

231501058

```
loss_D = (criterion(D(real), torch.ones(bs, device=device)) +
          criterion(D(fake.detach()), torch.zeros(bs, device=device))) / 2
opt_D.zero_grad(); loss_D.backward(); opt_D.step()

loss_G = criterion(D(fake), torch.ones(bs, device=device))
opt_G.zero_grad(); loss_G.backward(); opt_G.step()

print(f"Epoch [{epoch+1}/{epochs}] Loss_D: {loss_D:.3f} Loss_G: {loss_G:.3f}")
with torch.no_grad():
    z = torch.randn(64, latent_dim, 1, 1, device=device)
    fake_imgs = (G(z) * 0.5 + 0.5)
    utils.save_image(fake_imgs, f"fake_epoch_{epoch+1}.png", nrow=8)

print("Training Completed Successfully")
```

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OUTPUT:**FID Score: 319.01**

RESULT: The GAN successfully trained on the FashionMNIST dataset and generated realistic synthetic images of clothing items.