AED_Assignment4_Report

--Team Technogeeks

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Introduction

This report majorly focuses on creation of effective solution to enable universities to evaluate the education standards that they deliver to their students

To obtain the solution, we will be gathering the information on yearly basis with the help of a Feedback Form , which will be sent to students graduated from the University in past five years.

Valuable insights provided by them over a period of time play a significant role in improving the quality of education.

This data gathered from passed out student will be processed and analyzed by university development analysts, which becomes a root in creation of new methodologies.

From the gathered data, application system will be tracking the connection between courses pursued by alumni and their current status and growth. Thereafter, We will assign course and faculty ranking accordingly.

The Solution also includes a performance analysis dashboard, which will enable the college administration to monitor the data and take suitable decisions accordingly.

In conclusion, this proposed solution will help administration to improve the education quality, standards and methodologies which will be job-oriented.

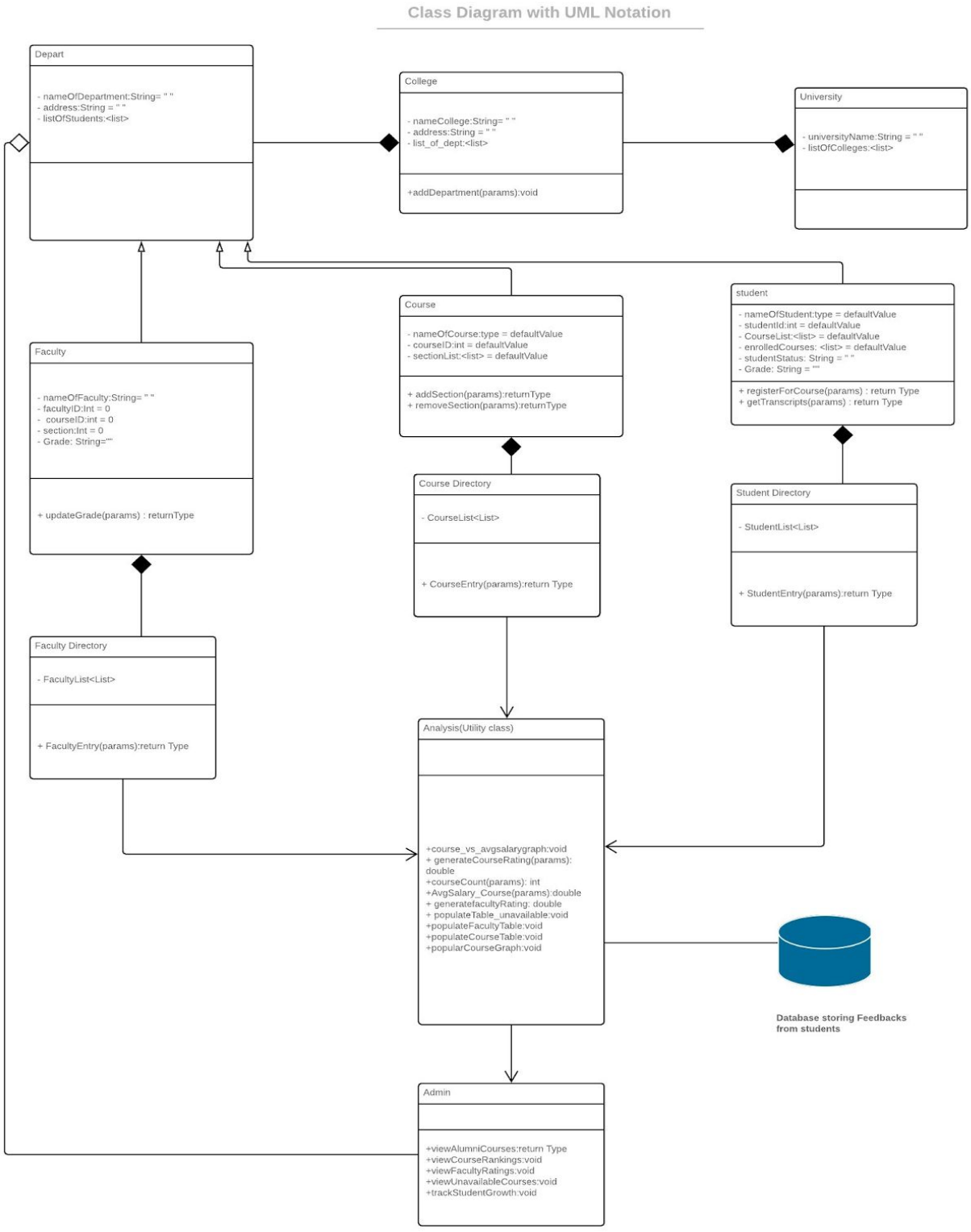
Solution:

The proposed solution can be better understood with help of class diagram of the university which will support the unique new capabilities, in the form of additional attributes, methods.

Sequence diagrams which explains the navigation flow of the proposed system to deliver performance, value and feedback.

The Performance dashboard will help the admin to understand the gathered data with the help of graphical output.

