INFO5100

Assignment-3

University Model

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Zihan Wan

1.Correlation analysis of educational resources (faculty and courses) and student employment

Dashboard designed for university administrators

- 1.1 Graduate Employment Competitiveness Score (GECS)
- 1.2 Relevance between GECS and Faculty
- 1.3 Relevance between GECS and Courses
- 1.4 Relevance between GECS and Academic Performance

2. University Education Quality Scoring Methodology

Dashboard designed for applicants

- 2.1 Faculty-to-student ratio
- 2.2 % of faculty with PhD and above
- 2.3 Total number of papers
- 2.4 Mean GECS
- 2.5 Mean Tuition

Correlation analysis of educational resources (faculty and courses) and student employment

Dashboard designed for university administrators

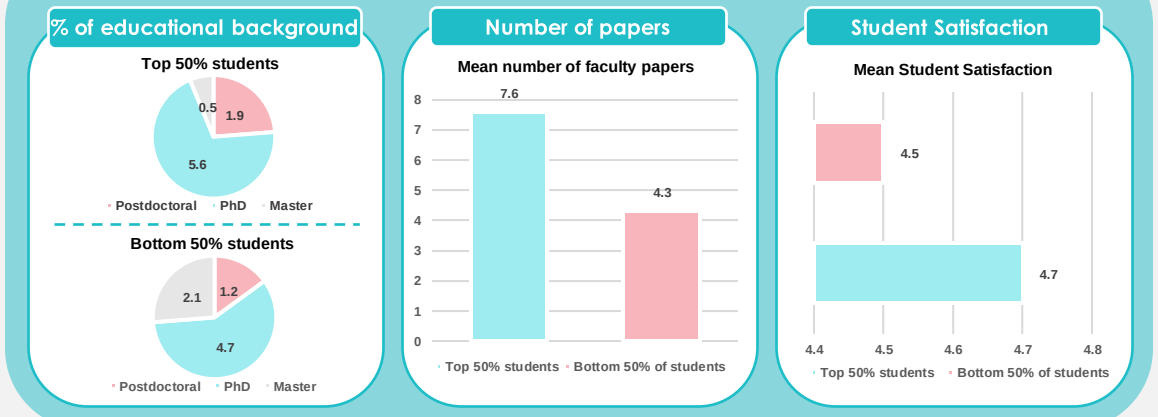
1 Correlation analysis of educational resources (faculty and courses) and student employment

——Dashboards designed for university administrators

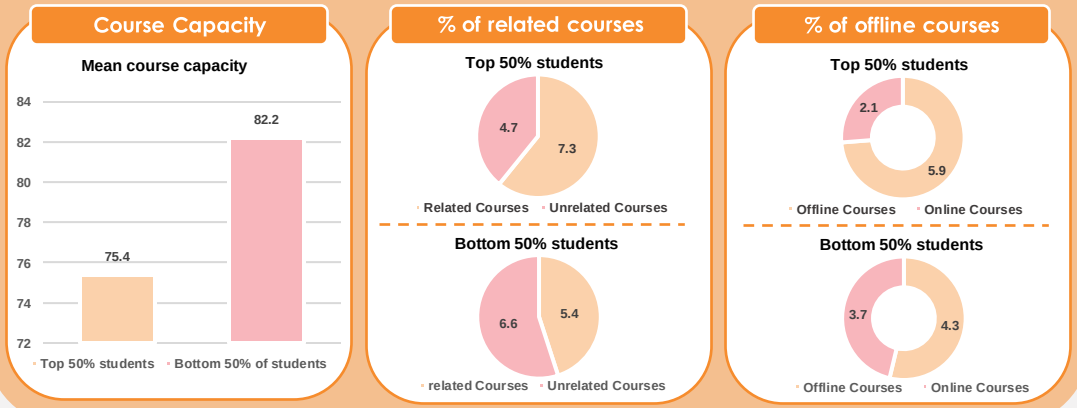
Graduate Employment Competitiveness Score (GECS)

Ranking	Score	Student ID	Employment or not (10%)	Employer Reputation (40%)	Salary (30%)	Promotion or not (20%)
1	97	0010001	Yes	Top 100	55w$/y	Yes
2	94	0035435	Yes	Top 100	45w$/y	Yes
…	…	…	…	…	…	…
100	0	0034253	No	None	0	No

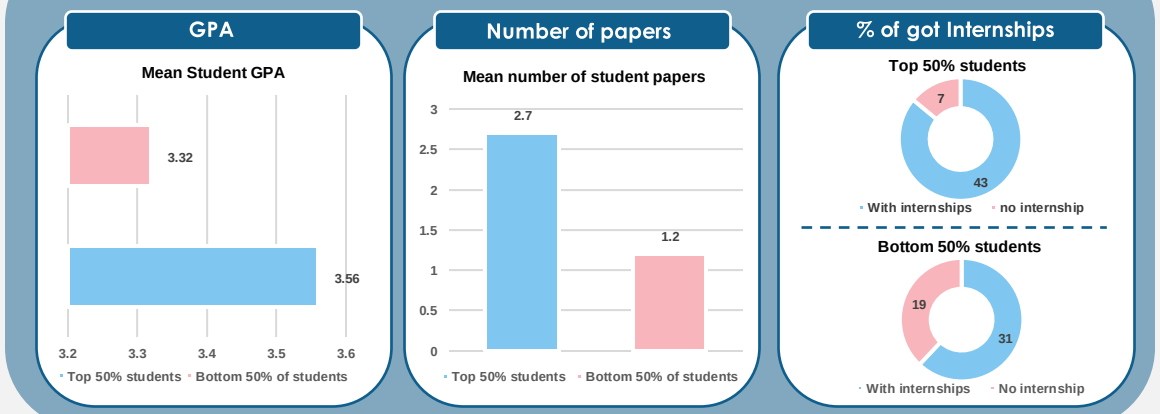
Relevance between GECS and Faculty



Relevance between GECS and Courses



Relevance between GECS and Academic Performance



Note: Assuming 100 students data (12 courses and 8 faculty per student, GPA out of 4.0)

