

PLACEMENT STATS ANALYSIS (D.T.U.)

Introduction

This project focuses on analyzing the placement statistics of students from D.T.U. to uncover patterns and insights related to academic performance, branch specialization, roles offered, and salary packages (CTCs). Understanding these trends can help students, mentors, and placement coordinators identify factors that influence successful placements.

About the Dataset

The dataset includes information about student CGPA, branch, role received, duration of the offer, gender, and offered CTC. The dataset initially contained 13 columns, including several with substantial missing values such as Company, Stpd, Details, #, and Additional Info, which were dropped as they contributed little to the analysis. Missing values in the Role column were filled with "NO DATA" to retain all records, while CGPA and CTC were left as NaN where data was unavailable. Duplicate entries were checked and removed, ensuring the dataset was clean and ready for exploratory analysis.

ANALYSIS

Further ahead:

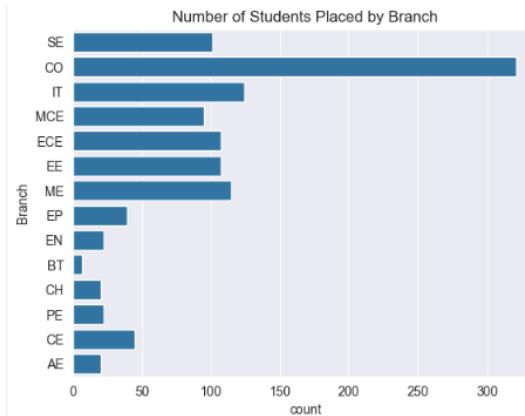
- Number of students placed- Branch wise, Role wise
- Types of roles received
- Independent variations of CGPA and CTC
- CTC analysis- w.r.t. benchmarks (30LPA, 15LPA)
- Requirements of CGPA according to different roles, branch
- Variation of CTC with CGPA, Branch, Role
- Analysis of CGPA required for same roles- across various branches

Placement stats

No. of students placed:

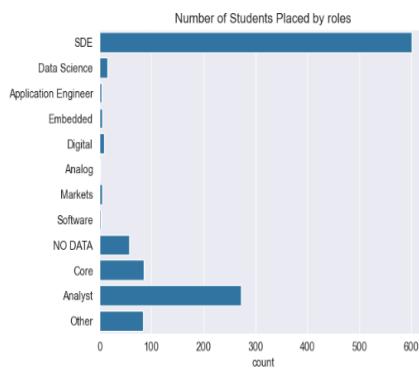
- Branch-wise

Branch	Count
CO	321
IT	124
ME	115
EE	107
ECE	107
SE	101
MCE	95
CE	45
EP	39
EN	22
PE	22
CH	20
AE	20
BT	7

