```
1 C:\ProgramData\Anaconda3\python.exe "D:/OneDrive -
   University of Florida/Documents/UF School Projects/Deep
   Learning/GameGAN/gan example.py"
 2 Random Seed:
                 999
 3 Generator(
     (main): Sequential(
4
5
       (0): ConvTranspose2d(100, 512, kernel size=(4, 4),
   stride=(1, 1), bias=False)
       (1): BatchNorm2d(512, eps=1e-05, momentum=0.1, affine=
6
   True, track running stats=True)
       (2): ReLU(inplace=True)
7
       (3): ConvTranspose2d(512, 256, kernel_size=(4, 4),
   stride=(2, 2), padding=(1, 1), bias=False)
       (4): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=
9
   True, track_running_stats=True)
       (5): ReLU(inplace=True)
10
       (6): ConvTranspose2d(256, 128, kernel_size=(4, 4),
11
   stride=(2, 2), padding=(1, 1), bias=False)
12
       (7): BatchNorm2d(128, eps=1e-05, momentum=0.1, affine=
   True, track running stats=True)
13
       (8): ReLU(inplace=True)
       (9): ConvTranspose2d(128, 64, kernel_size=(4, 4),
14
   stride=(2, 2), padding=(1, 1), bias=False)
       (10): BatchNorm2d(64, eps=1e-05, momentum=0.1, affine=
15
   True, track running stats=True)
16
       (11): ReLU(inplace=True)
       (12): ConvTranspose2d(64, 3, kernel_size=(4, 4), stride
17
   =(2, 2), padding=(1, 1), bias=False)
18
       (13): Tanh()
19
     )
20 )
21 Discriminator(
22
     (main): Sequential(
       (0): Conv2d(3, 64, kernel_size=(4, 4), stride=(2, 2),
23
   padding=(1, 1), bias=False)
       (1): LeakyReLU(negative slope=0.2, inplace=True)
24
25
       (2): Conv2d(64, 128, kernel_size=(4, 4), stride=(2, 2
   ), padding=(1, 1), bias=False)
26
       (3): BatchNorm2d(128, eps=1e-05, momentum=0.1, affine=
   True, track_running_stats=True)
       (4): LeakyReLU(negative_slope=0.2, inplace=True)
27
       (5): Conv2d(128, 256, kernel_size=(4, 4), stride=(2, 2
28
   ), padding=(1, 1), bias=False)
       (6): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=
29
   True, track_running_stats=True)
30
       (7): LeakyReLU(negative slope=0.2, inplace=True)
```

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(8): Conv2d(256, 512, kernel_size=(4, 4), stride=(2, 2
   ), padding=(1, 1), bias=False)
32
       (9): BatchNorm2d(512, eps=1e-05, momentum=0.1, affine=
   True, track running stats=True)
33
       (10): LeakyReLU(negative slope=0.2, inplace=True)
       (11): Conv2d(512, 1, kernel_size=(4, 4), stride=(1, 1
34
   ), bias=False)
35
       (12): Sigmoid()
36
     )
37 )
38 Starting Training Loop...
39 [0/5][0/1583]
                  Loss_D: 1.5918 Loss_G: 5.4597 D(x): 0.
           D(G(z)): 0.5501 / 0.0071
40 [0/5][50/1583] Loss D: 0.2295
                                   Loss G: 20.7922 D(x): 0.
   9227
           D(G(z)): 0.0000 / 0.0000
41 [0/5][100/1583] Loss D: 1.3583
                                  Loss G: 14.9177 D(x): 0.
   9447
           D(G(z)): 0.6459 / 0.0000
42 [0/5][150/1583] Loss D: 0.9721
                                   Loss G: 1.2263
                                                   D(x): 0.
   5143
           D(G(z)): 0.0223 / 0.3884
43 [0/5][200/1583] Loss D: 0.4550
                                   Loss G: 6.0048
                                                   D(x): 0.
   8834
           D(G(z)): 0.2357 / 0.0052
44 [0/5][250/1583] Loss_D: 1.6101
                                   Loss_G: 10.0624 D(x): 0.
