

Visualization on Attrition dataset

1 Count Plot – Business Travel vs Attrition

What it shows: The number of employees in each Business Travel category, split by Attrition status.

Insight: Helps identify whether frequent or rare travelers tend to leave the company more often. If the “Attrition” hue shows more “Yes” in one category, that category has higher churn risk.

2 Bar Plot – Business Travel vs Attrition

What it shows: Aggregated counts of Attrition per Business Travel category using a simple bar chart.

Insight: A simpler version of the above; easier to see which category has the most attrition overall.

3 Pie Chart – Business Travel vs Attrition

What it shows: Percentage distribution of Attrition across Business Travel categories.

Insight: Quickly highlights which travel category contributes the most to attrition percentage-wise.

4 Bar Plot – Department vs Attrition

What it shows: Attrition counts per Department.

Insight: Identifies which department (e.g., Sales, HR, R&D) has the highest employee attrition.

5 Pie Chart – Department vs Attrition

What it shows: Percentage distribution of attrition across different departments.

Insight: Visualizes department-level attrition contribution in percentage form.

6 Point Plot – Attrition vs DistanceFromHome

What it shows: Average distance from home for employees who stayed vs left.

Insight: Helps see whether longer commutes are associated with high attrition.

7 Bar Plot – Attrition vs DistanceFromHome

What it shows: Same variables but in a bar form to compare mean distances.

Insight: Confirms if commuting distance correlates with attrition.

8 Count Plot – Attrition by Gender

What it shows: Count of attrition cases split by gender.

Insight: Reveals if attrition is more prevalent in a particular gender group.

9 Box Plot – Attrition vs JobSatisfaction

What it shows: Distribution of Job Satisfaction scores for employees who left vs stayed.

Insight: Lower median job satisfaction may indicate higher attrition risk.

10 Bar Plot – JobSatisfaction vs MonthlyIncome by Attrition

What it shows: Average Monthly Income across Job Satisfaction levels for each attrition group.

Insight: Examines the combined effect of income and job satisfaction on attrition.

Count Plot – JobSatisfaction by Attrition

What it shows: Number of employees at each satisfaction level, split by attrition.

Insight: Low satisfaction levels with high attrition counts point to problem areas.

Point Plot – JobSatisfaction vs Attrition by Gender

What it shows: Attrition rate trend across satisfaction levels split by gender.

Insight: Helps see if men and women behave differently at different satisfaction levels.

Box Plot – Attrition vs MonthlyIncome

What it shows: Income distribution of employees who stayed vs left.

Insight: Lower income may correlate with higher attrition.

Bar Plot – Attrition vs MonthlyIncome

What it shows: Aggregated Monthly Income per Attrition category.

Insight: A simpler high-level view of income differences between attrition groups.

Violin Plot – Attrition vs Some Feature

What it shows:

A violin plot combines a box plot with a KDE (kernel density estimate) to show the distribution and density of a numeric feature (like MonthlyIncome or JobSatisfaction) across Attrition categories (“Yes” vs “No”).

Insight:

- You can see the median (white dot) and interquartile range (thick bar) for each group.
- The wider sections of the violin indicate more employees at that value.
- If the “Attrition = Yes” violin is concentrated at lower values, it means employees who left had lower scores/incomes.

Joint Plot – Relationship Between Two Numeric Features by Attrition

What it shows:

A joint plot visualizes the relationship between two continuous variables and also shows the distribution of each variable separately on the top and side histograms.

Insight:

- The main scatter area shows how two features (say DistanceFromHome vs MonthlyIncome) are related for each attrition group.
- The marginal histograms show the distribution of each variable individually.
- If one group (Attrition=Yes) clusters differently or at lower/higher values compared to “No,” that reveals a trend or risk factor.