1.1 Graduate Employment Competitiveness Score (GECS)

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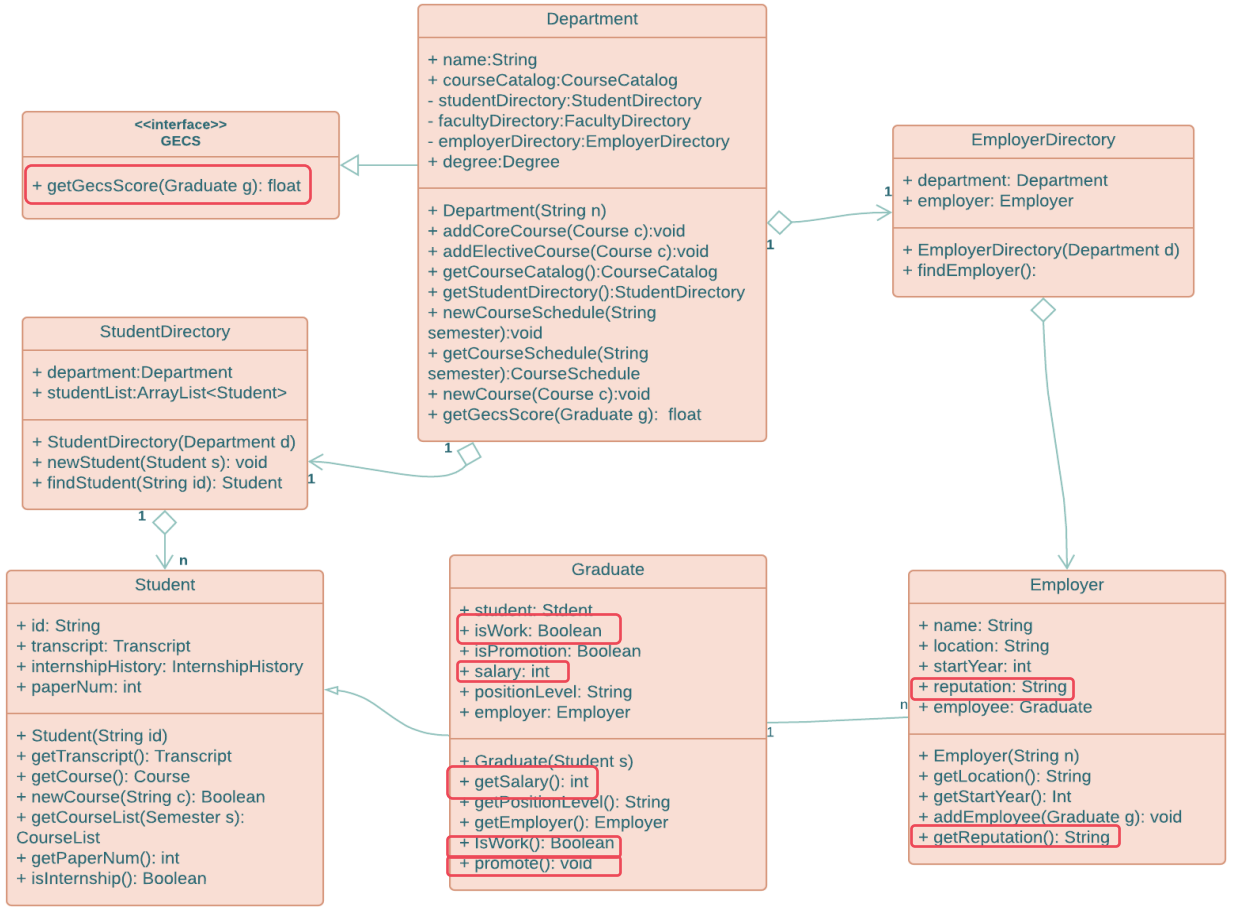
…	…	…	…	…	…	…
100	0	0034253	No	None	0	No

Scoring Criteria

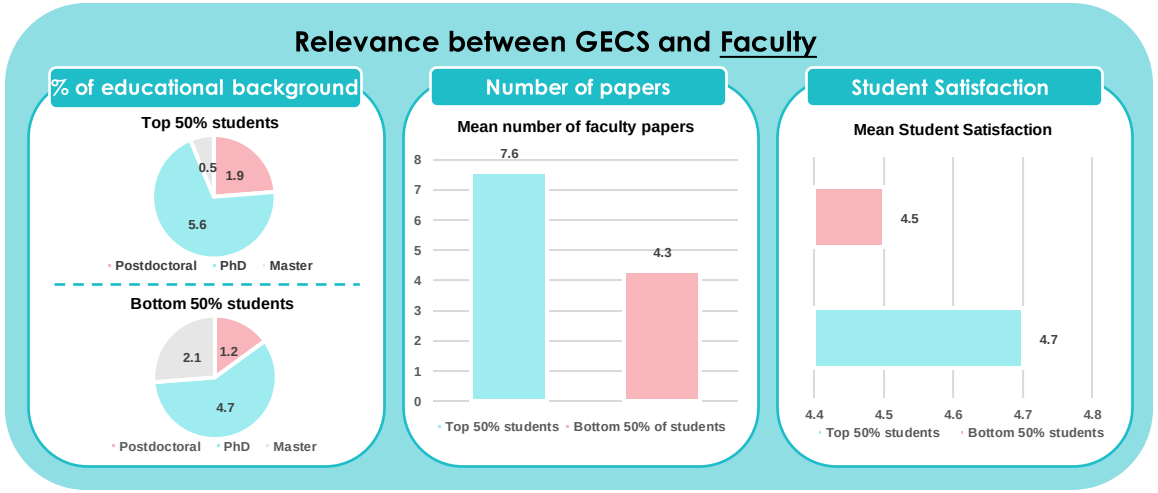
Employment or not		Employer Reputation		Salary		Promotion or not	
Yes	100	Top100	100	>=50w$/y	100	Yes	100
		Top200	95	>=40w$/y	95		
		Top300	90	>=30w$/y	85		
		Top400	85	>=20w$/y	75		
		Top500	80	>=10w$/y	65		
		500+	75	<10w$/y	60		
No	0						

