Project Documentation: HR Analytics Dashboard

1. Project Overview

This Power BI project provides a comprehensive HR Analytics Dashboard designed to analyze and visualize employee attrition trends, identify contributing factors, and support data-driven decision-making. The dashboard consolidates HR data to track workforce metrics such as attrition rate, demographics, education background, job satisfaction, and salary-related factors.

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2. Objectives

- To monitor overall employee attrition and its distribution.
- To identify patterns and key reasons for attrition across different segments (age, education, salary, job role, etc.).
- To enable HR teams to make informed decisions for retention strategies.
- To create an interactive and visually intuitive dashboard for quick insights.

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3. Data Sources

- **Primary Data Source:** HR employee records (Excel/CSV/Database).
- **Key Data Fields:**
    - Employee ID
    - Age
    - Gender
    - Education Field
    - Salary Slab
    - Job Role
    - Years at Company
    - Job Satisfaction (1-4 scale)
    - Attrition (Yes/No)

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4. Key Metrics and KPIs

- **Count of Employees:** Total number of employees in the dataset.
- **Attrition Count:** Number of employees who have left.
- **Attrition Rate (%):**

$$\text{Attrition Rate} = \frac{\text{Attrition Count}}{\text{Total Employees}} \times 100$$

- **Average Age:** Mean age of employees.

- **Average Salary:** Mean salary.
- **Average Years:** Average tenure in years.

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5. Dashboard Components

a) Summary Cards

- Count of Employees
- Attrition Count
- Attrition Rate
- Average Age
- Average Salary
- Average Years at Company

b) Attrition by Education

- Donut chart showing attrition distribution across education fields (Life Sciences, Medical, Marketing, etc.).

c) Attrition by Age

- Bar chart categorizing attrition by age groups (18–25, 26–35, 36–45, etc.).

d) Attrition by Gender

- Stacked bar chart comparing attrition between male and female employees.

e) Attrition by Salary Slab

- Horizontal bar chart showing attrition counts across salary categories (e.g., Up to 5k, 5k–10k, etc.).

f) Attrition by Years at Company

- Line chart showing attrition trends against employee tenure.

g) Job Satisfaction vs Job Role

- Matrix visual displaying job satisfaction scores (1–4) for each job role.

h) Attrition by Job Role

- Horizontal bar chart showing attrition count per job role.

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6. Interactivity

- **Filters/Slicers:**
    - Department selection (Human Resource, Research & Development, Sales)
    - Drill-down capability for more detailed analysis.

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7. Tools & Technologies Used

- **Power BI Desktop:** For data modeling, visualization, and dashboard creation.
- **DAX (Data Analysis Expressions):** For calculated columns and measures.
- **Power Query:** For data cleaning and transformation.

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8. Insights and Observations

- Highest attrition is seen in the **26–35 age group**.
- Employees with **Life Sciences education** have the highest attrition percentage.
- **Lower salary slabs** (up to 5k) show significantly higher attrition.
- Certain job roles (Laboratory Technician, Sales Executive) experience the most attrition.

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9. Future Enhancements

- Integration with real-time HR databases.
- Predictive modeling for attrition risk.
- Adding more demographic dimensions (location, marital status, etc.).
- Exportable automated HR reports.