**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 be 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) How will you achieve this in AI?**

To address this Scenario using AI, I would recommend implementing a predictive model to estimate the likelihood of employee turnover. This can be achieved through the use of machine learning algorithms that can analyze historical employee data and identify patterns or factors that contribute to employee resignation.

One approach would be to use a supervised learning algorithm **logistic regression, decision trees, random forests t**he probability of an employee resigning. The model would be trained on a dataset of past employee records, including features

Demographic information includes age, gender, marital status, Job-related factors like job role, department, salary, performance ratings Behavioral indicators such as absenteeism, tardiness, training participation Organizational factors includes employee satisfaction, work-life balance, management quality. The model would then be used to analyze the current employee data and generate a risk score or probability for each employee, indicating the likelihood of them resigning in the near future. This information can be used by the company to proactively address potential turnover and implement retention strategies for high-risk employees.

**B) Find out the 3-Stage of Problem Identification:**

**Model Development and Training**:

* **Stg1:**Machine learning
* **Stg 2:**supervised learning
* **Stg3:** Logistic regression

**C) Name the project:**

**"PREDICTIVE EMPLOYEE RETENTION ANALYTICS".**

**D) CREATE THE DUMMY DATASET:**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **EID** | **AGE** | **GENDER** | **TENURE** | **DEPT** | **SALARY** | **ABS** | **SATISFACTION** | **RESIGNED** |
| 1001 | 32 | Female | 4 | Marketing | 65000 | 4 | 3 | 0 |
| 1002 | 29 | Male | 2 | IT | 75000 | 5 | 1 | 1 |
| 1003 | 45 | Female | 8 | HR | 85000 | 3 | 5 | 0 |
| 1004 | 27 | Male | 1 | Sales | 55000 | 3 | 2 | 0 |
| 1005 | 38 | Female | 6 | Marketing | 70000 | 4 | 2 | 0 |
| 1006 | 31 | Male | 3 | IT | 80000 | 4 | 1 | 1 |
| 1007 | 41 | Female | 7 | HR | 90000 | 4 | 3 | 0 |
| 1008 | 25 | Male | 1 | Sales | 60000 | 3 | 4 | 0 |
| 1009 | 35 | Female | 5 | Marketing | 75000 | 4 | 2 | 0 |
| 1010 | 28 | Male | 2 | IT | 70000 | 4 | 1 | 1 |