

HW 4

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- See `lenet_cifar_fill.py` in the `.zip` file for the code.
- See `og_lenet.txt` for the console output from the network without dropout/batch normalization.
- See `dropout_lenet.txt` for the console output from the network with dropout.
- See `drop_batch_lenet.txt` for the network with both dropout and batch normalization.

I used the given `lenet_cifar_fill.py` and edited the code to finish this homework assignment. I used the given hyperparameters except I changed `batch_size=100` and `epochs=15`. I chose to use CrossEntropyLoss for the loss function for training. My dropout layer was left at the default parameters of `p=0.5`.

In order to get the output of each network version for training and testing, I set the code to output the console log to a file as it went. You can see the `.txt` files in the `.zip` folder, but I have also copied the contents of these files below. Also, if you wish to replicate my results, you must manually comment out or uncomment the lines of code with the batch normalization layer and the dropout layers. They should be labeled with comments in `lenet_cifar_fill.py`.

All of my test accuracies for all of the versions of LeNet are over 50%.

	Test Accuracy	Training and Testing Execution Time
Modified LeNet	55%	990.4335172176361 seconds
Modified LeNet w/ Dropout (p=0.5)	54%	883.8906359672546 seconds
Modified LeNet w/ Dropout (p=0.5) & Batch Normalization	66%	464.4997498989105 seconds

The test accuracy for the modified LeNet with an additional dropout layer ($p=0.5$) is 54% which is slightly lower than the version of LeNet without dropout. However, the total training and execution time of the version with dropout was ~117 seconds faster than the version without dropout. The version of modified LeNet with an additional batch normalization layer has a test accuracy of 66% which is a better performance than the previous two versions. It also cuts the total execution time almost in half, making it significantly faster than the other versions.

1. Base Modified LeNet

==> Preparing data..

Files already downloaded and verified

Files already downloaded and verified

Train Epoch: 1 [0/50000 (0%)]	Loss: 2.307434
Train Epoch: 1 [1000/50000 (2%)]	Loss: 2.282136
Train Epoch: 1 [2000/50000 (4%)]	Loss: 2.243597
Train Epoch: 1 [3000/50000 (6%)]	Loss: 2.044372
Train Epoch: 1 [4000/50000 (8%)]	Loss: 2.091002
Train Epoch: 1 [5000/50000 (10%)]	Loss: 2.054228
Train Epoch: 1 [6000/50000 (12%)]	Loss: 1.977842
Train Epoch: 1 [7000/50000 (14%)]	Loss: 1.914019
Train Epoch: 1 [8000/50000 (16%)]	Loss: 1.901714
Train Epoch: 1 [9000/50000 (18%)]	Loss: 1.897976
Train Epoch: 1 [10000/50000 (20%)]	Loss: 1.927272
Train Epoch: 1 [11000/50000 (22%)]	Loss: 1.967286
Train Epoch: 1 [12000/50000 (24%)]	Loss: 1.874870
Train Epoch: 1 [13000/50000 (26%)]	Loss: 1.913832
Train Epoch: 1 [14000/50000 (28%)]	Loss: 1.839459
Train Epoch: 1 [15000/50000 (30%)]	Loss: 1.748756
Train Epoch: 1 [16000/50000 (32%)]	Loss: 2.052489
Train Epoch: 1 [17000/50000 (34%)]	Loss: 1.746289
Train Epoch: 1 [18000/50000 (36%)]	Loss: 2.019539
Train Epoch: 1 [19000/50000 (38%)]	Loss: 1.816650
Train Epoch: 1 [20000/50000 (40%)]	Loss: 1.915903
Train Epoch: 1 [21000/50000 (42%)]	Loss: 1.740621
Train Epoch: 1 [22000/50000 (44%)]	Loss: 1.727762
Train Epoch: 1 [23000/50000 (46%)]	Loss: 1.734758
Train Epoch: 1 [24000/50000 (48%)]	Loss: 1.850808
Train Epoch: 1 [25000/50000 (50%)]	Loss: 1.572333
Train Epoch: 1 [26000/50000 (52%)]	Loss: 1.684468

Train Epoch: 1 [27000/50000 (54%)] Loss: 1.740358
Train Epoch: 1 [28000/50000 (56%)] Loss: 1.742361
Train Epoch: 1 [29000/50000 (58%)] Loss: 1.717020
Train Epoch: 1 [30000/50000 (60%)] Loss: 1.749648
Train Epoch: 1 [31000/50000 (62%)] Loss: 1.805556
Train Epoch: 1 [32000/50000 (64%)] Loss: 1.817613
Train Epoch: 1 [33000/50000 (66%)] Loss: 1.655497
Train Epoch: 1 [34000/50000 (68%)] Loss: 1.675360
Train Epoch: 1 [35000/50000 (70%)] Loss: 1.457065
Train Epoch: 1 [36000/50000 (72%)] Loss: 1.797954
Train Epoch: 1 [37000/50000 (74%)] Loss: 1.512884
Train Epoch: 1 [38000/50000 (76%)] Loss: 1.549457
Train Epoch: 1 [39000/50000 (78%)] Loss: 1.579741
Train Epoch: 1 [40000/50000 (80%)] Loss: 1.683373
Train Epoch: 1 [41000/50000 (82%)] Loss: 1.774658
Train Epoch: 1 [42000/50000 (84%)] Loss: 1.540717
Train Epoch: 1 [43000/50000 (86%)] Loss: 1.653758
Train Epoch: 1 [44000/50000 (88%)] Loss: 1.636174
Train Epoch: 1 [45000/50000 (90%)] Loss: 1.754030
Train Epoch: 1 [46000/50000 (92%)] Loss: 1.632220
Train Epoch: 1 [47000/50000 (94%)] Loss: 1.768406
Train Epoch: 1 [48000/50000 (96%)] Loss: 1.743312
Train Epoch: 1 [49000/50000 (98%)] Loss: 1.767412

Test set: Average loss: 1.6493, Accuracy: 3887/10000 (39%)

Train Epoch: 2 [0/50000 (0%)] Loss: 1.563776
Train Epoch: 2 [1000/50000 (2%)] Loss: 1.853902
Train Epoch: 2 [2000/50000 (4%)] Loss: 1.744951
Train Epoch: 2 [3000/50000 (6%)] Loss: 1.534235
Train Epoch: 2 [4000/50000 (8%)] Loss: 1.690171
Train Epoch: 2 [5000/50000 (10%)] Loss: 1.775258
Train Epoch: 2 [6000/50000 (12%)] Loss: 1.634064
Train Epoch: 2 [7000/50000 (14%)] Loss: 1.746393
Train Epoch: 2 [8000/50000 (16%)] Loss: 1.816789
Train Epoch: 2 [9000/50000 (18%)] Loss: 1.574417
Train Epoch: 2 [10000/50000 (20%)] Loss: 1.449570
Train Epoch: 2 [11000/50000 (22%)] Loss: 1.736950
Train Epoch: 2 [12000/50000 (24%)] Loss: 1.745228
Train Epoch: 2 [13000/50000 (26%)] Loss: 1.498350

