**Title of the Project: *Workforce Attrition Forecasting***

**Objective:**

* Predict whether an employee/worker is likely to leave the organization based on various factors.

**Key Features:**

1. **Employee Data**
   * Age, Gender, Department, Job Role, Salary, etc.
2. **Work Environment Factors**
   * Job Satisfaction, Work-Life Balance, Promotion Status, etc.
3. **Performance & Tenure**
   * Years at Company, Number of Projects, Performance Rating, etc.
4. **External Influences**
   * Salary Hike, Opportunities Outside, Distance from Work, etc.

**Dataset Used:**

* Can be sourced from **IBM HR Analytics**, Kaggle datasets, or company-provided data.

**Machine Learning Approach:**

1. **Data Preprocessing**
   * Handling missing values, encoding categorical data, feature scaling.
2. **Exploratory Data Analysis (EDA)**
   * Identifying key factors influencing departure.
3. **Model Selection & Training**
   * Logistic Regression, Decision Trees, Random Forest, XGBoost, etc.
4. **Evaluation Metrics**
   * Accuracy, Precision, Recall, F1-Score, ROC-AUC.

**Deployment Options:**

* Flask/Django for API
* Streamlit for interactive UI
* Integration with company HR tools

**Enhancements which we Can Consider:**

1. **Feature Engineering:**
   * Add new features like **peer reviews, company policies impact, sentiment analysis** on exit interviews.
2. **Hyperparameter Tuning:**
   * Use GridSearchCV, RandomizedSearchCV for improving model accuracy.
3. **Explainability & Interpretability:**
   * Use **SHAP (SHapley Additive exPlanations)** to explain predictions.
4. **Real-time Predictions:**
   * Deploy as an API that HR can use to analyse live employee data.