

Campus Placement

Documentation

Here is a dataset on campus placements. There is a total of 215 student records with information about each student of their SSC board and scores, HSC board, specialization and scores, degree, MBA etc. Our objective is to predict if, given the select information about a student, should that student be Placed or Unplaced. Also, what is the salary that is to be offered to that student.

To achieve our objective, we have used Classification to predict if the student should be Placed or Unplaced, Also, in this code, we have an in-depth Exploratory data analysis with inferences based on the analysis.

Here is an overview of the dataset,

1. gender - Male='M', Female='F'
2. ssc_p - Secondary Education percentage
3. ssc_b - Secondary Education Board (Central or Others)
4. hsc_p - Higher Secondary Education percentage
5. hsc_b - Higher Secondary Education Board (Central or Others)
6. hsc_s - Specialization in Higher Secondary Education (Commerce or Science or Others)
7. degree_p - Degree Percentage
8. degree_t - Degree Type or specialisation (Comm&Mgmt, Sci&Tech, Other)
9. workex - Has prior work experience or not (yes/no)
10. etest_p - Employability test percentage (conducted prior to Placements)
11. specialisation - MBA Specialization (Mkt&Fin or Mkt&HR)
12. mba_p - MBA percentage
13. status - Status of placement (Placed or Not placed)
14. salary - Salary offered by corporate to placed students.

Following are the steps followed in this code:

1. Import Libraries
2. Loading and Understanding Data
3. EDA - Univariate, Bivariate, Multivariate analysis, missing values check, Outlier detection.

Insights from Data

- There are a total of 215 student records. It contains information about student's SSC %, SSC board, HSC %, HSC board, HSC Specialization, Degree %, Degree Specialization, Work Exp status (yes/no), Etest %, MBA Specialization, MBA %, Salary, and Placed Status (Yes/No)
- Target feature - status (Placement status, to predict if student will be placed or not) and salary (for students who are to be placed, we will predict what salary should they be placed with)
- Total features count = 14 (excluding target feature)
- Count of numerical features = 7
- Count of categorical features = 8 (including target feature)
- Missing values - Only Salary feature has missing values (Unplaced students)

Univariate Analysis

Understanding Categorical features

- What is the gender distribution of students?
 - There are nearly twice as much as male students (139) as female students (76) in the college.
- What are the different HSC boards, and what is the distribution of students in each of the HSC board types?
 - Students are from Central or Others HSC board. More than 50% (84) of 215 students are from the Central HSC board.
- What are the different HSC specializations, and what is the distribution of students in each of the HSC specializations?
 - There are 3 HSC specializations, Commerce, Science and Arts. Commerce has the maximum students enrolled (113), followed by science (91) and Arts (11)
- What are the different Degree specializations, and what is the distribution of students in each of the degree specializations?
 - There are 2 main degree specializations Comm&Mgmt and Sci&Tech which most students have opted for, rest are categorized as others. Maximum students are enrolled in Comm&Mgmt (145) followed by Sci&tech (59) with rest in others (11)
- How many students have work experience?
 - Only 74 students have prior work experience, remaining 141 students are freshers.
- What are the different specializations in MBA, and what is the distribution of students in each of the MBA specialisation?
 - There are 2 MBA specializations that students can opt for. Maximum number of students have opted for Mkt&Fin (120), and remaining have opted for Mkt&HR (95)
- How many of the students are currently placed, and how many are unplaced?
 - As computed, 68.83% of the students are already placed, remaining are unplaced.

Understanding Numerical Features

- What are the total number of student records? Are there any duplicates?
 - There are 215 student records, and no duplicates.
- What is the minimum, 25th percentile, mean, 75th percentile, and maximum SSC percentage of students?
- What is the minimum, 25th percentile, mean, 75th percentile, and maximum HSC percentage of students?
- What is the minimum, 25th percentile, mean, 75th percentile, and maximum SSC percentage of students?
- What is the minimum, 25th percentile, mean, 75th percentile, and maximum Degree percentage of students?
- What is the minimum, 25th percentile, mean, 75th percentile, and maximum etest percentage of students?
- What is the minimum, 25th percentile, mean, 75th percentile, and maximum MBA percentage of students?

	ssc_p	hsc_p	degree_p	etest_p	mba_p
count	215.000000	215.000000	215.000000	215.000000	215.000000
mean	67.303395	66.333163	66.370186	72.100558	62.278186
std	10.827205	10.897509	7.358743	13.275956	5.833385
min	40.890000	37.000000	50.000000	50.000000	51.210000
25%	60.600000	60.900000	61.000000	60.000000	57.945000
50%	67.000000	65.000000	66.000000	71.000000	62.000000
75%	75.700000	73.000000	72.000000	83.500000	66.255000
max	89.400000	97.700000	91.000000	98.000000	77.890000