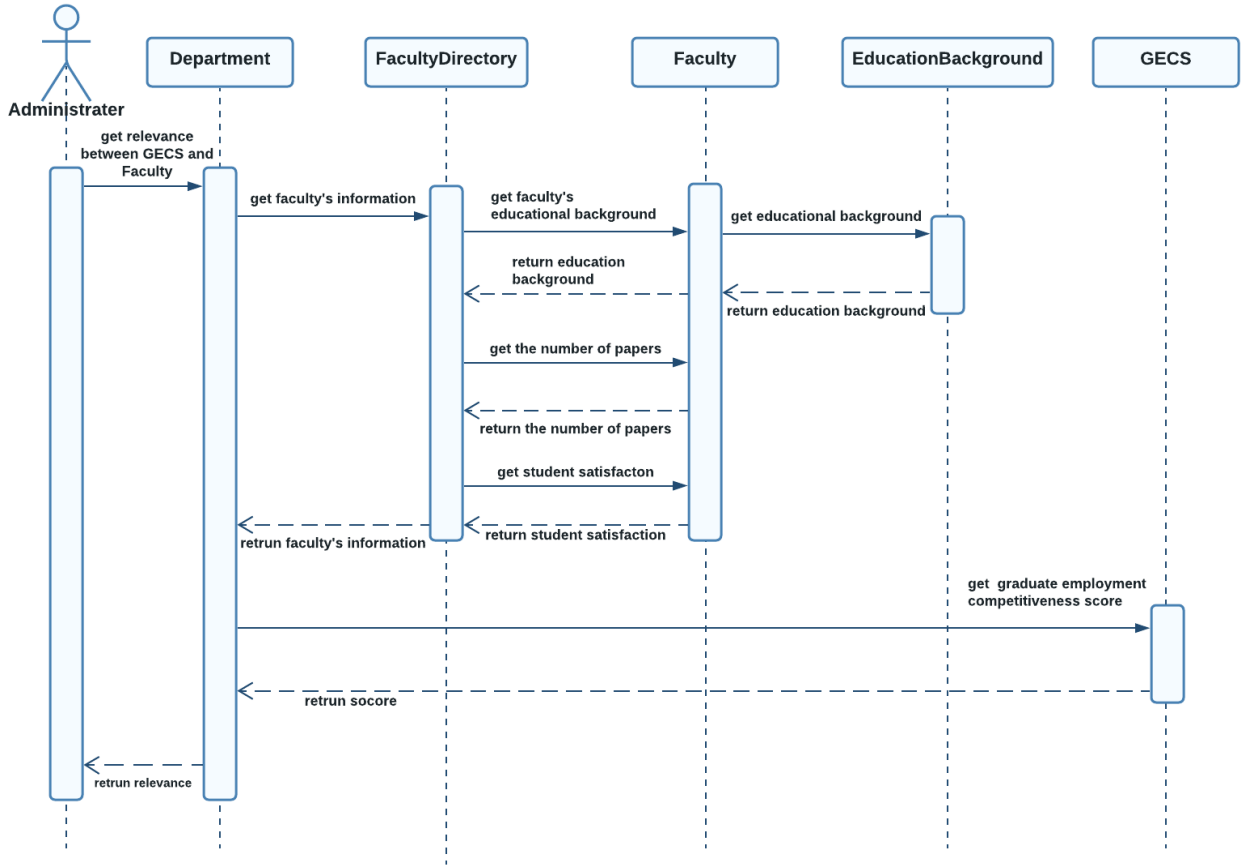
GECS = Employment or not ×10% + Employer Reputation × 40%
+ Salary × 30% + Promotion or not × 20%



Note: Assuming 100 students data (12 courses and 8 faculty per student, GPA out of 4.0)

1.2 Relevance between GECS and Faculty

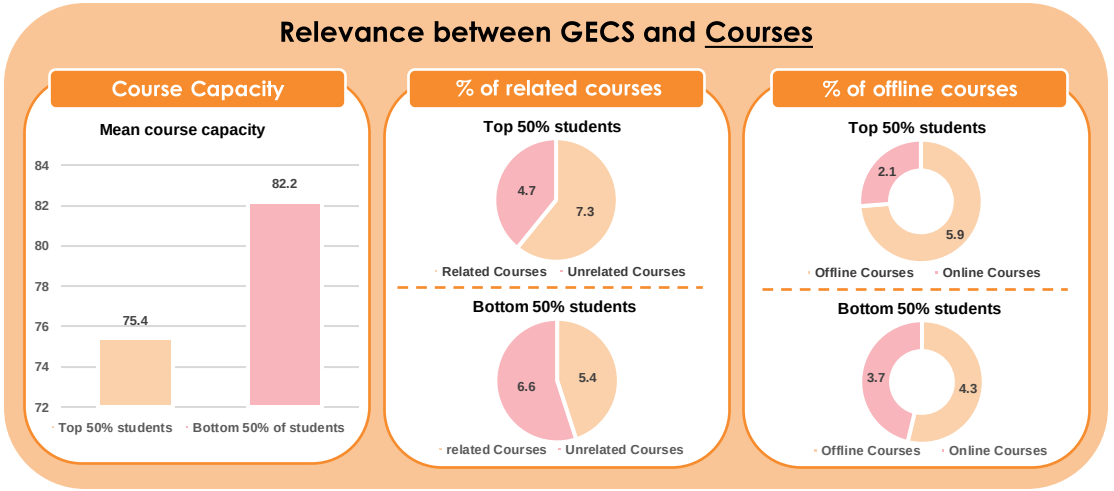




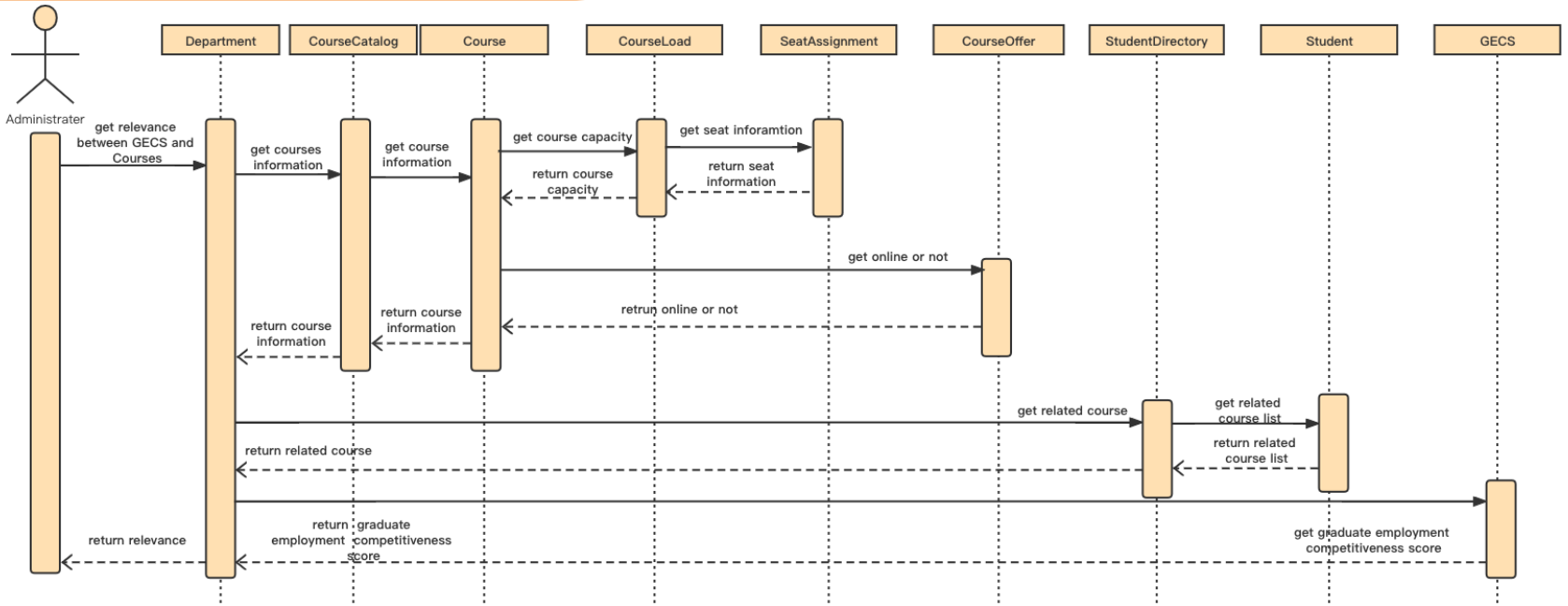
- Students are divided into two parts by the top 50% and bottom 50% of the GECS ranking.
- Show the difference between all of their teaching faculty in terms of *percentage of Ph.D. and above*, mean number of papers, and mean student satisfaction.

