Hope Artificial Intelligence

Scenario Based Learning

A Company works with number of employees, all the works are dependents on the employees. Even if one of the employees resign the job immediately then assigned work will not finished at the time, so delivery of the project to the clients will be delayed. Company planned to make solution for this they want to know which employee may resign next. If they know previously, they can arrange alternative to avoid such problem. As an AI Engineer you must give solution to this.

A) How will you achieve this in AI?

B) Find out the 3- stage of problem identification

C) Name the project

D) Create the dummy Dataset.

A) To achieve this AI solution, we can use a predictive analytics model that leverages machine learning algorithms to identify potential employees who may resign in the upcoming month. This involves analyzing historical data of employees who have resigned in the past and identifying patterns. The model can then be trained on features such as employee performance, job satisfaction, years of service, recent promotions, salary levels, and other relevant data point.

B) The 3-Stage problem identification

1. Data Collection Analysis:

This stage involves gathering relevant data related to employee behavior, performance, and job satisfaction. Historical data on past resignations, employee feedback, performance evaluations, and other relevant metrics should be collected and analyzed to identify patterns or trends that may indicate a potential resignation.

2. Model Development and Training:

In this stage, a machine learning model is developed using the collected data. The model is trained on labeled data to predict which employees are likely to resign in the upcoming month or next. This stage involves selecting appropriate algorithms, feature engineering, model training, and validation.

3. Prediction and Action:

Once the model is trained and validated, it can be used to make predictions on which employees are at risk of resigning. The HR team can then take proactive measures such as conducting retention discussions, offering incentives, or providing additional support to prevent potential resignation.

Stage 1: Machine Learning

The first stage in addressing the problem of predicting employee resignations is to utilize machine learning techniques. Machine learning algorithms can analyze historical data related to employee behavior, performance, satisfaction, and other relevant factors to identify patterns and markers that indicate potential resignations.

Stage 2: Supervised Learning

Supervised learning is a suitable approach for this problem, as it involves training a model on labeled data (past instances of employee resignations) to make predictions on new data. By employing supervised learning algorithms, such as logistic regression or decision trees, the model can learn from existing data to classify or predict the likelihood of an employee resigning in the near future.

Stage 3: Regression Algorithms

A regression algorithm can be employed to estimate the probability or likelihood of an employee resigning within a specific timeframe, such as the upcoming month. By using regression, the model can provide a continuous output indicating the probability of resignation, allowing the company to prioritize employees at higher risk.

By following these 3 stages of problem identification using machine learning techniques, the company can effectively predict which employees are likely to resign and take proactive measures to address potential gaps in workforce availability and project continuity.

C) Project Name:

”Employee Attrition Prediction System”

D) Dummy Dataset Example:

Employee ID	Tenure (Years)	Performance Rating	Department	Job Satisfaction	Resignation probability
1	3	4	Salas	3	Resign
2	5	3	Marketing	2	Not Resign

3	2	5	HR	4	Not Resign
4	1	2	IT	2	Resign
5	4	4	Finance	3	Not Resign

In this dummy dataset, we have attributes such as employee ID, Tenure (years), performance rating, department, job satisfaction and resignation probability. The data can be used to train a predictive model to identify potential resignations based on there features.