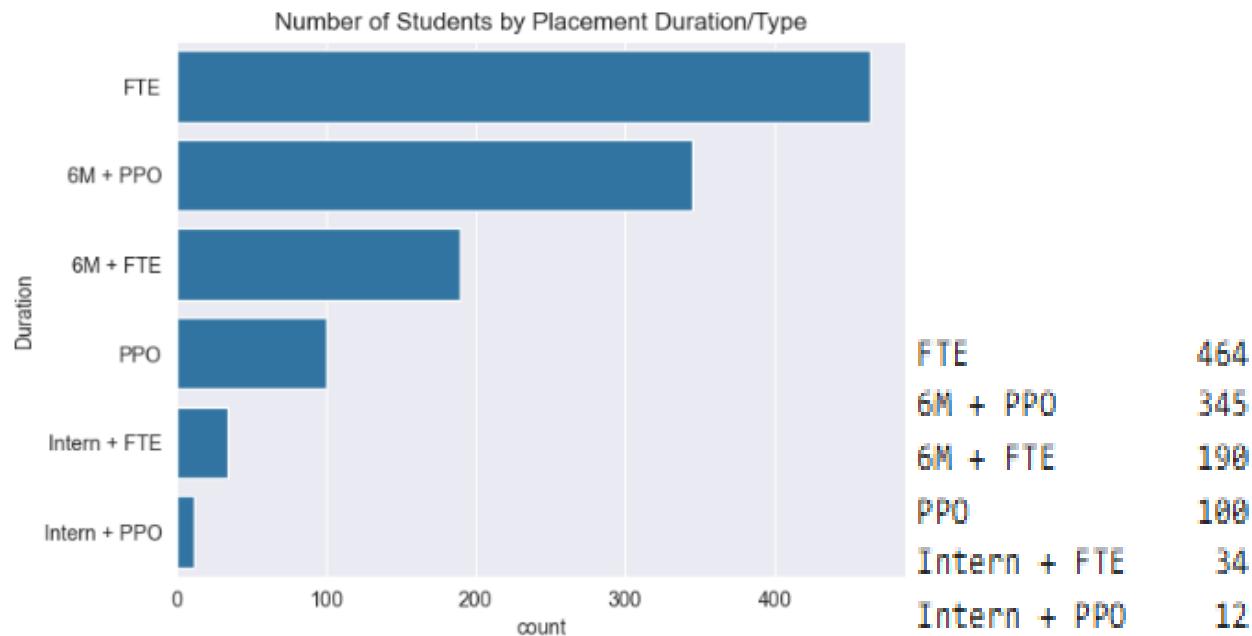


- Role-wise

Role	Count
SDE	601
Analyst	272
Core	85
Other	84
NO DATA	58
Data Science	15
Digital	9
Embedded	6
Markets	6
Application Engineer	4
Software	3
Analog	2



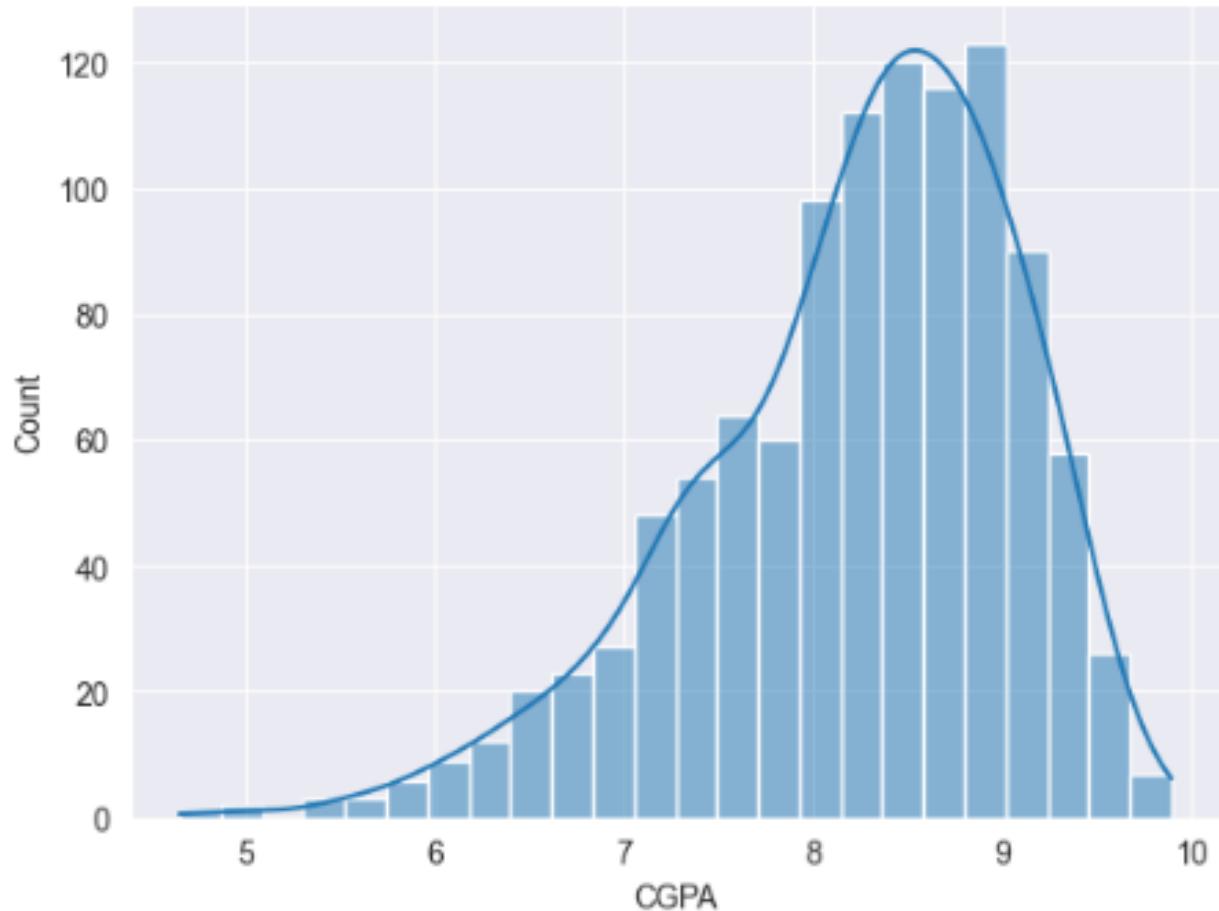
Types of roles received:



Placement stats

Variations of CGPA, CTC (independent):

CGPA:	
Mean	8.220702
Std devn.	0.846780
Min	4.650000
25%	7.700000
Median	8.360000
75%	8.830000
Max	9.890000

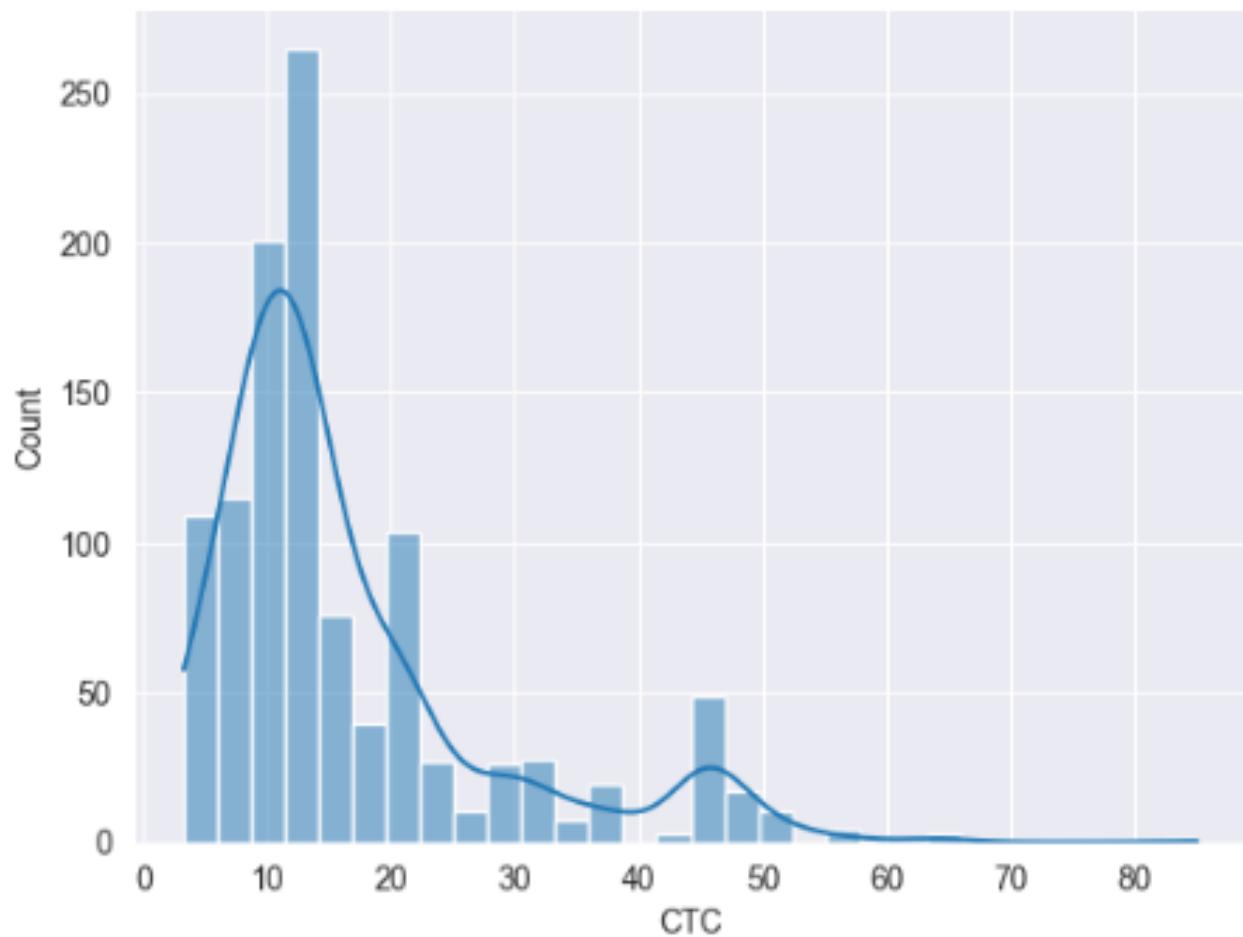


Most common CGPA among placed students is around 8.5

CTC :

Mean	16.516768
Std devn.	11.685788
Min	3.300000
25%	9.000000
Median	12.600000
75%	20.000000
Max	85.000000

CTC analysis



Most common CTC is 10-12LPA.

CTC benchmarks (Branch-wise):

Number of students with CTC more than or equal to 30LPA (along with average CGPA):

