1.A real estate company wants to develop a system that predicts house prices based on square footage, number of bedrooms, and location.
Q: Identify the problem type and outline the step-by-step logic to solve it

Problem type: Supervised learning, Regression

Steps:

- Collect data
- Clean dataset
- Split data into training and testing
- Train model
- Evaluate performance
- Deploy system

2. A bank wants to build a model to detect fraudulent transactions by analyzing customer spending behavior and transaction history.
Q: Identify the problem type and outline the step-by-step logic to solve it.

- Problem type: Supervised learning, Classification
- Steps:
    - Collect data
    - Clean dataset
    - Split data into training and testing
    - Train model
    - Evaluate performance
    - Deploy system

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3. A supermarket wants to segment its customers based on their shopping patterns to provide personalized promotions.
Q: Identify the problem type and outline the step-by-step logic to solve it.

- Problem type: Unsupervised learning, Clustering

- Steps:
    - Collect data
    - Clean dataset
    - Split data into training and testing
    - Train model
    - Evaluate performance
    - Deploy system

4. A company wants to estimate an employee's salary based on their years of experience, job title, and education level.
Q: Identify the problem type and outline the step-by-step logic to solve it

- Problem type: Supervised learning, Regression
- Steps:
    - Collect data
    - Clean dataset
    - Split data into training and testing
    - Train model
    - Evaluate performance
    - Deploy system

5. An email provider wants to automatically classify incoming emails as spam or not spam based on their content and sender details.
Q: Identify the problem type and outline the step-by-step logic to solve it

- Problem type: Supervised learning, Classification
- Steps:
    - Collect data

    - Clean dataset
    - Split data into training and testing
    - Train model
    - Evaluate performance
    - Deploy system

6. A business wants to analyze customer reviews of its products and determine whether the sentiment is positive or negative.
Q: Identify the problem type and outline the step-by-step logic to solve it.

- Problem type: Supervised learning, Classification
- Steps:
    - Collect data
    - Clean dataset
    - Split data into training and testing
    - Train model
    - Evaluate performance
    - Deploy system

7. An insurance company wants to predict whether a customer is likely to file a claim in the next year based on their driving history and demographics.
Q: Identify the problem type and outline the step-by-step logic to solve it.

- Problem type: Supervised learning, Classification
- Steps:
    - Collect data
    - Clean dataset
    - Split data into training and testing

    - Train model
    - Evaluate performance
    - Deploy system

8. A streaming platform wants to recommend movies to users by grouping them based on their viewing preferences and watch history.
Q: Identify the problem type and outline the step-by-step logic to solve it.

- Problem type: Unsupervised learning, Clustering
- Steps:
    - Collect data
    - Clean dataset
    - Split data into training and testing
    - Train model
    - Evaluate performance
    - Deploy system

9. A hospital wants to predict the recovery time of patients after surgery based on their age, medical history, and lifestyle habits.
Q: Identify the problem type and outline the step-by-step logic to solve it.

- Problem type: Supervised learning, Regression
- Steps:
    - Collect data
    - Clean dataset
    - Split data into training and testing
    - Train model

    - Evaluate performance
    - Deploy system

10. A university wants to predict a student's final exam score based on study hours, attendance, and past academic performance.
Q: Identify the problem type and outline the step-by-step logic to solve it.

- Problem type: Supervised learning, Regression
- Steps:
    - Collect data
    - Clean dataset
    - Split data into training and testing
    - Train model
    - Evaluate performance
    - Deploy system