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RESEARCH LABS

INNOVATION. AUTOMATION. ANALYTICS

PROJECT ON

Analysis of AMCAT Data

About me

I hold a Bachelor of Computer Applications (B.C.A.) degree and I want to learn more about Data Science because I'm curious about how machine learning works in the apps I use every day. I am eager to explore how data can provide insights and improve experiences.
Although I currently do not have any work experience I am dedicated to developing my skills and knowledge in this exciting field. I believe that with the right learning and practice I can contribute meaningfully to data science projects in the future.
Have a look at my portfolio below :
LinkedIn & GitHub

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Objective

AMCAT (Aspiring Minds Computer Adaptive Test) is a test that helps people get jobs. In this project we analysis the salary of a aspirant who give the exam. In this project we have one csv file which have 3998 rows and 39 columns. AMCAT team were able to gather concrete data with which they hoped to understand what has become of candidates since they took part in the tests and find interesting patterns from the study..

Analysis Workflow

- Introduction Of Data
- Data Types And Fixing the type of data
- Univariate Analysis
- Bivariate Analysis
- Research Questions :
  - Times of India article dated Jan 18, 2019 states that “After doing your Computer Science Engineering if you take up jobs as a Programming Analyst, Software Engineer, Hardware Engineer and Associate Engineer you can earn up to 2.5-3 lakhs as a fresh graduate.” Test this claim with the data given to you.
  - Is there a relationship between gender and specialization? (i.e. Does the preference of Specialisation depend on the Gender?)

Introduction Of Data

Introduction of data

```
[4]: df.shape
```

```
[4]: (3998, 39)
```

```
[5]: df.size
```

```
[5]: 155922
```

```
[6]: df.columns
```

```
[6]: Index(['Unnamed: 0', 'ID', 'Salary', 'DOJ', 'DOL', 'Designation', 'JobCity',
       'Gender', 'DOB', '10percentage', '10board', '12graduation',
       '12percentage', '12board', 'CollegeID', 'CollegeTier', 'Degree',
       'Specialization', 'collegeGPA', 'CollegeCityID', 'CollegeCityTier',
       'CollegeState', 'GraduationYear', 'English', 'Logical', 'Quant',
       'Domain', 'ComputerProgramming', 'ElectronicsAndSemicon',
       'ComputerScience', 'MechanicalEngg', 'ElectricalEngg', 'TelecomEngg',
       'CivilEngg', 'conscientiousness', 'agreeableness', 'extraversion',
       'nueroticism', 'openess_to_experience'],
      dtype='object')
```

```
[7]: df.isnull().sum()
```

```
[7]: Unnamed: 0              0
     ID                      0
     Salary                  0
     DOJ                     0
     DOL                     0
     Designation             0
     JobCity                 0
     Gender                  0
     DOB                     0
     10percentage            0
     10board                 0
     12graduation            0
     12percentage            0
     12board                 0
     CollegeID               0
     CollegeTier             0
     Degree                  0
     Specialization          0
```

```
[7]: Unnamed: 0              0
     ID                      0
     Salary                  0
     DOJ                     0
     DOL                     0
     Designation             0
     JobCity                 0
     Gender                  0
     DOB                     0
     10percentage            0
     10board                 0
     12graduation            0
     12percentage            0
     12board                 0
     CollegeID               0
     CollegeTier             0
     Degree                  0
     Specialization          0
     collegeGPA              0
     CollegeCityID           0
     CollegeCityTier         0
     CollegeState            0
     GraduationYear          0
     English                 0
     Logical                 0
     Quant                   0
     Domain                  0
     ComputerProgramming     0
     ElectronicsAndSemicon   0
     ComputerScience         0
     MechanicalEngg          0
     ElectricalEngg          0
     TelecomEngg             0
     CivilEngg               0
     conscientiousness       0
     agreeableness           0
     extraversion            0
     nueroticism             0
     openess_to_experience   0
     dtype: int64
```

```
[8]: df.duplicated().sum()
```

```
[8]: 0
```

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Data Types And Fixing The Types Of Data

