

# About Me

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# AMCAT EXPLORATORY DATA ANALYSIS





**MY OBJECTIVE IS TO DETERMINE  
THE SALARY OF AN  
ENGINEERING GRADUATE IN  
INDIA**

# TABLE OF CONTENT

## Technologies /Libraries Used

- **Pandas**
- **NumPy**
- **Matplotlib**
- **Seaborn**

## Steps Involved:

- **Importing necessary libraries**
- **Exploring Datasets with pandas**
- **Data Type Conversion**
- **Feature Engineering**
- **Univariate analysis**
- **Bivariate Analysis**
- **Multivariate Analysis**
- **Outlier removal**

# 01

## DATABASE OVERVIEW

- The dataset contains the employment outcomes of engineering graduates.
- The dataset contains around 40 independent variables and 4000 data points.

# BEFORE CLEANING

```
1 # before cleaning
2 data.head()
```

	ID	Salary	DOJ	DOL	Designation	JobCity	Gender	DOB	10percentage	10board	12graduation	12percentage
0	203097	420000	2012-06-01	present	senior quality engineer	Bangalore	f	1990-02-19	84.3	board ofsecondary education,ap	2007	95.8
1	579905	500000	2013-09-01	present	assistant manager	Indore	m	1989-10-04	85.4	cbse	2007	85.0
2	810601	325000	2014-06-01	present	systems engineer	Chennai	f	1992-08-03	85.0	cbse	2010	68.2
3	267447	1100000	2011-07-01	present	senior software engineer	Gurgaon	m	1989-12-05	85.6	cbse	2007	83.6
4	343523	200000	2014-03-01	2015-03-01 00:00:00	get	Manesar	m	1991-02-27	78.0	cbse	2008	76.8



Total data set contains 40 features and 4000 observations

# AFTER CLEANING

```
df.head()
```

	salary	doj	dol	designation	jobcity	gender	dob	10percentage	10board	12graduation	12percentage	12board	collegetier	degree	specialization
0	420000	2012-06-01	2015-12-31	other	bangalore	Female	1990-02-19	84.3	other	2007	95.8	other	2	B.Tech/B.E.	computer science & engineering
1	500000	2013-09-01	2015-12-31	other	other	Male	1989-10-04	85.4	cbse	2007	85.0	cbse	2	B.Tech/B.E.	electronics & telecommunications
2	325000	2014-06-01	2015-12-31	system engineer	chennai	Female	1992-08-03	85.0	cbse	2010	68.2	cbse	2	B.Tech/B.E.	information technology
3	1100000	2011-07-01	2015-12-31	senior software engineer	gurgaon	Male	1989-12-05	85.6	cbse	2007	83.6	cbse	1	B.Tech/B.E.	computer science & engineering
4	200000	2014-03-01	2015-03-01	other	other	Male	1991-02-27	78.0	cbse	2008	76.8	cbse	2	B.Tech/B.E.	electronics & telecommunications

