Performance Measurement Solution for University Model

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Objectives:

➢The purpose of the assignment is to understand the concept of object model and learn the techniques for converting an object model to UI interface for collecting the data and providing meaningful insights.

➢The University model enables the Universities to assess the quality of education they deliver based on ranking criteria assigned to individual entity levels in the university.

➢It helps to track the Alumni data over a period of 5 years based on the GPA and their career graph based on research, job roles and promotions over the period of time.
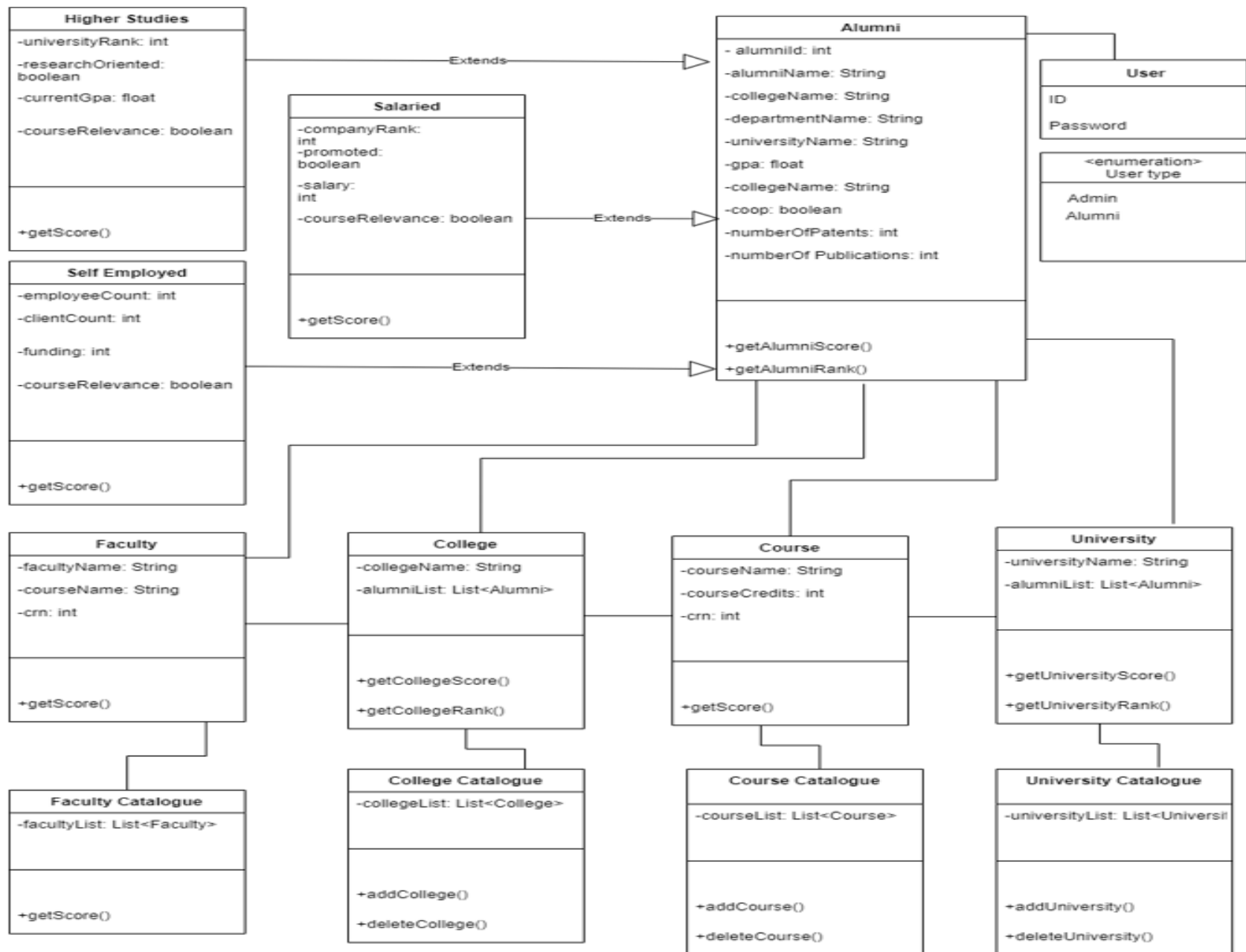
Object Model Diagram

The model diagram proposed has multiple attributes such as Web User, Alumni, Course, Faculty, College and University etc.