<u>Branch</u>	<u>Count</u>	<u>Mean CGPA</u>
CO	68	8.897164
SE	21	8.750476
IT	17	8.888750
ECE	15	8.500769
EE	12	8.949167
MCE	11	8.860909
BT	1	8.120000
EN	1	8.010000
EP	1	7.910000
ME	1	8.300000

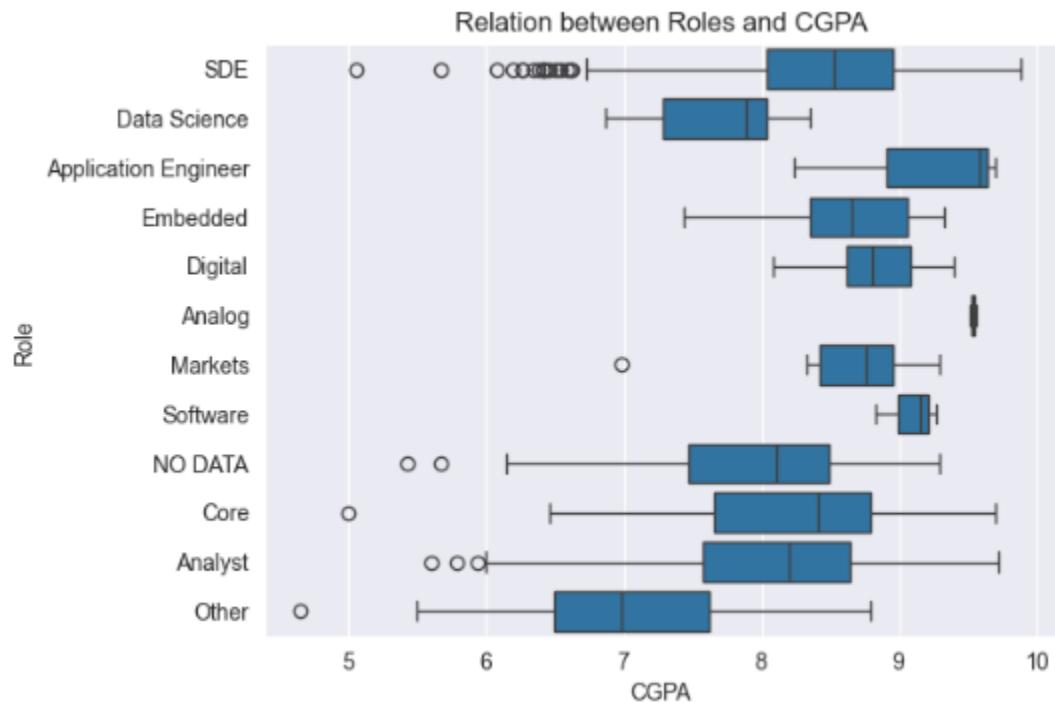
Number of students with CTC between 12LPA and 30LPA (along with average CGPA):

<u>Branch</u>	<u>Count</u>	<u>Mean CGPA</u>
CO	113	8.638257
IT	38	8.755135
SE	24	8.750417
ECE	24	8.510000
MCE	21	8.460476
EE	13	8.460000
ME	11	8.661000
EP	5	8.997500
CE	2	8.140000
CH	2	8.980000
PE	2	7.775000
EN	1	9.040000