**Total data set contains 38 features and 3998 observations**

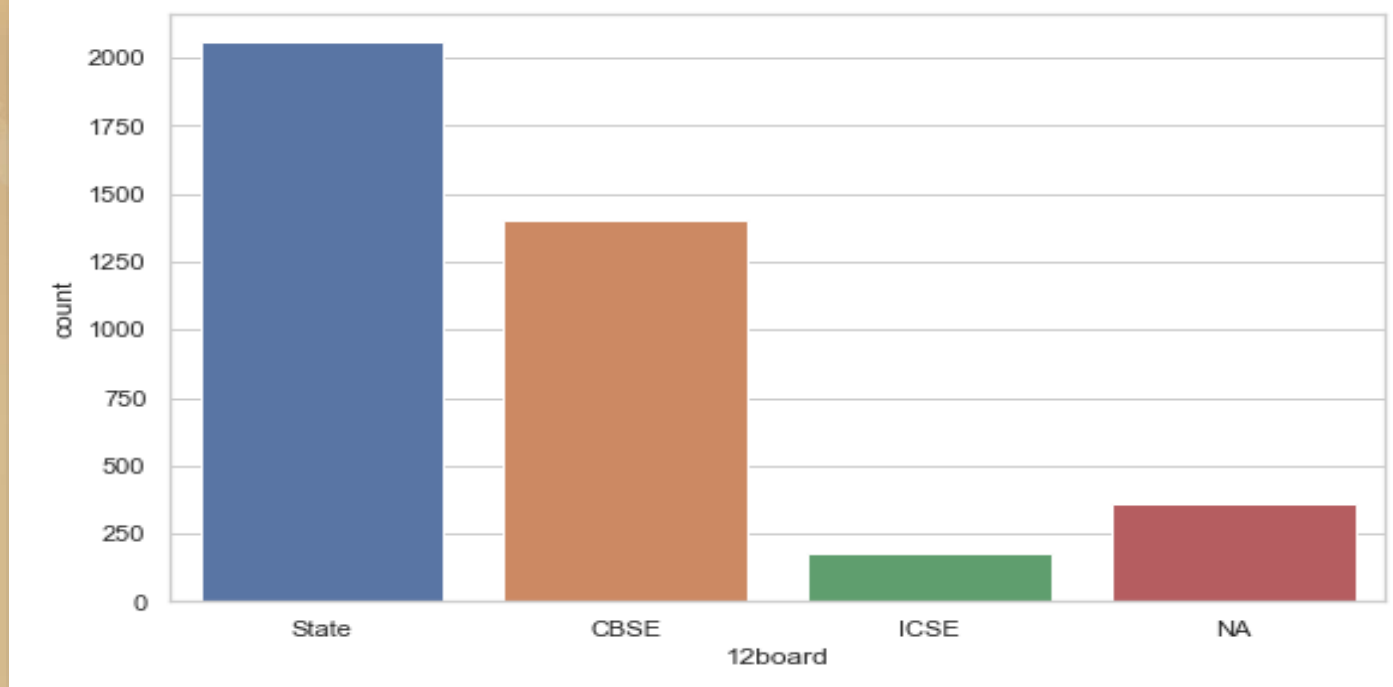
02

# DATA VISUALIZATION



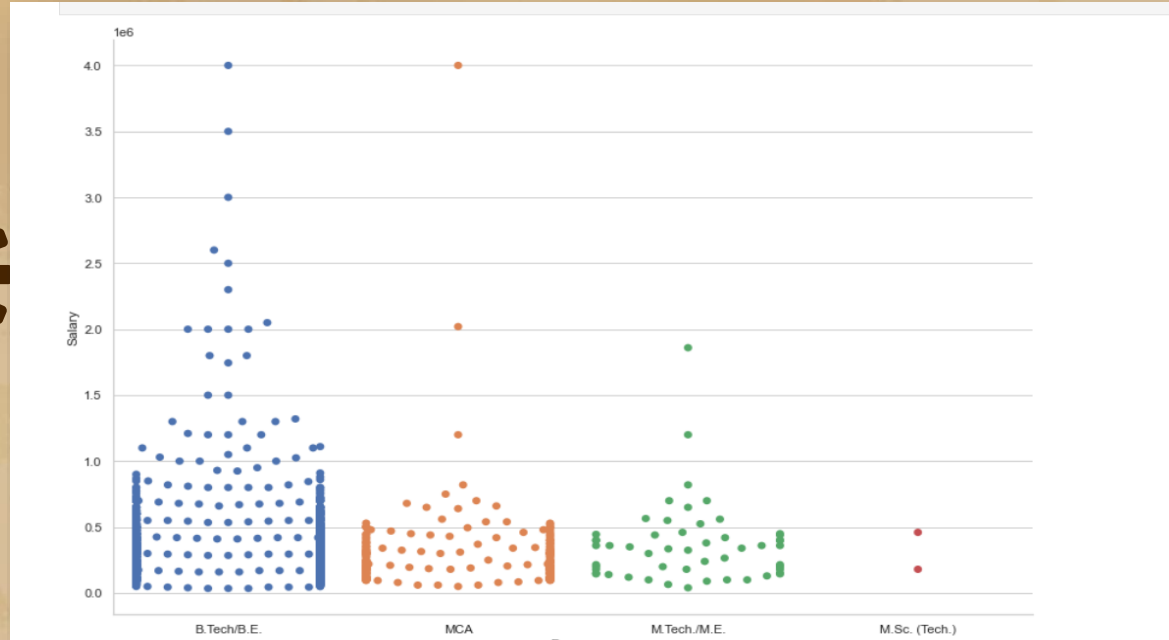
# UNIVARIATE ANALYSIS

Categorical Feature



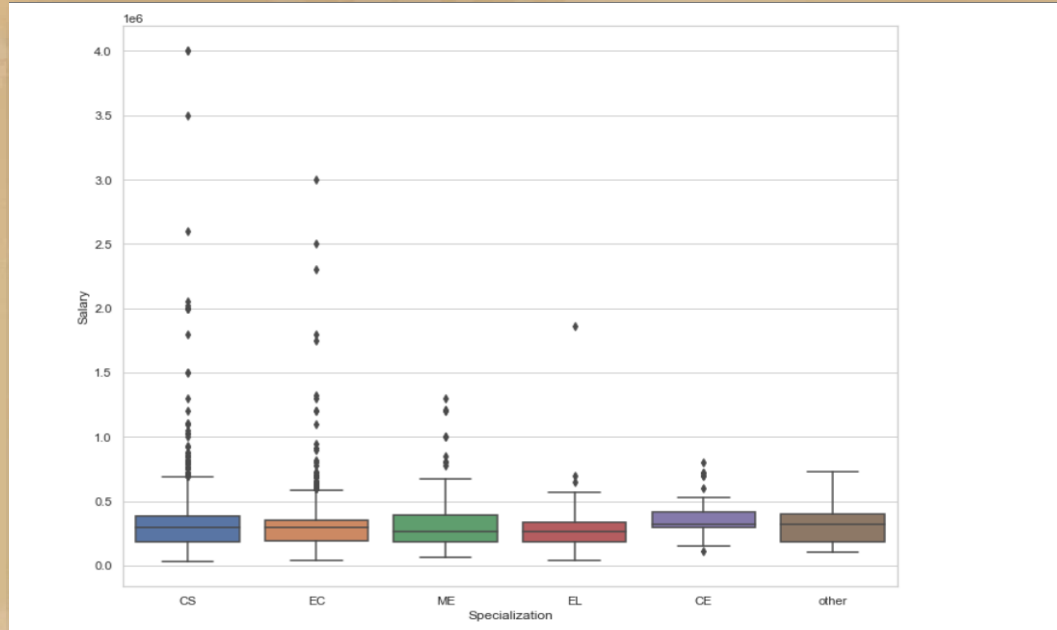
- Most of the students have completed their intermediate in State Board