Note: Assuming 100 students data (12 courses and 8 faculty per student, GPA out of 4.0)

1.3 Relevance between GECS and Courses

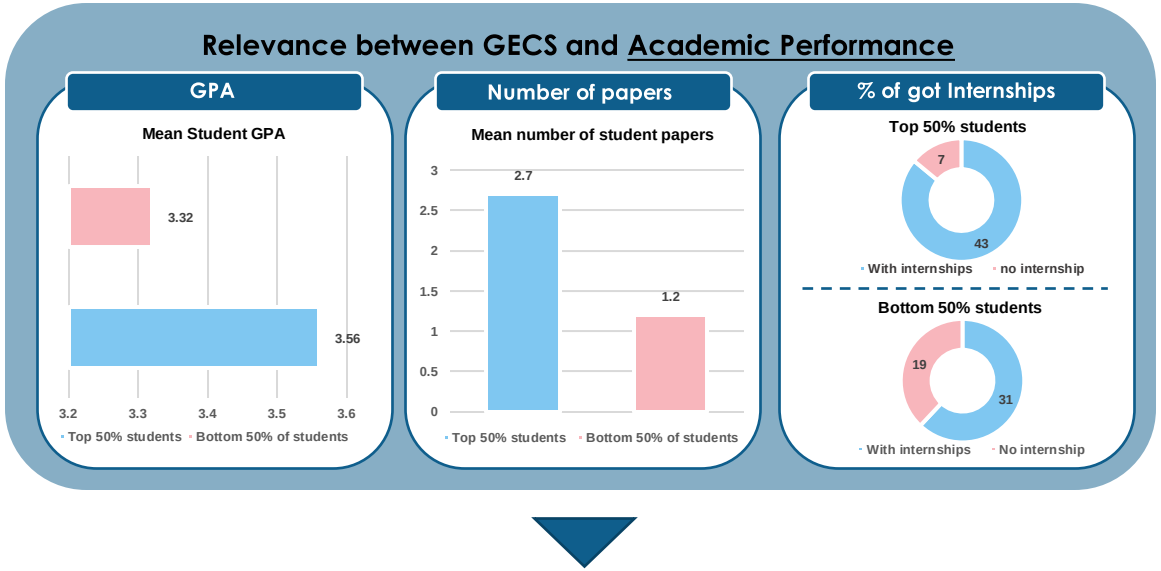


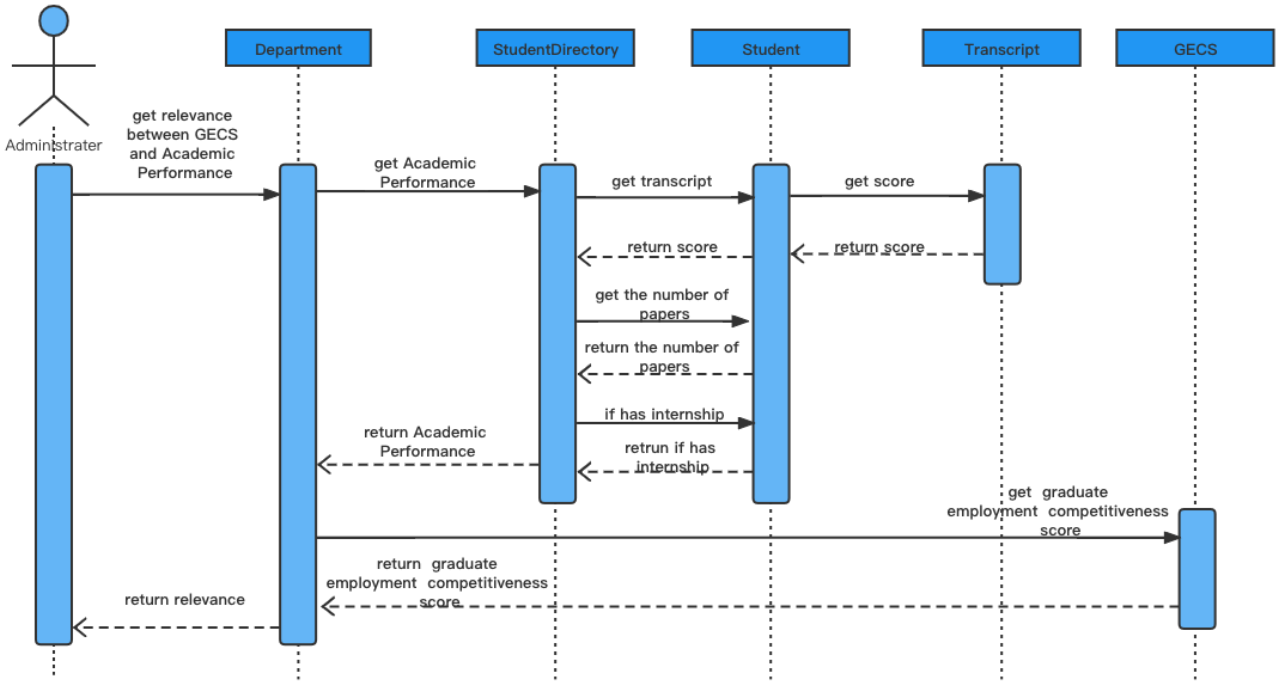
- Students are divided into two parts by the top 50% and bottom 50% of the GECS ranking.
- Show the difference between all their courses in terms of mean course capacity, percentage of relevant courses, and percentage of offline courses.



