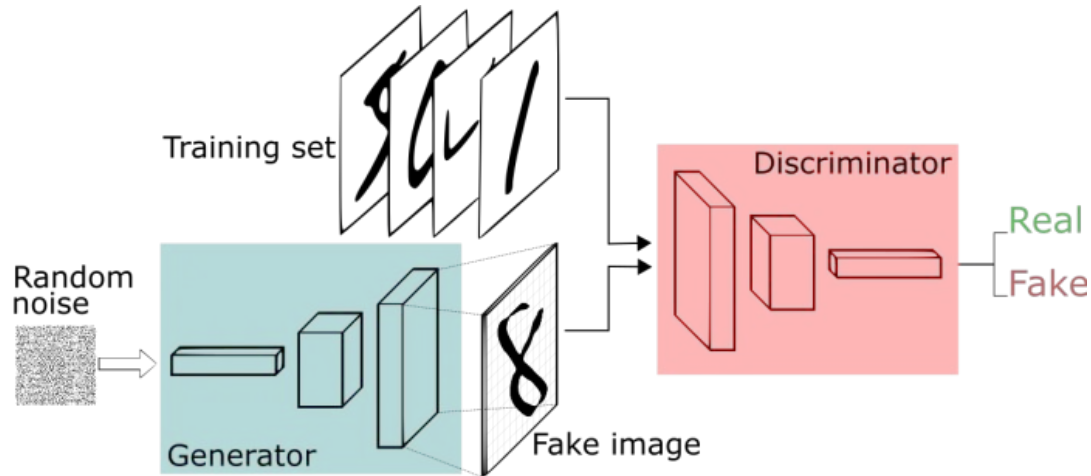# cGAN

# Generator (criminal) and Discriminator (police)

The place where the fake is created is called the **generator**, and the place where the authenticity is determined is called the **discriminator**.

# DCGAN

The DCGAN architecture utilizes random noise as its input to generate images. Nonetheless, it comes with a drawback: the generated output lacks controllability.

To illustrate, if a DCGAN model is trained on MNIST dataset and fed with noise, it lacks the ability to determine which specific digit image will be generated as output.

**The outcome is a random selection** from the range of numbers 0 to 9.

# cGAN

The concept of Conditional Generative Adversarial Networks (cGANs) involves influencing the generated outcomes by introducing **both noise and conditional factors into the input**.

For instance, when working with MNIST dataset, feeding a specific number within the range of 0 to 9 as input influences the generation of an image depicting that particular digit as the output.

# cGAN

# Results (50 epochs - cGAN_MNIST.ipynb)
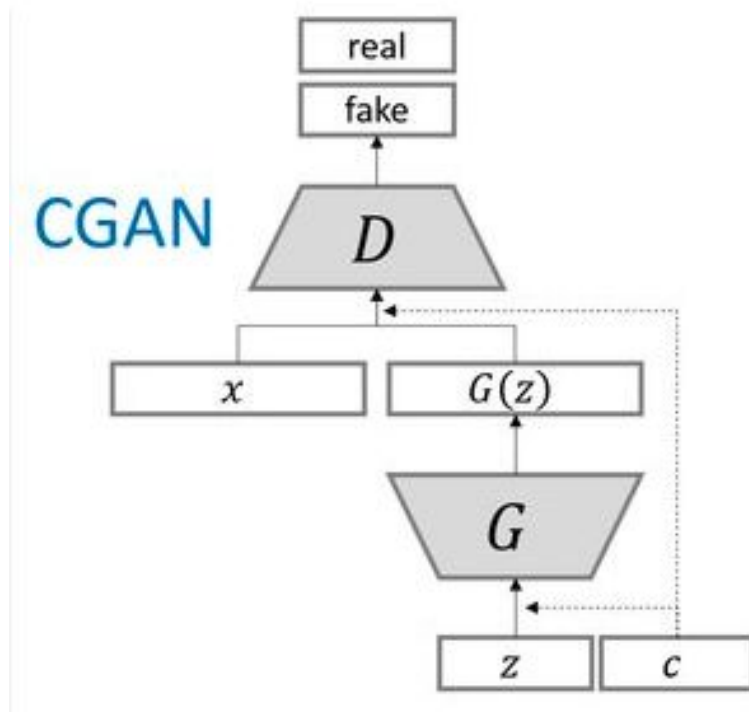
# Lab 35

cGAN

# cGAN

Train a cGAN model with FashionMNIST data.

Generate image sets of each fashion items (10 x 10 grid images) like the result with MNIST in the previous slide.

Submit your code, loss graph, and images you generated.