# HIGHER CHANCES OF PLACEMENTS



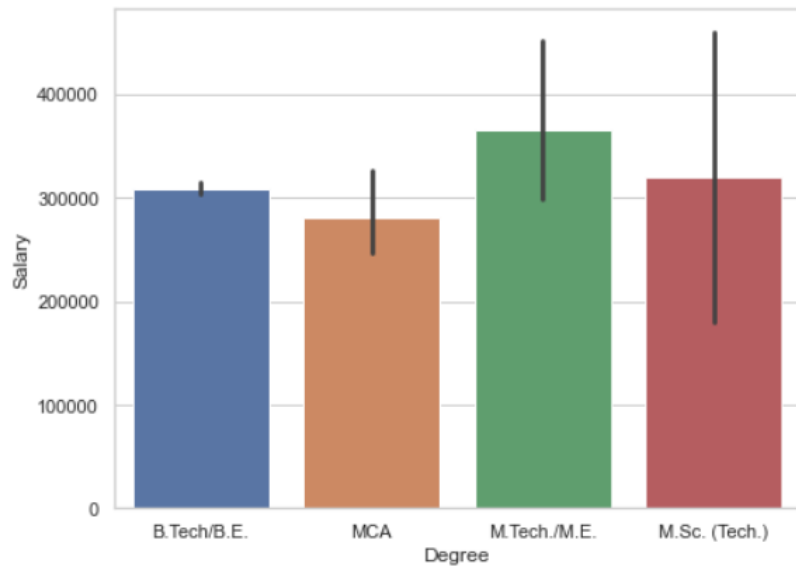
**Graduated from B.Tech has higher chances of a getting a job with higher salaries**

# SPECIALIZATIONS SALARY

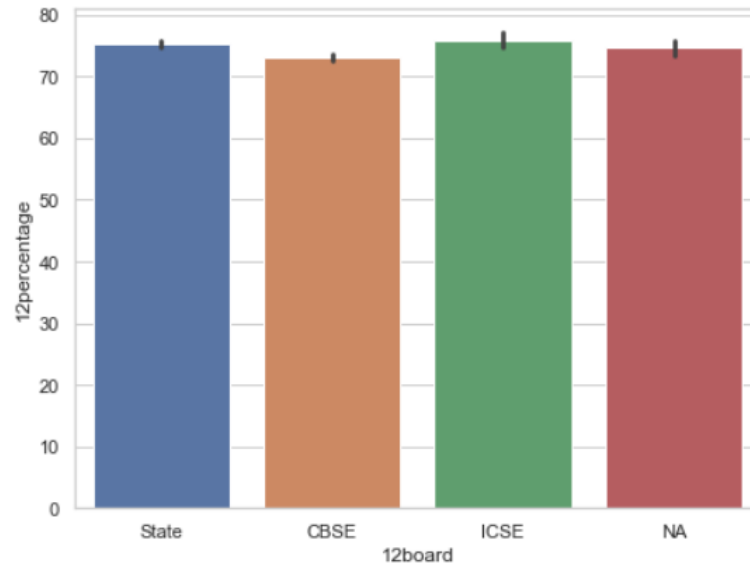


Graduates With Specialization in CS has higher chances to get more salary around 1,80,000 - 4,00,000

## HIGHEST SALARY



## BOARD HAVING MAX %?



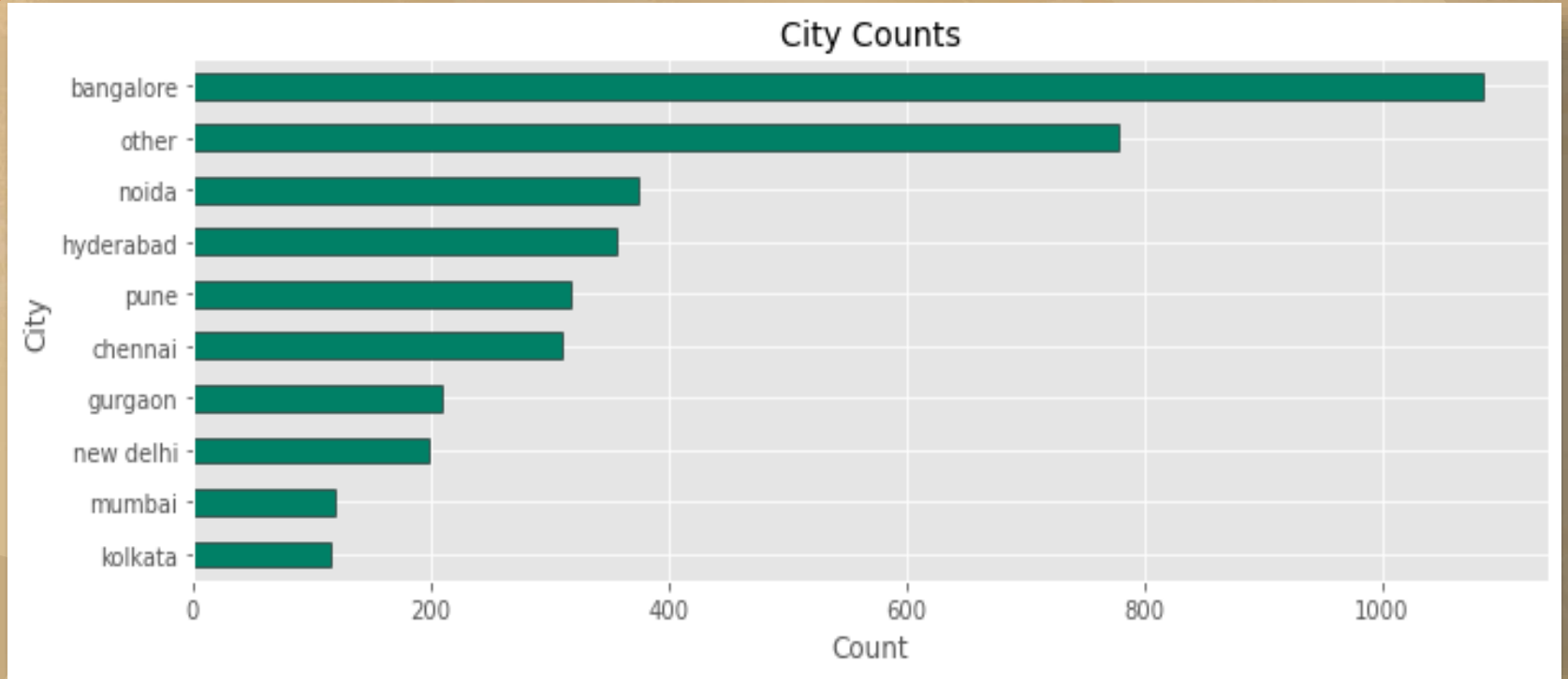
**Graduates who has done Masters has higher salaries**