Class Diagram



- There are multiple colleges like(COE, CCIS, CIS) under one university

- There are multiple departments under one college like (IS department, CSYE department)
- Each department will have single admin for obtaining performance review.

Method Explanation

1.) generateCourseRating.

This function will help the admin to generate the course rating and the method followed to generate the course rating is as follows

Once the data is collected, Dashboard provides with the sub-option of View Courses. Where-in, we can view course ranking

1) Select the data from database where course name matches with the selected course name
2) Extract the rating values for the course selected given by the Students
3) Calculate the average rating and display it in the table.

2.) generatefacultyRating

This function will help the admin to generate the faculty rating and the method followed to generate the faculty rating is as follows

Once the data is collected, Dashboard provides with the sub-option of View Courses. Where-in, we can view course ranking

1) Select the data from the database where faculty name matches with the selected faculty name
2) Extract the rating values for the faculty selected given by the Students
3) Calculate the average rating and display it in the table.

3.) viewAlumniCourse:

This function will enable the admin to view all the courses taken by the graduate students over the period of 5 years.

4.) **viewUnavailableCourses**

This function will enable the admin to view all the courses, which are not available by the department, over the period of 5 years, For example : some courses, like salesforce

5.) trackStudentGrowth

This function will enable the admin to track the student success on the basis of courses taken by the graduate whose are earning the more than average salary(for example). We will be viewing this data in the form of graph, wherein, we will be drawing a graph **courses taken versus the salary**

6.) populateTable

This utility function will populate the table with data we needed, this function will be triggered whenever admin wants to populate the table.

7.) populateTableunavailable

This function will populate the table with the courses, not offered by the university, college, or the department.

8.) populateFacultyTable

This function will populate the table with all the faculty names, and their corresponding ranking provided by the alumni students.

9.) popularCourseRanking

This function will populate the table with the courses, which are the favorites or in other words, the most liked course.

10.) populateCourseTable:

This function will populate all the courses in the form of table with details, number of students taken, course ranking, description etc.

11.) popularCourseGraph

This utility function will display the graph, where x axis, is the total number of courses taken and y axis is the frequency count of each course, This uses courseCount() function to get the total course count,

12.) addDepartment

Functionality: This method in College class will facilitate the user to add multiple departments for a college. This method will return nothing except adding a department for a college. This will add department objects to the arraylist-**list_of_dept.**

13.) updateGrade

Functionality: The main functionality of this method is to provide the faculty to update grades for this students across their subjects. This functionality will be restricted to the faculty alone and no one else can change grades of students.

14.)addSection

Functionality: In a university model there might courses with multiple sections at multiple time schedules. This method gives the flexibility to add multiple sections for courses at different time schedules. This will help in maintaining a good student to faculty ratio thereby helping the students benefit further.

15.) removeSection

Functionality: In a university model there might courses with multiple sections at multiple time schedules. There might a situation where the faculty cannot make to particular section due to time constraints, then in that this method will offer the flexibility of removing that section from the directory.

16.) registerForCourse

Functionality: This method main functionality will be enabling users to register for multiple courses as part of their semester with some restrictions-may it be prerequisites etc etc. This will populate the course list against a particular student in the directory.

17.) getTranscripts

Functionality: This method will facilitate the university people and students to view the entire list of courses he has registered for and the corresponding grades against those courses if he/she has completed them during a semester.

18.) FacultyEntry

Functionality: This method will add a faculty entry in the faculty directory by returning an object of type faculty and adding them all to FacultyList.

19.) StudentEntry

Functionality: This method will add a student entry in the student directory by returning an object of type student and adding them all to StudentList.

20.) CourseEntry

Functionality: This method will add a course entry in the course directory by returning an object of type course and adding them all to CourseList.

Gathering Data from Alumni

A particular and unique procedure is followed, while recording the data from university graduates.

1) Once university initiates system administrator to gather student feedback.

2) System Admin will retrieve list of students graduated in the last 5 years.

3) Once student list is generated, Admin will trigger an event (button) to generate the feedback form (with questions sent by the university)