CGPA Requirements according to various roles

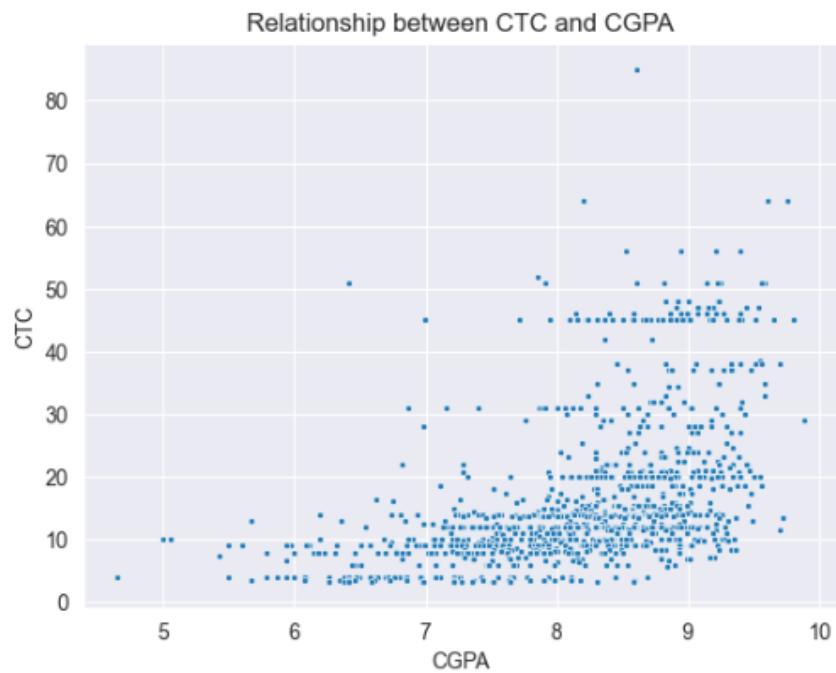
Role	count	mean	std	min	25%	50%	75%	max
Analog	2.0	9.540000	0.028284	9.52	9.5300	9.540	9.5500	9.56
Software	3.0	9.083333	0.227450	8.83	8.9900	9.150	9.2100	9.27
Application Engineer	3.0	9.176667	0.813040	8.24	8.9150	9.590	9.6450	9.70
Digital	8.0	8.827500	0.443227	8.09	8.6175	8.810	9.0900	9.40
Embedded	5.0	8.568000	0.733328	7.44	8.3500	8.660	9.0600	9.33
Markets	6.0	8.521667	0.821156	6.98	8.4200	8.760	8.9575	9.30
Data Science	15.0	7.727333	0.483225	6.87	7.2800	7.890	8.0350	8.35
Analyst	253.0	8.088340	0.785319	5.60	7.5700	8.200	8.6400	9.72
NO DATA	56.0	7.951607	0.838190	5.42	7.4675	8.115	8.4975	9.29
SDE	581.0	8.437659	0.736416	5.05	8.0400	8.530	8.9600	9.89
Core	77.0	8.212338	0.795135	5.00	7.6600	8.410	8.7900	9.70
Other	73.0	7.043425	0.863313	4.65	6.4900	6.980	7.6200	8.80

- Roles like Analog (mean CGPA ≈ 9.54) and Application Engineer (mean CGPA ≈ 9.18) have the highest average CGPAs, indicating they attract or require top-performing students.
- Software roles have a high average CGPA (≈ 9.08) with relatively low variation, showing consistent academic performance among selected students.
- Roles such as D.S. (≈ 7.73) and Analyst (≈ 8.09) have moderate average CGPAs, suggesting a wider range of acceptable academic performance. SDE roles, being the most common (581 students), have an average CGPA of ≈ 8.44 with moderate spread, reflecting consistent but slightly broader eligibility.
- Roles labeled as ‘Other’ show the lowest mean CGPA (≈ 7.04) and the highest variation, indicating diverse responsibilities or entry criteria.
- Overall, specialized or niche roles require higher CGPA, whereas high-volume or general roles accept a broader CGPA range.



