Problem Identification Assignment

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 company's employee may have various reasons for resigning from the jobs. Therefore, the following data can be collected for each employee to achieve the goal in AI by predicting which employee is most likely to exist the job in the near future

1. Demographic data: age, gender, marital status

2.Work-related data: job role, department, years at company, promotions

3. Performance data: last performance rating, number of projects

4.Behavioral data: absenteeism, lateness, communication frequency

5.Feedback data: satisfaction level, work-life balance score

6.Salary - related data: salary, overtime hours

7.Exit status Target data: Still working, Resigned

Label Encodings

Dept	Label	Performance Rating	Label	Exit Status	Label
IT	1	Outstanding	1	Still working	1
HR	2	Excellence	2	Resigned	0
Sales	3	Very Good	3		
Finance	4	Good	4		
Marketing	5	Poor	5		

Table: ML001

Dataset

Employee Id	Age	Dept	Years of Experience	Performance Rating	Salary	Exit Status
E001	48	1	15	5	300K	0
E002	27	2	7	4	100K	1
E003	31	1	8	3	100K	1
E004	35	4	10	3	150K	0
E005	28	3	6	5	120K	1

Table: ML002

Problem Identification for the Project “Employee Exit Prediction System (AI Powered HR Analytics)”

Stage 1:-In the domain selection stage , Machine Learning or Deep Learning techniques are applied as the all data are in numerical forms

Stage 2:- Supervised Learning is used because requirements are well defined and Inputs and outputs are present as shown in the above Table ML002

Stage 3:- The Exit status consist of two categorical values, 1 for Still working and 0 for Resigned in the target variable, therefore Classification approach under supervised learning is used