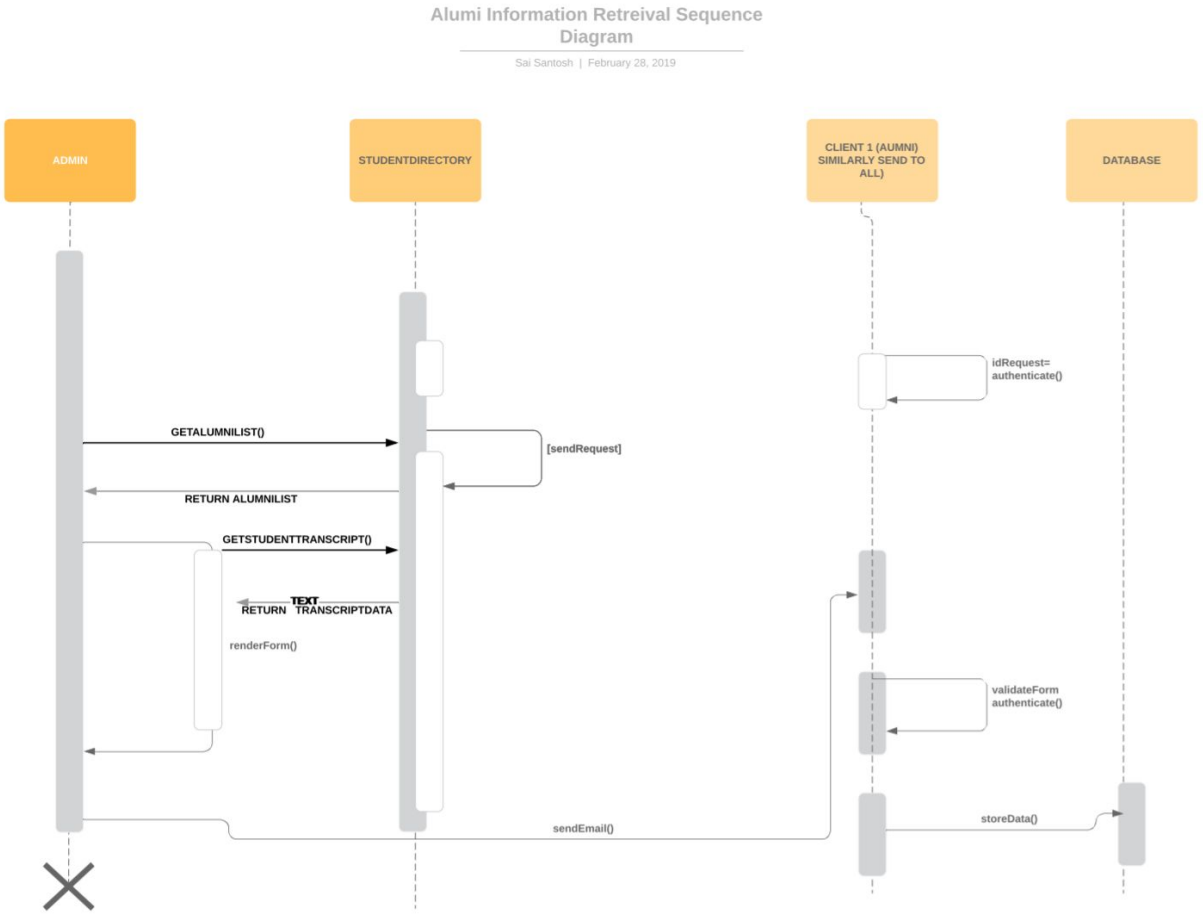
4) Admin will hit on send email, feedback form will be sent to the students registered email id.

5) Feedback form will contain questions like.
    a) Select courses that are useful on the job. List of all the courses he/she has taken & rate the course form (1 to 5).(Radio checkbox)
    b) Additional courses completed, apart from the above listed courses(Checkbox)
    c) Rate your professors from 1-5 (Sub sections :: Teaching methods, Assignments, Course Coverage)

6) On form submission, user data will be sent as response to the admin in form markup language.

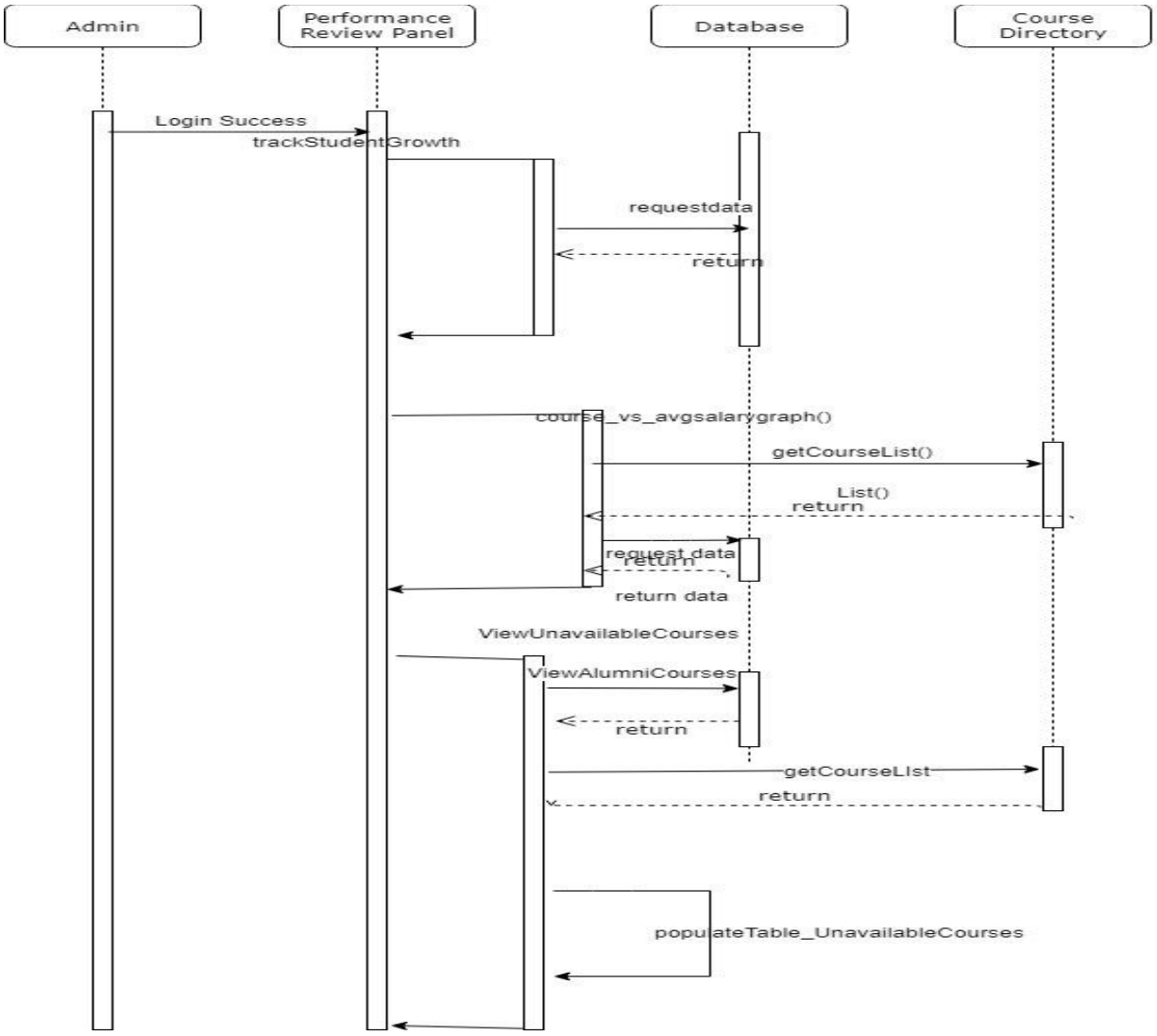
7) Data is processed by appended and stored into a database.

