Power bi project-HR Data

Develop a power bi project focused on HR data for a company Riverwood Industries facing challenges in comprehending their employee data to extract valuable insights. Construct a comprehensive dashboard that includes that includes the following components:

Summary page:

-present a page of key HR metrics

Headcount analysis:

-Showcase year-on-year trends in headcount and attrition.

-Display headcount breakdown based on gender.

-Display headcount distribution across various age groups.

-Analyze headcount based on gender.

-Show headcount by different departments.

Slicers for Enhanced Analysis:

-Implement multiple slicers enabling dynamic filtering by department, country, and employee full name.

Data refresh information

-Incorporate a visual element indicating the date and time of the last data refresh

By transforming this data into an insightful dashboard, the company will gain a clearer understanding of their workforce dynamic and be better equipped to make informed decisions.

1. Project Objective

The objective of this project was to design a Power BI dashboard for Riverwood Industries' HR team, enabling them to analyze workforce distribution, headcount trends, gender balance, and attrition insights. The dashboard empowers HR leaders to make data-driven decisions and improve workforce planning.

2. Dataset Details

- **Source**: HR data provided (Excel/CSV format).
- **Size**: 1,000 employee records.
- **Key Fields**: Employee Name, Gender, Age, Business Unit, Country, Job Title, Headcount, and Date fields.

3. Data Preparation (Power Query)

- Removed duplicates and blank records.
- Ensured proper data types (dates, whole numbers, categorical fields).
- Standardized column names for clarity (e.g., *BusinessUnit*, *JobTitle*).
- Created calculated columns/measures:
    - **Headcount**
    - **Gender Ratio %**
    - **Employee Distribution by Department**

4. Data Modeling

- Established **relationships** between dimension tables (Employees, Business Unit, Country) and fact table (Headcount).
- Applied a **star schema** model for optimized performance.
- Created **DAX measures**:
    - Total Headcount = COUNT(EmployeeID)
    - Male % / Female %
    - Year-on-Year Headcount Growth

5. Dashboard Components

📌 Summary Page

- KPIs: **Total Headcount (1,000)**, Male vs Female Ratio (49% vs 52%).
- Real-time **data refresh timestamp**.

📌 HR Analysis Page

- **Employee Headcount Trend** (2000–2025).
- **Gender Distribution** (Pie chart: 485 Male, 515 Female).
- **Age-wise Employee Volume** (e.g., highest in age 58 = 25 employees).
- **Employee Headcount by Business Unit** (e.g., Specialty Products = 266, Research & Development = 253).
- **Employee Headcount by Country** (US = 634, China = 227, Brazil = 139).
- **Employee Headcount by Job Title** (e.g., Managers = 109, Vice Presidents = 108).

📌 Slicers

- Enabled filtering by: **Business Unit, Country, and Employee Name** for dynamic analysis.

6. Insights / Findings

- Workforce is **evenly balanced by gender** (slightly higher female %).
- **United States** contributes the majority of employees (63% of workforce).
- **Specialty Products unit** has the highest headcount (266 employees).
- Most employees fall within the **age range 58–61**, indicating an aging workforce.
- Job roles are concentrated in **Manager (109) and VP (108)** positions, showing leadership-heavy structure.
- **Headcount grew steadily** year-on-year, peaking in 2025 (85 employees added).

7. Tools Used

- **Power BI Desktop** (data cleaning, modeling, dashboard creation)
- **Power Query** (ETL process)
- **DAX** (measures & KPIs)
- **Excel** (data source)

8. Conclusion

The HR dashboard successfully provides:

- A **clear overview of workforce structure**.
- Visibility into **gender diversity, age distribution, and departmental balance**.
- Key metrics to identify **attrition trends, workforce planning needs, and skill gaps**.

This project demonstrates the power of **Power BI** in transforming raw HR data into a dynamic, user-friendly dashboard, ensuring Riverwood Industries' HR team can take **informed, data-driven decisions**.