**Students from ICSE has higher percentages**

**ICSE**



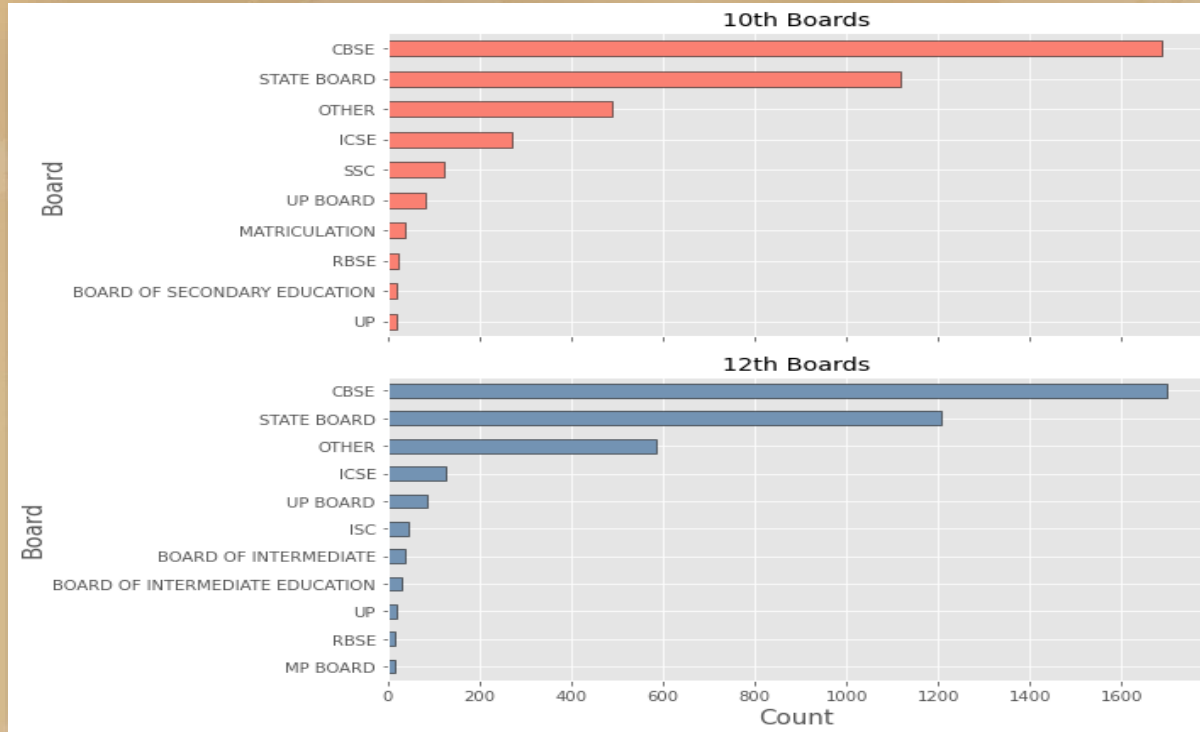
# CITIES HIGHEST JOB PLACEMENTS



**The most favorable city for job placements is Bangalore, followed by Noida, Hyderabad and Pune. Mumbai and Kolkata being least favorable.**