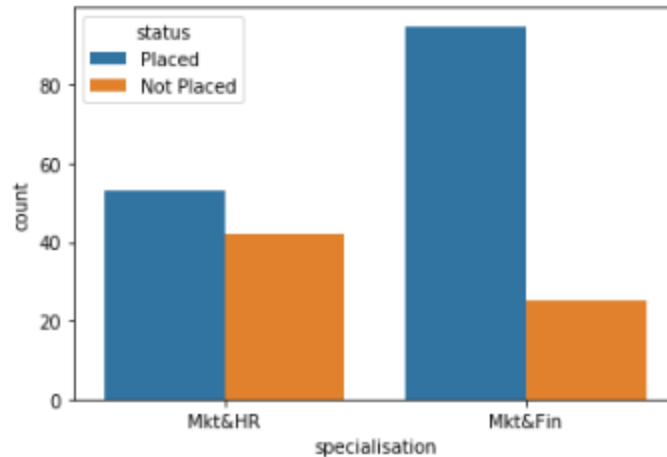
- What is the minimum, 25th percentile, mean, 75th percentile, and maximum salaries offered to placed students?
 - Of the placed students, the lowest salary offered is Rs.200000 and the highest salary offered is Rs.940000. The average salary of the batch is Rs.288655.4. 75th percentile of the batch earns Rs.300000, and 25th percentile of the batch earns Rs.240000

```
count      148.000000
mean      288655.405405
std       93457.452420
min       200000.000000
25%       240000.000000
50%       265000.000000
75%       300000.000000
max       940000.000000
Name: salary, dtype: float64
```

Bivariate Analysis

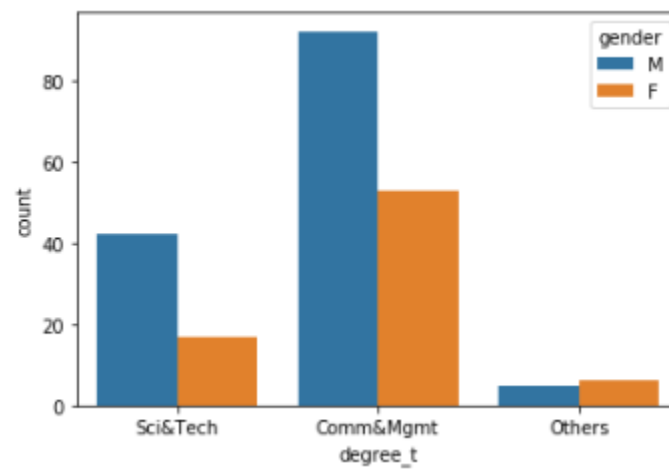
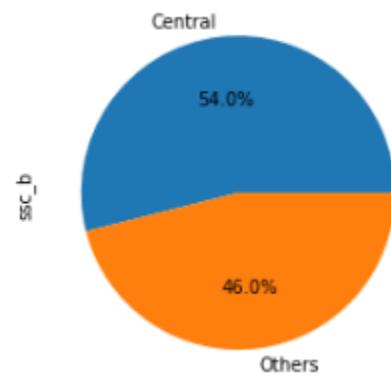
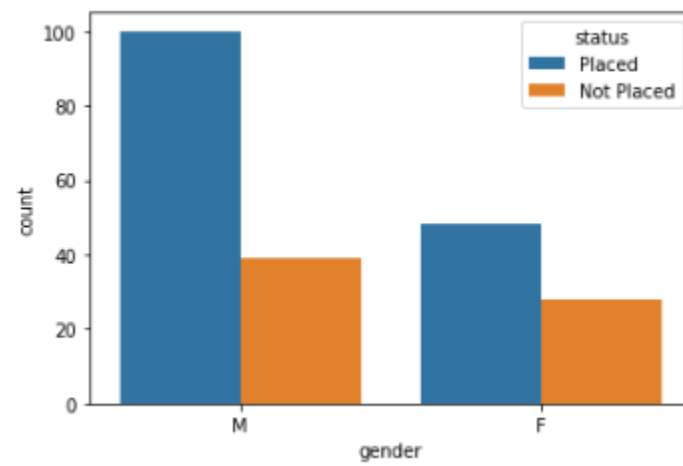
- What is the gender-wise distribution of students in different SSC boards?
 - Maximum students are male from Central SSC, followed by Male in others.
- What is the gender-wise distribution of students in different HSC boards?
 - In HSC, maximum students are male in HSC Others board followed by Central.
- What is the gender-wise distribution of students in different Degree specializations?
 - Maximum students are in Comm&Mgmt both male and female, followed by Sci&Tech
- What is the gender-wise distribution of students in different MBA specializations?
 - Male students are mostly focused in Mkt&Fin whereas female students have an almost equal distribution in Mkt&HR and Mkt&Fin
- What is the gender-wise distribution of students with work experience?
 - Majority of both male and female students do not have any prior work experience
- What is the gender-wise distribution of students who got placed?
 - The ratio of placed: unplaced students is greater for male students against female students.
- What is the 5-point summary SSC % of students gender-wise?
 - Female students have overall scored better than male students in ssc, however the highest is scored by a male student.
- What is the 5-point summary HSC % of students gender-wise?
 - In HSC, male students have scored better than female students by a negligible margin.
- What is the 5-point summary Degree % of students gender-wise?
 - Female students have overall scored better than male students in Degree.
- What is the 5-point summary etest % of students gender-wise?
 - Male students have overall scored better than female students in employability test.
- What is the 5-point summary MBA % of students gender-wise?
 - Female students have overall scored better than male students in MBA.
- What is the 5-point summary of salary distribution of placed students' gender-wise?
 - Male students who got placed have a higher average salary compared to female students. The highest salary is offered to a male student.
- Does the ssc board in which the student studied have an impact on placement?
 - SSC board does not have an impact on placement.
- Does the hsc board in which the student studied have an impact on placement?
 - HSC board does not have an impact on placement.
- Does the hsc specialisation opted by the student have an impact on placement?
 - HSC specialisation does not have an impact on placement.
- Does the degree specialisation opted by the student have an impact on placement?
 - Degree specialisation does not have an impact on placement.
- **Does the MBA specialisation opted by the student have an impact on placement?**
 - **Students with Mkt&Fin have a higher probability for placements compared to Mkt&HR**

