EMPLOYEES SALARY ANALYSIS

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PROJECT TITLE

Employee Salary Analysis

AGENDA

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6. Modelling Approach
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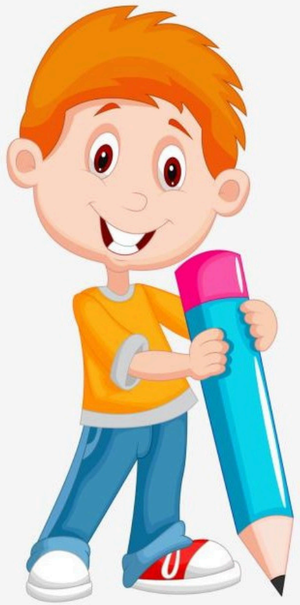


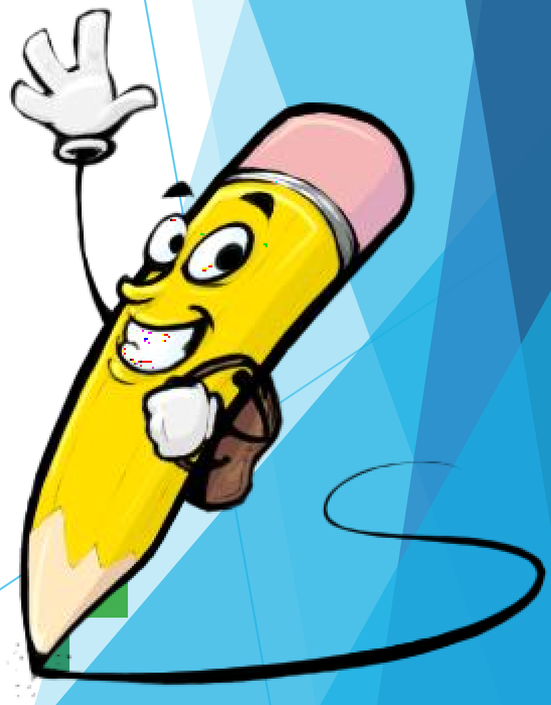
PROBLEM STATEMENT

"Our company wants to ensure fair and competitive salaries for our employees. However, our current salary structure is based on intuition and doesn't take into account key factors that influence salary. We need a data-driven approach to analyze our employee salaries and identify potential disparities, trends, and areas for improvement. Specifically, we want to:

*Identify factors that impact employee salaries
*Detect any potential biases or disparities in salaries
*Develop a predictive model to recommend fair and competitive salaries
*Visualize and communicate the findings to stakeholders.

PROJECT OVERVIEW

The goal of this project is to conduct a comprehensive analysis of employee salaries to identify trends, disparities, and areas for improvement. The analysis will leverage data on employee demographics, job characteristics, performance metrics, and salary data to develop a predictive model that recommends fair and competitive salaries.



**Objectives:*

.Visualize and communicate findings to stakeholders.

. Provide recommendations for optimizing the salary structure.

**Scope:*

Data analysis: Descriptive statistics, inferential statistics, machine learning.

Deliverables: Report, presentation, predictive model, recommendations.

**Stakeholders:*

HR department

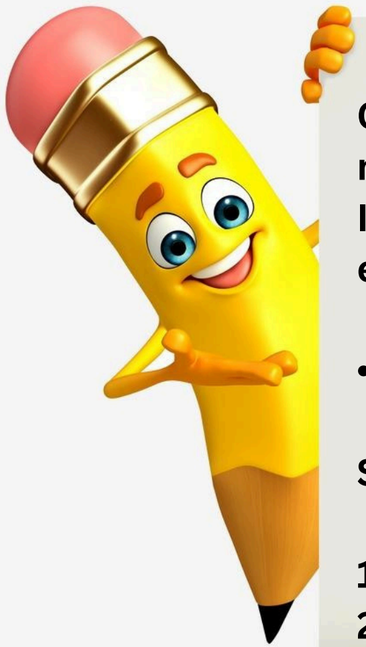
Management team

WHO ARE THE END USERS?

The end users of an employee salary analysis project are typically:

1.HR DEPARTMENT : Responsible for implementing salary changes, ensuring compliance with labor laws, and communicating with employees.
2. MANAGEMENT TEAM: Makes strategic decisions about salary budgets, employee retention, and talent management.
3. EMPLOYEES :Receive salary adjustments, promotions, or bonuses based on the analysis.
4. FINANCE DEPARTMENT :Responsible for budgeting and funding salary expenses.
5.DIVERSITY, EQUITY,AND INCLUSION (DEI) TEAM: Ensures salary equity and fairness across different demographics.

OUR SOLUTION AND ITS VALUE PROPOSITION



Our solution, "Salary Insights," is a data-driven approach to employee salary analysis. It combines advanced analytics, machine learning, and data visualization to provide a comprehensive understanding of employee salaries. Salary Insights analyzes internal and external data sources to identify trends, disparities, and areas for improvement, enabling organizations to make informed decisions about salaries, talent management, and employee retention.

