**Module 2**

1. Consider “Correct Bank“ as one of the reputed banks in India. It is receiving unlimited calls every day on fraud transactions, the amount has been debited from the users account unknowingly.

Now, the bank is planning to build a model which can provide security to all the accounts before performing any transactions. You as an AI expert must come up with Business Objective and Business constraints.

Business Objective:

Maximize the accuracy of the fraud detection model to effectively identify and prevent fraudulent transactions in real-time

Business Constraints:

Minimize latency to provide real-time protection.

Minimize false positives and negatives to enhance accuracy.

1. Find five real time examples of Supervised Learning and Unsupervised Learning

Supervised Learning:

Spam email detection

Stock price prediction

Credit risk assessment

Medical diagnosis

Handwriting recognition

Unsupervised Learning:

Customer segmentation

Anomaly detection

Topic modeling

Image compression

Market basket analysis

1. Look at the different cases and label them as Underfit and Bestfit.

Case 1: Studying for an exam by practicing from the model paper & previous year’s paper.

Underfit

Case2: Looking at the previous year papers and coming up with important questions and studying only those questions.

Underfit

Case 3: Preparing for an exam by studying important chapters, previous year’s questions and making notes of important points.

Bestfit

1. Let’s say you have Real Estate Data. Your data consists of the price of a house, size of the house(square feet), No. of bedrooms, Bulk factor of the house, house location, age or proportion of units built prior to 2000s(or some year), population status, median value of the house, crime rate on the estate etc…

What error function will you use and why?

For predicting the price of a house based on various features, a common choice for the error function would be the Mean Squared Error (MSE).

MSE calculates the average squared difference between the predicted and actual house prices.

The reason for using MSE is that it penalizes larger errors more than smaller ones, which is suitable for regression tasks like predicting house prices. It provides a clear measure of how well the model is performing in terms of its predictive accuracy.

1. Give 10 realtime examples of Unstructured Data

Social media posts

Emails

Images

Videos

Audio recordings

Text messages

Sensor data

Web pages

Satellite imagery

Medical records