Note: Assuming 100 students data (12 courses and 8 faculty per student, GPA out of 4.0)

1.4 Relevance between GECS and Academic Performance





- Students are divided into two parts by the top 50% and bottom 50% of the GECS ranking.
- Show the difference in their mean GPA, mean number of papers, and percentage of got internships.

Note: Assuming 100 students data (12 courses and 8 faculty per student, GPA out of 4.0)

University Education Quality Scoring Methodology

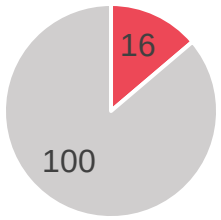
Dashboard designed for applicants

2 University Education Quality Scoring Methodology

——Dashboard designed for applicants

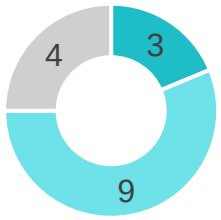
Education Quality Score of XXX University: 84

20% — Faculty-to-student ratio



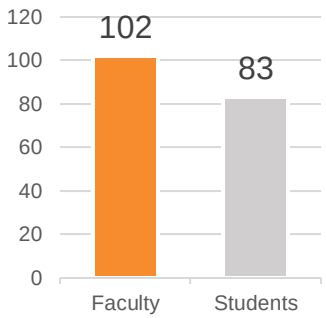
0.16

20% — % of faculty with PhD and above



0.75

20% — Total number of papers



185

30% — Mean GECS

Total GECS: 7246

Number of Students: 100

72.46

10% — Mean Tuition

Total tuition: 532w$

Number of Students: 100

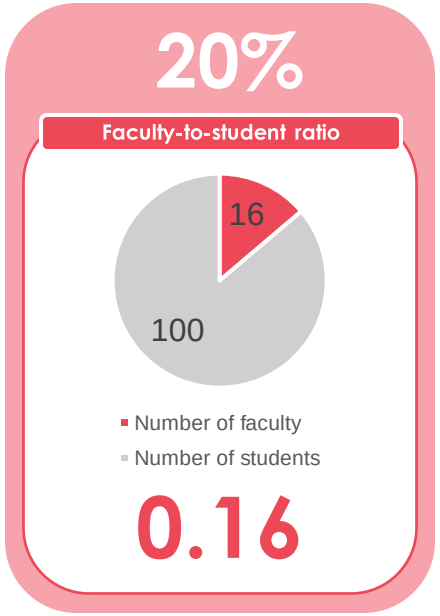
5.32w$

Scoring Criteria					
Individual score	Faculty-to-student ratio	% of faculty with PhD and above	Total number of papers	Mean GECS	Mean Tuition
100	>=0.25	>=0.85	>=300	>=80	<=4w$
90	>=0.20	>=0.80	>=250	>=75	<=5w$
80	>=0.15	>=0.75	>=200	>=70	<=6w$
70	>=0.10	>=0.70	>=150	>=65	<=7w$
60	<0.10	<0.70	<150	<65	>7w$

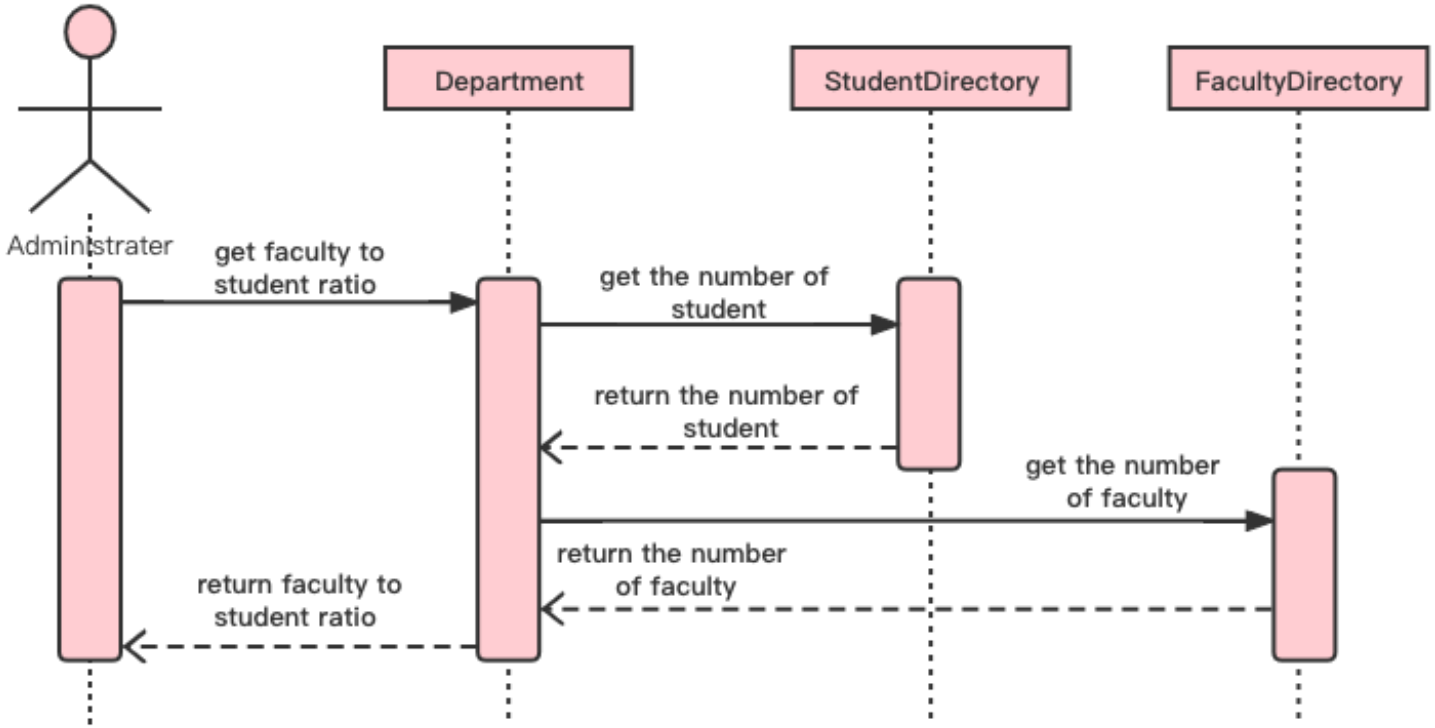
Education Quality Score = Faculty-to-student ratio×20%
+ % of faculty with PhD and above × 20%
+ Total number of papers × 20%
+ Mean GECS × 30%