Data Types And Fixing the type of data

```
[9]: df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 3998 entries, 0 to 3997
Data columns (total 39 columns):
 #   Column                 Non-Null Count  Dtype
---  ------                 --------------  -----
 0   Unnamed: 0             3998 non-null   object
 1   ID                     3998 non-null   int64
 2   Salary                 3998 non-null   float64
 3   DOJ                    3998 non-null   object
 4   DOL                    3998 non-null   object
 5   Designation            3998 non-null   object
 6   JobCity                3998 non-null   object
 7   Gender                 3998 non-null   object
 8   DOB                    3998 non-null   object
 9   10percentage           3998 non-null   float64
 10  10board                3998 non-null   object
 11  12graduation           3998 non-null   int64
 12  12percentage           3998 non-null   float64
 13  12board                3998 non-null   object
 14  CollegeID              3998 non-null   int64
 15  CollegeTier            3998 non-null   int64
 16  Degree                 3998 non-null   object
 17  Specialization         3998 non-null   object
 18  collegeGPA             3998 non-null   float64
 19  CollegeCityID          3998 non-null   int64
 20  CollegeCityTier        3998 non-null   int64
 21  CollegeState           3998 non-null   object
 22  GraduationYear         3998 non-null   int64
 23  English                3998 non-null   int64
 24  Logical                3998 non-null   int64
 25  Quant                  3998 non-null   int64
 26  Domain                 3998 non-null   float64
 27  ComputerProgramming    3998 non-null   int64
 28  ElectronicsAndSemicon  3998 non-null   int64
 29  ComputerScience        3998 non-null   int64
 30  MechanicalEngg         3998 non-null   int64
 31  ElectricalEngg         3998 non-null   int64
 32  TelecomEngg            3998 non-null   int64
 33  CivilEngg              3998 non-null   int64
 34  conscientiousness      3998 non-null   float64
 35  agreeableness          3998 non-null   float64
 36  extraversion           3998 non-null   float64
 37  nueroticism            3998 non-null   float64
 38  openess_to_experience  3998 non-null   float64
dtypes: float64(10), int64(17), object(12)
memory usage: 1.2+ MB
```

```
[10]: df['DOJ'] = pd.to_datetime(df['DOJ'])
```

```
C:\Users\DIXIT MEGI\AppData\Local\Temp\ipykernel_25392\1263764186.py:1: UserWarning: Could not infer format, so each element will be parsed individually, falling back to `dateutil`. To ensure parsing is consistent and as-expected, please specify a format.
  df['DOJ'] = pd.to_datetime(df['DOJ'])
```

```
[11]: df['DOL'] = pd.to_datetime(df['DOL'])
```

```
C:\Users\DIXIT MEGI\AppData\Local\Temp\ipykernel_25392\1662918849.py:1: UserWarning: Could not infer format, so each element will be parsed individually, falling back to `dateutil`. To ensure parsing is consistent and as-expected, please specify a format.
  df['DOL'] = pd.to_datetime(df['DOL'])
```

```
[12]: df.dtypes
```

```
Unnamed: 0                     object
ID                              int64
Salary                        float64
DOJ                    datetime64[ns]
DOL                    datetime64[ns]
Designation                    object
JobCity                        object
Gender                         object
DOB                    datetime64[ns]
10percentage                  float64
10board                        object
12graduation                    int64
12percentage                  float64
12board                        object
CollegeID                       int64
CollegeTier                     int64
Degree                         object
Specialization                 object
collegeGPA                    float64
CollegeCityID                   int64
CollegeCityTier                 int64
CollegeState                   object
GraduationYear                  int64
English                         int64
Logical                         int64
Quant                           int64
Domain                        float64
ComputerProgramming             int64
ElectronicsAndSemicon           int64
ComputerScience                 int64
MechanicalEngg                  int64
ElectricalEngg                  int64
TelecomEngg                     int64
CivilEngg                       int64
conscientiousness             float64
agreeableness                 float64
extraversion                  float64
nueroticism                   float64
openess_to_experience         float64
dtype: object
```

```
[13]: df['Unnamed: 0'].unique()
```

```
[13]: array(['train'], dtype=object)
```

```
[14]: df=df.drop('Unnamed: 0',axis=1)
```

```
[15]: df['Salary'] = df['Salary'].astype(int)
```

