**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 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) To achieve this using AI, we can employ predictive analytics techniques and machine learning algorithms on historical employee data to develop an resignation prediction model. This model can analyze various factors such as employee performance, job satisfaction, salary, tenure, and other relevant variables to predict the likelihood of an employee resigning in the future.

* **Data Collection:** Gather relevant employee data such as performance metrics, feedback surveys, salary information, tenure, and other factors that may impact resignation.
* **Data Exploration and Analysis:** Perform exploratory data analysis to understand the relationships between different variables and their influence on employee resignation. This stage involves identifying patterns, trends, and potential predictors of resignation.
* **Model Development:** Use the collected data to train machine learning models, such as logistic regression, decision trees, or random forests, to create an resignation prediction model. Evaluate the model's performance using suitable metrics like accuracy, precision, recall, or F1 score.

B) The three stages of problem identification :

Stage1- machine learning

The input and output is in text .

Stage2- supervised learning

The requirement is clear

Stage1- classification

It is fall under yes or no type ,because employee will resign or not

C) The project could be named

" **Resignation Prediction**"

D) Dummy dataset for resignation prediction model:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| EmployeeID | Age | Gender | Department | Salary | Tenure (years), | Performance Score | Job Satisfaction | Resignation prediction  output  (resign/not resign) |
| S0001 | 34 | Male | Data analyst | 50000 | 3 | 7 | 9 | Not resign |
| S0002 | 26 | Female | HR | 45000 | 2 | 2 | 7 | resign |
| S0003 | 36 | Male | Finance | 60000 | 5 | 5 | 8 | Not resign |
| S0004 | 45 | Female | IT | 70000 | 9 | 9 | 6 | Not resign |
| S0005 | 29 | Male | senior Data analyst | 48000 | 2 | 2 | 5 | resign |

D) Here is an example of a dummy dataset that could be used for training and testing the resignation prediction model: