Output:

Epoch	Training Loss
1	166.23
2	152.45
3	145.10
5	132.87
10	121.34
15	114.89
20	109.70

L:12 Implement a Deep Convolutional GAN to generate complex color image

AIM: To implement and train a deep convolutional GAN (Generative Adversarial Network) to generate complex color images

Objective:

To understand GAN architecture

To train model on color image dataset

To observe training dynamics and quality of generating images

Pseudo code

Import libraries and set devices

Load CIFAR-10 dataset normalize to $[-1, 1]$, create data loader.

Define DCGAN generator: series of conv transpose 2D, batchnorm 2d, ReLu.

Initialize weights (Normal with mean $= 0$, std $= 0.02$)

Define Loss and optimizers

For each epochs

(a) Train discriminator on real images

(b) Train generator to fool discriminator

(c) Save generator batch of generated image for visualization

Monitor losses