INFO5100: Application Engineering & Development

Assignment 3

University Performance Optimization Model

Submitted By-

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Objective:

Each world class university is ranked on few performance indicators – teaching, research, employment opportunities and international outlook covering their core missions. The objective is to discover new ways for reaching new heights in each of these sectors to create and maintain the brand name of the university. In this assignment, we are transforming a university model design into a system that would be used for data collection and analysis to measure the performance. Software Designing techniques can be truly useful to enhance the educational quality around the globe and make people responsible enough for improvement of education, self-learning and feedbacks.

Task:

The Task is to learn various methods to design a performance measurement solution to facilitate universities to assess the value of content provided by them to the learners. Quality assessment is carried out for the parameters like course freshness, whether courses are revised according to industry's current trends. The attempt here is to analyze an educational system's elements such as faculty, courses, employers that could contribute to the professional progress of the graduates for period of 5 years. Upon points related to jobs, progress, promotions and course relevance in their job graduates are supposed to rank the universities. Task also includes designing a dashboard that would help university officials to study academics and job parameters.

Proposed Solution:

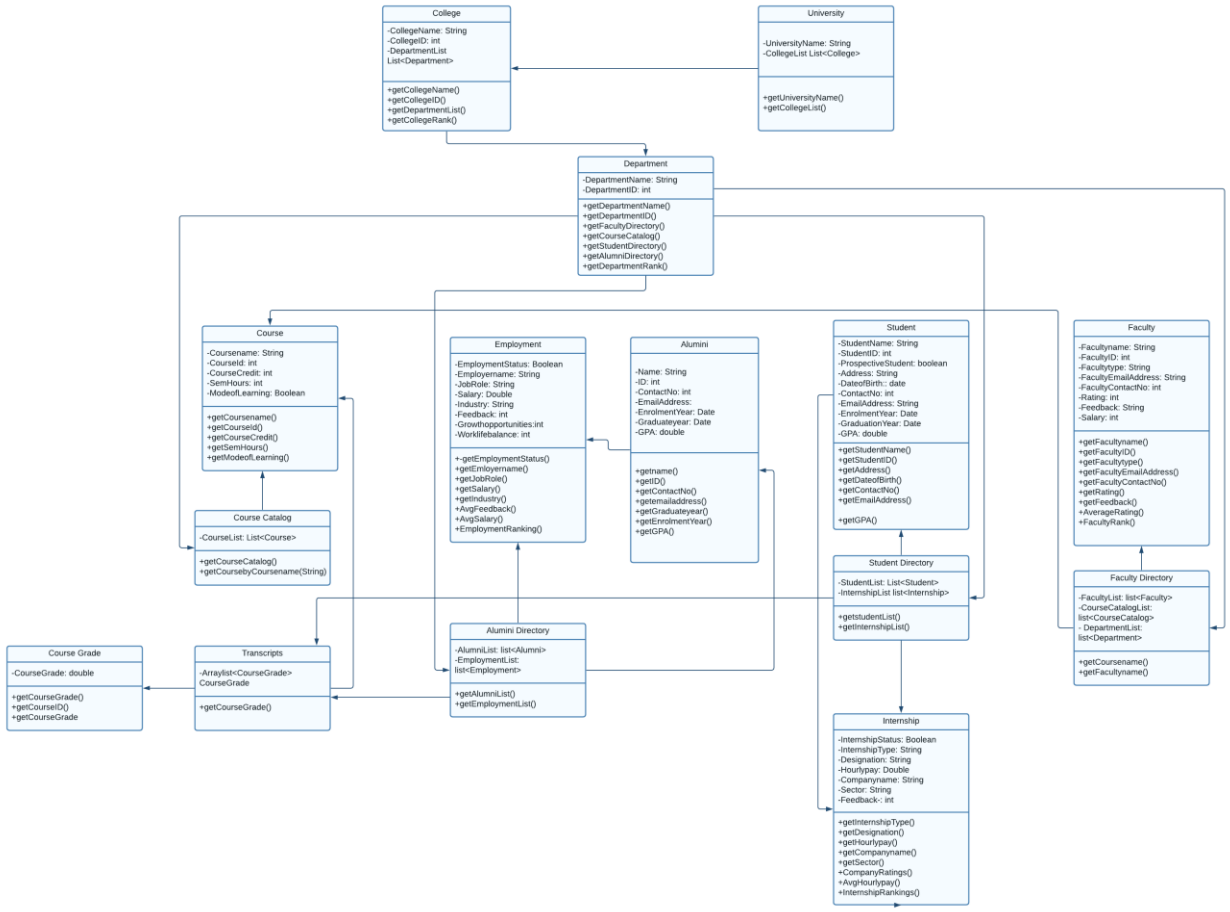
Our task was to design performance metrics for university for the quality measurement of the components of the educational system. This would facilitate students to opt for a desired course depending upon their area of interest.

