Technical Proposal for Human Resources Dataset Analysis

1. Introduction

This proposal outlines the methodology, tools, and deliverables for the Human Resources (HR) dataset analysis project. The project aims to clean, analyze, and visualize HR-related data to generate meaningful insights that can aid decision-making within an organization.

2. Project Objectives

- **Data Cleaning & Preprocessing**: Ensure data quality by addressing missing values, outliers, and inconsistencies.

- **Analysis Questions Definition**: Identify key questions that can provide actionable insights.

- **Dashboard Development**: Create an interactive Power BI dashboard for effective data visualization.

- **Final Report & Presentation**: Summarize findings, insights, and recommendations for stakeholders.

3. Project Timeline & Tasks

Week 1: Data Cleaning and Preprocessing

Tasks:

- Load and inspect the dataset.

- Identify and handle missing values.

- Address outliers in salary, tenure, and other key columns.

- Resolve inconsistencies in dates (e.g., hire date vs. review date).

- Normalize and format data for analysis.

Tools:

- Power BI (Power Query)

- Excel for initial data exploration

Deliverables:

- Cleaned and structured dataset.

- Data preprocessing documentation.

Week 2: Analysis Questions Phase

Tasks:

- Identify relevant analytical questions such as:

  o What is the correlation between employee satisfaction and performance?

  o How does education level impact salary and promotion opportunities?

  o What trends exist in employee attrition rates?

        ○   How does the number of years with a manager influence performance?

- Define key metrics and KPIs.

Tools:

- Power BI for exploratory data analysis

Deliverables:

- List of analytical questions and expected insights.

Week 3: Dashboard Development

Tasks:

- Design an interactive Power BI dashboard.
- Develop visualizations to answer key questions (e.g., bar charts, heatmaps, trend analysis).
- Implement filters for dynamic data exploration.

Tools:

- Power BI (DAX for calculations, visualization tools)

Deliverables:

- Interactive Power BI dashboard.

Week 4: Final Presentation

Tasks:

- Summarize data insights and key findings.
- Prepare a final presentation for stakeholders.
- Document recommendations for HR strategies based on findings.

Tools:

- PowerPoint for presentation
- Power BI for insights visualization

Deliverables:

- Final report detailing the methodology, analysis, and insights.
- PowerPoint presentation for stakeholders.

4. Data Challenges and Solutions

Challenge	Solution
Missing values in key fields	Impute or remove missing values based on context
Outliers in salary and tenure data	Cap extreme values within normal distribution

| Inconsistent dates | Cross-check and correct inconsistencies |
| Data misalignment | Standardize records and resolve discrepancies |

5. Expected Outcomes

- A clean and structured HR dataset.

- A set of well-defined analytical questions with insightful answers.

- An interactive dashboard enabling data-driven decision-making.

- A final report with recommendations for HR strategy and policy adjustments.

6. Conclusion

This project will provide valuable insights into HR data, helping decision-makers improve employee satisfaction, performance tracking, and workforce management. By leveraging Power BI and data analytics techniques, we aim to deliver a comprehensive HR analysis solution.