Performance Metrics Measurement

Objectives:

The proposed model measured the quantitative performance of various metrics like University, Course, Student's performance during academic level and also professional work experience, Professor. We can assess the forementioned metrics with the help of the score generated based on various parameters

Process for evaluation of metrics:

Every parameter is assigned a weightage based on a scale of 10 and finally, a weighted average of all the metrics is taken to normalize the score on a scale of 100. Hence every metric's performance ranking is measured on a scale of 100. Higher the score, the better the performance.

Metric 1: University Ranking

To rank the university, we have considered the following parameters.

1. No. of professors with a minimum of Ph.D. degree (***weightage:*** 8)

<10	0
10 to 30	20
30 to 50	40
50 to 80	60
80 to 100	80
>100	100

2. No. of research papers published per year by the university including students and faculty (***weightage:*** 10)

<50	25
50 to 100	50
100 to 150	75
>150	100

3. Amount of funding received by government or various other sources (***weightage:*** 7)

<100k $	25
100k to 125k	50
125k to 150k	75
>150k	100

4. No. of students per faculty (***weightage:*** 5)

<10	0
10 to 30	20
30 to 50	40
50 to 80	60
80 to 100	80
>100	100

5. No. of placements every year (***weightage:*** 9)

<100	10
100 to 500	20
500 to 1000	40
1000 to 2000	60
2000 to 4000	80
>4000	100

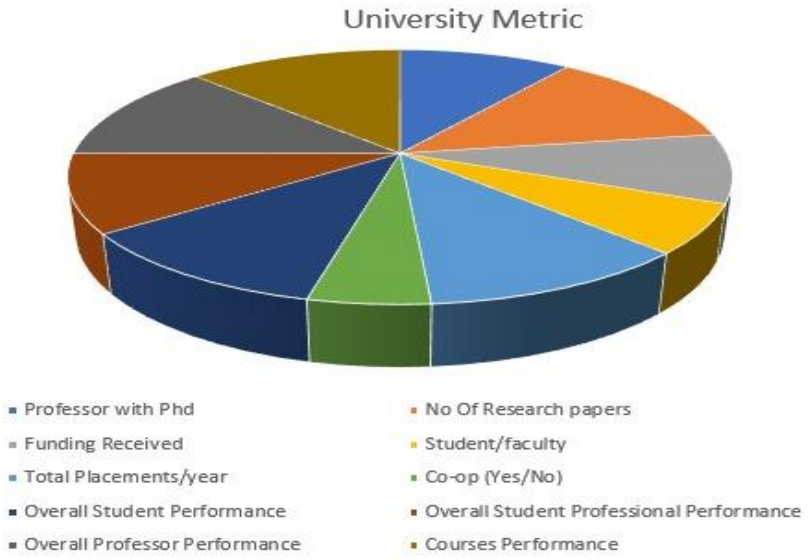
6. Whether the university is providing Co-op/internship opportunities to its students (***weightage:*** 4)

Yes	100
No	0

Formula for University Ranking = Weighted Average of parameters 1 to 6 marks w.r.t total weightage assigned to all the parameters along with the weighted averages of Metric 2, Metric 3, Metric 4, and Metric 5

$$Univesrity\ Rank\ = \frac{(1)*8\ +\ (2)*10\ +\ (3)*7\ +\ (4)*5\ +\ (5)*9\ +\ (6)*4+(Metric\ 2)*9+(Metric\ 3)*8\ +(Metric\ 4)*10+(Metric\ 5)*10}{8+10+7+5+9+4+9+\ 8+10+10}$$

Pie Representation of University Ranking Score:



University Ranking Tabular Representation:

	Weight	Score	Weighted Average
Professor with Phd	8	80	640
No Of Research papers	10	10	100
Funding Received	7	75	525
Student/faculty	5	60	300
Total Placements/year	9	100	900
Co-op (Yes/No)	4	100	400
Overall Student Performance	9	85	765
Overall Student Professional Performance	8	72	576
Overall Professor Performance	10	69	690
Courses Performance	10	78	780
		Total Score	**71**

Metric 2: Student Academic Ranking

To rank a student performance, we consider two criteria i.e Academic level and Professional level.

a)During the academic level, the parameters considered are as follows

1. Cumulative Grade Point Average (CGPA) (***weightage:*** 10)

<3	10
3.0 to 3.2	25
3.2 to 3.4	40
3.4 to 3.5	60
3.5 to 3.6	70
3.6 to 3.8	80
3.8 to 3.9	90
4.0	100