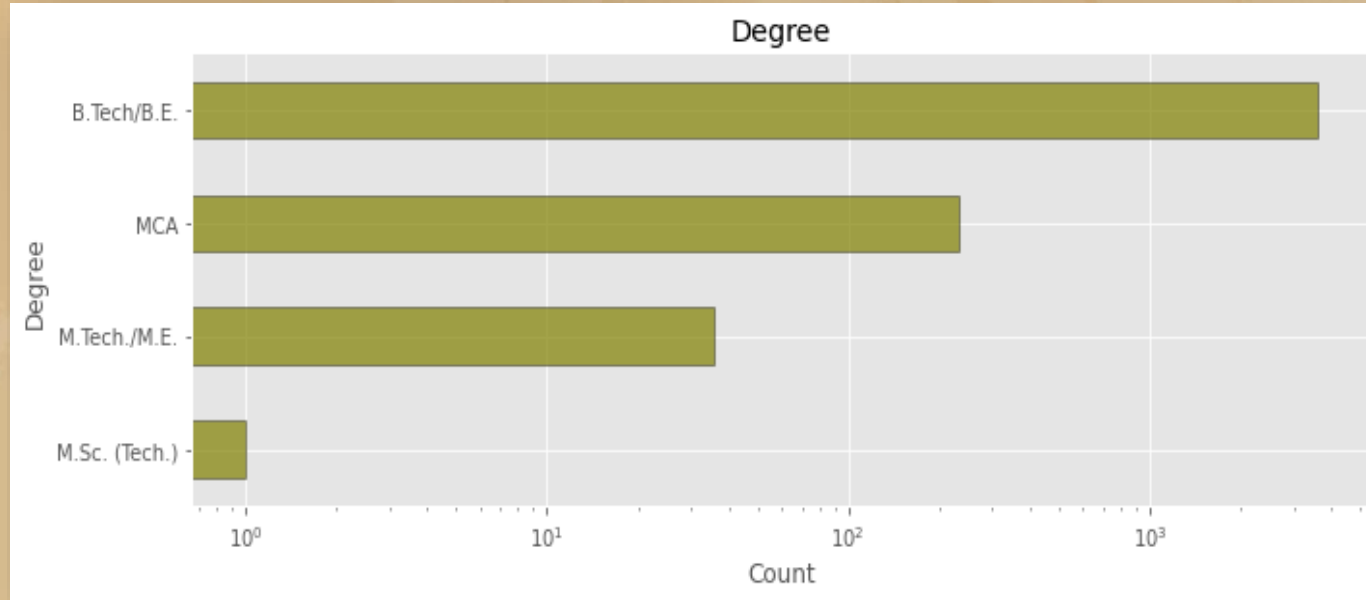


# 10<sup>TH</sup> - 12<sup>TH</sup> COMMON BOARDS



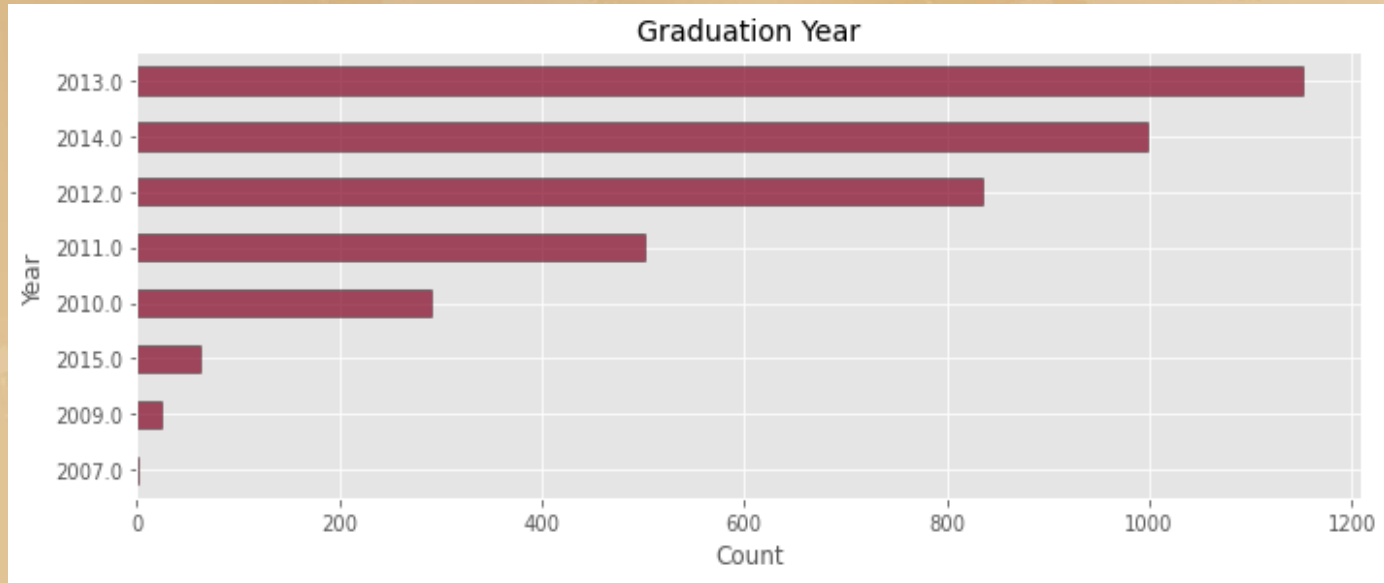
CBSE is the most common school board for both 12<sup>th</sup>- 1737 and 10<sup>th</sup>- 1726.

# DEGREE



Most of the students have done their graduation in B.Tech and there are very less students from M.Sc.(Tech)

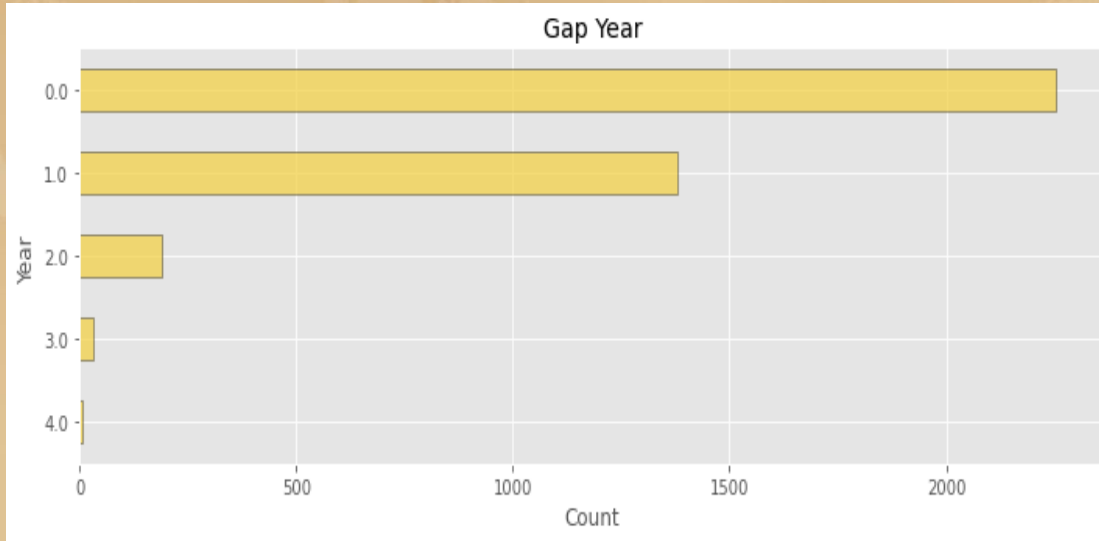
# GRADUATION YEAR



Maximum number of students were graduated in 2013, followed by the year 2014 and 2012.



