

1. A bank wants to predict whether a loan applicant will default based on credit score, income, and past loan history. What type of ML problem is this, and what steps would you take to solve it?
  - a) **Supervised Learning and Classification Problem.**
  - b) **Goal is to predict if a loan applicant will default (Yes/No).**
  - c) **Collect and prepare the data.**
  - d) **Encode categorical variables.**
  - e) **Choose and train a classification model**
  - f) **Predict and evaluate the model**
  - g) **Deploy the best model.**
  
2. A retail store wants to predict the demand for different products to optimize inventory levels. What type of ML problem is this, and what steps would you take to solve it?
  - a) **Supervised Machine Learning and Regression Problem.**
  - b) **Goal is to predict how many units of a product will be demanded in the future.**
  - c) **Preprocess the data.**
  - d) **Split data into training and testing sets.**
  - e) **Choose and train a regression model.**
  - f) **Evaluate and predict the model.**
  - g) **Deploy the best model.**
  
3. A factory wants to detect whether a manufactured product is defective based on sensor readings and quality control data. What type of ML problem is this, and what steps would you take to solve it?
  - a) **Supervised Learning and Classification Problem.**
  - b) **Goal is to predict whether a product is defective or not based on sensor and quality data.**
  - c) **Collect and prepare the data.**
  - d) **Preprocess the data.**
  - e) **Split data into training and testing sets.**
  - f) **Choose and train a classification model.**
  - g) **Evaluate and predict the model.**
  - h) **Deploy the best model.**
  
4. A healthcare provider wants to analyze patient symptoms and classify them into different disease categories. What type of ML problem is this, and what steps would you take to solve it?
  - a) **Supervised Learning and Classification Problem.**
  - b) **Goal is to classify patient symptoms to identify the correct disease category.**

- c) **Collect and prepare the data.**
  - d) **Preprocess the data.**
  - e) **Split data into training and testing sets.**
  - f) **Choose and train a classification model.**
  - g) **Evaluate and predict the model.**
  - h) **Deploy the best model.**
5. An e-commerce company wants to identify and remove fake reviews posted by bots or fraudsters. What type of ML problem is this, and what steps would you take to solve it?
- a) **Supervised Learning and Classification Problem.**
  - b) **Goal is to automatically detect if a product review is fake or real.**
  - c) **Collect and prepare the data.**
  - d) **Preprocess the data.**
  - e) **Split data into training and testing sets.**
  - f) **Choose and train a classification model.**
  - g) **Evaluate and predict the model.**
  - h) **Deploy the best model.**
6. A financial firm wants to predict stock price movements based on historical price data and market indicators. What type of ML problem is this, and what steps would you take to solve it?
- a. **Supervised Learning and Classification Problem**
  - b. **Goal is to predict if the stock price will go up or down.**
  - c. **Collect and prepare the data.**
  - d. **Preprocess the data.**
  - e. **Split data into training and testing sets.**
  - f. **Choose and train a classification model.**
  - g. **Evaluate and predict the model.**
  - h. **Deploy the best model.**
7. A social media platform wants to detect fake user accounts based on user activity and profile data. What type of ML problem is this, and what steps would you take to solve it?
- a) **Supervised Learning and Classification Problem.**
  - b) **Goal is to predict whether a user account is fake (1) or real (0).**
  - c) **Collect and prepare the data.**
  - d) **Preprocess the data.**
  - e) **Split data into training and testing sets.**
  - f) **Choose and train a classification model.**
  - g) **Evaluate and predict the model.**

- h) Deploy the best model.**
8. A marketing agency wants to segment customers into different groups based on their purchasing behavior. What type of ML problem is this, and what steps would you take to solve it?
- a) Unsupervised Machine Learning and Clustering Problem.**
  - b) Goal is to automatically segment customers into different groups based on behavior.**
  - c) Collect and Prepare Data.**
  - d) Preprocessing.**
  - e) Choose and create the Clustering Algorithm**
  - f) Analyze the cluster.**
9. A geospatial research team wants to analyze satellite images to classify different land types (forest, water, urban). What type of ML problem is this, and what steps would you take to solve it?
- a) Supervised Learning and Classification Problem.**
  - b) goal is to classify images based on the (forest, water, urban).**
  - c) Collect and Prepare Data.**
  - d) Preprocess data.**
  - e) Choose a Classification Model and Train the Model.**
  - f) Evaluate and predict the Model**
  - g) Deploy the best model.**
10. A streaming service wants to predict which users are likely to cancel their subscriptions. What type of ML problem is this, and what steps would you take to solve it?
- a) Supervised Learning and Classification Problem.**
  - b) goal is to predict if a user will cancel (Yes/No) based on their behavior and usage data.**
  - c) Collect and prepare the data.**
  - d) Preprocess the data.**
  - e) Split data into training and testing sets.**
  - f) Choose and train a classification model.**
  - g) Evaluate and predict the model.**
  - h) Deploy the best model.**