           D(G(z)): 0.7052 / 0.0003
   9570
45 [0/5][300/1583] Loss_D: 0.3385
                                   Loss G: 5.2574
                                                   D(x): 0.
           D(G(z)): 0.0797 / 0.0131
   8189
46 [0/5][350/1583] Loss D: 0.7526
                                                   D(x): 0.
                                   Loss G: 3.3703
           D(G(z)): 0.0255 / 0.0662
   5897
47 [0/5][400/1583] Loss D: 0.5943
                                   Loss G: 3.3682
                                                   D(x): 0.
           D(G(z)): 0.0244 / 0.0581
   6703
48 [0/5][450/1583] Loss D: 0.6817 Loss G: 7.0480 D(x): 0.
           D(G(z)): 0.4070 / 0.0023
49 [0/5][500/1583] Loss_D: 1.0027 Loss_G: 2.1860
                                                   D(x): 0.
   5007
           D(G(z)): 0.0128 / 0.2211
50 [0/5][550/1583] Loss D: 0.6713
                                   Loss G: 5.6073
                                                   D(x): 0.
   6667
           D(G(z)): 0.0205 / 0.0109
51 [0/5][600/1583] Loss D: 0.3250
                                   Loss G: 3.4123
                                                   D(x): 0.
           D(G(z)): 0.1888 / 0.0586
   9264
52 [0/5][650/1583] Loss_D: 0.4655
                                   Loss G: 5.2837
                                                   D(x): 0.
           D(G(z)): 0.0379 / 0.0126
   7373
53 [0/5][700/1583] Loss D: 0.4697
                                   Loss G: 3.3961
                                                   D(x): 0.
   7392
           D(G(z)): 0.0809 / 0.0488
54 [0/5][750/1583] Loss_D: 1.0460
                                   Loss_G: 4.3714
                                                   D(x): 0.
   5026
           D(G(z)): 0.0077 / 0.0398
55 [0/5][800/1583] Loss D: 0.9296
                                   Loss G: 1.8271
                                                   D(x): 0.
           D(G(z)): 0.0754 / 0.2254
   5526
56 [0/5][850/1583] Loss D: 0.3239 Loss G: 5.6506
                                                   D(x): 0.
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D(G(z)): 0.1601 / 0.0079
56 9092
57 [0/5][900/1583] Loss D: 1.7361 Loss G: 10.3272 D(x): 0.
           D(G(z)): 0.7633 / 0.0001
58 [0/5][950/1583] Loss D: 0.4914 Loss G: 4.6603 D(x): 0.
   6938
           D(G(z)): 0.0328 / 0.0254
59 [0/5][1000/1583]
                       Loss D: 0.9765
                                       Loss_G: 7.2924
                                                        D(x):
   0.9781
           D(G(z)): 0.5518 / 0.0014
                       Loss D: 0.2666
60 [0/5][1050/1583]
                                        Loss G: 6.1004
                                                        D(x):
   0.8204 D(G(z)): 0.0236 / 0.0061
61 [0/5][1100/1583]
                       Loss D: 0.5573
                                        Loss G: 2.3688
                                                        D(x):
   0.7269 \quad D(G(z)): 0.1075 / 0.1272
62 [0/5][1150/1583]
                       Loss D: 0.5601
                                        Loss_G: 3.8881
                                                        D(x):
          D(G(z)): 0.1955 / 0.0407
   0.7795
                       Loss D: 0.4976
63 [0/5][1200/1583]
                                        Loss G: 4.1517
                                                        D(x):
   0.7181 D(G(z)): 0.0371 / 0.0315
64 [0/5][1250/1583]
                       Loss D: 0.4517
                                        Loss G: 4.8939
                                                        D(x):
   0.8917 \quad D(G(z)): 0.2192 / 0.0167
                       Loss D: 0.9825
65 [0/5][1300/1583]
                                        Loss G: 5.6769
                                                        D(x):
   0.9028 D(G(z)): 0.5064 / 0.0078
66 [0/5][1350/1583]
                       Loss D: 0.4574
                                        Loss G: 3.4318
                                                        D(x):
   0.8355 D(G(z)): 0.1977 / 0.0503
67 [0/5][1400/1583]
                       Loss_D: 0.3605
                                        Loss_G: 3.4465
                                                        D(x):
   0.8108 D(G(z)): 0.1023 / 0.0505
68 [0/5][1450/1583]
                       Loss D: 0.6681
                                        Loss G: 1.7035
                                                        D(x):
   0.6811 \quad D(G(z)): 0.1459 / 0.2505
69 [0/5][1500/1583]
                       Loss D: 2.7337
                                        Loss G: 2.7107
                                                        D(x):
   0.1358 D(G(z)): 0.0035 / 0.1184
                       Loss D: 0.3848
                                        Loss G: 4.4620
70 [0/5][1550/1583]
                                                        D(x):
   0.8544 \quad D(G(z)): 0.1766 / 0.0182
71 [1/5][0/1583]
                  Loss D: 0.4767 Loss G: 3.1798
                                                    D(x): 0.
