Employee Attrition Dashboard Documentation

1. Project Overview

1.1. Project Overview

The Employee Attrition Dashboard is designed to provide insights into employee attrition within an organization. It visualizes key metrics such as attrition rate, employee demographics, job satisfaction, and other relevant factors that influence employee turnover.

1.2. Objectives

- Analyze employee attrition trends.
- Identify key factors contributing to employee turnover.
- Provide actionable insights to HR and management to reduce attrition.

1.3. Data Source

The dataset used for this project is **WA_Fn-UseC_-HR-Employee-Attrition.csv**, which contains various attributes related to employees, including:
- **Demographics**: Age, Gender, Marital Status
- **Job Details**: Department, Job Role, Job Level
- **Satisfaction**: Job Satisfaction, Environment Satisfaction
- **Compensation**: Monthly Income, Salary Hike
- **Attrition**: Whether the employee has left the company (Yes/No)

1.4. Tools and Technologies

- **Tableau**: For creating visualizations and dashboards.
- **Excel/CSV**: For data preparation and cleaning.
- **Documentation**: Markdown or Word for project documentation.

1.5. Key Metrics to Visualize

- **Attrition Rate**: Percentage of employees who have left the company.
- **Department-wise Attrition**: Attrition rate by department.
- **Job Role Attrition**: Attrition rate by job role.
- **Salary vs. Attrition**: Correlation between salary and attrition.
- **Job Satisfaction vs. Attrition**: Correlation between job satisfaction and attrition.
- **Age Distribution**: Age distribution of employees who left vs. stayed.
- **Gender-wise Attrition**: Attrition rate by gender.

1.6. Dashboard Layout

- **Header**: Title of the dashboard.
- **Filters**: Department, Job Role, Gender, etc.
- **Visualizations**: Bar charts, pie charts, scatter plots, and heatmaps.
- **Summary**: Key insights and recommendations.

2. Tableau Workbook Creation

2.1. Data Preparation

- **Load Data**: Import the `WA_Fn-UseC_-HR-Employee-Attrition.csv` file into Tableau.
- **Data Cleaning**: Ensure there are no missing values or inconsistencies in the data.
- **Create Calculated Fields**:
    - **Attrition Rate**: `COUNT(IF [Attrition] = "Yes" THEN 1 END) / COUNT([EmployeeNumber])`
    - **Job Satisfaction Score**: Average of `JobSatisfaction`.
    - **Environment Satisfaction Score**: Average of `EnvironmentSatisfaction`.

2.2. Key Metrics and Visualizations

2.2.1. Attrition by Job Role

- **Visualization Type**: Bar Chart
- **X-Axis**: Job Role
- **Y-Axis**: SUM(Attrition#)
- **Color**: Job Role
- **Steps**:

a. Drag `Job Role` to the Columns shelf.
b. Drag `Attrition#` to the Rows shelf.
c. Set the Mark type to Bar.
d. Color the bars by `Job Role.`

2.2.2. Years Since Last Promotion vs. Years in Current Role

- **Visualization Type**: Scatter Plot
- **X-Axis**: Years Since Last Promotion
- **Y-Axis**: Years in Current Role
- **Color**: Attrition#
- **Steps**:
  a. Drag `Years Since Last Promotion` to the Columns shelf.
  b. Drag `Years in Current Role` to the Rows shelf.
  c. Drag `Attrition#` to the Color shelf.
  d. Set the Mark type to Circle.

2.2.3. Attrition by Number of Companies Worked

- **Visualization Type**: Area Chart
- **X-Axis**: Num Companies Worked
- **Y-Axis**: SUM(Attrition#)
- **Color**: Job Role
- **Steps**:
  a. Drag `Num Companies Worked` to the Columns shelf.
  b. Drag `Attrition#` to the Rows shelf.
  c. Set the Mark type to Area.
  d. Color the area by `Job Role.`

2.2.4. Attrition by Gender and Department

- **Visualization Type**: Pie Chart
- **Category**: Gender
- **Value**: SUM(Attrition#)
- **Color**: Department
- **Steps**:
  a. Drag `Gender` to the Columns shelf.
  b. Drag `Attrition#` to the Rows shelf.

c. Set the Mark type to Pie.
d. Color the pie slices by `Department`.

2.3. Dashboard Layout

2.3.1. Header

- Add a title to the dashboard, e.g., "Employee Attrition Dashboard".

2.3.2. Filters

- Add filters for `Department`, `Job Role`, `Gender`, and `Num Companies Worked`.

2.3.3. Visualizations

- Arrange the visualizations in a grid layout:
    - **Top Row**: Attrition by Job Role (Bar Chart) and Attrition by Gender and Department (Pie Chart).
    - **Middle Row**: Years Since Last Promotion vs. Years in Current Role (Scatter Plot).
    - **Bottom Row**: Attrition by Number of Companies Worked (Area Chart).

2.3.4. Summary

- Add a text box with key insights and recommendations based on the visualizations.

3. Final Dashboard

3.1. Dashboard Layout

- **Header**: "Employee Attrition Dashboard"
- **Filters**: Department, Job Role, Gender, Num Companies Worked
- **Visualizations**:
    - Attrition by Job Role: Bar Chart
    - Attrition by Gender and Department: Pie Chart
    - Years Since Last Promotion vs. Years in Current Role: Scatter Plot
    - Attrition by Number of Companies Worked: Area Chart
- **Summary**: Key insights and recommendations

4. Documentation

4.1. User Guide

4.1.1. How to Use the Dashboard

- Explain how to interact with the filters and interpret the visualizations.

4.1.2. Key Insights

- Provide a summary of the key insights derived from the dashboard.

4.1.3. Recommendations

- Suggest actionable steps based on the insights.

4.2. Technical Documentation

4.2.1. Data Source

- Description of the dataset and its attributes.

4.2.2. Calculated Fields

- Explanation of any calculated fields used in Tableau.

4.2.3. Visualizations

- Description of each visualization and its purpose.

4.2.4. Filters

- List of filters available in the dashboard and their impact on the visualizations.

5. Conclusion

The **Employee Attrition Dashboard** provides a comprehensive view of employee attrition within

the organization. By analyzing key metrics and trends, HR and management can make informed decisions to reduce turnover and improve employee satisfaction.

This structure offers a thorough explanation of the project from beginning to end and organizes each section in a logical flow. Let me know if you'd like further adjustments or details added!