

APPLICATION ENGINEERING & DEVELOPMENT

DESIGN ASSIGNMENT

(Fall '21)

UNIVERSITY RANKING SYSTEM

Submitted By:

1. Miti Shah

shah.miti@northeastern.edu

2. Vandit Kothari

kothari.va@northeastern.edu

3. Sahil Sonawane

sonawane.sa@northeastern.edu

Report

1. University:

- The University class will be the Master class of this model.
- This class will contain information about different colleges affiliated with it.
- It will have Registrar which holds information regarding different colleges, students, alumni's and the survey details acquired by them (Alumni).

2. Registrar:

- There will be a Registrar for the University which will hold all the records of different colleges that come under the particular University.
- All the Survey information will be directed towards the Registrar from the Compare/Rank class.
- Registrar will then give feedback regarding courses, its usefulness to the colleges accordingly.

3 College:

- College will be Superclass having different subclasses such as, College Administrator, College student directory, Department, Degree requirements.
- After comparing and assigning rankings, the Registrar will forward that particular data to respective colleges.

4. College Administrator:

- There will be a College Administrator for the College which will hold all the records of different Departments that come under the particular College.
- All the information regarding the survey taken by Alumni of that particular college will be directed towards the College Administrator.
- College Administrator will be responsible to compare and rank different Departments, under the College, according to the survey information collected.
- College Administrator will then give feedback regarding courses to the various Departments accordingly.

5. College Student Directory:

- College Student Directory is an Array list that contains all the students in the respective college.
- It contains basic information of the Students of each Department affiliated to the particular College.

6. Department:

- The Department is responsible for holding information of the Degree Requirements, Faculty, Course Catalog and Jobs.
- The Department receives the details of the Feedback for the Courses and Faculty.
- The Feedback is conducted by the student.

7. Department Student Directory:

- Department Student Directory is an Array list that contains all the students in the respective department.
- It contains basic information of the student's taking courses under that Department.

8. Degree Requirements:

- The Degree Requirements class defines the basic criteria of getting the degree.
- It collects the information from the Transcripts of students.
- The Degree Requirements class calculates the GPA to determine whether a student is above or below the minimum par GPA requirement.

9. Jobs:

- The Jobs class holds all the information about Current jobs and Job offerings in the Department.
- It consists of details of the Job positions that are vacant or filled.

10 Faculty:

- Faculty is one of the Job titles that comes under the Job Class.
- The faculty class maintains the information of the faculty at a particular College's Department.
- It contains the details of Faculty's history of the Subjects(Thesis or Non Thesis) taught over the last 5 years.
- Feedback Class uses the information of Alumni that were under the particular Faculty and that information will be useful for particular Department to make decisions regarding that particular Faculty.

Course Catalog:

- Every Department contains its own Course Catalog.
- The Course Catalog is an Array list that contains all the courses available under the Department.
- It also maintains the details of the particular courses.

Courses:

- Course is a class having all the information about the courses offered by the Department.
- It is a class that has two extended classes - Thesis Class and Non-Thesis Class.
- The Thesis Class will contain the subjects related to Research work whereas the Non-Thesis Class will contain different types of subjects such as Core and Electives.
- Information of these courses will be useful in the Review class which will ultimately help Department class to make different decisions regarding the courses offered by them.

Course Offering:

- The Course Offering class contains details regarding the courses offered by particular Faculty in particular semester.
- It contains details regarding the Timings and the Locations of the particular Course.

- It is the representation of the scenario for particular class' Total Seats available and Seats occupied out of those.

Rank/Compare:

- Rank/Compare will be responsible to compare and rank different colleges, under the University, according to the Survey information collected.
- This class will also collect information from the Feedback. It will then transfer the calculated results to the College Administrator.

Transcript:

- The Transcript class contains all the data of all the courses the student took during their time at the University.
- It contains information about the grades of a particular Student for every course in each semester.

Feedback:

- The Feedback class is used to get feedback from the students about the Courses and their respective Faculty.
- The Feedback is given by current students and not the Alumni.
- All the students are asked to give their feedback on the courses they have taken and the respective faculty as soon as the course concludes.
- This feedback will be directed to the College Administrator.
- The College Administrator will review the feedback and then will take necessary action towards the Faculty or the Course of that particular Department.
- This class will indirectly help in improving the current state of the Courses or the Faculty.