           D(G(z)): 0.1308 / 0.0667
   7769
72 [1/5][50/1583] Loss_D: 0.8641 Loss_G: 1.5597
                                                    D(x): 0.
           D(G(z)): 0.0162 / 0.2742
   5293
                                   Loss_G: 4.6732
73 [1/5][100/1583] Loss D: 0.4848
                                                    D(x): 0.
   6700
           D(G(z)): 0.0118 / 0.0201
74 [1/5][150/1583] Loss D: 0.4625 Loss G: 2.9568
                                                    D(x): 0.
   7397
           D(G(z)): 0.0921 / 0.0767
75 [1/5][200/1583] Loss_D: 1.0677 Loss_G: 6.9297
                                                    D(x): 0.
           D(G(z)): 0.5065 / 0.0025
   8843
76 [1/5][250/1583] Loss D: 1.5085 Loss G: 2.5293
                                                    D(x): 0.
           D(G(z)): 0.0225 / 0.1776
77 [1/5][300/1583] Loss D: 0.4499 Loss G: 3.2860
                                                    D(x): 0.
   8773
           D(G(z)): 0.2330 / 0.0562
78 [1/5][350/1583] Loss D: 0.5731 Loss G: 1.6582
                                                    D(x): 0.
   6743
           D(G(z)): 0.0704 / 0.2787
79 [1/5][400/1583] Loss D: 0.7705 Loss G: 4.7851
                                                    D(x): 0.
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D(G(z)): 0.3362 / 0.0152
 79 7845
80 [1/5][450/1583] Loss D: 0.4202 Loss G: 2.6871
                                                    D(x): 0.
            D(G(z)): 0.0683 / 0.1039
81 [1/5][500/1583] Loss D: 0.6888 Loss G: 2.1421
                                                    D(x): 0.
   6430
            D(G(z)): 0.1171 / 0.1620
                                                    D(x): 0.
82 [1/5][550/1583] Loss_D: 0.9476
                                   Loss_G: 6.2524
   9764
            D(G(z)): 0.5420 / 0.0038
83 [1/5][600/1583] Loss D: 0.4726
                                                    D(x): 0.
                                   Loss G: 2.2285
            D(G(z)): 0.1205 / 0.1444
   7630
84 [1/5][650/1583] Loss D: 0.5096 Loss G: 3.7754
                                                    D(x): 0.
   8545
            D(G(z)): 0.2660 / 0.0330
                                                    D(x): 0.
85 [1/5][700/1583] Loss D: 1.4746
                                   Loss_G: 6.5215
            D(G(z)): 0.6936 / 0.0063
86 [1/5][750/1583] Loss D: 0.4420 Loss G: 3.3446
                                                    D(x): 0.
            D(G(z)): 0.1357 / 0.0561
    7789
87 [1/5][800/1583] Loss D: 0.6884 Loss G: 3.7245
                                                    D(x): 0.
   8075
            D(G(z)): 0.3087 / 0.0400
88 [1/5][850/1583] Loss D: 2.6146 Loss G: 6.8374
                                                    D(x): 0.
   9890
            D(G(z)): 0.8768 / 0.0027
89 [1/5][900/1583] Loss D: 0.3749 Loss G: 2.6383
                                                    D(x): 0.