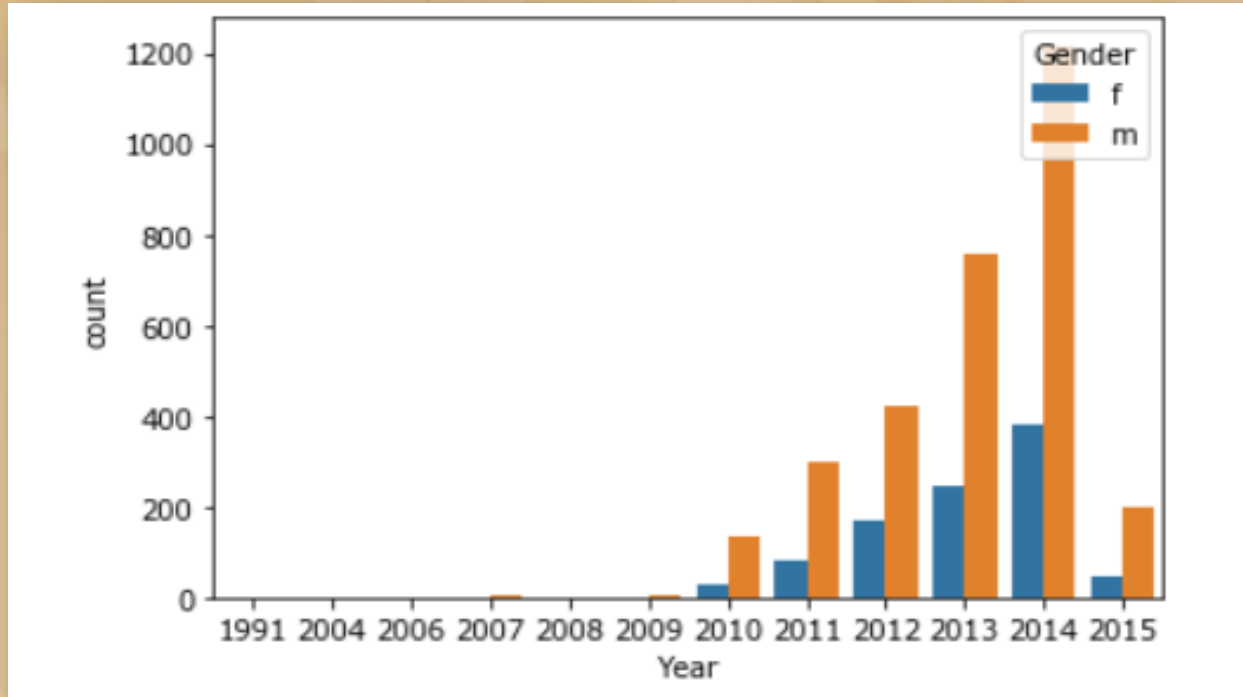
# NUMBER OF YEAR GAP



Maximum number of students have 0 gap years i.e. the students got placed in the same year they got graduated.  
Some students do have 1 year gap.  
75% of student's are less than 26 years old.

