**Topic: Convolution Neural Network (CNN)**

**Instructions:**

**1. Business Problem**

* 1. **Objective**
  2. **Constraints (if any)**

**Using Python perform:**

**2. Data Pre-processing (if applicable)**

**2.1 Data cleaning, Feature Engineering etc.**

**3. Exploratory Data Analysis (EDA): (if applicable)**

**3.1. Summary**

**3.2. Univariate analysis**

**3.3. Bivariate analysis**

**4. Model Building**

**4.3 Using Python libraries perform the below tasks**

**5. Result Share the benefits/impact of the solution - how or in what way the business (client) gets benefit from the solution provided. (If applicable)**

**Note:**

The assignment should be submitted in the following format:

* Python code
* Code Modularization should be maintained
* Documentation of the modules (elaborating on steps mentioned above).

1. Build a CNN model on CIFAR-10 dataset by applying few regularization techniques like drop out and data augmentation

2. Find out the differences between Convnet filter and the Maxpool layers

3. If the input of an image is 64x64x3 which has been convolved by 10 5x5 filters with stride 1 and padding 2.

a. How many activation maps are obtained?

b. What is the size of the activation maps?

c. How many parameters are calculated?

4. During training, I get into overfitting issues. What are the different techniques will you apply to overcome this issue and why?