   7771
            D(G(z)): 0.0806 / 0.0965
90 [1/5][950/1583] Loss_D: 0.6221 Loss_G: 2.1754
                                                    D(x): 0.
            D(G(z)): 0.0501 / 0.1451
   6167
91 [1/5][1000/1583]
                        Loss D: 1.0061
                                        Loss G: 0.4073
                                                        D(x):
   0.4620 D(G(z)): 0.0269 / 0.7018
92 [1/5][1050/1583]
                        Loss D: 0.4377
                                        Loss G: 2.7406
                                                        D(x):
            D(G(z)): 0.1714 / 0.0879
   0.8072
                        Loss_D: 0.6339
                                        Loss G: 4.6699
93 [1/5][1100/1583]
                                                        D(x):
   0.9394 D(G(z)): 0.3924 / 0.0152
94 [1/5][1150/1583]
                        Loss D: 0.8127
                                        Loss G: 5.4041
                                                        D(x):
   0.9589 D(G(z)): 0.4723 / 0.0074
                        Loss_D: 0.6086
95 [1/5][1200/1583]
                                        Loss_G: 4.3503
                                                        D(x):
           D(G(z)): 0.3711 / 0.0201
   0.9315
96 [1/5][1250/1583]
                        Loss D: 0.6289
                                        Loss G: 3.4261
                                                        D(x):
   0.8003 D(G(z)): 0.2712 / 0.0546
                                        Loss_G: 2.7215
97 [1/5][1300/1583]
                        Loss D: 0.4301
                                                        D(x):
   0.7998 D(G(z)): 0.1486 / 0.0843
98 [1/5][1350/1583]
                        Loss D: 0.4743
                                        Loss G: 2.2206
                                                        D(x):
           D(G(z)): 0.1101 / 0.1501
   0.7328
99 [1/5][1400/1583]
                        Loss D: 0.5278
                                        Loss_G: 2.9643
                                                        D(x):
   0.8504
           D(G(z)): 0.2748 / 0.0718
100 [1/5][1450/1583]
                        Loss D: 1.1246
                                        Loss_G: 1.1294
                                                        D(x):
   0.4125 D(G(z)): 0.0460 / 0.4068
                                                        D(x):
101 [1/5][1500/1583]
                        Loss D: 0.4695
                                        Loss G: 2.8411
   0.8246 D(G(z)): 0.1974 / 0.0829
102 [1/5][1550/1583]
                                        Loss G: 2.0271
                        Loss D: 0.5891
                                                        D(x):
```

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D(G(z)): 0.1055 / 0.1788
102 0.6578
103 [2/5][0/1583]
                   Loss D: 1.2322 Loss G: 6.1466
                                                    D(x): 0.
            D(G(z)): 0.6471 / 0.0033
104 [2/5][50/1583] Loss D: 0.6669 Loss G: 3.4929
                                                    D(x): 0.
   9375
            D(G(z)): 0.3959 / 0.0507
105 [2/5][100/1583] Loss_D: 0.5032 Loss_G: 2.1608
                                                    D(x): 0.
    7674
            D(G(z)): 0.1740 / 0.1490
106 [2/5][150/1583] Loss D: 0.5911 Loss G: 2.0231
                                                    D(x): 0.
            D(G(z)): 0.1652 / 0.1675
   7186
107 [2/5][200/1583] Loss_D: 0.9226 Loss G: 3.2813
                                                    D(x): 0.
   8595
            D(G(z)): 0.4637 / 0.0564
108 [2/5][250/1583] Loss_D: 0.4314
                                   Loss_G: 2.9283
                                                    D(x): 0.
            D(G(z)): 0.2043 / 0.0701
   8443
109 [2/5][300/1583] Loss D: 0.7165 Loss G: 3.5987
                                                    D(x): 0.
            D(G(z)): 0.3482 / 0.0377
   8000
110 [2/5][350/1583] Loss D: 0.6730 Loss G: 4.0261
                                                    D(x): 0.
   8829
            D(G(z)): 0.3776 / 0.0251
111 [2/5][400/1583] Loss D: 0.7580
                                   Loss G: 4.2597
                                                    D(x): 0.
