/matrix on how relevant a department and its course offerings are in the current industry.
- We also determine the rank of a particular alumni by the number of promotion he/she has received in his/her employment history and also the number of additional certifications that an alumni had to complete to achieve their career goal. If an alumni is in research filed, there ranking would be significantly higher than other alumni.
- We intend to capture all these information about the alumni and create a dashboard for the current students who might be interested in the same career path and will be able to get an insight of all the required courses to help reach their career goal. This dashboard can also help the university get an insight on the review of courses and revise their course curriculum in a particular department if need be.

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Role of a Prospective Student

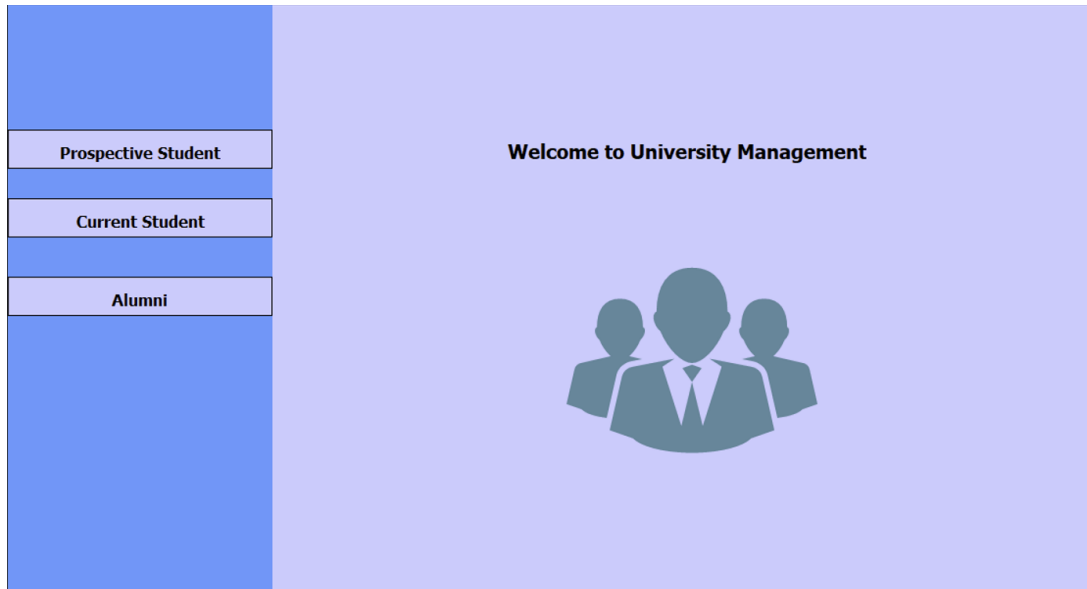## Sequence Diagram for Prospective Students.

- The Proposed solution can also help prospective students get a detailed insight on the ratings of each college, department and all the course offerings.
- The students can also get a specific course detail from a department and additional information such as the review from current students and review from alumni on how this course has helped them in their work environment to solve real world problems.

Summary

- Alumni of university can help the university and current students by providing valuable feedback on the curriculum, they can also help the current students by providing insights on the different methods of solving problems and work culture.
- Alumni rating can help the university understand new technologies and methodologies that are currently being implemented on real word problems, University can then try to include new courses or improve existing courses that can help current students and prospective students get a hands-on experience of those technologies and methodologies.
- Our proposed solution mitigates the gap between the alumni and university that can be mutually beneficial.

