**Module 2**

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**Topic:** Machine Learning primer

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.

**Solution:**

**Objective:** Minimize Fraudulent and maximize efficiency of transactions.

**Constraints:** Customer satisfaction and availability of data for all accounts.

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

**Solution:**

**Examples for Supervised Learning Models:**

1. Prediction of car price.

2. Predicting whether the picture provided is lion or tiger.

3. Prediction of the weather of the next day.

4. Prediction whether the loan of the customer will default or not.

5. Prediction of number iPhone sales for the next year

**Examples for Un-Supervised Learning Models:**

1. Market Basket Analysis

2. Segregating the customers based on the items they purchased.

3. Giving offers to the customers using association rules based on the purchase history of the customer.

4. Segregation of cricket players.

5. Uber car booking acceptance by the driver.

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.

**ANS:** Bestfit

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

**ANS:** Underfit

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

**ANS:** Underfit

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?

**Solution:**

Since given feature are Continuous, lets consider our target variable is also Continuous.

So, the best Error function that can be used is MAPE – Mean absolute percentage error. Because it fixed all the mis conception of all other Error functions like Mean error have outliers influence etc.

1. Give 10 realtime examples of Unstructured Data

**Solution:**

1. Emails.

2. Text files: Word processing, spreadsheets, PDF files.

3. Websites.

4. Social Media.

5. Media (images, video, audio)

6. Mobile data.

7. Communications: live chat, collaboration software.

8. Customer-generated content.

9. Rich media. Media and entertainment data, surveillance data, geo-spatial data, audio,

weather data.

10. Internet of Things (IoT). Sensor data, ticker data.