Survey:

- The Survey class is used to get the Survey information from the Alumni regarding their current status.
- The survey includes questions about the Alumni's Current Job Status, Current salary, Relevance of the courses taken in college to today's Job technology
- The Alumni are asked to fill out the survey 5 years after their graduation from the particular college.
- This Survey will be directed to the Registrar and the College Administrator.
- This class will indirectly help in improving the current state of the College.

FLOW OF THE MODEL

- The Ranking of our model is divided upon two levels. First is College Level and other is University Level.
- The Alumni of the college who have completed 5 years post their graduation are presented with a Survey that consists of questions regarding their current job scenario. Questions such as “placed or not placed”, their “Current job position”, the “Relevance of their courses in college to the current job profile and work”, the “Number of promotions earned” and lastly their “Current Salary” are evaluated.
- Each question is assigned a specific score ranging from 1 to 5. The total of all the questions’ scores are calculated and an aggregate is computed based on the total number of people taking the survey.
- The score is forwarded to the University Registrar
- These scores are then used to rank different universities accordingly with the Universities with most scores on the top of the ranks.
- For the college level scenario, Current Students are provided with a Feedback.
- The Feedback form consists of questions such as “Faculty Rating”, “Course Rating”, “Assignment Quality”, “Department Facilities” and “Research Work”.
- These questions on ratings are used to evaluate the Feedback result. Each question has a score ranging from 1 to 5. The aggregate score for a particular College are computed by dividing the sum of scores by total number of students filling the feedback form.
- This score is forwarded to the College Administrator and Department of the College.
- This score is then evaluated by the College Administrator. The College Administrator then determines the rank of the Course, Department and Faculty.

METHODS

•**compare ()** - This is a method that computes upon the Survey information and finds the ranks of the University.

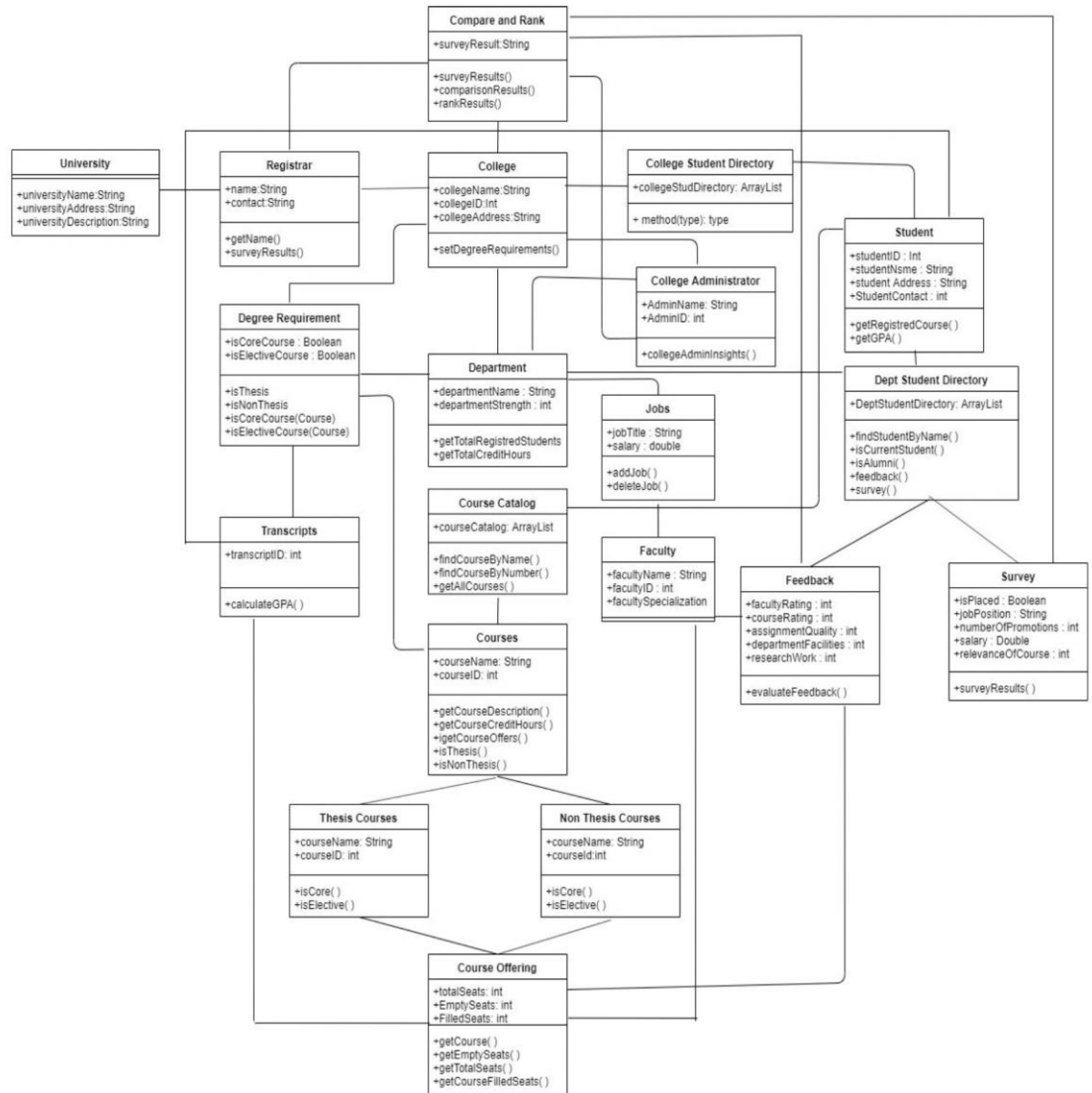
•**comparisonSurveyResults()** - This method is used to send the Survey results to the University Registrar and the College Administrator.