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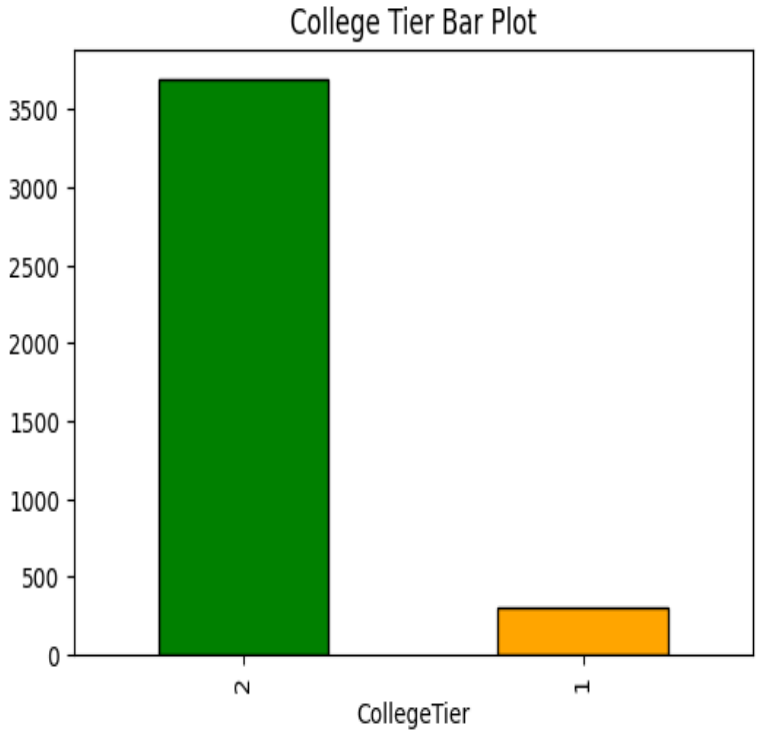
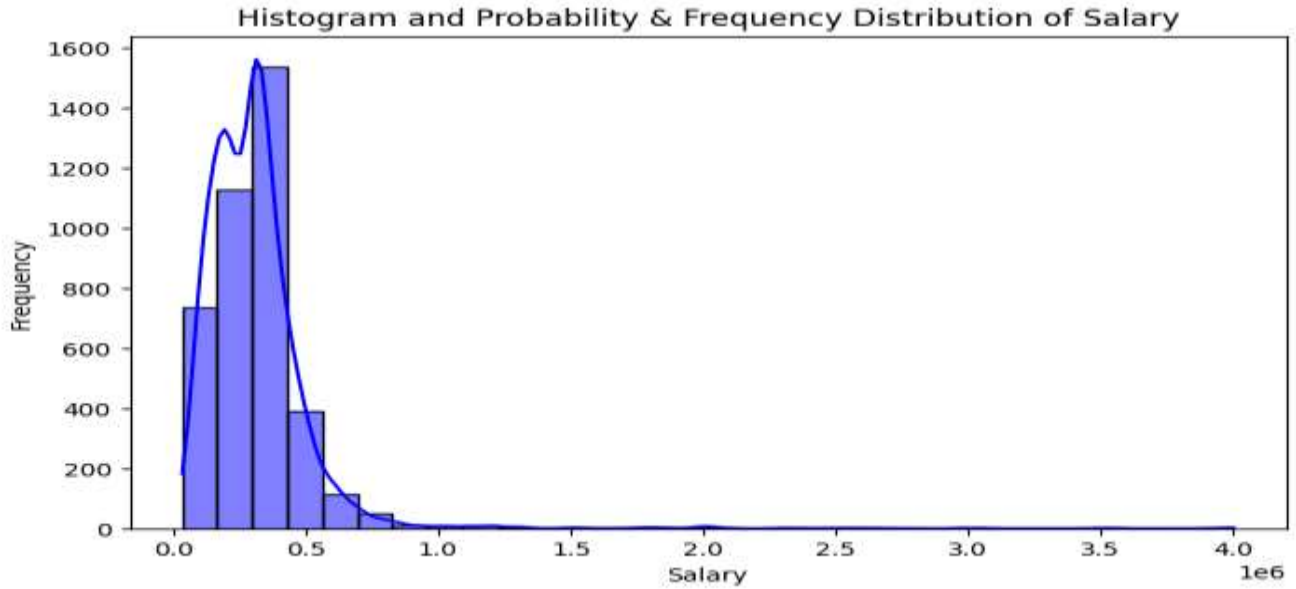
Univariate Analysis