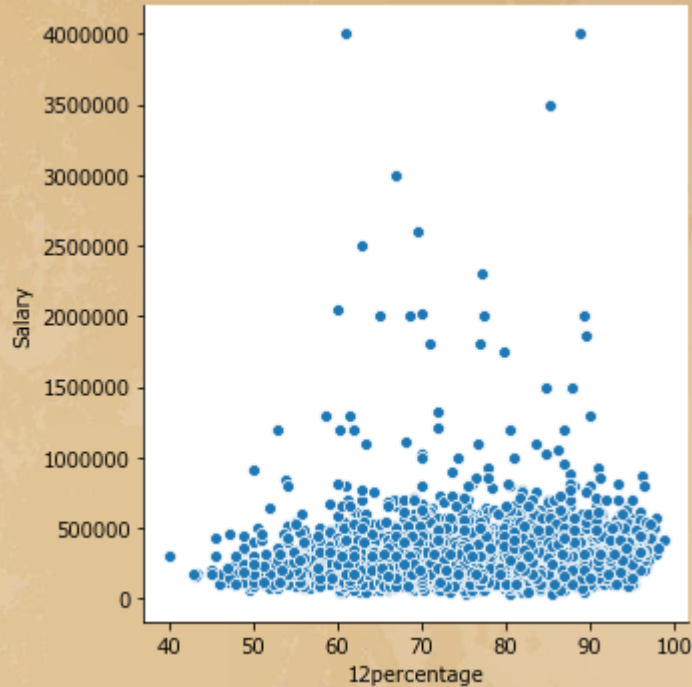


# MALE VS FEMALE

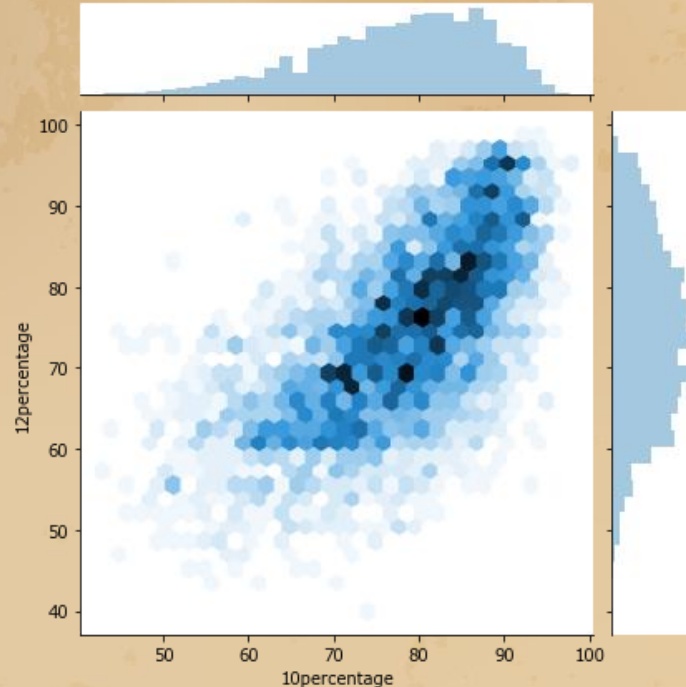


From this we can directly conclude that the joining of male is greater than females every year.

# 10<sup>TH</sup> & 12<sup>TH</sup> PERCENTAGE



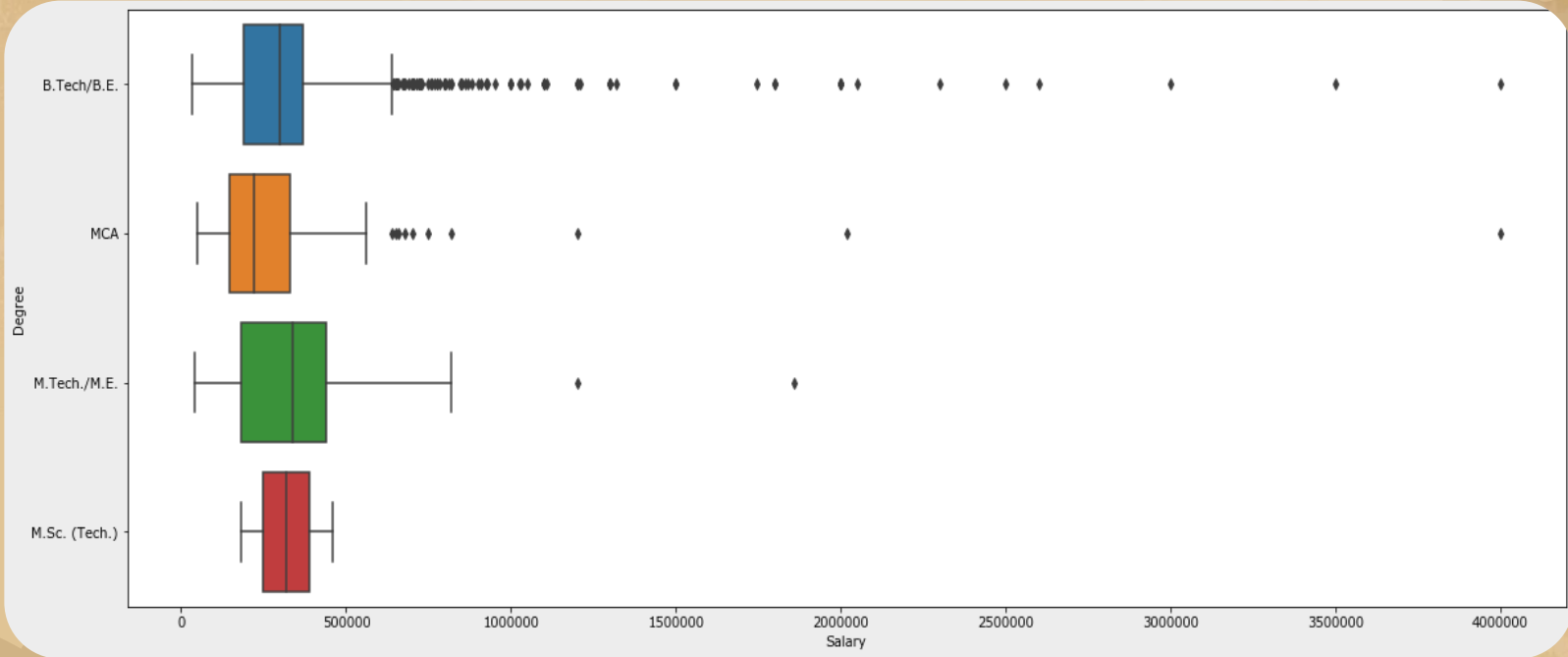
Almost all candidates gets salary between 0 and 10,00,000 except some outliers which are also the one who scored more than 60% in 12th.



10<sup>th</sup> percentage = There are very less students with low % and the majority of the students scored b/w 75% - 90%. Maximum number of students scored 78% and on average the score was 77%.

12<sup>th</sup> percentage = There are very less students with low % and the majority of the students scored b/w 69% - 84%. Maximum number of students scored 70% and on average the score was 74%.