8) The database has the following columns
    a) Student ID
    b) Student Name
    c) Course 1
    d) Rating
    e) Course 2
    f.) Rating
    g) Course 3
    h) Rating
    i) {Similarly for all the courses taken}
    j) Faculty 1
    k) Rating



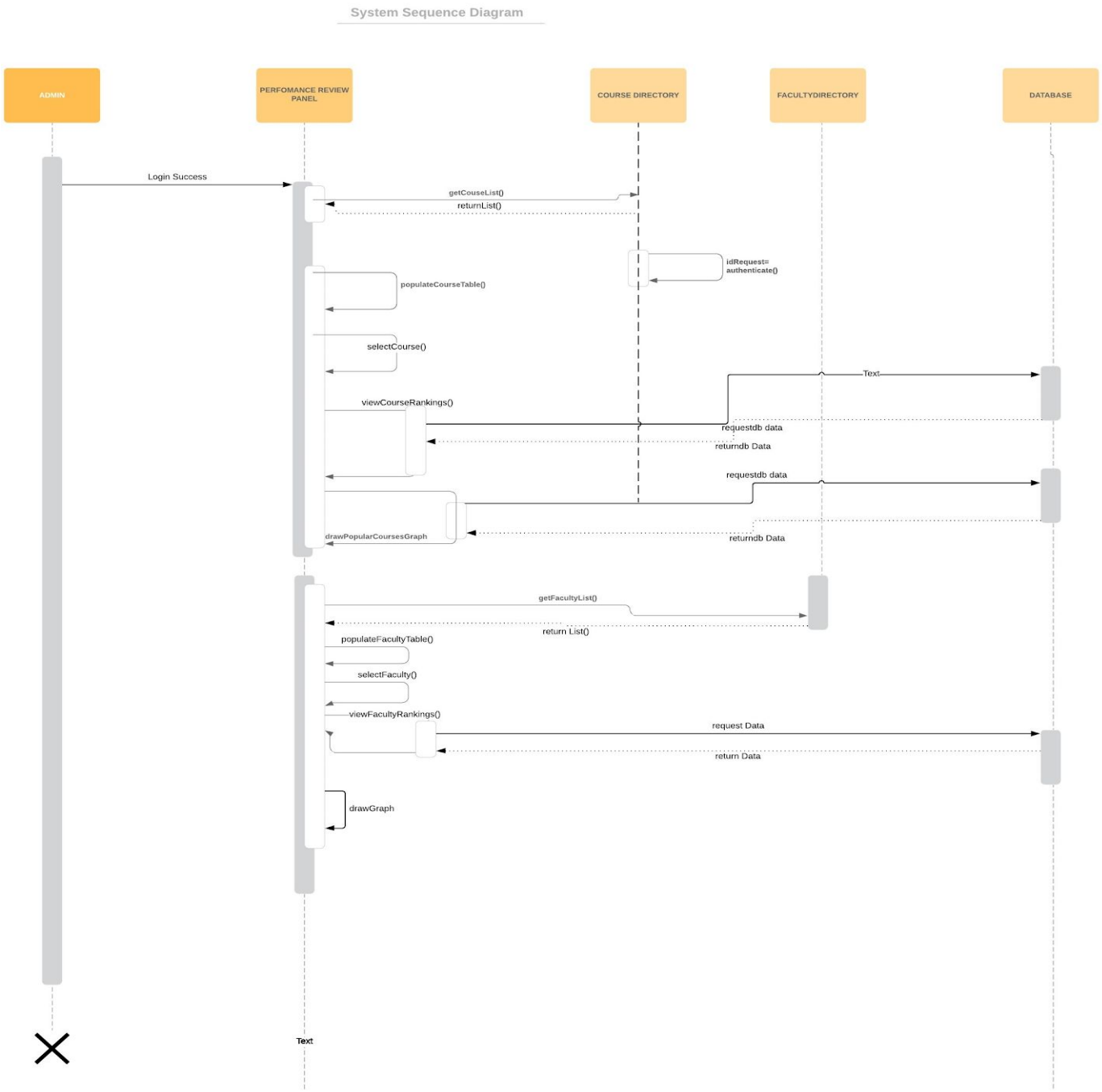
l) Faculty 2
m) Rating
n) Faculty 3
o) Rating
p) {Similarly for all Faculties}
q) Students Batch
r) Email ID
s) Job Title
t) Experience
u) Starting salary
v) Current Salary
w) Promotions.
x) Current Employer