In College Tier more candidates come from Tier 2 colleges as compared to Tier 1 colleges.



In salary Right-skewed distribution with most prices concentrated towards the lower end.

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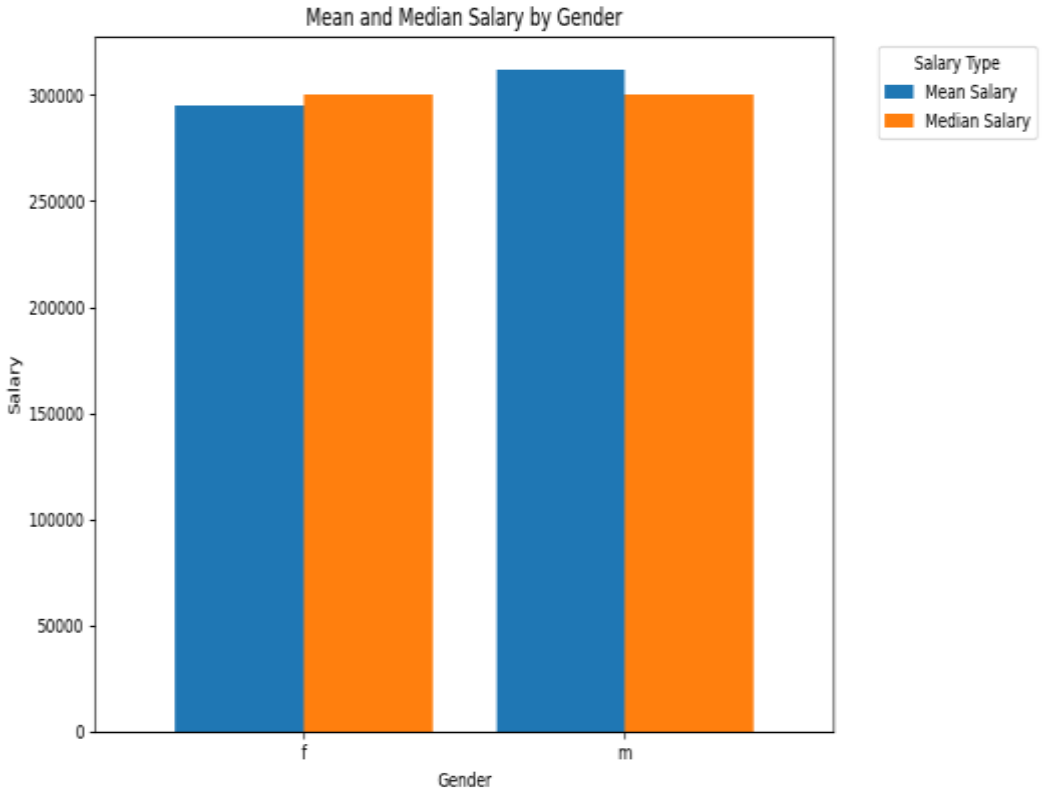
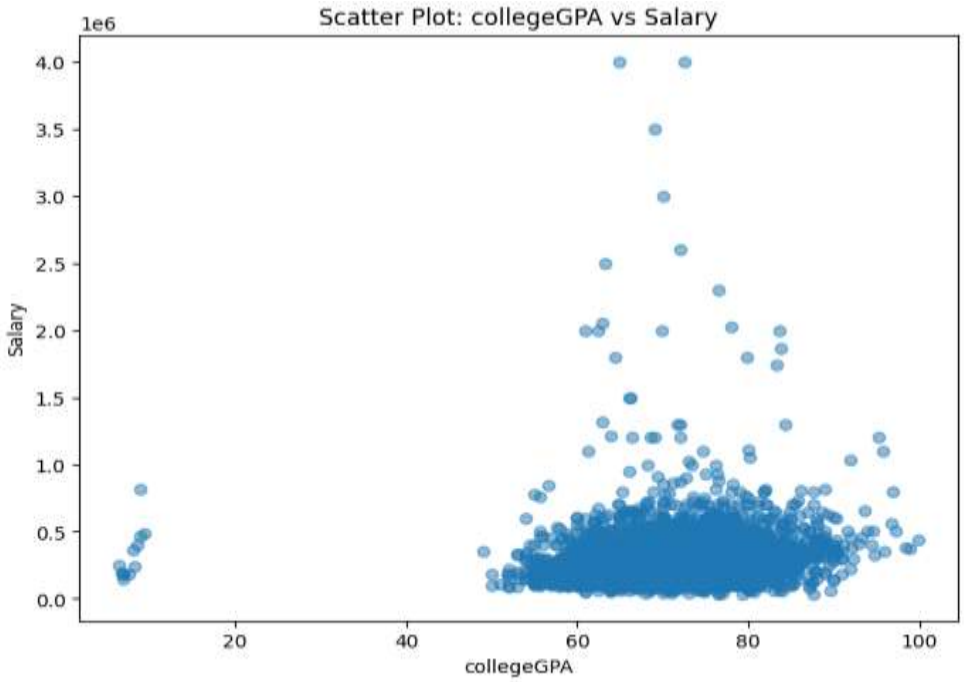
Bivariate Analysis



