**Question 1:** Denoising Images with Autoencoders

Dataset Problem: Use the CIFAR-10 dataset to train an autoencoder for denoising images. Add random noise to the CIFAR-10 dataset images and then use the autoencoder to clean the images.

CIFAR is an acronym that stands for the Canadian Institute for Advanced Research and the

CIFAR-10 dataset was developed along with the CIFAR-100 dataset by researchers at the CIFAR institute. The dataset is comprised of 60,000 32 X 32-pixel color photographs of objects from10 classes, such as frogs, birds, cats, ships, etc. The class labels and their standard associated

integer values are listed below.

0: airplane

1: automobile

2: bird

3: cat

4: deer

5: dog

6: frog

7: horse

8: ship

9: truck

Download the data from: <http://www.cs.utoronto.ca/~kriz/cifar.html>

**Question 2**: CIFAR-10 dataset reconstruction

Dataset Problem: Use the CIFAR-10 dataset to train an autoencoder. The goal is to input an image of a CIFAR-10 dataset into the autoencoder and have it reconstruct the image as a new output. Use the concept of VAE to solve this problem

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