   9273
            D(G(z)): 0.4626 / 0.0200
112 [2/5][450/1583] Loss D: 0.7365
                                    Loss G: 4.5159
                                                    D(x): 0.
   8998
            D(G(z)): 0.3975 / 0.0223
113 [2/5][500/1583] Loss_D: 0.8086
                                   Loss_G: 1.3333
                                                    D(x): 0.
            D(G(z)): 0.1510 / 0.3030
    5802
114 [2/5][550/1583] Loss_D: 1.4943 Loss_G: 0.4932
                                                    D(x): 0.
    3122
            D(G(z)): 0.0190 / 0.6595
115 [2/5][600/1583] Loss D: 0.4589 Loss G: 3.1693
                                                    D(x): 0.
            D(G(z)): 0.2243 / 0.0600
   8572
116 [2/5][650/1583] Loss D: 0.6049
                                   Loss G: 1.8836
                                                    D(x): 0.
            D(G(z)): 0.1493 / 0.1858
   6880
117 [2/5][700/1583] Loss D: 0.5689 Loss G: 3.1882
                                                    D(x): 0.
   8242
            D(G(z)): 0.2772 / 0.0554
118 [2/5][750/1583] Loss_D: 0.4869 Loss_G: 2.8370
                                                    D(x): 0.
            D(G(z)): 0.1280 / 0.0832
   7630
119 [2/5][800/1583] Loss D: 0.9424 Loss G: 4.6697
                                                    D(x): 0.
   9382
            D(G(z)): 0.5369 / 0.0157
120 [2/5][850/1583] Loss D: 1.0867 Loss G: 0.7338
                                                    D(x): 0.
            D(G(z)): 0.0709 / 0.5255
   4426
121 [2/5][900/1583] Loss_D: 0.6354 Loss_G: 1.6458
                                                    D(x): 0.
            D(G(z)): 0.1060 / 0.2289
    6427
122 [2/5][950/1583] Loss D: 0.7523 Loss G: 1.1882
                                                    D(x): 0.
            D(G(z)): 0.0739 / 0.3562
    5584
                        Loss D: 1.4147
123 [2/5][1000/1583]
                                        Loss_G: 0.2441
                                                        D(x):
   0.3126 D(G(z)): 0.0565 / 0.8029
124 [2/5][1050/1583]
                        Loss D: 1.3861
                                        Loss G: 0.3535
                                                        D(x):
    0.3283 D(G(z)): 0.0295 / 0.7492
125 [2/5][1100/1583] Loss D: 1.1007 Loss G: 1.2930
                                                        D(x):
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D(G(z)): 0.0541 / 0.3405
125 0.4386
126 [2/5][1150/1583]
                        Loss D: 0.6259
                                         Loss G: 2.8402
                                                         D(x):
    0.9269 D(G(z)): 0.3853 / 0.0808
127 [2/5][1200/1583]
                        Loss D: 0.6398
                                         Loss G: 2.3106
                                                         D(x):
    0.7125
           D(G(z)): 0.1915 / 0.1264
128 [2/5][1250/1583]
                        Loss_D: 0.3864
                                         Loss_G: 2.7747
                                                         D(x):
    0.8696 D(G(z)): 0.1939 / 0.0757
                        Loss D: 1.6018
129 [2/5][1300/1583]
                                         Loss G: 5.0926
                                                         D(x):
    0.6629 \quad D(G(z)): 0.6345 / 0.0100
130 [2/5][1350/1583]
                        Loss D: 0.5428
                                         Loss G: 2.0593
                                                         D(x):
            D(G(z)): 0.2225 / 0.1668
    0.7948
131 [2/5][1400/1583]
                        Loss_D: 0.4843
                                         Loss_G: 1.6450
                                                         D(x):
            D(G(z)): 0.0850 / 0.2366
    0.7069
132 [2/5][1450/1583]
                        Loss D: 0.6850
                                         Loss G: 3.7081
                                                         D(x):
    0.9518 \quad D(G(z)): 0.4251 / 0.0344
133 [2/5][1500/1583]
                        Loss D: 0.4936
                                         Loss G: 2.8467
                                                         D(x):
    0.8358 \quad D(G(z)): 0.2408 / 0.0765
134 [2/5][1550/1583]
                        Loss D: 0.4871
                                        Loss G: 2.1306
                                                         D(x):
    0.7784 D(G(z)): 0.1831 / 0.1451
135 [3/5][0/1583]
                   Loss D: 1.1357 Loss G: 1.4700
                                                     D(x): 0.
