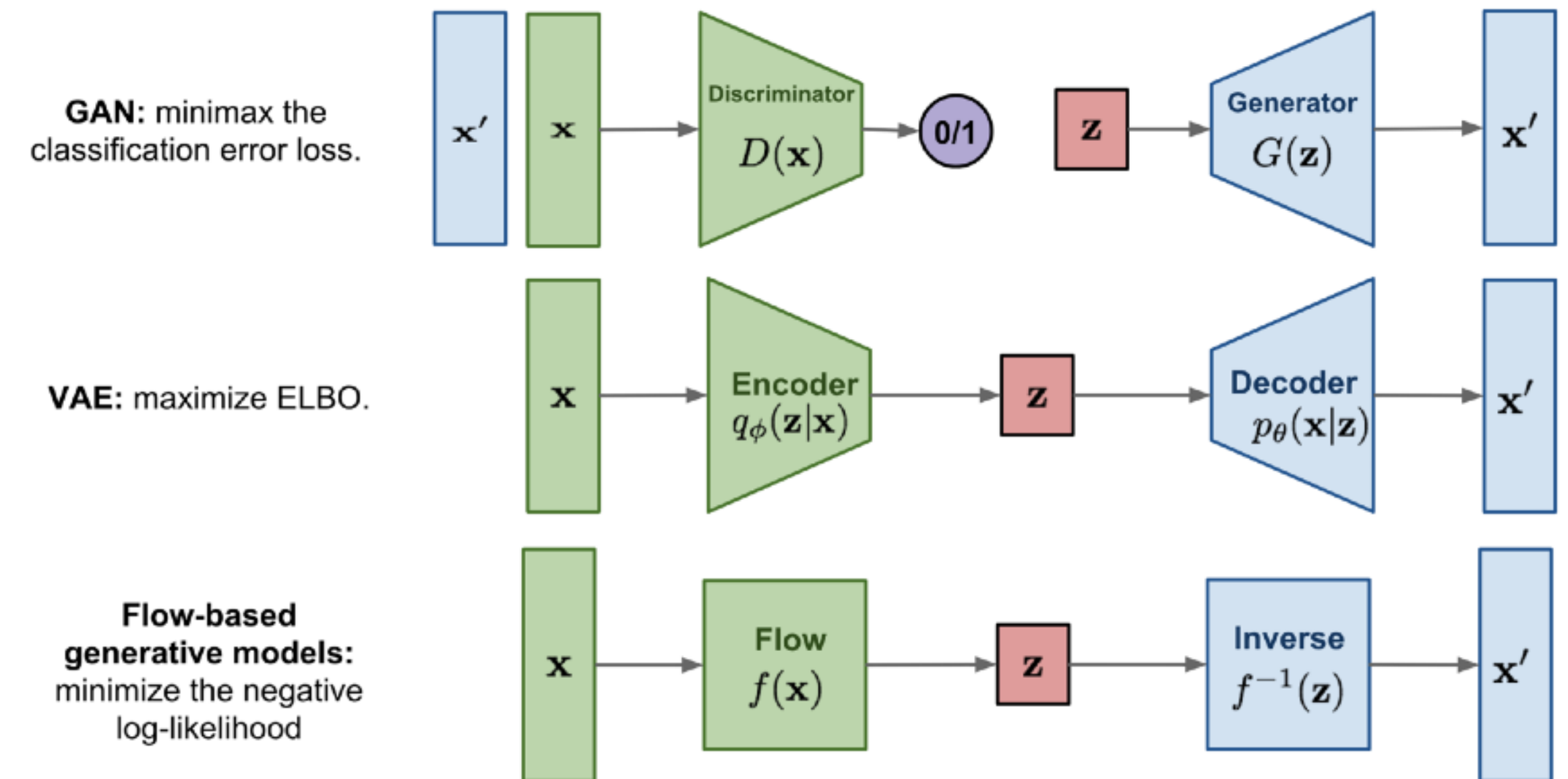# GAN / VAE / Flow~
다른 모델과 비교(GAN, VAE)

- GAN
  = 생성자(generator) + 구분자(discriminator)

- VAE
  AE의 Gaussian 버전정도로 이해

- Flow-based generative models

Background
(Linear Algebra, Jacobian Matrix)

- Linear Transformation / Affine Transformation
  Affine ~ = Linear ~ + shifting(translation)

- change of variable

$$\frac{dz}{dt} = \frac{\partial z}{\partial x}\frac{dx}{dt} + \frac{\partial z}{\partial y}\frac{dy}{dt}$$
➡
$$dz = \frac{\partial z}{\partial x}dx + \frac{\partial z}{\partial y}dy$$

- Jacobian matrix
  비선형변환 => 선형변환