Note: Assuming 100 students data (12 courses and 8 faculty per student, GPA out of 4.0)

2.1 Faculty-to-student ratio

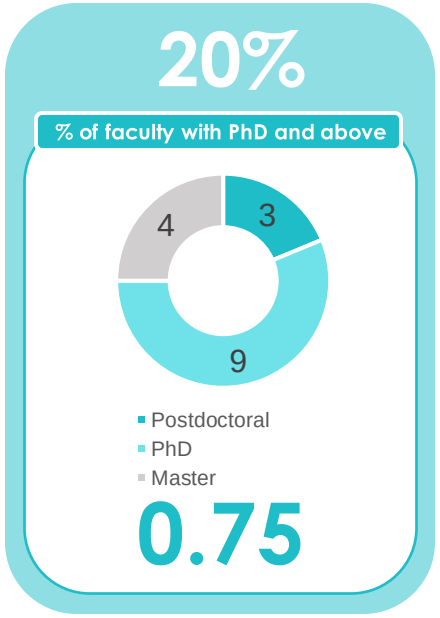


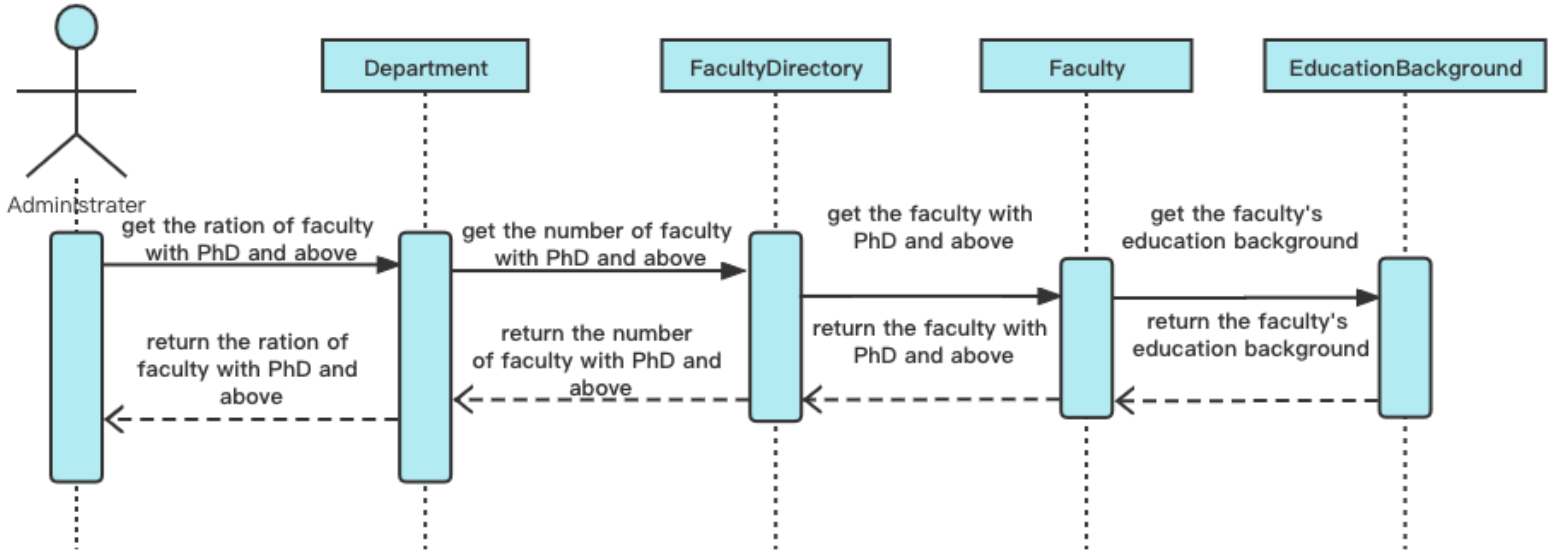
Faculty-to-student ratio = $\frac{Number\ of\ faculty}{Number\ of\ students}$



Note: Assuming 100 students data (12 courses and 8 faculty per student, GPA out of 4.0)