The ranking that is proposed is based on Alumni score.

There are two types of users based on access:

Alumni: The Alumni has to login with his credentials i.e. his unique ID and password. The Alumni user just has a permission to give his details in Alumni Details page. The user does not have any update or delete access.

Admin: The Admin has an access to view the Alumni, Course, Faculty, College and University score and rank list. He can search based on any given criteria.
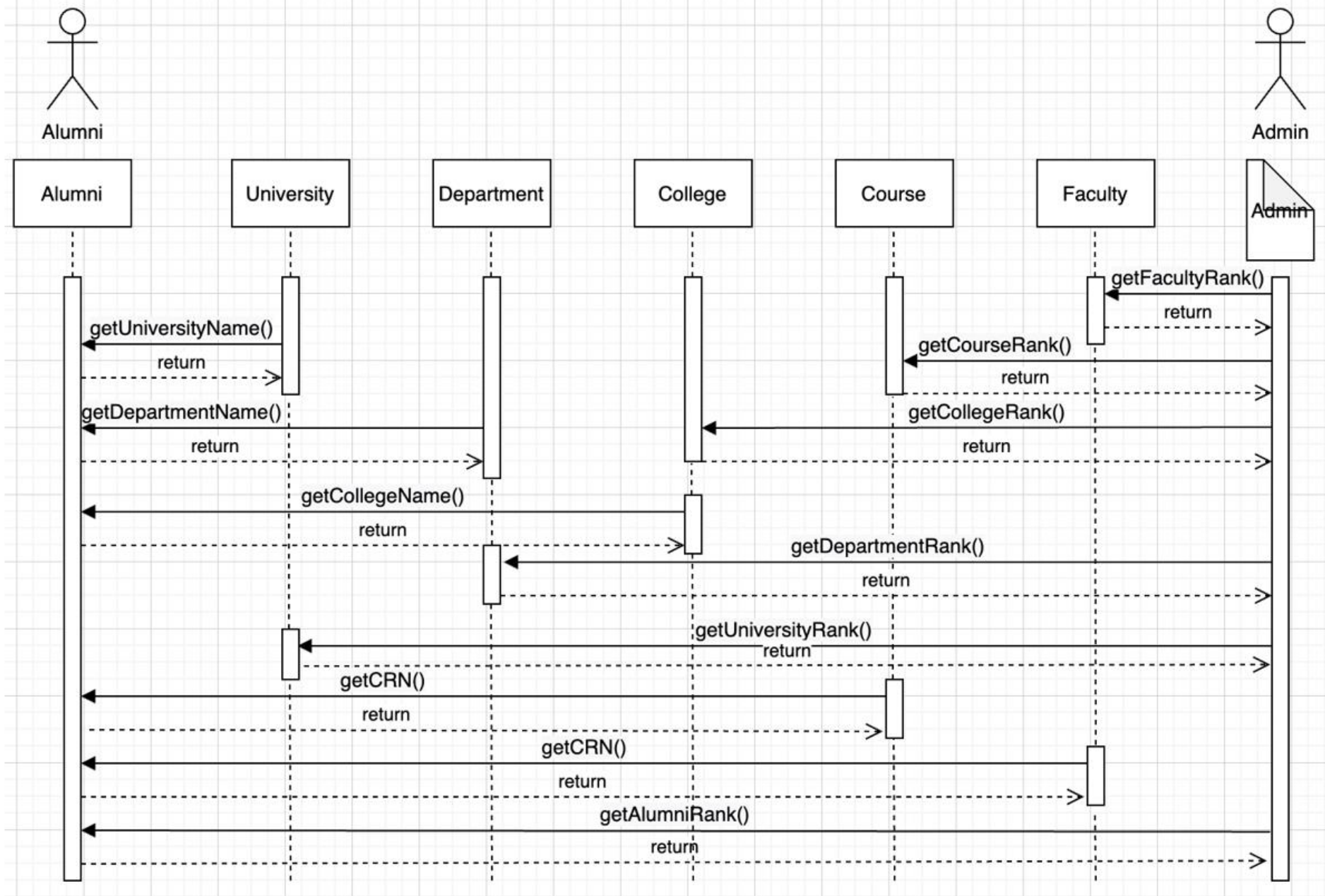
Higher Studies