    4161
            D(G(z)): 0.0359 / 0.2897
136 [3/5][50/1583] Loss_D: 0.7877 Loss_G: 1.1609
                                                     D(x): 0.
            D(G(z)): 0.0557 / 0.3594
    5320
137 [3/5][100/1583] Loss_D: 0.6214 Loss G: 1.7761
                                                     D(x): 0.
            D(G(z)): 0.1349 / 0.2074
    6599
138 [3/5][150/1583] Loss D: 0.9499 Loss G: 3.3906
                                                     D(x): 0.
            D(G(z)): 0.4602 / 0.0441
    8233
139 [3/5][200/1583] Loss D: 0.5910 Loss G: 3.1253
                                                     D(x): 0.
            D(G(z)): 0.3245 / 0.0587
    8644
140 [3/5][250/1583] Loss D: 0.6496 Loss G: 1.3246
                                                     D(x): 0.
    6168
            D(G(z)): 0.0906 / 0.3149
141 [3/5][300/1583] Loss_D: 0.5270 Loss_G: 2.5967
                                                     D(x): 0.
            D(G(z)): 0.2726 / 0.0958
    8514
142 [3/5][350/1583] Loss D: 0.5545
                                   Loss G: 3.1883
                                                     D(x): 0.
    8510
            D(G(z)): 0.2929 / 0.0553
143 [3/5][400/1583] Loss D: 0.5865 Loss G: 2.2572
                                                     D(x): 0.
            D(G(z)): 0.2035 / 0.1317
    7314
144 [3/5][450/1583] Loss_D: 0.8535
                                    Loss_G: 1.6745
                                                     D(x): 0.
            D(G(z)): 0.0554 / 0.2440
    5191
145 [3/5][500/1583] Loss D: 1.3695
                                    Loss G: 1.0962
                                                     D(x): 0.
            D(G(z)): 0.2862 / 0.3925
    4392
146 [3/5][550/1583] Loss_D: 0.6613
                                    Loss_G: 1.6361
                                                     D(x): 0.
            D(G(z)): 0.1175 / 0.2295
    6238
147 [3/5][600/1583] Loss D: 0.9184 Loss G: 1.1648
                                                     D(x): 0.
            D(G(z)): 0.0425 / 0.3752
    4703
148 [3/5][650/1583] Loss D: 1.0849 Loss G: 2.7988
                                                     D(x): 0.
```

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D(G(z)): 0.5041 / 0.0870
148 7930
149 [3/5][700/1583] Loss D: 0.6386 Loss G: 3.1799
                                                     D(x): 0.
            D(G(z)): 0.3601 / 0.0540
150 [3/5][750/1583] Loss D: 0.6542 Loss G: 2.0810
                                                     D(x): 0.
    6733
            D(G(z)): 0.1677 / 0.1626
151 [3/5][800/1583] Loss_D: 0.5495
                                   Loss G: 2.6888
                                                     D(x): 0.
    7853
            D(G(z)): 0.2248 / 0.0876
152 [3/5][850/1583] Loss D: 0.6327 Loss G: 2.8387
                                                     D(x): 0.
            D(G(z)): 0.3312 / 0.0815
    8580
153 [3/5][900/1583] Loss_D: 0.6607 Loss G: 2.8690
                                                     D(x): 0.
            D(G(z)): 0.3008 / 0.0695
    7731
154 [3/5][950/1583] Loss_D: 0.5300 Loss_G: 1.9856
                                                     D(x): 0.