In this design we have taken into consideration various parameters like faculty ranking, student's academic performance, employment records and many more for assessing the worth of education provided by the university. Depending upon all this assessment parameters university rank is calculated.

Creating a dashboard made the design more user friendly. Making dashboard provides all the required data under one umbrella for various users like faculty, alumni and administrators. This type of design can be surely some help for the university to take essential steps for improvements in the system.

As the parameters from elements of the university like faculty, students and alumni are taken into consideration it helps the university to analyze the current scenarios in the industry and the upcoming demands which would help them to groom the students in that specific way.

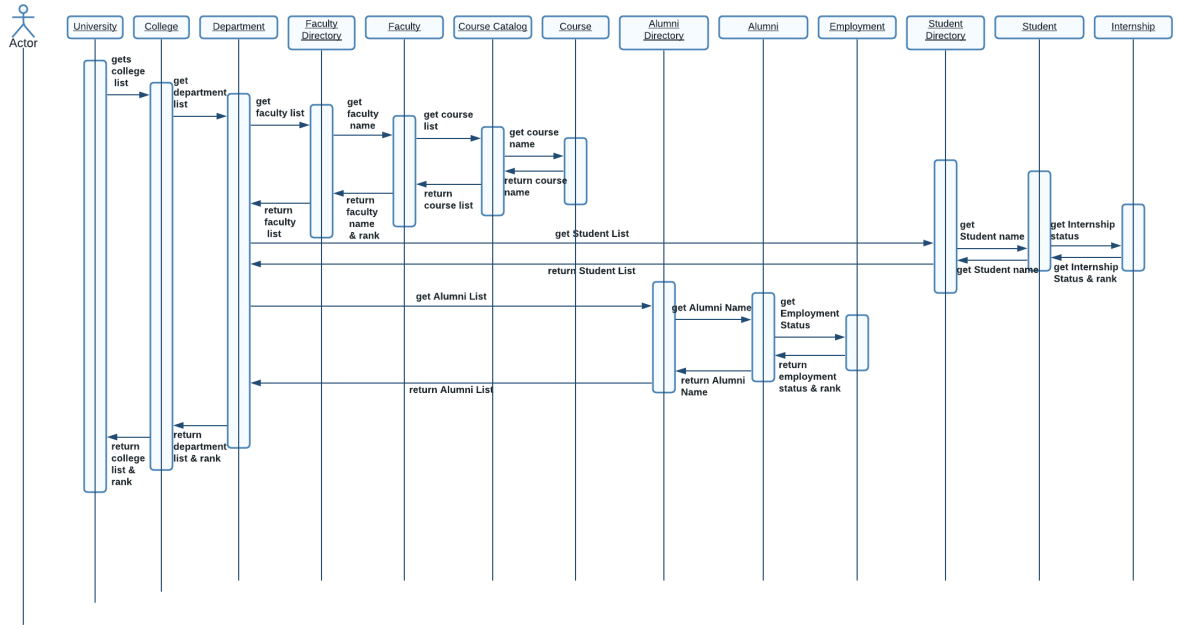
Class Diagram:



Class Diagram Description:

To design the system, we have used UML diagram. Here we have used various classes and implemented inheritance concept of Java. The expected output here is to get college rank, department rank, faculty rank, average GPA of students and employment rankings. Here we have used classes like University, College, Department, Faculty, Student, Alumni, Course. We have also designed directories for many classes to create array list for the same.

Sequence Diagram:

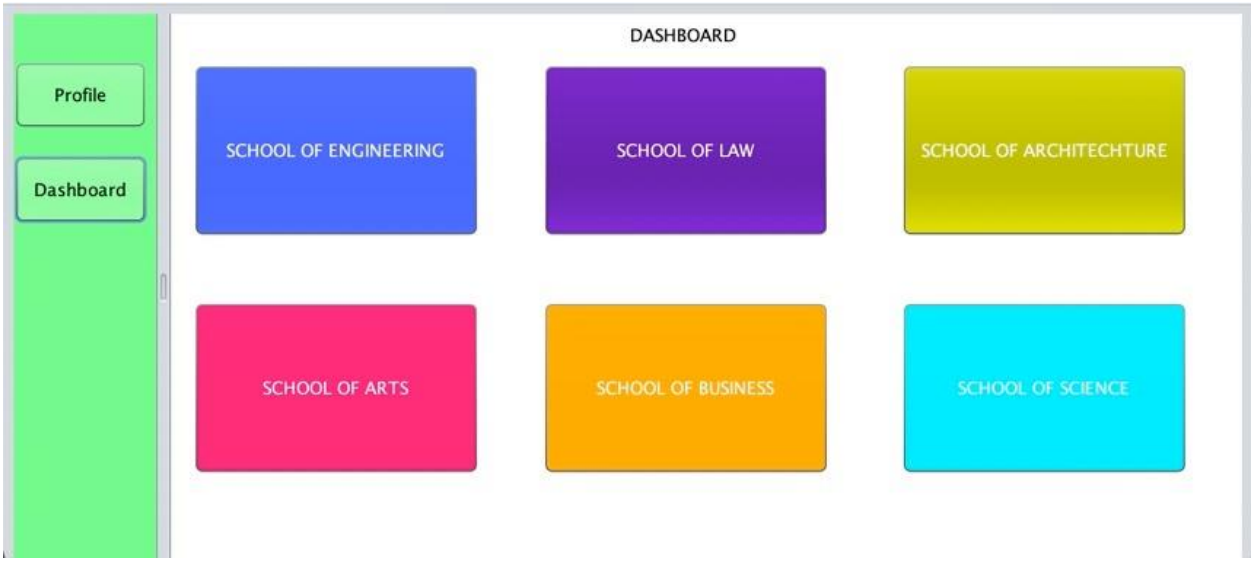


Sequence Diagram Description:

In this diagram we learn about the flow of the system i.e., it helps us make clear the methods of the classes. Here we get to know what all is fed to the system and what output are we deriving from it. The diagram showcases the interactions between the classes and their objects.

Dashboard Design:

Screen 1:



