1. Project Title

HR Analytics – Employee Attrition Analysis Using Power BI

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2. Introduction

Human Resource departments play a critical role in managing employee retention and workforce performance.

This **HR Analytics project** focuses on analysing employee data to identify **attrition patterns, demographic trends, and job satisfaction levels**.
Using **Microsoft Power BI**, raw HR data is converted into an **interactive and insightful dashboard** to support data-driven HR decisions.

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3. Project Objectives

The key objectives of this project are:

- To analyze **employee attrition rate**
- To identify factors affecting employee turnover
- To study attrition based on **age, salary, education, job role, and experience**
- To provide actionable insights for **HR decision-making**

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4. Dataset Description

- **Dataset Type:** HR Employee Dataset
- **Data Source:** Excel file
- **Total Employees: 1,470**
- **Total Attributes: 35+ columns**

Key Columns:

- Employee ID
- Age & Age Group
- Gender
- Department
- Job Role
- Education Field
- Monthly Income
- Years at Company
- Job Satisfaction
- Attrition

📌 *The dataset contains employee demographic, professional, and compensation information.*

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5. Tools & Technologies Used

Tool	Purpose
Power BI Desktop	Data visualization & dashboard
Power Query	Data cleaning & transformation
Microsoft Excel	Data source

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6. Data Cleaning & Preparation

The following steps were performed using **Power Query**:

- Removed duplicate employee records
- Checked for missing and null values
- Standardized column names
- Converted data types
- Created calculated columns and measures

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7. Key KPIs (Using DAX)

The following KPIs were created:

- **Total Employees:** 1,470
- **Attrition Count:** 237
- **Attrition Rate:** 16%
- **Average Age:** 36.92 years
- **Average Salary:** 6.50K
- **Average Years at Company:** 7.01 years

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8. Dashboard Overview

The **HR Analytics Dashboard** includes the following components:

KPI Cards

- Total Employees
- Attrition
- Attrition Rate
- Average Age
- Average Salary
- Average Years

Visualizations

- Attrition by Education Field
- Attrition by Age Group
- Attrition by Salary Range
- Attrition by Years at Company
- Job Role vs Job Satisfaction

Filters (Slicers)

- Gender
- Department

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9. Key Insights & Findings

- Employees aged **26–35** show the highest attrition
- Attrition is higher among employees with **lower salary ranges**
- Employees with **less than 2 years of experience** are more likely to leave
- Certain education fields and job roles experience higher turnover
- Job satisfaction directly impacts employee retention

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10. Business Impact

This HR Analytics dashboard helps:

- Identify high-risk employee groups
- Improve employee retention strategies
- Support workforce planning
- Reduce hiring and training costs
- Enable faster HR decision-making

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11. Conclusion

The **HR Analytics Power BI project** successfully demonstrates how employee data can be transformed into meaningful insights using business intelligence tools. The dashboard provides HR teams with a clear view of attrition trends and workforce behaviour, enabling proactive human resource management.

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12. Future Enhancements

- Add predictive attrition analysis
- Include performance evaluation metrics
- Connect real-time HR databases
- Enhance visuals using advanced Power BI features

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13. Dashboard