# Case Study 2: Analyzing Employee Data for a Tech Company

#### Problem Statement

A tech company aims to understand its employee data in order to make informed decisions regarding human resources. The company has access to data about employee demographics (age, gender, location), job title, and salary. They seek to gain insights into:

* The distribution of salaries across job titles.
* The demographics of their employees (age, gender, etc.).
* Correlations between job title, gender, and salary.

#### Goal

The company intends to use the employee data to:

1. Understand salary distribution across different job roles.
2. Analyze the demographics of employees, such as gender balance and age distribution.
3. Identify any correlations between employee gender, job title, and salary.
4. Leverage these insights to make informed decisions related to pay equity, promotions, hiring, and overall HR strategy.

#### *The technologies to be used to solve this problem are Python, Pandas, data analysis, data visualization, and basic statistics.*

### Steps to solve the case study as follows:

1. **Data Collection:** The company has a dataset containing the following fields:
   * **EmployeeID**: Unique identifier for each employee.
   * **Age**: Age of the employee.
   * **Gender**: Gender of the employee.
   * **Job Title**: Employee’s role in the company.
   * **Salary**: Current salary of the employee.
2. **Data Preprocessing:** Before proceeding with analysis, the data is cleaned, with missing or erroneous values handled appropriately (e.g., filling in missing ages, handling gender misclassifications). The data is then loaded into a Pandas DataFrame for further analysis.
3. **Data Analysis:**
   * **Do profiling on data** to generate an in-depth summary of the dataset. This report includes key metrics such as missing values, variable distributions, and correlations between variables.
   * The profiling report highlights trends in the data, such as the relationship between salary and job title, the distribution of salaries by gender, and possible outliers in the salary data.
4. **Insights and Recommendations: (Your view points based on data analysis/report)**
   * Competitive salaries for high-level job titles
   * Identify if there is any gender pay gap and address it
   * Adjustments in the salary based on the locations where the employees work.

#### Below is the sample answer(Insight 1) regarding “**Point: 4. Insights and Recommendations**”

***Answer:***

***Insight 1:*** *Location-Specific Salary Adjustments  
Salaries in high-cost-of-living cities like San Francisco and New York are higher than in other locations.*

* ***Recommendation****: Ensure location-specific salary adjustments to remain competitive in high-demand areas. Consider offering remote work options to employees in lower-cost regions while providing equitable compensation.*