



Exploratory Data Analysis

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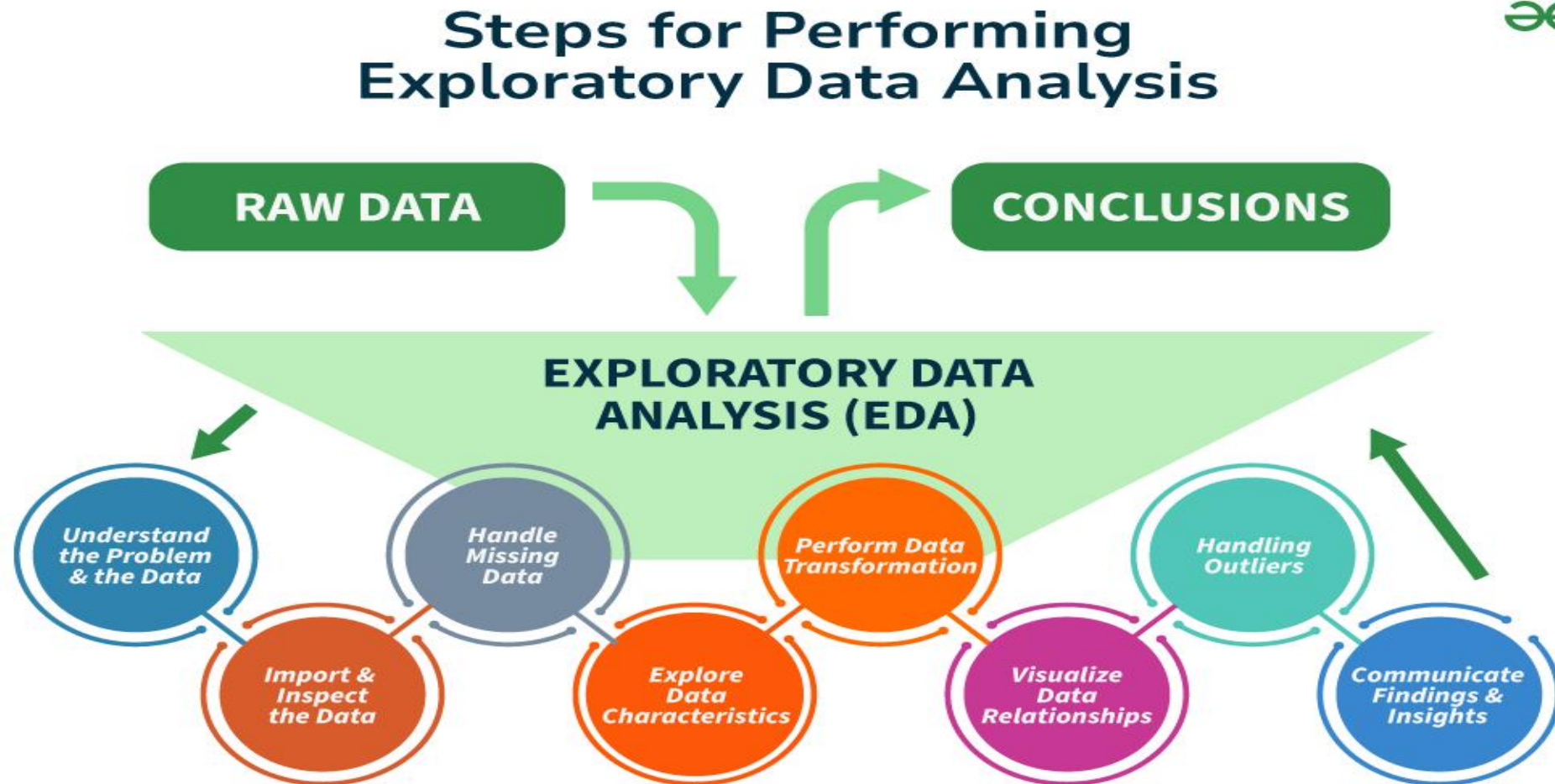
AMCAT

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objective :