Analyser :: Sequence Diagram



1.) Once user logins in Admin mode,Admin can select which data he wants to gather, one being trackStudentGrowth and viewUnavailableCourses.
2.) In trackStudentGrowth, data is fetched from various sources and graph is plotted. The function methodology is explained above.
3.) In viewUnavailableCourses, data is fetched from all the required courses. Thereafter, Help from the utility courses are taken to process the data. Finally the data is displayed in the form of table.

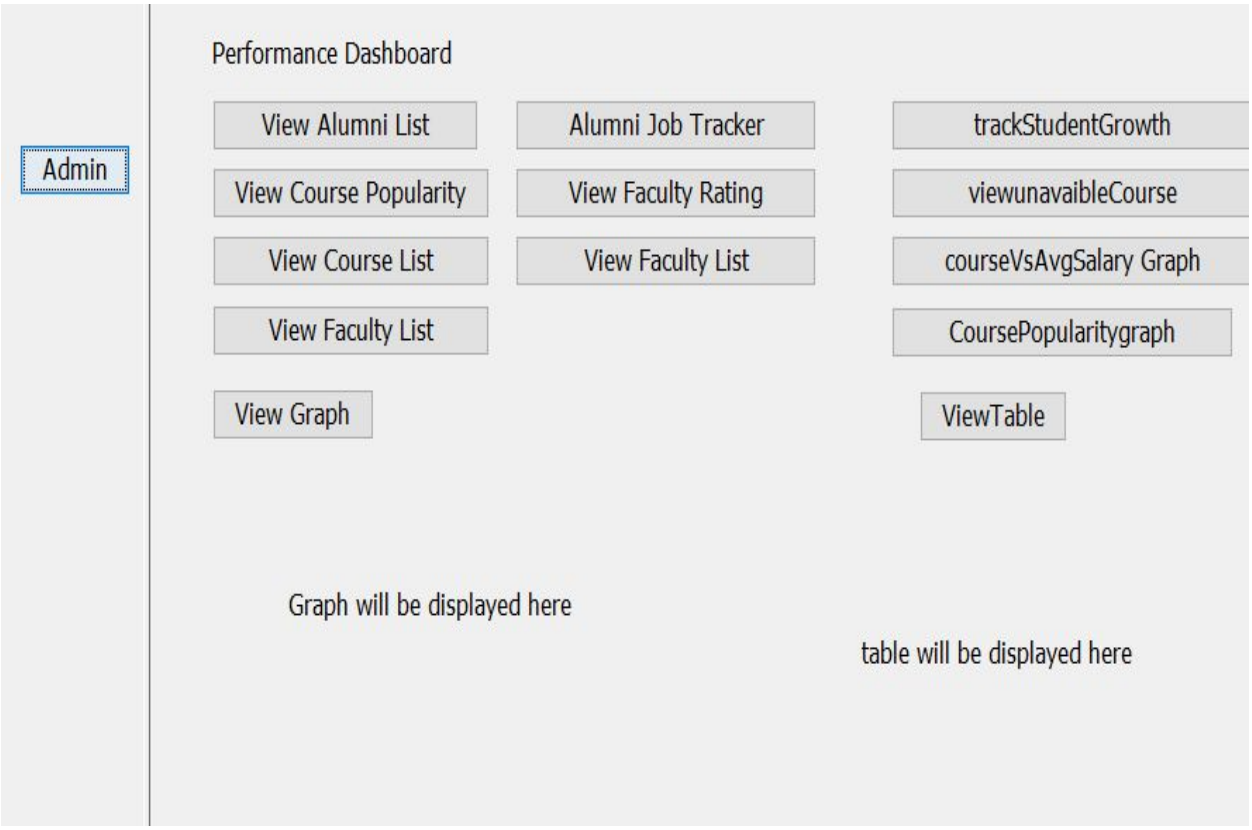
System Sequence Diagram



1.) Once the user login in the admin mode, admin will be provided with set of functionalities to select, which are explained above.
2.) Thereafter, application will interact with other entities, and obtain the course ranking and display in the form of table. And draw popular courses graph as shown below
3.) The third one being, where application with the help of other entities will obtain the faculty ranking and display their in the form of graph as shown below.