2.2 % of faculty with PhD and above

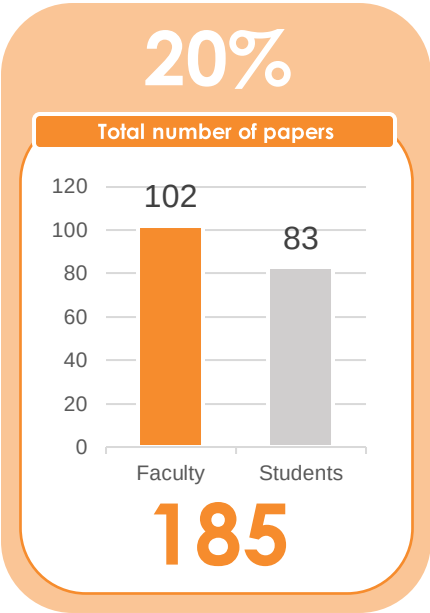


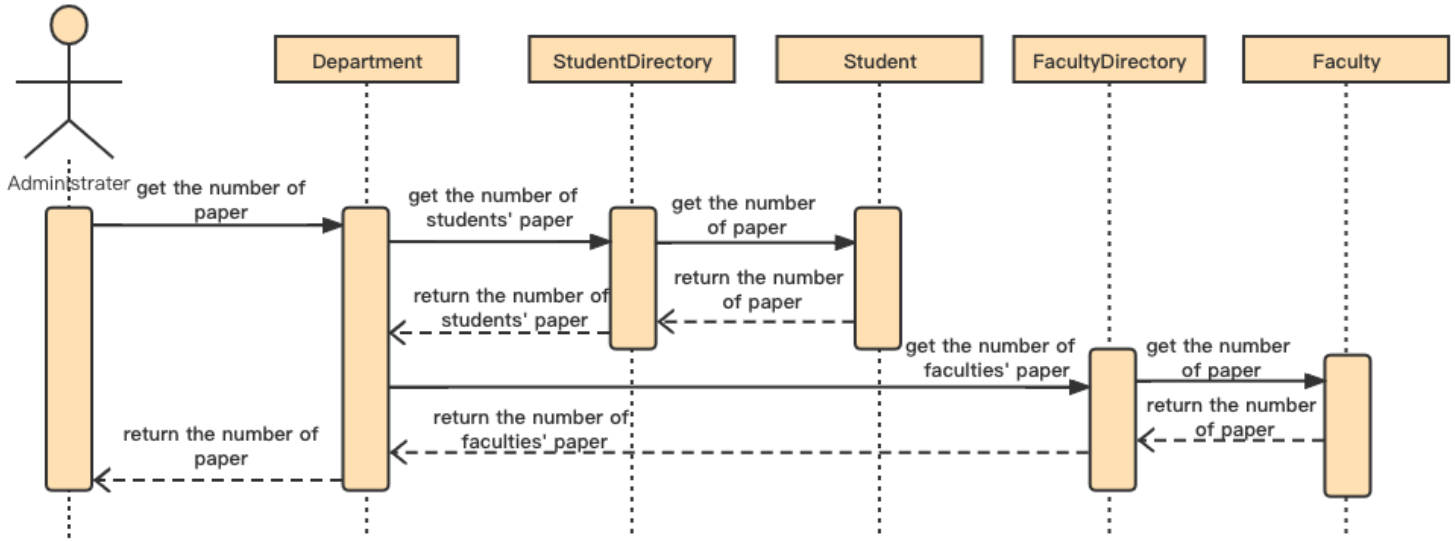


$$\text{\% of faculty with PhD and above} = \frac{\text{Number } of\ Postdoctoral + Number\ of\ PhD}{Number\ of\ faculty}$$

Note: Assuming 100 students data (12 courses and 8 faculty per student, GPA out of 4.0)

2.3 Total number of papers





Total number of papers = $Number\ of\ student\ papers + Number\ of\ faculty\ papers$

Note: Assuming 100 students data (12 courses and 8 faculty per student, GPA out of 4.0)

2.4 Mean GECS

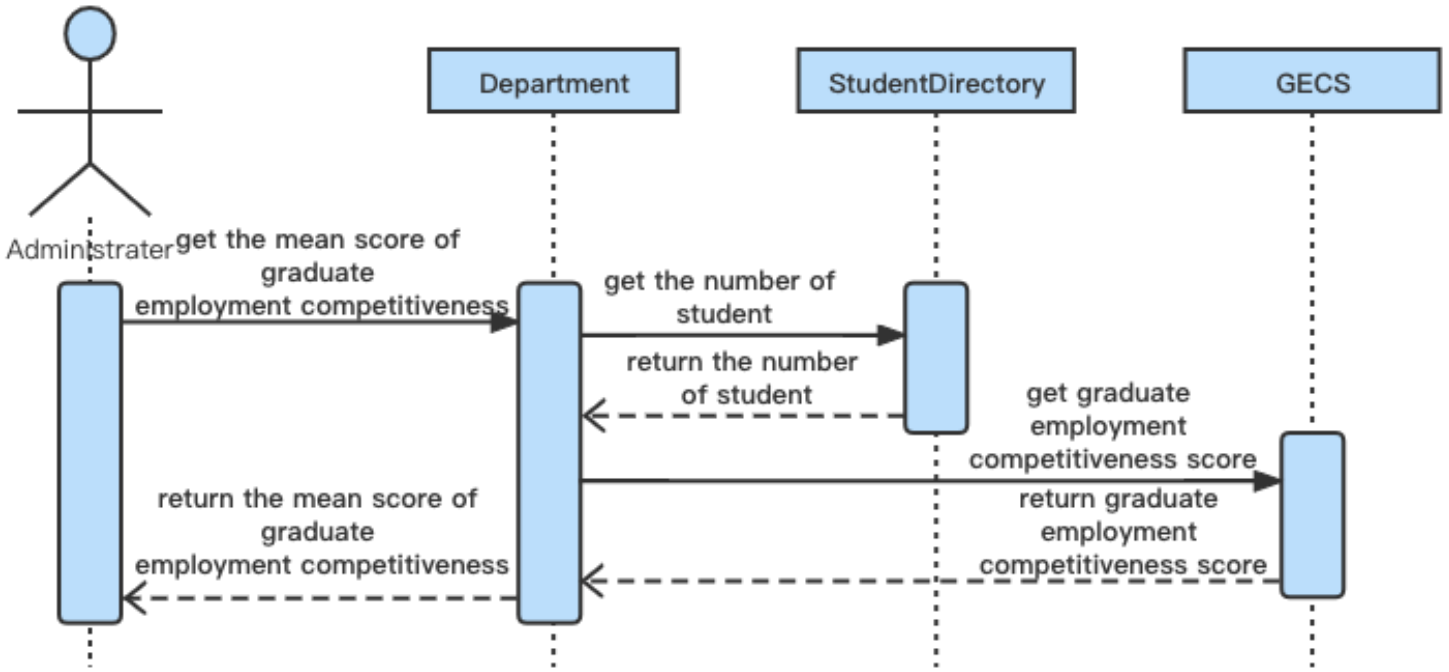
30%

Mean GECS

Total GECS: 7246

Number of Students: 100

72.46



$$\text{Mean GECS} = \frac{Total\ GECS}{Number\ of\ Students}$$

Note: Assuming 100 students data (12 courses and 8 faculty per student, GPA out of 4.0)