2. No. of Research papers published by the student(***weightage:*** 10)

0	0
1	20
2	40
3	60
4	80
>4	100

3. No. of Projects done(***weightage:*** 8)

0	0
1	20
2	40
3	60
4	80
>4	100

4. Whether a student secured a Co-op/internship (***weightage:*** 4)

Yes	100

No	0

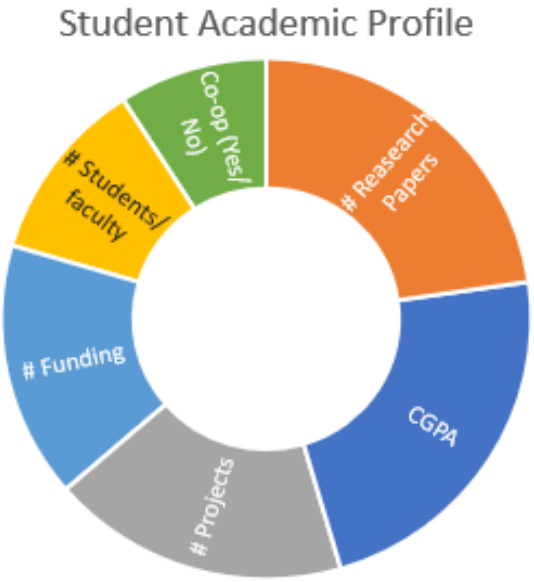
5. Total funding received during his education through scholarships, fellowship programs, research work etc(***weightage:*** 7)

<1000 $	25
1000 to 2000	50
1250 to 1500	75
>1500	100

Formula for Student Academic Profile Ranking = Weighted Average of parameters 1 to 5 marks w.r.t total weightage assigned to all the parameters

$$Student\ Academic\ Profile\ Rank = \frac{(1)*10 + (2)*10 + (3)*8 + (4)*4 + (5)*7}{10+10+8+4+7}$$

Pie Representation of Student Academic Scores



Student Academic Scores Tabular Representation

	Weightage	Score	Weighted Average
CGPA	10	80	800
# Reasearch Papers	10	100	1000
# Projects	8	40	320
# Students/faculty	5	60	300
# Funding	7	100	700
Co-op (Yes/No)	4	100	400
		Total Score	80

Metric 3 : Student Professional Profile Ranking

During professional Work Experience, the parameters considered are as follows

1. No. of years of experience(***weightage:*** 8)

<1	25
1 to 2	50
2 to 5	75
>5	100

2. Preplacement Offer from the internship/Co-op he has done(***weightage :*** 3)

Yes	100
No	0

3. If it is a product-based company or a service-based company(***weightage :*** 2)

Product Based	100
Service Based	0

4. Package received(***weightage :*** 10)

<100k $	25
100k to 125k	50
125k to 150k	75
>150k	100

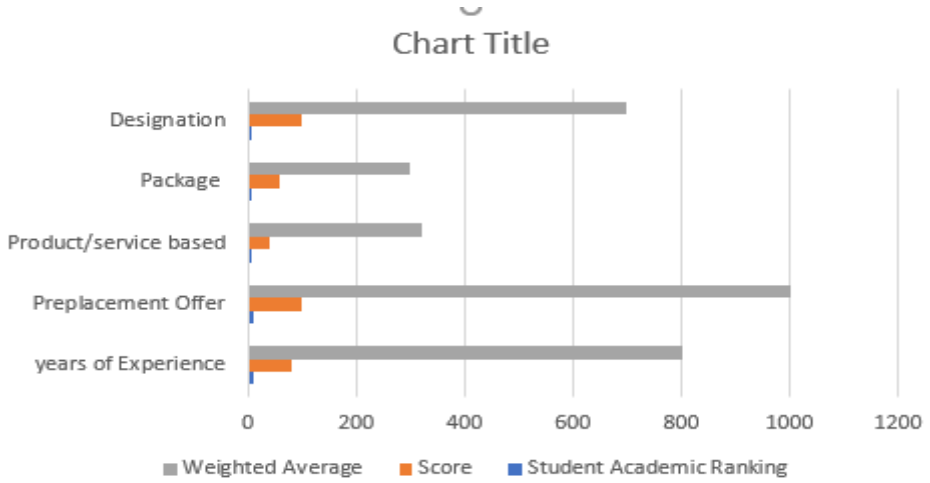
5. Designation in the company(***weightage:*** 9)

Level 1	20
Level 2	40
Level 3	60
Level 4	80
Level 5	100

Formula for Student Professional Profile Ranking = Weighted Average of parameters 1 to 5 marks w.r.t total weightage assigned to all the parameters

$$Student\ Professional\ Profile\ Rank = \frac{(1)*8 + (2)*3 + (3)*2 + (4)*10 + (5)*9}{8+3+2+10+9}$$

Bar Graph Representation of Student Professional Scores



Student Professional Scores Tabular Representation

	Weightage	Score	Weighted Average
Years of Experience	10	80	800
Preplacement Offer	10	100	1000
Product/service based	8	40	320
Package	5	60	300
Designation	7	100	700
		Total Score	78

