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.

**predictive solution**

Problem Statement:

The company wants to **predict which employee may resign in the next 1–2 months** to avoid project delivery delays.

End goal:
          Predict which employees are likely to resign this month or next month, so we can take preventive actions like reassigning work or preparing backups.

1. **How Will You Achieve This in AI?**
Approach:

Supervised ML + Classification + Monthly Risk Prediction
Because we have past labeled data (Predict Resign: Yes (1) or No (0) for this or next month)

2. **3 Stages of Problem Identification**

| Stage | Category | Choice for my model |
|---|---|---|
| **Stage 1** | ML / NLP / DL / TSA | **ML** – Structured employee data |
| **Stage 2** | Supervised / Unsupervised | **Supervised Learning** (labeled: resigned/not) |
| **Stage 3** | Classification / Regression | **Classification (Categorical data)** – Resign (Yes/No) |

3. **Name the Project**:  Employee Exit Forecast / Employee Resign Radar
4. **Create Dummy Dataset**

| EmployeeID | Age | Tenure (Months) | Dept | SalaryLevel | WorkloadTrend | ResignationDate | ResignNext60Days (Label) |
|---|---|---|---|---|---|---|---|
| E001 | 28 | 18 | IT | Low | Decline | NULL | 0 |
| E002 | 35 | 48 | HR | Medium | Stable | NULL | 0 |
| E003 | 30 | 24 | IT | Low | Decline | 2025-09-15 | 1 |
| E004 | 40 | 72 | Finance | High | Improving | NULL | 0 |
| E005 | 25 | 12 | Sales | Low | Decline | 2025-09-30 | 1 |