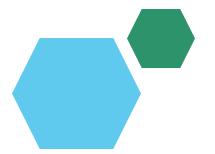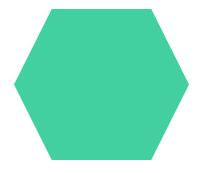# Employee Data Analysis using Excel

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PROJECT TITLE

Employee Attrition Analysis using Excel

AGENDA

1. Problem Statement
2. Project Overview
3. End Users
4. Our Solution and Proposition
5. Dataset Description
6. Modelling Approach
7. Results and Discussion
8. Conclusion

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PROBLEM STATEMENT

THE ORGANIZATION IS EXPERIENCING A SIGNIFICANT EMPLOYEE TURNOVER, LEADING TO INCREASED RECRUITMENT COSTS, LOST PRODUCTIVITY, AND POTENTIAL NEGATIVE IMPACTS ON EMPLOYEE MORALE. TO ADDRESS THIS ISSUE, THERE IS A NEED TO CONDUCT AN IN-DEPTH ANALYSIS OF EMPLOYEE ATTRITION USING AVAILABLE DATA. THE GOAL IS TO IDENTIFY KEY TRENDS, PATTERNS, AND CONTRIBUTING FACTORS TO ATTRITION, AND TO PROPOSE ACTIONABLE STRATEGIES TO REDUCE TURNOVER. THE ANALYSIS WILL LEVERAGE EXCEL TOOLS TO CALCULATE METRICS, VISUALIZE TRENDS, AND PERFORM PREDICTIVEANALYSIS TO SUPPORT DATA-DRIVEN DECISION-MAKING.

PROJECT OVERVIEW

1. INVESTIGATE EMPLOYEE TURNOVER PATTERNS AND CAUSES
2. CALCULATE KEY METRICS: ATTRITION RATE, AVERAGE TENURE, TRENDS
3. ANALYSES DATA BY DEPARTMENT, ROLE, AND DEMOGRAPHICS
4. USE EXCEL TOOLS: PIVOT TABLES, CHARTS, FORMULAS
5. IDENTIFY CRITICAL FACTORS INFLUENCING ATTRITION
6. PERFORM BASIC PREDICTIVE MODEL FOR FUTURE TRENDS
7. PROVIDE ACTIONABLE RECOMMENDATIONS TO REDUCE TURNOVER

WHO ARE THE END USERS?

1. HR DEPARTMENT

2. MANAGEMENT AND LEADERSHIP

3. DEPARTMENT HEAD

4. RECRUITMENT TEAM

5. FINANCE DEPARTMENT

6. EMPLOYEE ENGAGEMENT TEAM

OUR SOLUTION AND ITS VALUE PROPOSITION

OUR SOLUTION

OUR SOLUTION IS AN IN-DEPTH ANALYSIS OF EMPLOYEE ATTRITION USING EXCEL, TRANSFORMING RAW HR DATA INTO ACTIONABLE INSIGHTS. BY LEVERAGING EXCEL'S POWERFUL DATA ANALYSIS TOOLS, WE WILL CALCULATE KEY ATTRITION METRICS, IDENTIFY TRENDS, AND UNCOVER THE FACTORS DRIVING EMPLOYEE TURNOVER. THIS ANALYSIS WILL ENABLE A DATA-DRIVEN UNDERSTANDING OF WHERE AND WHY ATTRITION IS OCCURRING WITHIN THE ORGANIZATION.

VALUES

1. Data-Driven Decision Making: Provides leadership with clear insights into attrition patterns and predictive analysis to make informed decisions.
2. Cost Reduction: Helps identify areas to reduce recruitment and training costs by retaining employees longer.

Dataset Description

1 . Employee id
 A unique identifier for each employee

2 . Demographics
  1. Age
  2. Gender
  3. Marital status

3 . Employment information
  1. Job role/Title
  2. Department
  3. Employment type
  4. Hire date

4 . Performance metrics
  1. Performance rating
  2. Promotion received
  3. Last performance review date

5 .Compensation
  1.Salary/ wages
  2. Bonus

6 . Exit details
  1. Exit date
  2. Reason for leaving

7 .Work life balance indicators
  1.Overtime hours
  2. Flexible hours arranged
  3. Leave taken

8 .Employee engagement metrics
  1. Job satisfaction score
  2.Employee survey result

THE "WOW" IN OUR SOLUTION

1. **Actionable Insights from Data** : Beyond just numbers, our Excel-based solution transforms raw employee data into clear, actionable insights, allowing businesses to tackle the root causes of attrition with precision.