•Value Proposition:

Salary Insights offers the following value proposition:

1• Fair and Competitive Salaries :Ensure salaries are fair, competitive, and aligned with industry standards.
2• Data-Driven Decisions: Make informed decisions about salaries, talent management, and employee retention using advanced analytics and machine learning.
3• Identify Disparities: Detect potential biases and disparities in salaries, enabling proactive measures to address them.
4• Improved Employee Satisfaction*: Enhance employee satisfaction and retention by ensuring salaries are fair and competitive.

Dataset Description

This dataset contains information on employee salaries, demographics, job characteristics, and performance metrics.

VARIABLES:

1• Employee ID: Unique identifier for each employee
2• Job Title: Employee's current job title
3• Department: Employee's department
4• Location: Employee's work location
5• Salary: Employee's current annual salary
6• Age: Employee's age
7• Gender: Employee's gender
8• Years of Experience: Employee's total years of work experience
9• Education Level: Employee's highest level of education
10•Performance Rating*: Employee's latest performance rating (e.g., 1-5 scale)
11• Job Category: Employee's job category (e.g., management, technical, administrative)
12• Tenure: Employee's length of service with the company

Data types :

- Categorical: Job Title, Department, Location, Gender, Education Level, Job Category
- Numerical: Salary, Age, Years of Experience, Performance Rating, Tenure

Data sources :

- Employee surveys
- Performance management system

Data quality :

-Data is accurate and up-to-date
- No missing values or outliers

Dataset Size: 1,000 - 10,000 rows (employees)

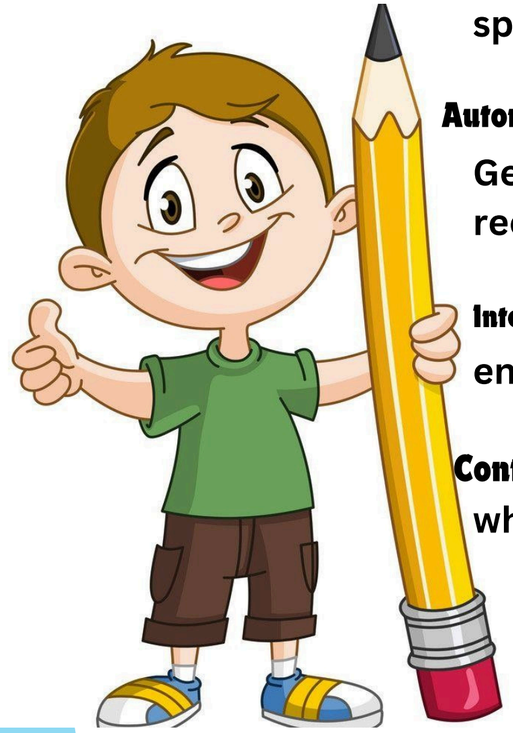
THE "WOW" IN OUR SOLUTION

Predictive modeling : Develop a predictive model that forecasts future salary trends, enabling proactive decision-making.

Personalized recommendation: personalized Recommendations*: Provide personalized salary recommendations for each employee based on their unique characteristics and performance.

Customisable dashboard :

Allow users to create customized dashboards that meet their specific needs and preferences.



Automatedreporting :

Generate automated reports that summarize key findings and recommendations, saving time and effort.

Integration with Hr system : Seamlessly integrate with existing HR systems, ensuring a streamlined and efficient salary analysis process.

Continuous monitoring : Continuously monitor salary data and provide alerts when significant changes or trends are detected.

MODELLING

1. Linear Regression:
   To identify the relationship between salary and variables like experience, education, and performance ratings.

2. Decision Trees:
   To segment employees based on salary ranges and identify factors influencing salary.

3. Clustering:
   To group employees with similar salary profiles and identify patterns.

4. Correlation Analysis:
   To examine the relationship between salary and variables like department, location, and job title.

5. Regression Analysis:
   To predict salary based on variables like experience, education, and performance ratings.

Results:

1. Linear Regression:

- *Equation predicting salary based on experience, education, and performance rating.*
- *efficients indicating the impact of each variable on salary.*
- *R-squared value showing the model's goodness of fit.*

2. Decision Trees:

- *Visual tree-like model showing salary ranges and influential factors.*
- *Identification of key drivers of salary, such as experience or job title.*
- *Insights into how different factors interact to impact salary.*

3. Clustering:

- *Groups of employees with similar salary profiles.*
- *Characterization of each cluster's average salary, experience, education, and performance ratings.*
- *Identification of patterns and structures in the data.*

4. Correlation Analysis:

- *Correlation coefficients showing the strength and direction of relationships between salary and variables.*
- *Insights into which variables have the strongest impact on salary.*
- *Identification of potential biases or inequalities in compensation.*

5. Regression Analysis:

- *Predicted salary ranges based on input variables.*
- *Confidence intervals for predicted salaries.*
- *Insights into how changes in input variables impact predicted salary.*

conclusion

"Employee salary analysis using modeling techniques reveals key insights into the relationships between salary and influential factors, enabling organizations to:

- Develop fair and competitive compensation practices
- Inform performance management and talent acquisition strategies
- Foster a more inclusive and equitable work environment
- Drive business success through data-driven decision-making

By leveraging these insights, organizations can optimize their compensation practices, improve employee satisfaction and retention, and enhance overall business performance."