-universityRank: int

-researchOriented: boolean

-currentGpa: float

-courseRelevance: boolean

+getScore()

Salaried

-companyRank: int
-promoted: boolean
-salary: int

-courseRelevance: boolean

+getScore()

Alumni

- alumniId: int
-alumniName: String
-collegeName: String
-departmentName: String
-universityName: String
-gpa: float
-collegeName: String
-coop: boolean
-numberOfPatents: int
-numberOf Publications: int

+getAlumniScore()
+getAlumniRank()

Extends

User

ID

Password

<enumeration>
User type

Admin
Alumni

Self Employed

-employeeCount: int

-clientCount: int

-funding: int

-courseRelevance: boolean

+getScore()

Extends

Faculty

-facultyName: String

-courseName: String

-crn: int

+getScore()

College

-collegeName: String

-alumniList: List<Alumni>

+getCollegeScore()

+getCollegeRank()

Course

-courseName: String

-courseCredits: int

-crn: int

+getScore()

University

-universityName: String

-alumniList: List<Alumni>

+getUniversityScore()

+getUniversityRank()

Faculty Catalogue

-facultyList: List<Faculty>

+getScore()

College Catalogue

-collegeList: List<College>

+addCollege()

+deleteCollege()

Course Catalogue

-courseList: List<Course>

+addCourse()

+deleteCourse()

University Catalogue

-universityList: List<Universit

+addUniversity()

+deleteUniversity()

Sequence Diagram

There are two actors : Alumni and Admin

As soon as alumni logins, he needs to enter the required data and submit it.

Admin can fetch the ranking and score details with various primary factors like:

1. Alumni
2. Course
3. Faculty
4. Department
5. College
6. University

Self Employed	Salaried	Higher Studies
Employee Count	**Company Ranking**	**University Ranking**
<20 5	1-50 5	1-50 5
20 – 100 10	50 – 100 10	50 – 100 10
100 – 200 15	100 – 500 15	100 – 500 15
>200 20	>500 20	>500 20
Client Count	**Promotions**	**Research Oriented**
<5 5	Yes 20	Yes 20
5– 10 10	No 0	No 0
10- 20 15		
>=20 20	**Salary**	**Current GPA**
	More than 100k 20	3.7 - 4 20
Funding	80 – 100k 15	3.5 – 3.7 15
More than 100k 20	50-80k 10	3 - 3.5 10
25 – 100k 15	< 50k 5	< 3 0
5-25k 10		
< 5k 5	**Course Relevance**	**Course Relevance**
	Yes 10	Yes 10
Course Relevance	No 0	No 0
Yes 10		
No 0	**Co-0p**	**Co-0p**
	Yes 10	Yes 10
Co-0p	No 0	No 0
Yes 10		
No 0	**GPA**	**GPA**
	3.7 - 4 20	3.7 - 4 20
GPA	3.5 – 3.7 15	3.5 – 3.7 15
3.7 - 4 20	3 - 3.5 10	3 - 3.5 10
3.5 – 3.7 15	< 3 0	< 3 0
3 - 3.5 10		
< 3 0		

Login Details

Admin

Alumni

User ID*

Password*

Login

Salaried Alumni

Alumni ID   [   ]

Alumni Name   [   ]

College Name   [   ]

University Name   [   ]

GPA   ○ <3   ○ 3–3.5   ○ 3.5–3.8   ○ 3.8–4

Co–op   ○ Yes   ○ No

CRN   [   ]

No. of Patents   [   ]

No. of Publications [   ]

Course Relevance   ○ Yes   ○ No

Company Rank   ○ 1–50   ○ 50–100   ○ 100–500   ○ <500

Promoted   ○ Yes   ○ No

Salary   ○ <50k   ○ 50k–80k   ○ 80k–100k   ○ >100k

[Save!]