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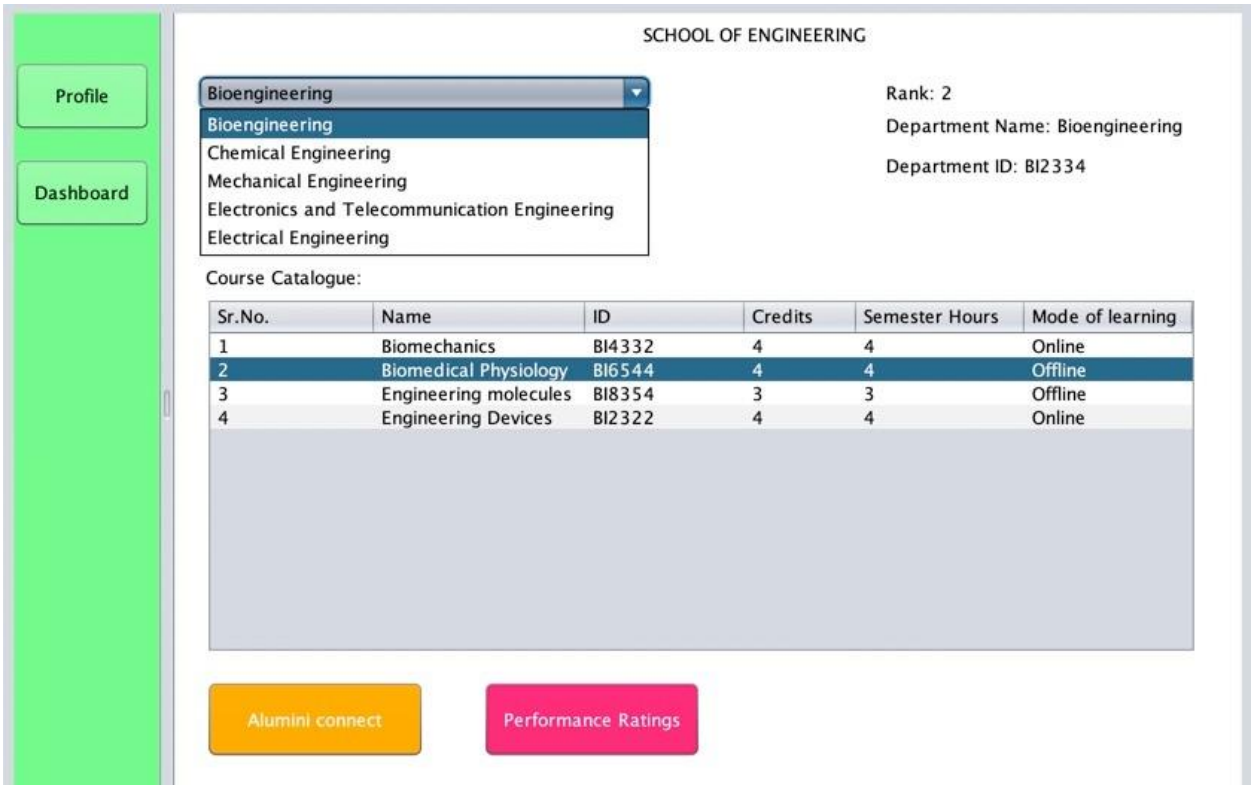
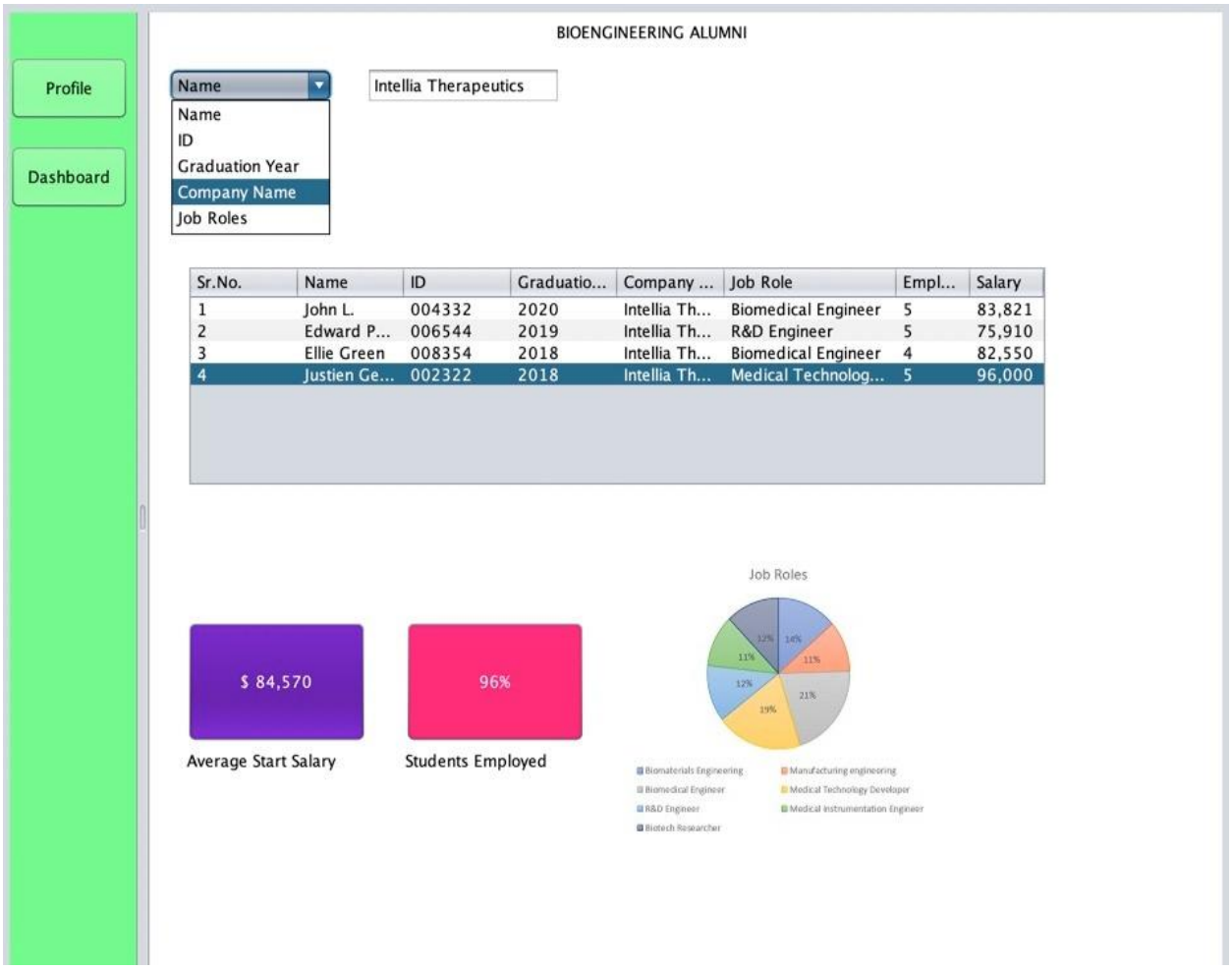
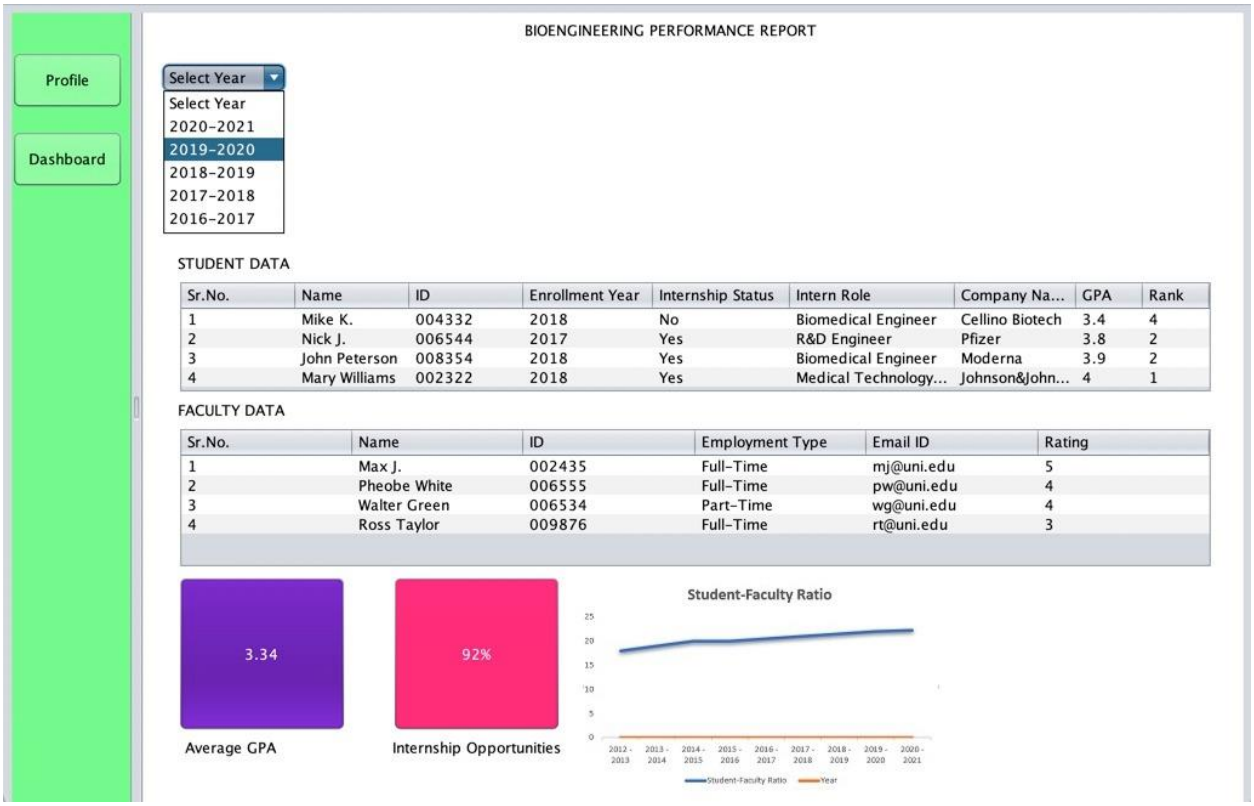