            D(G(z)): 0.1798 / 0.1696
155 [3/5][1000/1583]
                        Loss D: 0.6397
                                        Loss G: 2.0522
                                                         D(x):
    0.6258 D(G(z)): 0.0919 / 0.1750
156 [3/5][1050/1583]
                        Loss D: 0.7322
                                        Loss G: 3.7052
                                                         D(x):
    0.8605
           D(G(z)): 0.3999 / 0.0356
157 [3/5][1100/1583]
                        Loss D: 1.0464
                                        Loss G: 1.5835
                                                         D(x):
    0.4126
           D(G(z)): 0.0306 / 0.2580
158 [3/5][1150/1583]
                        Loss D: 0.7113
                                        Loss G: 3.0336
                                                         D(x):
    0.7785
            D(G(z)): 0.3287 / 0.0611
                        Loss_D: 1.0937
159 [3/5][1200/1583]
                                        Loss_G: 4.8021
                                                         D(x):
    0.9430 \quad D(G(z)): 0.6031 / 0.0125
160 [3/5][1250/1583]
                        Loss D: 0.7665
                                        Loss G: 1.6885
                                                         D(x):
    0.5936 D(G(z)): 0.1327 / 0.2228
161 [3/5][1300/1583]
                        Loss D: 3.2998
                                        Loss G: 0.2287
                                                         D(x):
    0.0679 D(G(z)): 0.0209 / 0.8242
                        Loss D: 0.6968
                                        Loss G: 2.7098
162 [3/5][1350/1583]
                                                         D(x):
    0.7416 D(G(z)): 0.2654 / 0.0927
163 [3/5][1400/1583]
                        Loss D: 0.4728
                                        Loss G: 2.2028
                                                         D(x):
    0.7943 D(G(z)): 0.1870 / 0.1410
                        Loss_D: 0.6065
164 [3/5][1450/1583]
                                        Loss_G: 1.9877
                                                         D(x):
    0.7276 D(G(z)): 0.2100 / 0.1609
165 [3/5][1500/1583]
                        Loss D: 1.2276
                                        Loss G: 0.7982
                                                         D(x):
    0.3834 D(G(z)): 0.0475 / 0.5024
                                        Loss_G: 3.6247
166 [3/5][1550/1583]
                        Loss D: 0.7563
                                                         D(x):
    0.8359 \quad D(G(z)): 0.4017 / 0.0343
167 [4/5][0/1583]
                   Loss D: 0.7216 Loss G: 1.6459
                                                     D(x): 0.
            D(G(z)): 0.0620 / 0.2472
    5646
168 [4/5][50/1583] Loss D: 0.7328 Loss G: 1.4794
                                                     D(x): 0.
            D(G(z)): 0.0844 / 0.2805
169 [4/5][100/1583] Loss_D: 2.2541
                                    Loss_G: 3.0769
                                                     D(x): 0.
            D(G(z)): 0.8141 / 0.0703
    8644
170 [4/5][150/1583] Loss D: 0.7420 Loss G: 1.7439
                                                     D(x): 0.
            D(G(z)): 0.0982 / 0.2146
    5679
171 [4/5][200/1583] Loss D: 0.5607 Loss G: 2.6178
                                                     D(x): 0.
```

```
D(G(z)): 0.2689 / 0.0943
171 8228
172 [4/5][250/1583] Loss D: 0.6236 Loss G: 1.6015
                                                     D(x): 0.
            D(G(z)): 0.0467 / 0.2395
173 [4/5][300/1583] Loss D: 1.5956 Loss G: 4.6873
                                                     D(x): 0.
    9197
            D(G(z)): 0.7256 / 0.0148
174 [4/5][350/1583] Loss_D: 0.4584 Loss_G: 2.5813
                                                     D(x): 0.
            D(G(z)): 0.2168 / 0.0972
    8403
175 [4/5][400/1583] Loss D: 0.6654 Loss G: 1.8826
                                                     D(x): 0.
            D(G(z)): 0.0987 / 0.2035
    6217
176 [4/5][450/1583] Loss D: 0.5910 Loss G: 2.8118
                                                     D(x): 0.
    8170
            D(G(z)): 0.2794 / 0.0789
177 [4/5][500/1583] Loss_D: 0.8112
                                                     D(x): 0.