Self Employed Alumni

Alumni ID	
Alumni Name	
College Name	
University Name	
GPA	◯ <3 ◯ 3–3.5 ◯ 3.5–3.8 ◯ 3.8–4
Co–op	◯ Yes ◯ No
CRN	
No. of Patents	
No. of Publications	
Course Relevance	◯ Yes ◯ No
Employee count	◯ <20 ◯ 20–100 ◯ 100–200 ◯ >=200
Client count	◯ <5 ◯ 5–10 ◯ 10–20 ◯ >=20
Funding	◯ <5k ◯ 5k–25k ◯ 25k–100k ◯ >=100k

Save!

Higher Studies Alumni

Alumni ID   [_____]

Alumni Name   [_____]

College Name   [_____]

University Name   [_____]

GPA   ○ <3   ○ 3–3.5   ○ 3.5–3.8   ○ 3.8–4

Co–op   ○ Yes   ○ No

CRN   [_____]

No. of Patents   [_____]

No. of Publications   [_____]

Course Relevance   ○ Yes   ○ No

University Rank   ○ 1–50   ○ 50–100   ○ 100–500   ○ <500

Research Oriented   ○ Yes   ○ No

Current GPA   ○ <3   ○ 3–3.5   ○ 3.5–3.8   ○ 3.8–4

[Save!]

Alumni Performance Measurement

Alumni ID	Alumni Na...	Departme...	University ...	GPA	College N...	Co-op	Number o...	Number o...	Alumni Sc...	Alumni Rank
103	Krishna	Computer S...	University	3.8	Khoury	NO	1	2	93	1
102	Sandeep B...	Information...	Northeaste...	3.6	COE	YES	0	1	90	2
104	Bhavana Y...	Data Analyti...	University	3.6	COE	YES	0	1	89	3
101	Sai	Information...	University	3.6	COE	YES	0	1	88	4

View

Alumni ID

Alumni Name

Department Name

University Name

GPA   ○ <3   ○ 3-3.5   ○ 3.5-3.8   ○ 3.8-4

College Name

Co-op   ○ YES   ○ NO

Number of Patents

Number of Publications

Search   **Update**

Course Performance Measurement

Course Name	CRN	Course Score	Course Rank
AED	5000	93	1
AED	5200	92	2
Python	7200	89	3
JAVA	6000	88	4

View

Course Name

CRN

Course Score

Course Rank

Search

Department Performance Measurement

Department Name	University Name	College Name	Department Score	Department Rank
Computer Science	University	Khoury	93	1
Information Systems	Northeastern University	COE	90	2
Data Analytics Engineering	University	COE	89	3
Information Systems	University	COE	88	4

View

Department Name

University Name

College Name

Department Score

Department Rank

Search

Faculty Performance Measurement

Faculty Name	CRN	Course Name	Performance Score	Performance Rank
Kal Bugara	5000	AED	92.5	1
Nick Brown	6100	Python	90	2
Daniel Peters	7200	PSA	88	3

View

Faculty Name

CRN

Course Name

Search

College Performance Measurement

College Name	Performance Score	Performance Rank
Khoury	92.5	1
COE	90	2
Arts	88	3

View

College Name

Performance Score

Performance Rank

Search

University Performance Measurement

University Name	Performance Score	Performance Rank
Northeastern University	92.5	1
ASU	80	2
Tufts	78	3

View

University Name

Performance Score

Performance Rank

Search

Thank you ☺