Variation of CTC with CGPA, Branch, Role:

Variation with CGPA:



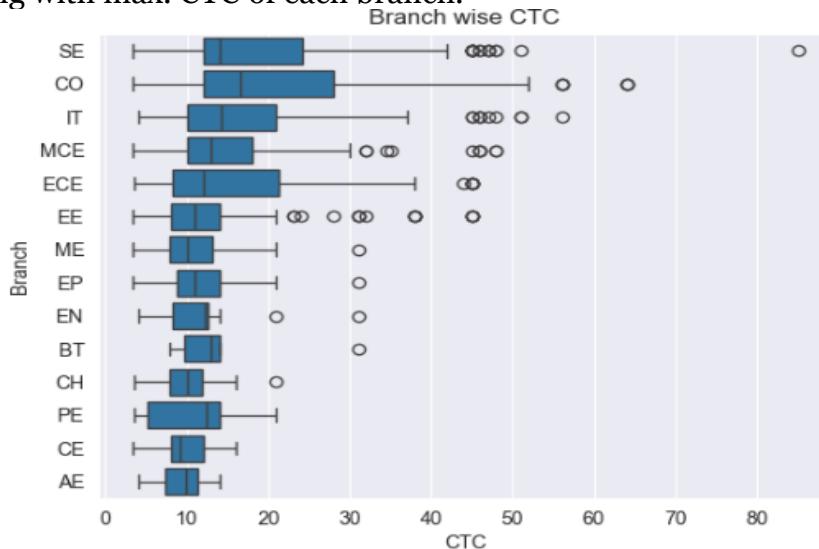
Placement stats

CGPA seems to have a moderately strong correlation with CTC (a correlation value of 0.47), suggesting that obtaining higher CGPA is correlated to cracking higher CTC. Which is also suggested through the scatter plot- most of the dots with CTC more than 30LPA lies after 8CGPA.

Variation of CTC- branchwise:

	count	mean	std	min	25%	50%	75%	max
Branch								
CO	305.0	21.450230	13.371026	3.3	12.0000	16.500	28.000	64.00
SE	96.0	20.545625	14.895603	3.3	11.9850	14.000	24.175	85.00
IT	117.0	18.567350	11.506854	4.0	10.0400	14.200	21.000	56.00
ECE	107.0	15.938037	11.084163	3.6	8.2650	12.000	21.300	45.00
MCE	93.0	15.767742	10.547352	3.3	10.0000	13.000	18.000	48.00
BT	7.0	14.200000	7.825386	7.8	9.7500	13.000	14.050	31.00
EE	106.0	13.920472	10.206070	3.3	8.0000	11.000	14.000	45.00
EP	39.0	11.706667	5.389476	3.3	8.7500	11.000	14.000	31.00
EN	22.0	11.328182	6.065840	4.0	8.1625	12.300	12.600	31.00
PE	22.0	10.640909	4.889461	3.6	5.2500	12.395	14.000	20.85
ME	115.0	10.467304	4.731932	3.3	7.8000	10.000	13.190	31.00
CH	20.0	10.208500	3.967196	3.6	7.8225	10.000	11.940	21.00
CE	45.0	9.615333	3.145910	3.3	8.0000	9.200	12.000	16.10
AE	20.0	9.269000	3.294490	4.0	7.3500	9.900	11.250	14.00

This table shows variation of CTC (columns) with branches (rows). It is sorted in the order as branch with highest average CTC is on top, decreasing till the lowest at bottom. It also includes min. CTC, 25% benchmark (25% students got less than X LPA), median (50%), and 75% benchmark, along with max. CTC of each branch.



Variation of CTC- Rolewise

Placement stats

		count	mean	std	min	25%	50%	75%	max
Role									
	Analog	2.0	38.000000	0.000000	38.0	38.0000	38.00	38.0000	38.00
	Application Engineer	4.0	37.000000	5.228129	33.0	33.0000	35.50	39.5000	44.00
	Markets	6.0	29.666667	4.082483	28.0	28.0000	28.00	28.0000	38.00
	Digital	9.0	28.266667	7.309241	23.1	23.1000	24.00	38.0000	38.00
	Data Science	15.0	27.406667	10.939213	10.0	23.5500	31.00	31.0000	52.00
	Embedded	6.0	24.996667	13.768371	8.0	13.2475	28.99	35.7475	38.00
	Software	3.0	23.400000	0.519615	23.1	23.1000	23.10	23.5500	24.00
	SDE	570.0	20.445018	13.705667	3.3	12.0000	15.50	27.0000	85.00
	NO DATA	58.0	13.628621	6.078568	6.0	9.5600	11.00	20.1000	24.00
	Analyst	272.0	12.074669	3.775722	6.8	9.0000	11.94	14.0000	22.00
	Core	85.0	9.842118	3.485892	5.7	7.2000	9.20	11.5000	23.00
	Other	84.0	6.511786	3.147531	4.0	4.0000	4.00	9.0000	14.48