# AVERAGE SALARY

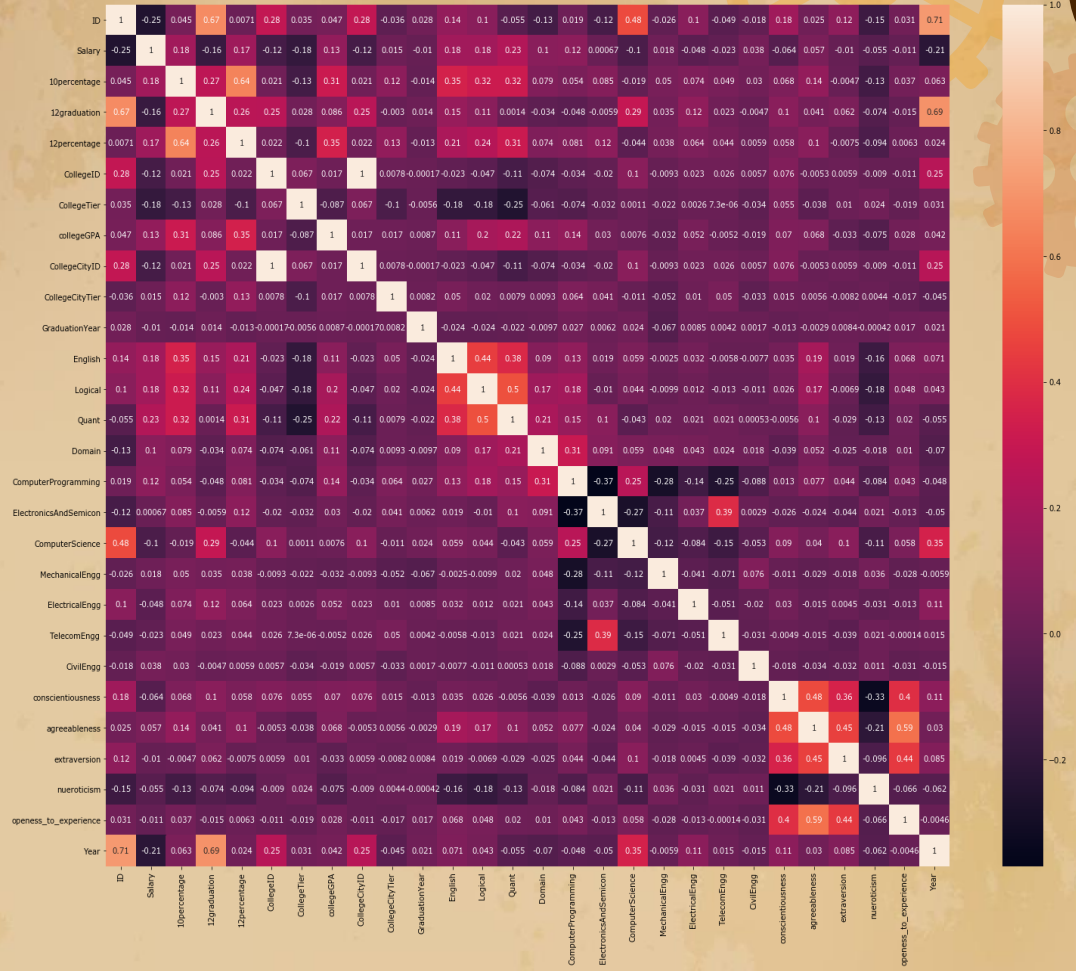


B.Tech./B.E. students get the most salary but median says MTech have more average salary.



# Correlate columns

- 1.12thgraduation & Id
- 2.10percentage & 12thpercentage
- 3.Computer Science & ID
- 4.CollegeCityID & CollegedID
- 5.Logical & English
- 6.Quant & English
- 7.Quant & Logical
- 8.agreeableness & conscientiousness
- 9.agreeableness & extraversion
- 10.conscientiousness & openness\_to\_exp
- 11.openess\_to\_exp & extraversion
- 12.openess\_to\_exp & agreeableness



# QUESTION & ANSWERS

**Q. Which board has completed intermediate?**

A. Most of the students have completed their intermediate in State Board around 1140

**Q. Which cities has higher chances of placements ?**

A. Bangalore , Noida , Hyderabad , & Pune

**Q. What is the minimum and maximum of employees?**

A. Minimum salary 35000 to max 40,00,00 .

**Q. Which cities have highest salary package?**

A. Mumbai, Bangalore, Pune and Hyderabad have the highest entry level mean salary while it is surprising to note that cities like Delhi and Kolkata have the lowest entry level salaries for engineering graduates.

**Q. In which year large no. of students got graduated?**

A. Maximum number of students were graduated in 2013 year 2014 and 2012.

**Q. Which college tier is having highest salary?**

A. College Tier 1 has higher salary than college Tier 2

**Q. Which Tier prefer among following 4 Boards?**

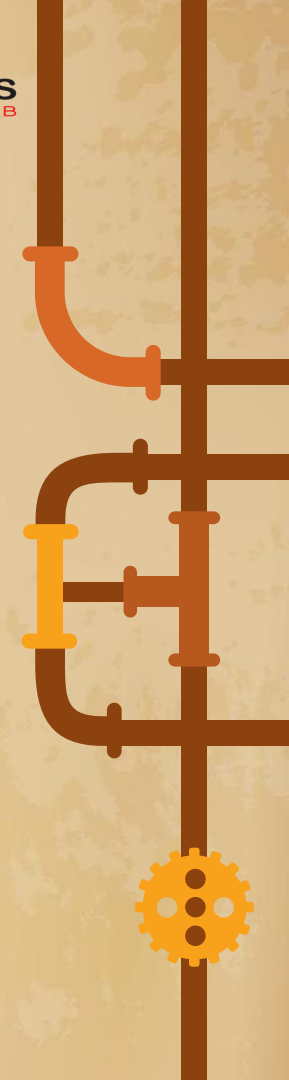
A. Students in college tier 2 mostly prefer sate board



# 03

## CONCLUSION

**Only ~24% Female candidates perused graduation. We need to motivate more females for graduation**



# THANK YOU!

**Do you have any questions?**  
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**INNOMATICS**  
TECHNOLOGY HUB