As we see the mean of the salary of male will be higher then female but the midian are same



Found a positive correlation between college CGPA and salary.

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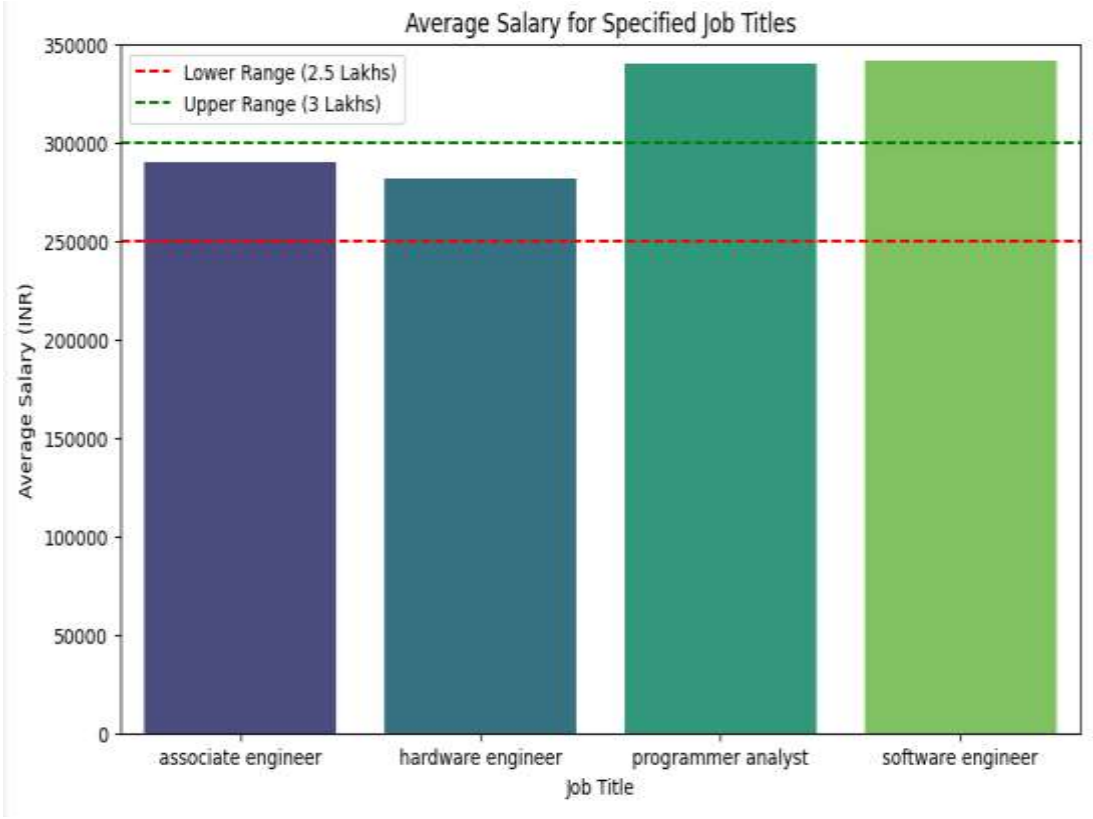
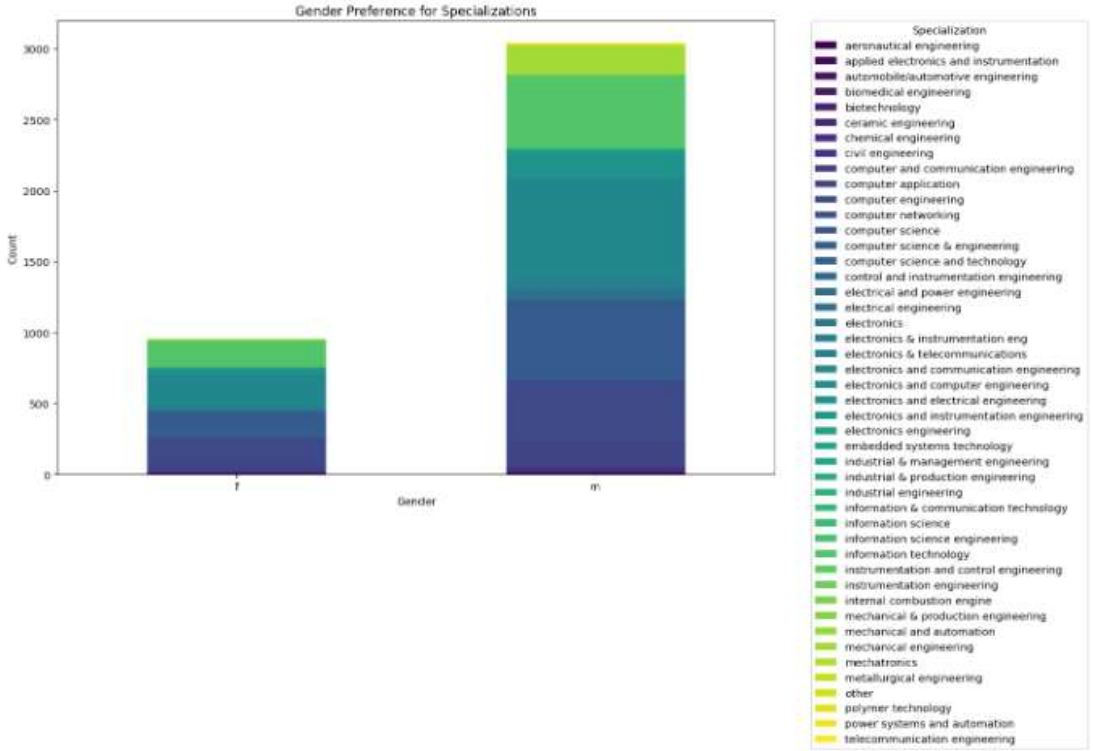
Research Questions



Average salary for spececified job title is between 2.5 lpa to 3lpa



It show Gender Preference for Specializations

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Conclusion

Following the insights generated from my analysis, I can make the following conclusions:

- More candidates come from Tier 2 colleges as compared to Tier 1 colleges.
- Salary Analysis:- The average salary for those who done our degree in M.Tech./M.E. .
- Most of the people who have the Location of the job city is Bangalore .

For the full analysis check my Github repository.

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THANK YOU

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