**Machine Learning**

**Answer 2(1)**

Steps to apply machine learning (ML) in a real world are as below:

Identify Problem:

Clearly state the issue you're trying to resolve. Recognize the needs of the business or application and how ML may benefit them.

Data Collection:

Collect pertinent information about your issue. For the ML model to be successful, both the quantity and quality of the data are essential. Make certain that the data accurately depicts the real-world situations that the model will face.

Data Preprocessing:

Sort and prepare the data. Organize the dataset's noise, outliers, and missing values. If necessary, numerical representations for category variables should be created.

Feature Engineering:

To improve the model's performance, add new features or modify current ones. The capacity of the model to identify patterns in the data can be enhanced by feature engineering.

Data Splitting:

Split the dataset into training and test sets. The training set is used to train the model and the test set is used to evaluate the model's performance on unseen data.

Model Selection:

Select the best machine learning algorithm for the given task. For example logistic regression, support vector machines, decision trees, random forests, etc.

Model Training:

Train the selected model on the training dataset. Adjust the model parameters to achieve the best accuracy.

Model Deployment:

Deploy the trained model to a production environment. This may involve integrating the model into an existing system or creating a new service/API.

Monitoring and Maintenance:

Regularly monitor the model's performance in the production environment. Retrain the model periodically with new data to ensure it remains accurate and relevant.