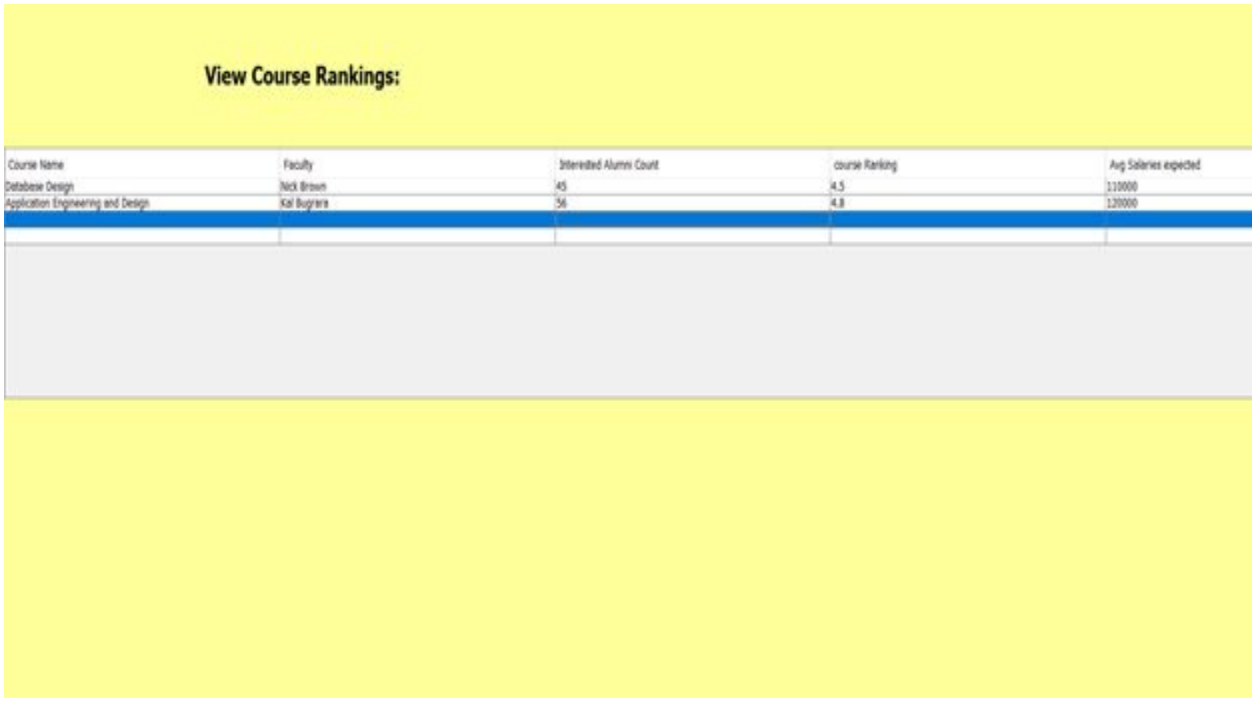
Dashboard

Admin DashBoard



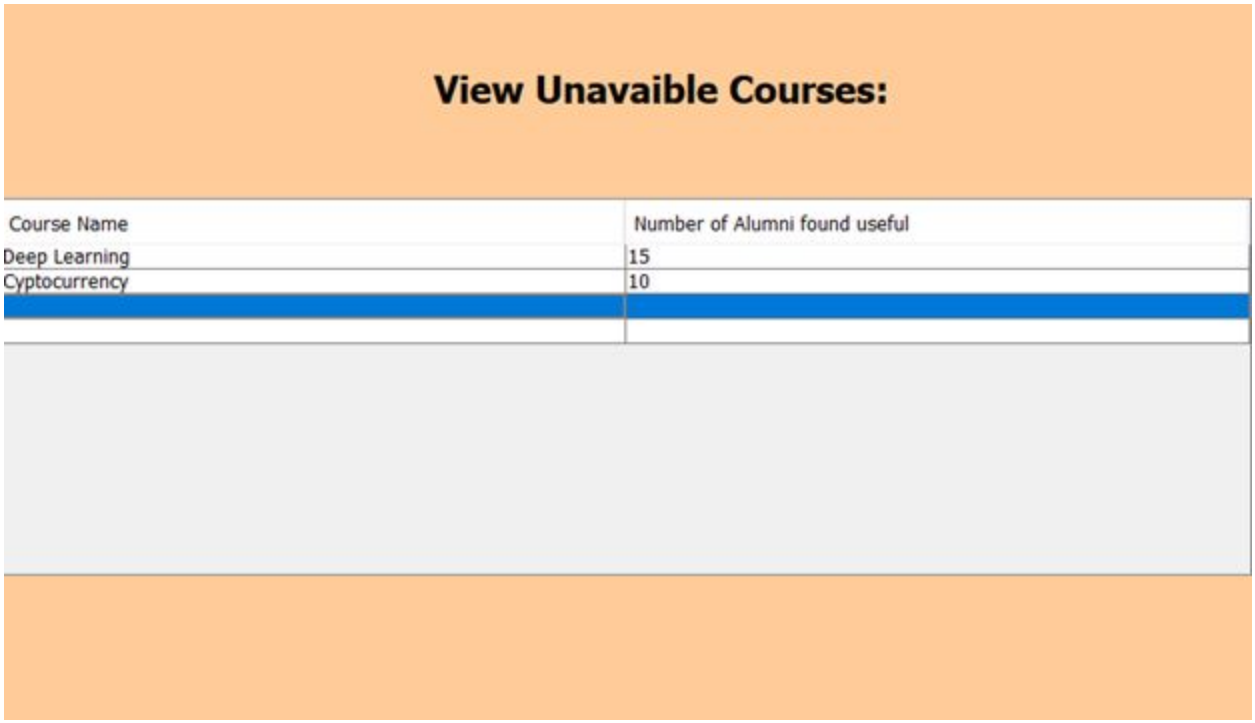
Once the user logins to the admin mode, User will be redirected to this page.

