HR Analysis

**Column Explanations (as a German company)**

1. **EmpID** → Unique identifier for each employee. Helps avoid confusion in HR records.
2. **Age** → Employee age. Important for career progression, retirement planning, and workforce demographics.
3. **AgeGroup** → Age bucket. Used for analysis of attrition or performance trends by age.
4. **Attrition** → Whether the employee left (Yes/No). This is our main metric — we want to reduce attrition.
5. **BusinessTravel** → Travel frequency (Rarely, Frequently, Non-Travel). Used to analyze correlation between travel and job satisfaction or attrition.
6. **DailyRate** → Internal measure of daily compensation or cost for accounting.
7. **Department** → Department of employee. Critical to understand department-wise performance, satisfaction, and attrition.
8. **DistanceFromHome** → Distance from home in km. Helps analyze work-life balance and attrition.
9. **Education** → Education level. Useful for role allocation, promotions, and training needs.
10. **EducationField** → Field of study (Life Sciences, Medical, Marketing). Helps us understand skill alignment.
11. **EmployeeCount** → Always 1 in your sample, for compatibility with some systems.
12. **EmployeeNumber** → Internal HR number. Another unique identifier for payroll/HRMS.
13. **EnvironmentSatisfaction** → 1–5 rating. Helps measure workplace satisfaction, key to retention.
14. **Gender** → Male/Female. Needed for diversity reporting and regulatory compliance.
15. **HourlyRate** → Used for internal cost analysis and payroll planning.
16. **JobInvolvement** → Engagement score, 1–5. Measures how invested employees are in their work.
17. **JobLevel** → Career level (entry, mid, senior). Helps in promotions and compensation planning.
18. **JobRole** → Specific job title. Critical for role-based analysis of attrition, satisfaction, and performance.
19. **JobSatisfaction** → 1–5 rating. Direct metric for employee happiness.
20. **MaritalStatus** → Helps in understanding personal circumstances affecting attrition/work-life balance.
21. **MonthlyIncome** → Payroll figure. Central for compensation analysis.
22. **SalarySlab** → Categorized for easy visualization and salary analysis.
23. **MonthlyRate** → Another internal measure of compensation.
24. **NumCompaniesWorked** → Shows previous work experience. Can influence performance and attrition risk.
25. **Over18** → Regulatory check. All employees are above 18.
26. **OverTime** → Yes/No. Useful to see correlation of overtime with satisfaction, attrition, and performance.
27. **PercentSalaryHike** → Annual hike percentage. Important for salary planning and retention analysis.
28. **PerformanceRating** → 1–5. Core KPI for appraisals and promotion decisions.
29. **RelationshipSatisfaction** → 1–5. Measures satisfaction with colleagues/team.
30. **StandardHours** → Usually 80 in your dataset. Needed for payroll calculations.
31. **StockOptionLevel** → 0–3. Shows eligibility for stock options. Impacts retention.
32. **TotalWorkingYears** → Total career experience. Helps in benchmarking performance and salary.
33. **TrainingTimesLastYear** → Number of training sessions. Important for upskilling and retention.
34. **WorkLifeBalance** → 1–4. Core metric to analyze attrition and satisfaction.
35. **YearsAtCompany** → Tenure. Correlates with loyalty and promotion planning.
36. **YearsInCurrentRole** → Helps analyze career growth and stagnation risks.
37. **YearsSinceLastPromotion** → Key retention indicator.
38. **YearsWithCurrManager** → Relationship with manager. Strong predictor of attrition and satisfaction.

**Why we gave you this data**

* We want to **understand our workforce** better — retention, satisfaction, performance.
* We need insights for **HR decisions**: promotions, training, hiring, and engagement programs.
* We want a **dashboard** to quickly visualize:
  + Attrition hotspots by department, age group, or role
  + Satisfaction trends across teams
  + Performance vs compensation
  + Work-life balance vs overtime

**Dashboard Expectations (from you, our Data Analyst)**

1. **Attrition Analysis** → Pie/bar charts by department, role, age group.
2. **Satisfaction & Engagement** → Heatmaps or stacked bar charts of EnvironmentSatisfaction, JobSatisfaction, WorkLifeBalance.
3. **Performance vs Compensation** → Scatter or bubble charts.
4. **Tenure & Promotion Analysis** → YearsAtCompany, YearsSinceLastPromotion trends.
5. **Overtime & Work-Life Balance** → Insights on who is burning out.
6. **Predictive Insights (optional)** → Which employees are at risk of leaving?

**Your role as a data analyst**

* **Step 1:** Clean and preprocess the data (missing values, correct types).
* **Step 2:** Explore and visualize key patterns.
* **Step 3:** Answer business questions (why are certain departments losing employees? Who is most satisfied?).
* **Step 4:** Build dashboards (Power BI / Excel / Python).
* **Step 5:** Deliver actionable recommendations for HR.