PROJECT DOCUMENTATION

Problem Statement

In today’s business environment, companies like Accenture face significant challenges in ensuring

fair and equitable salary allocation. Outdated manual HR and Finance processes often lead to inequities, bias, and budget strain. Human decision-making can overlook factors such as education, experience, job role, and market trends, resulting in overpayment, underpayment, and reduced employee engagement.

Adopting Artificial Intelligence can improve the accuracy and fairness of salary decisions by analyzing a wide range of employee and market data, thereby supporting both equitable compensation and organizational financial stability. Failure to address this issue affects employees through decreased job satisfaction, disengagement, and higher turnover, while the company experiences reduced productivity and ROI.

# How will it benefit the community?

By ensuring fair pay structures and eliminating bias, the AI solution fosters trust and economic stability within the local community. This leads to higher morale, improved workforce participation, and reduced labor unrest, creating a socially responsible business environment.

# Business Background

Accenture’s HR and Finance departments manage compensation for a diverse workforce, making accurate and equitable salary allocation critical. Manual processes are time-consuming, prone to errors, and influenced by subjective judgment. Implementing AI in this context supports sustainable HR practices, enhances employee satisfaction, and strengthens the company’s overall financial management.

# Business Objectives

Develop an AI solution to assist companies in determining fair and equitable employee salaries.

Eliminate bias and subjectivity in compensation decisions.

Improve HR efficiency and reduce manual effort in payroll decision-making.

Business Success Criteria

AI model achieves ≥85% accuracy in salary predictions.

Reduction of salary discrepancies by at least X% across employee categories.

Improved employee satisfaction scores related to compensation.

Significant reduction in HR time spent on salary calculations.

Requirements  
Employee Data:

Age, Gender, Job Title, Education Level, Years of Experience, Salary

Technical Requirements:

Python programming environment

Python libraries: scikit-learn, Pandas, NumPy, Matplotlib, Random

Cloud deployment (Amazon Web Services)

Internet access for development and testing

Human Requirements:

Access to HR and Finance experts to understand business rules

Training staff to effectively use and maintain the AI system

Constraints

Budget limitations for resources and cloud services

Compliance with HR and Finance policies

POPIA compliance for employee data privacy

Availability and quality of historical salary data

Risks

Potential privacy breaches if employee data is not properly secured.

AI may unintentionally replicate existing biases if trained on biased historical data.

Companies might misuse the AI tool to justify lowering salaries under the guise of fairness.

Tools

Programming Languages & Libraries: Python, scikit-learn, Pandas, NumPy, Matplotlib, Random

Version Control & Collaboration: Git, GitHub

Development Environment: Python IDE

AI Programs: Random Forest classifier, supervised machine learning frameworks

Techniques  
Data Preparation:

Convert categorical data to numerical (One-Hot Encoding)

Convert missing or blank values to NaN

Remove rows with NaN where necessary

Model Training:

Supervised machine learning approach

Classification algorithms (Random Forest classifier)

Train-test split for model evaluation

Evaluation Metrics:

Accuracy Score

Precision Score

Recall Score

F1 Score