Case Study
HR Data Analysis – Who's Likely to Quit?

Employee retention is critical for organizational success. Understanding which employees are at risk of quitting enables proactive engagement, reducing turnover costs and preserving talent.

1. Introduction

- Explain the importance of predicting employee attrition.
- Who benefits? (HR managers, team leads, organizational leadership)
- What business problems does this analysis address?

Example:

> Predicting attrition helps HR prioritize retention strategies, reduce hiring costs, and maintain workforce stability.

2. Data Cleaning & Preparation

- Check for missing or inconsistent data.
- Handle categorical variables (e.g., Gender, Department).
- Explore distributions and outliers in numeric fields.
- Create new features if needed (e.g., tenure buckets).

Questions to explore:

- Which departments show higher attrition rates?
- Do overtime or low job satisfaction correlate with leaving?

- Is there a relationship between salary and attrition?

3. Exploratory Data Analysis (EDA)

- Visualize attrition rates by department, job role, and gender.
- Analyze correlations between features and attrition.
- Use bar charts, boxplots, and heatmaps for insights.

4. Key Findings & Recommendations

- Present top 3 insights related to attrition risks.
- Example insights:
    - “Employees with low job satisfaction and overtime are twice as likely to quit.”
    - “Departments A and B have attrition rates 30% higher than average.”
- Recommendations for HR:
    - Improve work-life balance initiatives for overtime employees.
    - Target retention programs in high-risk departments.
    - Offer salary reviews where income correlates with attrition risk.

6. Conclusion

- Summarize key takeaways.
- Explain how predictive insights can support strategic HR decisions to reduce turnover.