2.5 Mean Tuition

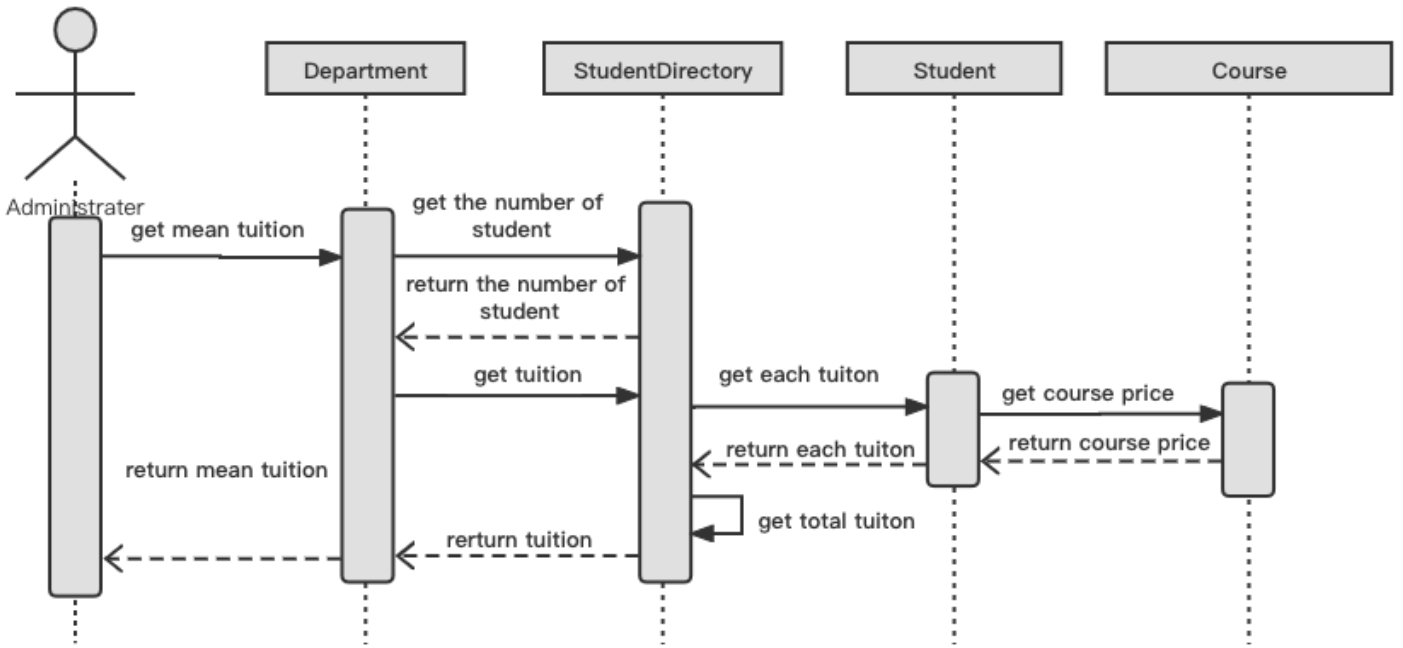
10%

Mean Tuition

Total tuition: 532w$

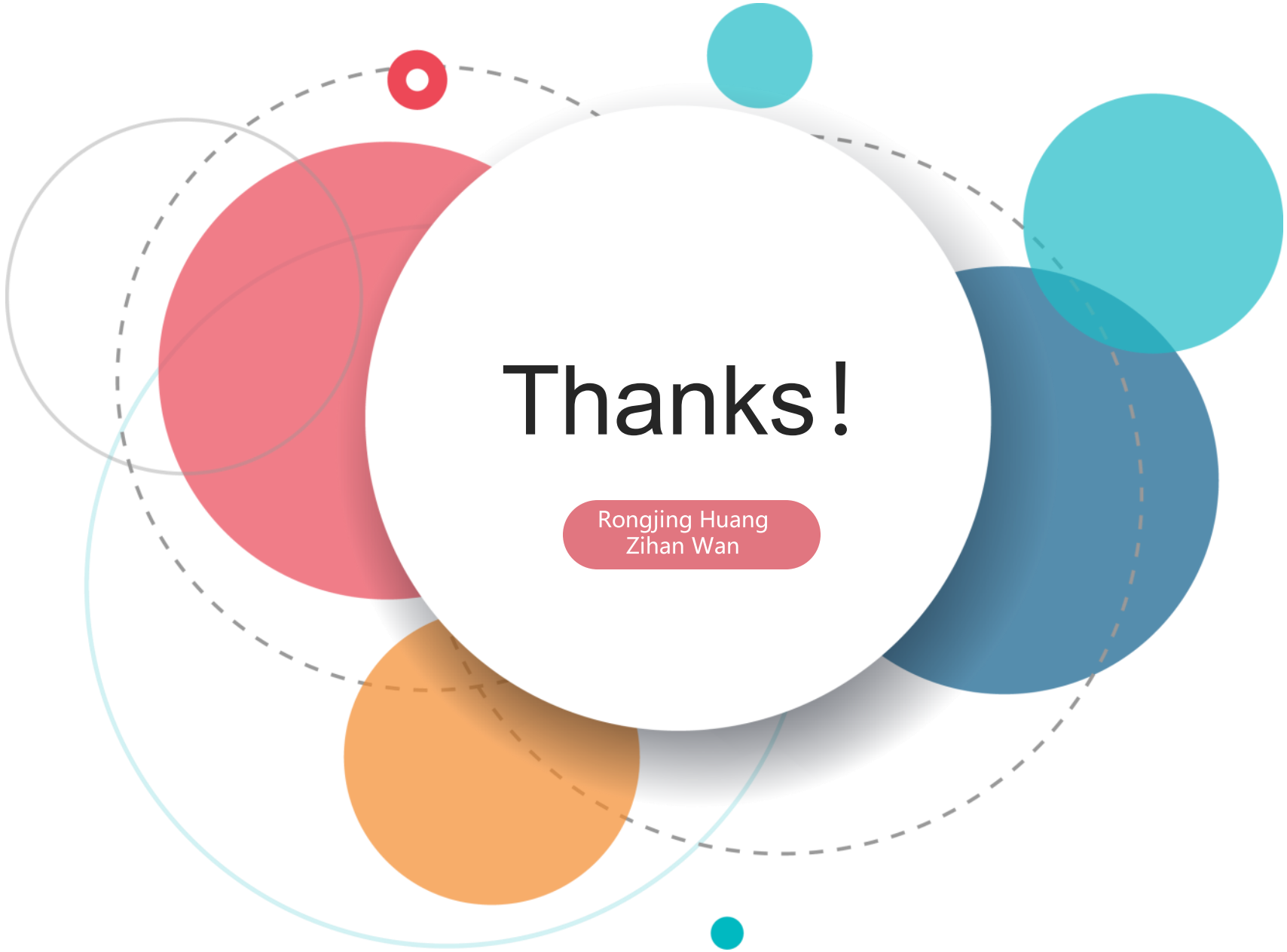
Number of Students: 100

5.32w$



$$\text{Mean Tuition} = \frac{Total\ tuition}{Number\ of\ Students}$$

Note: Assuming 100 students data (12 courses and 8 faculty per student, GPA out of 4.0)


Thanks!
Rongjing Huang
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