Employee Attrition Analysis – Self Project Report

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Tools Used: Excel, SQL, IBM HR Analytics Dataset (Kaggle)

# 1. Project Overview

This project analyzes employee attrition patterns using Excel and SQL on the IBM HR Analytics dataset. The goal is to uncover key insights that help HR departments improve retention strategies.

# 2. Tools Used

- Microsoft Excel (Pivot Tables, Charts)

- SQL (for querying structured data)

- Dataset: IBM HR Analytics (Kaggle)

# 3. Key Questions

- Which job roles have the highest attrition?

- Is job satisfaction linked to attrition?

- How does tenure, age, and income impact attrition rates?

# 4. Visual Insights

Dashboards created in Excel showcase the percentage of attrition across departments, age groups, and job satisfaction levels. For instance, job roles such as 'Sales Representative' had a higher attrition rate compared to others. Employees with low job satisfaction were more likely to leave.

# 4.1 Key Insights

Sales Representatives had 33% attrition – the highest among all job roles

Employees aged 25–30 showed the highest resignation rate

Satisfaction level of 1 (very low) had >29.73% attrition

# 5. Sample SQL Queries

Example:  
SELECT Job Role, COUNT(\*) AS Total Employees,   
 SUM(CASE WHEN Attrition = 'Yes' THEN 1 ELSE 0 END) AS AttritionCount  
FROM hr\_data  
GROUP BY JobRole;

# 6. Recommendations

- Improve onboarding and engagement for high-turnover roles.

- Implement satisfaction surveys and action plans for improvement.

- Offer performance-based rewards and career development plans.

# 7. Conclusion

By analyzing the attrition dataset, we discovered patterns that HR departments can use to reduce turnover. These insights help shape policies around employee satisfaction and retention.