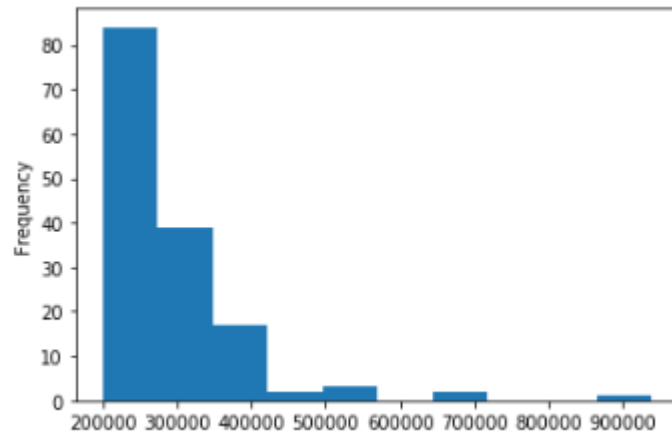
Probability of being Specialisation as Mkt&Fin: 0.5581395348837209 and Probability of being Specialisation as Mkt&HR: 0.4418604651162791



- Does having prior workex by the student have an impact on placement?
 - Prior work experience has no effect on placements.
- Does the salary offered to placed students factor in the SSC % scored by students?
 - SSC% does not affect salary offered to students.
- Does the salary offered to placed students factor in the HSC % scored by students?
 - HSC% does not affect salary offered to students.
- Does the salary offered to placed students factor in the Degree % scored by students?
 - Degree% does not affect salary offered to students
- **Does the salary offered to placed students factor in the etest % scored by students?**
 - ***Having good etest% percentage is like strawberry on cake. Students having good etest% percentage are more likely to get higher salary.***
- Does the salary offered to placed students factor in the MBA % scored by students?
 - MBA% does not affect salary offered to students

Snapshots





	gender	ssc_p	ssc_b	hsc_p	hsc_b	hsc_s	degree_p	degree_t	workex	etest_p	specialisation	mba_p	status	salary
119	M	60.80	Central	68.40	Central	Commerce	64.60	Comm&Mgmt	Yes	82.66	Mkt&Fin	64.34	Placed	940000.0
150	M	71.00	Central	58.66	Central	Science	58.00	Sci&Tech	Yes	56.00	Mkt&Fin	61.30	Placed	690000.0
177	F	73.00	Central	97.00	Others	Commerce	79.00	Comm&Mgmt	Yes	89.00	Mkt&Fin	70.81	Placed	650000.0
163	M	63.00	Others	67.00	Others	Science	64.00	Sci&Tech	No	75.00	Mkt&Fin	66.46	Placed	500000.0
77	M	64.00	Others	80.00	Others	Science	65.00	Sci&Tech	Yes	69.00	Mkt&Fin	57.65	Placed	500000.0
174	M	73.24	Others	50.83	Others	Science	64.27	Sci&Tech	Yes	64.00	Mkt&Fin	66.23	Placed	500000.0
53	M	80.00	Others	70.00	Others	Science	72.00	Sci&Tech	No	87.00	Mkt&HR	71.04	Placed	450000.0
4	M	85.80	Central	73.60	Central	Commerce	73.30	Comm&Mgmt	No	96.80	Mkt&Fin	55.50	Placed	425000.0
95	M	73.00	Central	78.00	Others	Commerce	65.00	Comm&Mgmt	Yes	95.46	Mkt&Fin	62.16	Placed	420000.0
39	M	81.00	Others	68.00	Others	Science	64.00	Sci&Tech	No	93.00	Mkt&Fin	62.56	Placed	411000.0