Metric 4: Professor Ranking

To rank a professor's performance, the parameters considered are as follows

1. Ratings are given by the students for the courses taught by the professor(***weightage:*** 10)

0	0

0 to 1	20
1 to 2	40
2 to 3	60
3 to 4	80
5	100

2. Funding received by the professor for his research work(***weightage:*** 10)

<50k $	25
50k to 100k	50
100k to 125k	75
>125k	100

3. Qualifications of the professor(***weightage:*** 8)

Bachelors	20
Masters	40
PhD 1	60
PhD 2	80
PhD 3	100

4. No. of students employed / No. of students enrolled for the courses taught(***weightage:*** 9)

0	0
0 to 0.25	25
0.25 to 0.50	50
0.50 to 0.75	75
0.75 to 1	100

5. Years of experience(***weightage:*** 8)

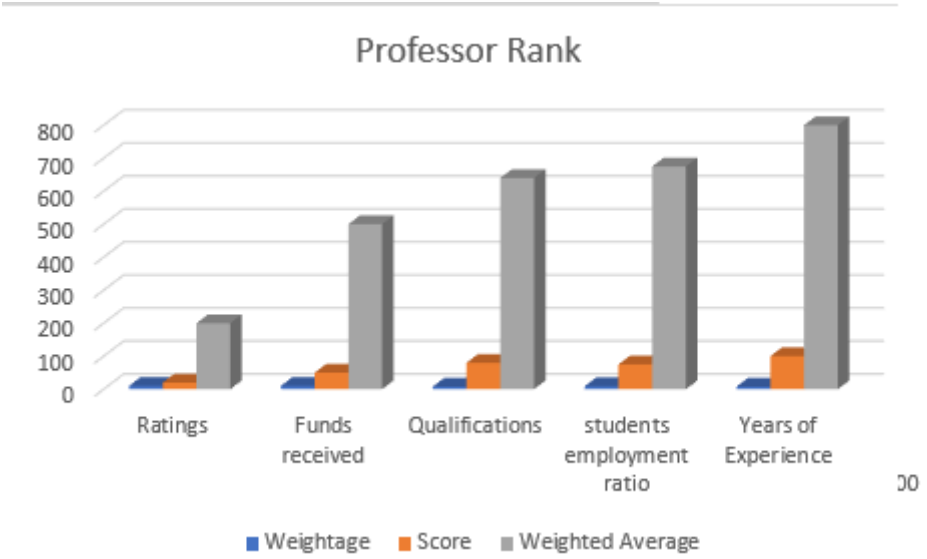
<1	0

1 to 2	20
2 to 5	40
5 to 10	60
10 to 15	80
>15	100

Formula for Professor Ranking = Weighted Average of parameters 1 to 5 marks w.r.t total weightage assigned to all the parameters

$$Professor\ Rank = \frac{(1)*10 + (2)*10 + (3)*8 + (4)*9 + (5)*8}{10+10+8+9+8}$$

Bar Graph Representation of Professor Scores



Professor Scores Tabular Representation

	Weightage	Score	Weighted Average
Ratings	10	20	200
Funds received	10	50	500
Qualifications	8	80	640
students employment ratio	9	75	675
Years of Experience	8	100	800
		Total Score	63

Metric 5 : **Course Rank**

To rank a course, the parameters considered are as follows.

1. Ratings for the course (***weightage:*** 10)

0	0
0 to 1	20
1 to 2	40
2 to 3	60
3 to 4	80
5	100

2. No. of students who opted for the course (***weightage:*** 4)

<10	25
10 to 50	50
50 to 100	75
>100	100

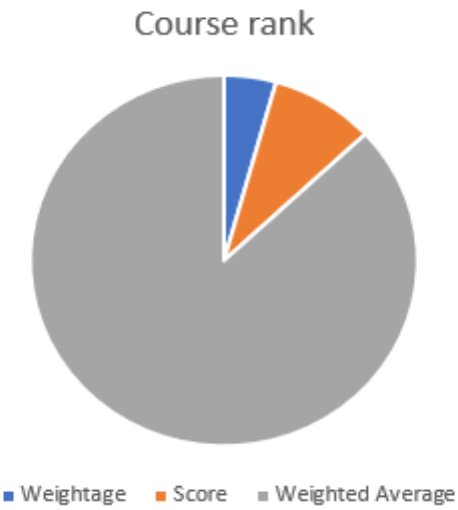
3. Percentage match of topics covered with the present market (***weightage:*** 7)

<25	25
25 to 50	50
50 to 100	75
>100	100

The formula for Course Ranking = Weighted Average of parameters 1 to 3 marks w.r.t total weightage assigned to all the parameters

$$Course\ Rank = \frac{(1)*10 + (2)*4 + (3)*7}{10+4+7}$$

Pie Representation of Course Scores



Course Scores Tabular Data

	Weightage	Score	Weighted Average
Current Course rating	10	20	200
No. of students	10	50	500
Percentage match of topics	8	80	640
		Ranking	48