2. **Advanced Analytics in a Simple Tool** : Leveraging Excel's powerful yet familiar tools—such as Pivot Tables, conditional formatting, and predictive model our solution delivers advanced analytics without the need for complex or expensive software.

3. **Customized and Scalable** : The solution is tailored to the organization's specific needs, allowing for ongoing updates and scalability as new data becomes available, ensuring that attrition trends can be continuously monitored and addressed.

4. **Visual Storytelling**: The use of dynamic charts, graphs, and dashboards brings the data to life, making it easy for HR teams and leadership to quickly grasp key trends and act on them effectively.

5. **Cost-Effective and Accessible** : No need for expensive data analysis tools—this Excel-based solution is both cost effective and accessible, making it possible for organizations of all sizes to benefit from high-quality attrition analysis.

MODELLING

I. **Preparing the Data**
 1. Clean the Data :
     Make that there are no duplicates, missing values, or irrelevant data in the dataset.

 2. Feature Development :
     Provide new variables that may be useful in forecasting attrition, such as tenure and age at exit.

II. **Descriptive Analysis**
 1. Summary Statistics :
     To obtain a summary of important metrics like average tenure, mean salary, and attrition rate, utilize Excel's descriptive statistics.

 2. Charts and Pivot Tables:
     Determine trends and relationships (e.g., gender, job role, and department attrition)
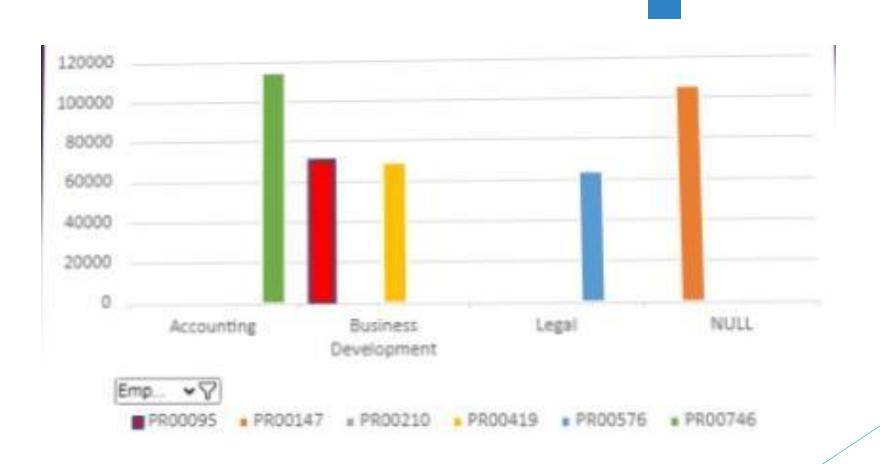
III. **Logistic Regression Model**
 1. Binary Logistic Regression :
 .   Make a logistic diagram in Excel using the Data Analysis .

RESULTS

Employee ID , Department and salary attrition analysis chart

conclusion

The Employee Attrition Analysis conducted using Excel has enabled a detailed examination of the factors contributing to employee turnover. Through this analysis, key trends and patterns were identified, allowing for a deeper understanding of where and why attrition is occurring within the organization. Excel's versatile tools facilitated the calculation of critical metrics, visualization of data, and even predictive modelling, all within a cost-effective and accessible platform.

By turning raw HR data into actionable insights, the analysis provides a solid foundation for implementing targeted retention strategies that address the root causes of attrition. Moving forward, continuous monitoring and refinement of these strategies will help improve employee retention, reduce associated costs, and foster a more engaged and satisfied workforce. Ultimately, this Excel-based solution empowers the organization to make data-driven decisions, proactively manage employee attrition, and create a more stable and productive work environment.

Thank you