This table shows variation of CTC (columns) with roles (rows). It is sorted in the order as role with highest average CTC is on top, decreasing till the lowest at bottom. It also includes min. CTC, 25% benchmark (25% students got less than X LPA), median (50%), and 75% benchmark, along with max. CTC of each role.

Analysis of CTCs offered for same roles across different branches:

In this section, we will discover what is the trend of CTCs for the roles spread across various branches. In other words, we will see, for example- how much CTC is offered for SDE roles across different branches. The count columns tells how many students got placed for that role.

Role	Branch	count	mean ctc	Role	Branch	count	mean	Role	Branch	count	mean ctc
SDE	CO	263	22.68	Analyst	ME	51	12.5349	D.S.	CO	4	31.0
SDE	IT	96	20.70	Analyst	CO	34	12.6588	D.S.	ECE	2	31.0
SDE	SE	86	22.33	Analyst	EE	33	10.9354	D.S.	EE	2	31.0
SDE	MCE	67	16.89	Analyst	ECE	30	10.9013	D.S.	IT	2	11.5
SDE	ECE	35	18.61	Analyst	EP	23	12.3773	D.S.	BT	1	31.0
SDE	EE	34	14.90	Analyst	MCE	18	13.2805	D.S.	EN	1	31.0
SDE	EP	8	9.55	Analyst	CE	16	11.9531	D.S.	EP	1	31.0
SDE	ME	3	3.50	Analyst	IT	15	11.8493	D.S.	ME	1	31.0
SDE	PE	3	8.83	Analyst	CH	13	12.1284	D.S.	SE	1	16.1
SDE	AE	2	11.50	Analyst	AE	11	10.7618	Total =			15
SDE	CE	2	3.45	Analyst	PE	11	14.6009	(D.S. = Data Science)			
SDE	BT	1	11.00	Analyst	EN	7	12.3571				
SDE	CH	1	3.60	Analyst	SE	6	11.0733				
Total =		601		Analyst	BT	4	11.1000				
				Total =			272				

Placement stats

Role	Branch	count	mean	ctc
Software	CO	1	23.1	
Software	ECE	1	23.1	
Software	IT	1	24.0	
Total =		3		

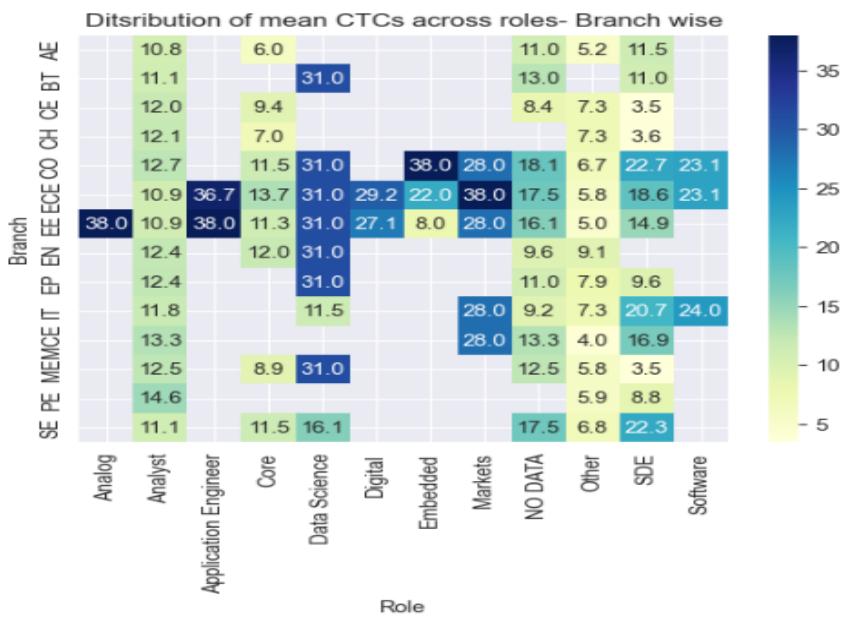
Role	Branch	count	mean	ctc
Embedded	ECE	3	21.993	
Embedded	CO	2	38.000	
Embedded	EE	1	8.000	
Total =		6		