•**evaluateFeedback()** - This is a method that computes upon the Feedback information and finds the ranks of the College Department or Faculty.

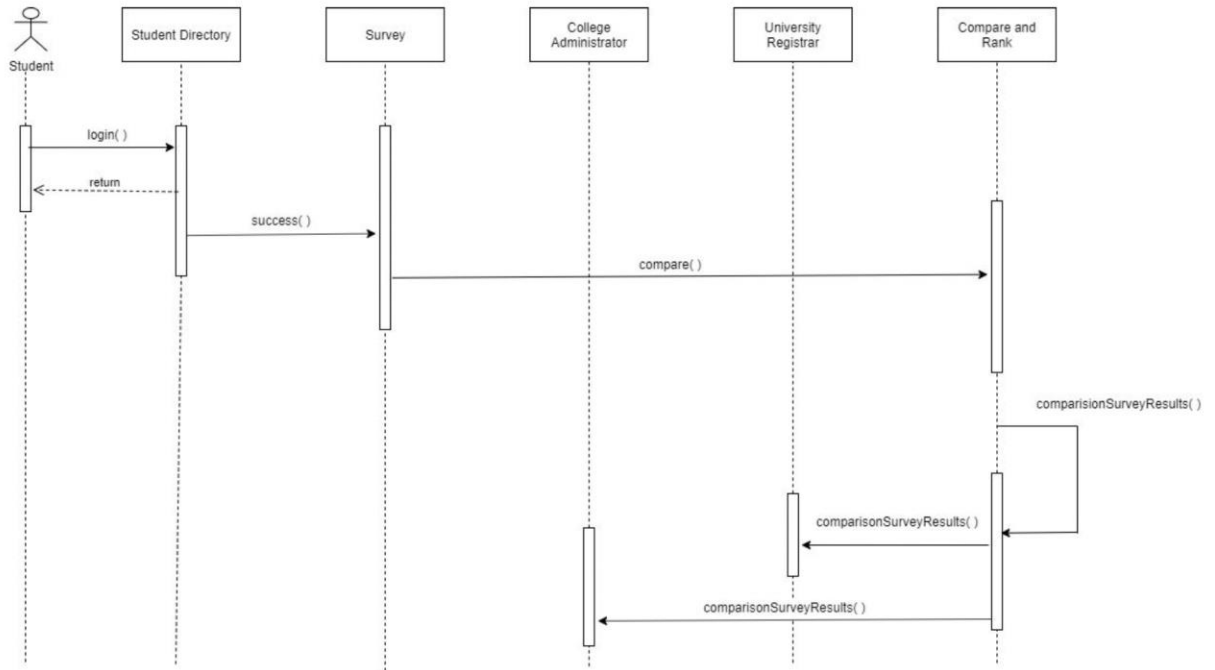
•**comparisonFeedbackResults()** - This method is used to send the Feedback results to the College Administrator.