User Interface

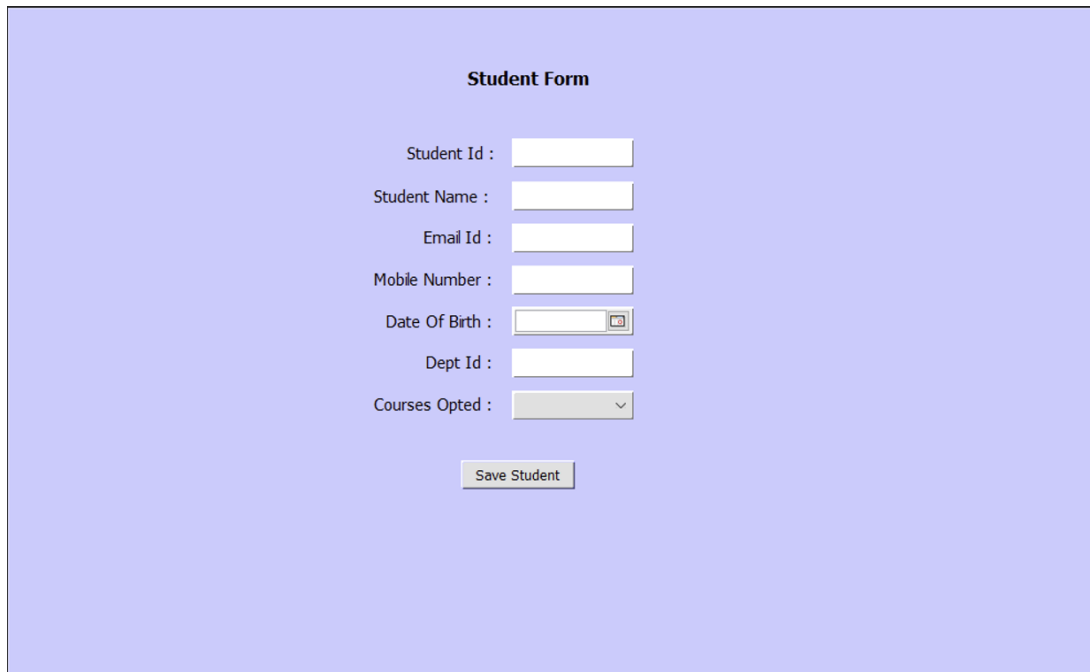Login Page

Welcome to University Management

Prospective Student

Current Student

Alumni

Add Student Details

Student Form

Student Id :

Student Name :

Email Id :

Mobile Number :

Date Of Birth :

Dept Id :

Courses Opted :

Save Student

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Course Performance

Course Performance

Course Id :

Student Id :

Lab Score :

Quiz Score :

Mid Term Score :

Final Exam Score :

Class Participation Score :

Add Metrics

Alumni Details

Alumni Details

Alumni Id :

Alumni Name :

Years Of Experience :

Year Of Graduation : 2021

Is In Research :

Job Title :

Job Position :

Is Related to Course Taken :

Save Details

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Alumni Employment History page

Alumni Employment History

Alumni Id :

Employment Type :

Employer Name :

Position :

Job Title :

No of Promotions Obtained :

Salary :

No of Certifications Obtained :

Add Employment History

Alumni certifications

Certification

Alumni Id :

Name :

Valid Till :

Rating :

Add Certification

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Find Alumni Page

Find Alumni Details

Alumni Id : [   ]   [Find Alumni]

Alumni Name : [   ]

Years Of Experience : [   ]

Year Of Graduation : [2021]

Is In Research : [▾]

Job Title : [   ]

Job Position : [   ]

Is Related to Course Taken : [   ]

Update Alumni Page

Update Alumni Details

Alumni Id : [   ]

Alumni Name : [   ]

Years Of Experience : [   ]

Year Of Graduation : [2021]

Is In Research : [▾]

Job Title : [   ]

Job Position : [   ]

Is Related to Course Taken : [   ]

[Update Alumni Details]

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Course Rating

Course Rating

Student Id :

Student Name :

Course Id :

Select Course :

Course Rating : ○ 1 ○ 2 ○ 3 ○ 4 ○ 5

Submit Rating

Overall Metrics

Metrics

Course Id	Student Id	Avg Lab Score	Avg Quiz Score	Avg Assignment Sc...	Mid Term Score	Final Exam Score	Faculty Name	Faculty Rating

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