Role	Branch	count	mean	ctc
Digital	ECE	5	29.24	
Digital	EE	4	27.05	
Total =		9		

Role	Branch	count	mean	ctc
NO DATA	CO	11	18.090909	
NO DATA	ME	9	12.544444	
NO DATA	MCE	7	13.285714	
NO DATA	CE	6	8.373333	
NO DATA	ECE	6	17.500000	
NO DATA	IT	6	9.166667	
NO DATA	EE	4	16.050000	
NO DATA	EP	3	11.000000	
NO DATA	EN	2	9.560000	
NO DATA	SE	2	17.500000	
NO DATA	AE	1	11.000000	
NO DATA	BT	1	13.000000	
Total =		58		

Role	Branch	count	mean	ctc
Other	ECE	14	5.785714	
Other	ME	14	5.785714	
Other	EN	11	9.145455	
Other	PE	8	5.875000	
Other	EE	7	4.987143	
Other	CE	6	7.333333	
Other	SE	5	6.800000	
Other	AE	4	5.250000	
Other	EP	4	7.870000	
Other	CH	3	7.333333	
Other	CO	3	6.666667	
Other	IT	3	7.333333	
Other	MCE	2	4.000000	
Total =		84		

Role	Branch	count	mean	ctc
Core	ME	37	8.893514	
Core	EE	18	11.312222	
Core	CE	15	9.353333	
Core	ECE	7	13.671429	
Core	CH	3	6.966667	
Core	AE	2	6.000000	
Core	CO	1	11.500000	
Core	EN	1	12.000000	
Core	SE	1	11.500000	
Total =		85		



Placement stats

Analysis of CGPA required for same roles across different branches:

This pivot table shows the **minimum CGPA** which was observed among placed students in particular roles- branch wise. “NaN” is filled in the cells where students of that branch were not recruited for the role.

Role	Analog	Analyst	Application Engineer	Core	Data Science	Digital	Embedded	Markets	NO DATA	Other	SDE	Software		
Branch														
AE	NaN	6.18		NaN	NaN		NaN	NaN	NaN	8.09	5.49	7.84	NaN	
BT	NaN	6.23		NaN	NaN		8.12	NaN	NaN	NaN	7.15	NaN	NaN	
CE	NaN	7.14		NaN	7.06		NaN	NaN	NaN	6.74	7.93	8.59	NaN	
CH	NaN	7.97		NaN	7.30		NaN	NaN	NaN	NaN	6.08	6.08	NaN	
CO	NaN	6.31		NaN	8.41		7.05	NaN	9.06	8.33	5.42	6.38	6.26	8.83
ECE	NaN	5.94		8.24	7.60		7.86	8.09	7.44	8.83	7.19	4.65	6.34	9.27
EE	9.52	5.60		9.70	6.46		6.87	8.82	NaN	8.69	5.67	6.79	5.67	NaN
EN	NaN	7.26		NaN	8.65		8.01	NaN	NaN	NaN	7.40	6.47	NaN	NaN
EP	NaN	6.77		NaN	NaN		7.91	NaN	NaN	NaN	7.57	6.11	7.98	NaN
IT	NaN	7.54		NaN	NaN		7.08	NaN	NaN	9.30	6.14	6.50	5.05	9.15
MCE	NaN	7.07		NaN	NaN		NaN	NaN	NaN	6.98	6.36	6.48	6.41	NaN
ME	NaN	5.78		NaN	5.00		8.30	NaN	NaN	NaN	6.95	6.49	6.85	NaN
PE	NaN	6.75		NaN	NaN		NaN	NaN	NaN	NaN	NaN	5.87	7.79	NaN
SE	NaN	7.31		NaN	8.86		8.00	NaN	NaN	NaN	8.11	5.78	6.41	NaN