•**CollegeAdminInsights()** - This is a method that has the insights of the college admin over the Feedback. The admin sends the insights to the college department.

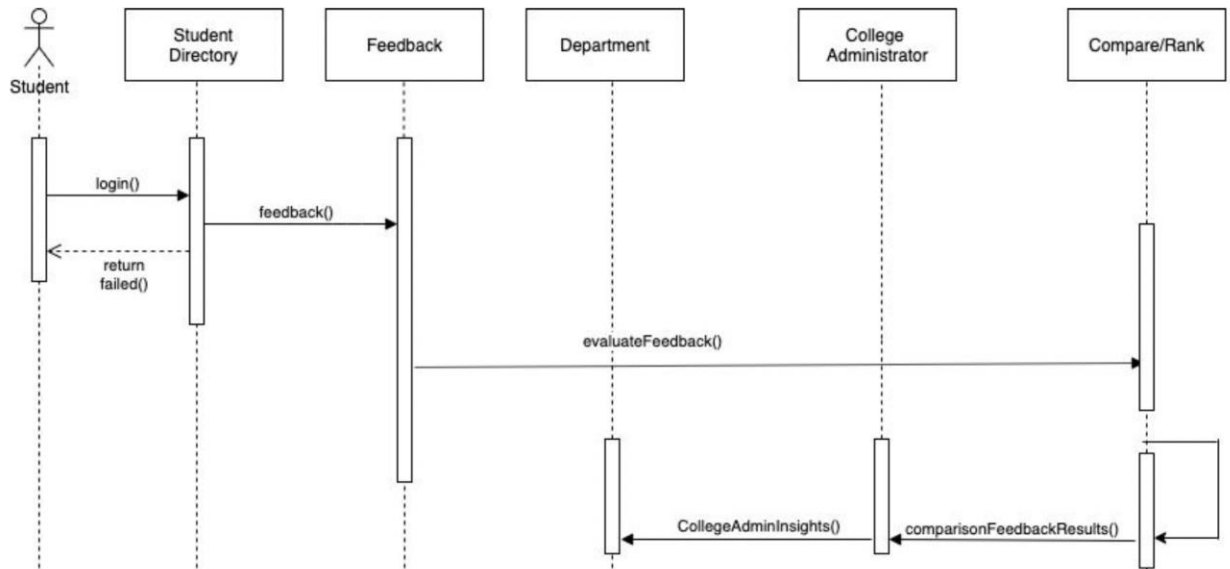
Class Diagram



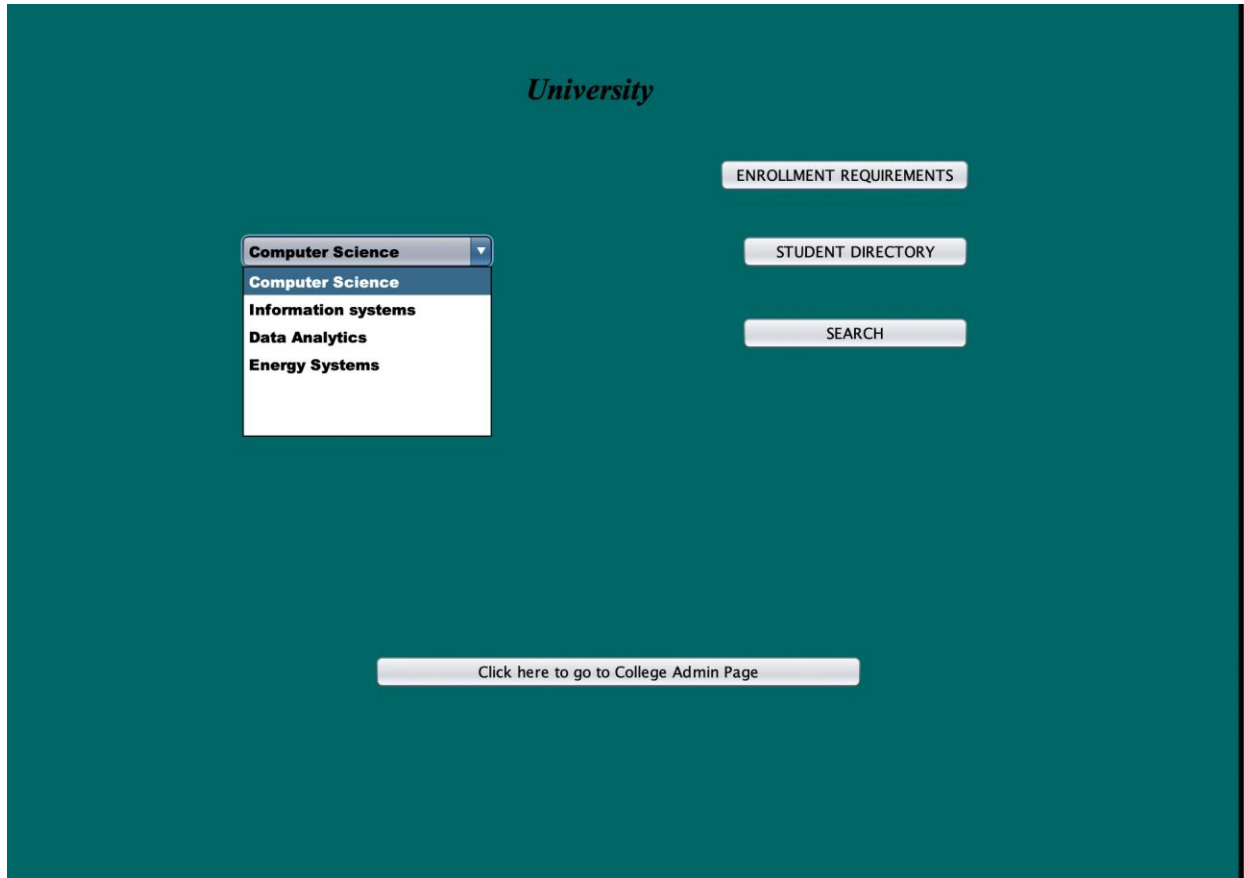
SEQUENCE DIAGRAM FOR SURVEY



SEQUENCE DIAGRAM FOR FEEDBACK



UI Designs



Survey

Alumni Name	<input type="text"/>
College Name	<div>Northeastern College of Engineering</div>
Department	<div>Northeastern College of Engineering Khuory college Law College College of Medical Science</div>
Graduation Year	<input type="text"/>

Performance Review

Placement Status	<div>Placed</div>
Designation	<input type="text"/>
Designation level	<div>1</div>
Salary per annum	<input type="text"/>
No of promotions in the same company	<input type="text"/>

Submit

Student Directory

Student ID	Student Name	Department ID	Department Name

Registration

Northeastern College of Engineering ▼

Northeastern College of Engineering
Khuory college
Law College
College of Medical Science

Search

Results

Feedback

Faculty Rating ▼

Faculty Rating
Faculty 1
Faculty 2
Faculty 3
Faculty 4

1 ▼

Quality of lectures

1 ▼

Any suggestions

Submit

1=Very poor, 2=Poor, 3=Intermediate, 4=Good, 5=Excellent

Registration

Username

Password

Forgot Password? [Reset](#)

[LOGIN](#)

Department Student Directory

Student ID	Student Name	Courses Taken	Status

[Feedback](#)

[View Details](#)

[Survey](#)

Department

Dept. student directory

Department requirements

Course Catalog

Job1

Job1

Job2

Job3

Job4

Course Catalog

Thesis Course

Thesis Course

Course 1 Faculty 1

Course 2 Faculty 2

Course 3 Faculty 3

Course 4 Faculty 4

Non Thesis Course

Search

Feedback

Course Rating

Course Rating

Course 1

Course 2

Course 3

Course 4

1

Overall course rating

1

Any suggestions

Submit

1=Very poor, 2=Poor, 3=Intermediate, 4=Good, 5=Excellent

College Administrator

Search Department

Search Faculty

Search Course

FUTURE SCOPE

The future scope of this assignment can be implementation of the ranking system over multiple Colleges and multiple Universities. This implementation will be useful for many students seeking ranking of the Universities and Colleges around the work. Searching the rank of universities is a vital step before taking Admission into it. This ranking system will give an edge to the students.