                                    Loss_G: 2.4788
            D(G(z)): 0.2422 / 0.1093
    6556
178 [4/5][550/1583] Loss D: 0.5854
                                    Loss G: 2.2619
                                                     D(x): 0.
            D(G(z)): 0.0890 / 0.1328
    6450
179 [4/5][600/1583] Loss D: 0.7073 Loss G: 3.4554
                                                     D(x): 0.
    9186
            D(G(z)): 0.4254 / 0.0424
180 [4/5][650/1583] Loss D: 0.6949 Loss G: 1.6728
                                                     D(x): 0.
    6889
            D(G(z)): 0.2229 / 0.2206
181 [4/5][700/1583] Loss D: 0.4998
                                    Loss G: 2.1635
                                                     D(x): 0.
    7364
            D(G(z)): 0.1440 / 0.1417
182 [4/5][750/1583] Loss_D: 0.5800 Loss_G: 1.8631
                                                     D(x): 0.
            D(G(z)): 0.1125 / 0.2041
    6649
183 [4/5][800/1583] Loss_D: 0.8134 Loss_G: 2.9043
                                                     D(x): 0.
            D(G(z)): 0.3330 / 0.0760
    7374
184 [4/5][850/1583] Loss D: 0.9117 Loss G: 1.0189
                                                     D(x): 0.
            D(G(z)): 0.1258 / 0.4103
    5228
185 [4/5][900/1583] Loss D: 0.5429 Loss G: 1.7079
                                                     D(x): 0.
            D(G(z)): 0.1293 / 0.2168
    7027
186 [4/5][950/1583] Loss D: 0.5842 Loss G: 3.0329
                                                     D(x): 0.
    8768
            D(G(z)): 0.3313 / 0.0647
187 [4/5][1000/1583]
                        Loss_D: 0.8462
                                        Loss_G: 4.4959
                                                         D(x):
           D(G(z)): 0.4678 / 0.0161
    0.8826
188 [4/5][1050/1583]
                        Loss D: 0.6464
                                        Loss G: 2.9920
                                                         D(x):
    0.8068
            D(G(z)): 0.3028 / 0.0698
                                        Loss_G: 1.1926
189 [4/5][1100/1583]
                        Loss D: 0.7514
                                                         D(x):
    0.5327 D(G(z)): 0.0422 / 0.3498
190 [4/5][1150/1583]
                        Loss D: 0.5610
                                        Loss G: 3.5384
                                                         D(x):
    0.8547 D(G(z)): 0.2998 / 0.0385
191 [4/5][1200/1583]
                        Loss D: 0.8598
                                        Loss_G: 4.3095
                                                         D(x):
    0.9587
            D(G(z)): 0.5146 / 0.0192
192 [4/5][1250/1583]
                        Loss D: 0.7195
                                        Loss_G: 1.5337
                                                         D(x):
    0.5684 D(G(z)): 0.0620 / 0.2695
193 [4/5][1300/1583]
                        Loss D: 0.7392
                                        Loss G: 1.6890
                                                         D(x):
            D(G(z)): 0.2623 / 0.2191
    0.6911
194 [4/5][1350/1583]
                        Loss D: 1.2008
                                        Loss G: 4.7425
                                                         D(x):
```

```
File - gan_example
194 0.8964 D(G(z)): 0.6151 / 0.0130
195 [4/5][1400/1583]
                        Loss D: 1.1807
                                        Loss G: 4.2280
                                                        D(x):
    0.9444 D(G(z)): 0.6085 / 0.0240
196 [4/5][1450/1583] Loss_D: 0.5469
                                        Loss_G: 3.1402
                                                        D(x):
    0.8597 D(G(z)): 0.2880 / 0.0589
197 [4/5][1500/1583] Loss_D: 0.4588
                                        Loss G: 1.9041
                                                        D(x):
    0.7369 \quad D(G(z)): 0.1162 / 0.1918
198 [4/5][1550/1583] Loss_D: 0.6402
                                        Loss_G: 3.0085
                                                        D(x):
    0.8543 D(G(z)): 0.3458 / 0.0623
199
200 Process finished with exit code 0
201
```