- performing Exploratory Data Analysis on the AMCAT dataset to find the patterns and insights.
- These insights help to understand the employee and the internal pattern of the journey.
- Understanding the pattern can be helpful for future analysis and employees outcome.
- Performing data analysis on a well structured data can bring extraordinary insights and rare unexpected patterns.
- EDA can help to understand the relationships between the variables.

workflow of EDA:



AMCAT dataset insights:

- Personal and Job Information:
 - ID, Salary, DOJ (Date of Joining), DOL (Date of Leaving), Designation, JobCity, Gender, and DOB.
- Education and Exam Performance:
 - Exam performance (like 10percentage, 12percentage, CollegeGPA).
 - Fields of study (ComputerScience, MechanicalEngg, ElectricalEngg, etc.).
- Personality Traits:
 - Attributes like conscientiousness, agreeableness, extraversion, neuroticism, and openness_to_experience.

understanding the data:

- Top-Earning Roles:
 - Senior roles like senior software engineer and senior quality engineer tend to have significantly higher salaries, often exceeding ₹1,000,000.
 - More junior positions like get (Graduate Engineer Trainee) have salaries around ₹200,000–₹300,000.
- Gender Salary Gap:
 - Men tend to hold higher-paying roles like senior software engineer, while women in the dataset are more concentrated in mid-level technical positions such as systems engineer.
- Tenure Impact:
 - Many employees who joined before 2014 still hold their positions, marked as “present” under the DOL column, indicating longer tenure in senior roles.

- Personality Patterns:

- Employees in leadership roles (e.g., assistant manager) generally have higher levels of openness to experience and extraversion, while lower roles (e.g., get) have more neutral or negative personality trait scores.

- City-Based Employment:

- A significant number of senior-level professionals are based in high-tech cities like Bangalore, while lower-level positions are more spread out, including places like Indore and Manesar.

statements:

1. Which job roles have the highest salaries?

The highest salaries are observed in senior positions like senior software engineer and senior quality engineer, with figures exceeding ₹1,000,000 annually. These roles often require more years of experience and specialized skills.

2. Is there a noticeable gender disparity in salaries?

While men occupy higher-paying roles like senior software engineer, women are typically seen in mid-level technical roles like systems engineer. Men tend to dominate higher salary brackets, suggesting a potential gender gap in seniority or salary.

3. What is the relationship between personality traits and job roles?

Roles like assistant manager exhibit higher scores in traits such as extraversion and openness to experience, which may reflect the leadership or interpersonal demands of the job. Lower roles, such as get, show more neutral personality traits, indicating that higher positions might require more of these personality characteristics.

4. How does employee tenure relate to salary?

Employees who joined prior to 2014 and remain in their roles ("present" under DOL) generally hold higher-paying positions. This suggests that tenure positively correlates with salary growth, especially for those in senior roles.

5. Which cities are associated with the highest-paying jobs?

Bangalore, a major tech hub, is home to many senior-level positions such as senior quality engineer and senior software engineer, both of which offer high salaries. In contrast, cities like Indore and Manesar house more entry-level and mid-level roles.

conclusion:

1. Job Roles Determine Salary Levels:

Senior roles like senior software engineer and senior quality engineer are associated with significantly higher salaries. The average salary for these positions exceeds ₹1,000,000, while entry-level roles such as get have much lower salaries, often under ₹300,000.

2. Gender Pay Disparity Exists:

Men tend to occupy higher-paying positions, such as senior software engineer, whereas women are more commonly found in mid-level roles like systems engineer. This pattern suggests a potential gender disparity in both role seniority and salary, with men having a stronger presence in more lucrative positions.

3. Longer Tenure Correlates with Higher Salaries:

Employees who have been with the company for longer (those with "present" in their DOL column) tend to have higher salaries. This is especially true for senior employees who joined before 2014, indicating that experience and tenure are rewarded with salary growth.

4. Location Matters for High-Paying Jobs:

Cities like Bangalore are hubs for high-paying technical and leadership roles, while cities like Indore and Manesar have more mid-level or entry-level jobs. This suggests that location plays a role in both the opportunities available and the salaries offered.

THANK YOU