Screen 3:


BIOENGINEERING ALUMNI
Profile
Dashboard
Name
Intellia Therapeutics
Name
ID
Graduation Year
Company Name
Job Roles
Sr.No. Name ID Graduatio... Company ... Job Role Empl... Salary
1 John L. 004332 2020 Intellia Th... Biomedical Engineer 5 83,821
2 Edward P... 006544 2019 Intellia Th... R&D Engineer 5 75,910
3 Ellie Green 008354 2018 Intellia Th... Biomedical Engineer 4 82,550
4 Justien Ge... 002322 2018 Intellia Th... Medical Technolog... 5 96,000
$ 84,570
Average Start Salary
96%
Students Employed
Job Roles
14%
11%
21%
19%
12%
11%
12%
Biomaterials Engineering
Manufacturing engineering
Biomedical Engineer
Medical Technology Developer
R&D Engineer
Medical Instrumentation Engineer
Biotech Researcher

Screen 4:



Conclusion:

In this assignment we have designed a system using UML class diagram and sequence diagram. In the system we took different parameters of university like faculty, students, alumni, courses, internships & employment to obtain results such as college ranking, faculty ranking, employment ranking, department ranking. All these results can help the university for upgradation purposes and provide them insight about the student progress and needs of the industries. Moreover, this study can help students to elect their courses. This system can furthermore develop with more attributes like research, government funding etc.