View Course Rankings Table:



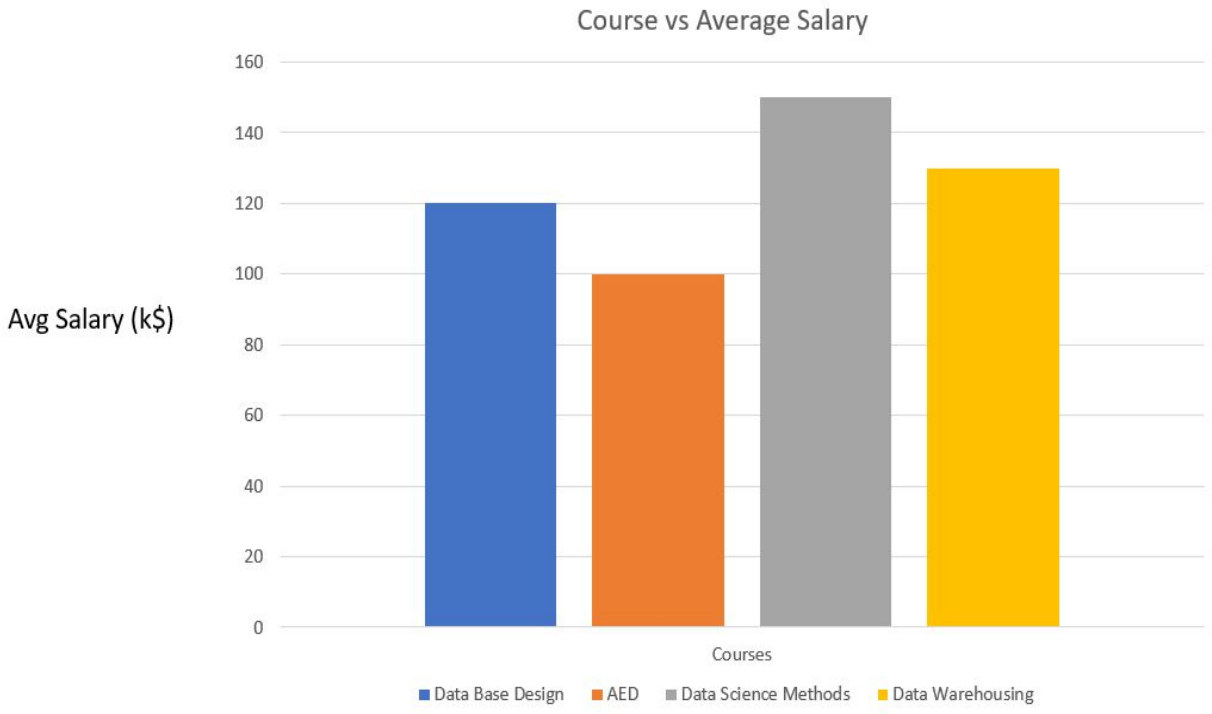
View Faculty Ratings

View Unavailable Courses:

