

## **Data Exploration Report with Visualizations**

### **Objective:**

Analyze and visualize CIFAR-100 data characteristics to understand its structure, distribution, and potential challenges.

### **Key Insights and Analysis:**

1. Dataset Summary:
  - Training Samples: 50,000
  - Test Samples: 10,000
  - Image Shape: (32, 32, 3)
  - Number of Classes: 100 (fine-grained labels)
2. Class Distribution: The frequency plot of each class in the training dataset.
3. Sample Image Visualizations: The sample images from 10 random classes was displayed.
4. Pixel Intensity Distribution: The pixel intensity distribution for each random image was visualized.