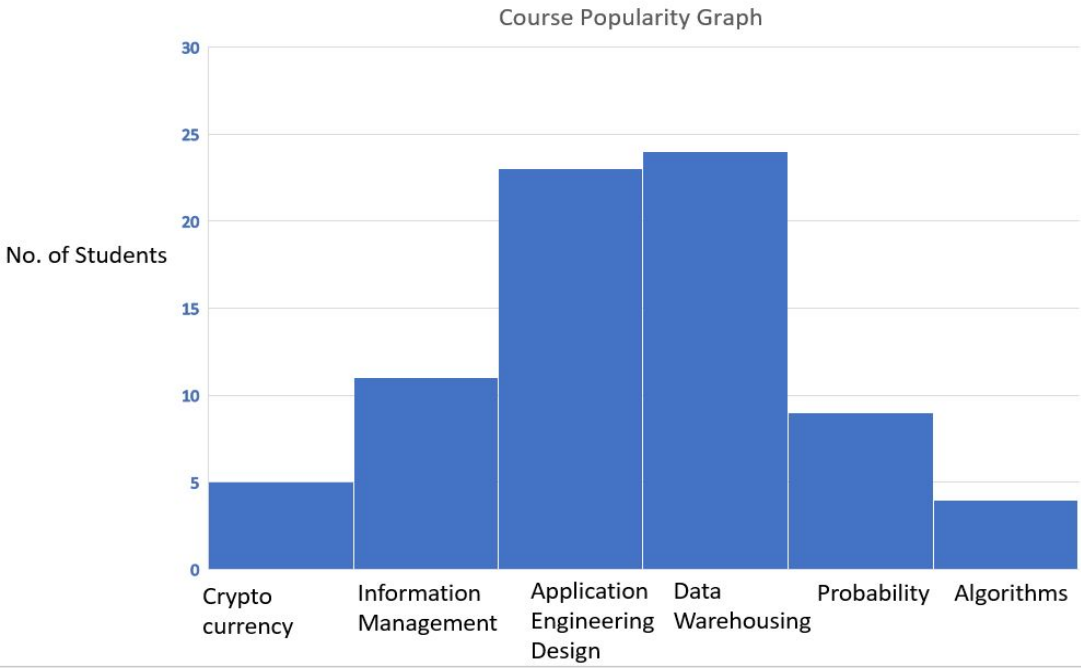


trackStudentGrowth:

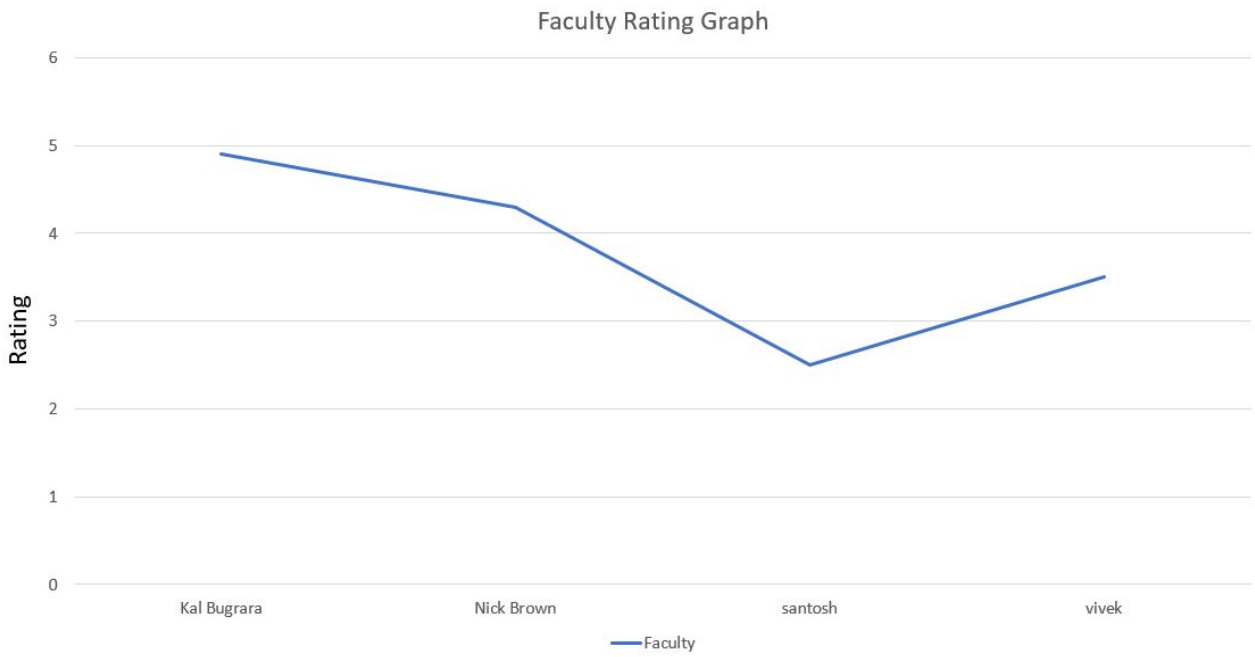
Course_vs_avgsalary graph:



Course Popularity Graph:



Faculty Rating Graph:



Conclusion:

There are no universal metrics to measure the quality of education that university provides. There can be multiple factors. One being, analysts can take into account to measure the performance and track graduated student growth in future.

While framing performance review solution, feedback from the alumni students can be off great importance. In order to achieve that we devised a feedback form which includes several questions regarding their current jobs, courses enrolled while they were studying and courses they thought that help them to perform better in their respective job domains. In addition, we tried to correlate the courses versus the range of salaries that the students are earning who enrolled in those courses.

We think that the students will be in a better position to rate their faculties, once they start working in the real world. Hence , we asked them to provide rating points for the professors as well in the feedback form along with other questions.