Train Epoch: 2 [14000/50000 (28%)] Loss: 1.669968
Train Epoch: 2 [15000/50000 (30%)] Loss: 1.375448
Train Epoch: 2 [16000/50000 (32%)] Loss: 1.663719
Train Epoch: 2 [17000/50000 (34%)] Loss: 1.630985
Train Epoch: 2 [18000/50000 (36%)] Loss: 1.643891
Train Epoch: 2 [19000/50000 (38%)] Loss: 1.563305
Train Epoch: 2 [20000/50000 (40%)] Loss: 1.671816
Train Epoch: 2 [21000/50000 (42%)] Loss: 1.462541
Train Epoch: 2 [22000/50000 (44%)] Loss: 1.657713
Train Epoch: 2 [23000/50000 (46%)] Loss: 1.969775
Train Epoch: 2 [24000/50000 (48%)] Loss: 1.638993
Train Epoch: 2 [25000/50000 (50%)] Loss: 1.883838
Train Epoch: 2 [26000/50000 (52%)] Loss: 1.647148
Train Epoch: 2 [27000/50000 (54%)] Loss: 1.608600
Train Epoch: 2 [28000/50000 (56%)] Loss: 1.805843
Train Epoch: 2 [29000/50000 (58%)] Loss: 1.544695
Train Epoch: 2 [30000/50000 (60%)] Loss: 1.527490
Train Epoch: 2 [31000/50000 (62%)] Loss: 1.576767
Train Epoch: 2 [32000/50000 (64%)] Loss: 1.543479
Train Epoch: 2 [33000/50000 (66%)] Loss: 1.524821
Train Epoch: 2 [34000/50000 (68%)] Loss: 1.668506
Train Epoch: 2 [35000/50000 (70%)] Loss: 1.695916
Train Epoch: 2 [36000/50000 (72%)] Loss: 1.651097
Train Epoch: 2 [37000/50000 (74%)] Loss: 1.694277
Train Epoch: 2 [38000/50000 (76%)] Loss: 1.461239
Train Epoch: 2 [39000/50000 (78%)] Loss: 1.608980
Train Epoch: 2 [40000/50000 (80%)] Loss: 1.727674
Train Epoch: 2 [41000/50000 (82%)] Loss: 1.498593
Train Epoch: 2 [42000/50000 (84%)] Loss: 1.590446
Train Epoch: 2 [43000/50000 (86%)] Loss: 1.587228
Train Epoch: 2 [44000/50000 (88%)] Loss: 1.570966
Train Epoch: 2 [45000/50000 (90%)] Loss: 1.602370
Train Epoch: 2 [46000/50000 (92%)] Loss: 1.377736
Train Epoch: 2 [47000/50000 (94%)] Loss: 1.518176
Train Epoch: 2 [48000/50000 (96%)] Loss: 1.714330
Train Epoch: 2 [49000/50000 (98%)] Loss: 1.623045

Test set: Average loss: 1.5334, Accuracy: 4384/10000 (44%)

Train Epoch: 3 [0/50000 (0%)] Loss: 1.588521

Train Epoch: 3 [1000/50000 (2%)] Loss: 1.601968
Train Epoch: 3 [2000/50000 (4%)] Loss: 1.585148
Train Epoch: 3 [3000/50000 (6%)] Loss: 1.430718
Train Epoch: 3 [4000/50000 (8%)] Loss: 1.425567
Train Epoch: 3 [5000/50000 (10%)] Loss: 1.478385
Train Epoch: 3 [6000/50000 (12%)] Loss: 1.770930
Train Epoch: 3 [7000/50000 (14%)] Loss: 1.465404
Train Epoch: 3 [8000/50000 (16%)] Loss: 1.646922
Train Epoch: 3 [9000/50000 (18%)] Loss: 1.594941
Train Epoch: 3 [10000/50000 (20%)] Loss: 1.609066
Train Epoch: 3 [11000/50000 (22%)] Loss: 1.567348
Train Epoch: 3 [12000/50000 (24%)] Loss: 1.333943
Train Epoch: 3 [13000/50000 (26%)] Loss: 1.437329
Train Epoch: 3 [14000/50000 (28%)] Loss: 1.856832
Train Epoch: 3 [15000/50000 (30%)] Loss: 1.356319
Train Epoch: 3 [16000/50000 (32%)] Loss: 1.562684
Train Epoch: 3 [17000/50000 (34%)] Loss: 1.674769
Train Epoch: 3 [18000/50000 (36%)] Loss: 1.418058
Train Epoch: 3 [19000/50000 (38%)] Loss: 1.549426
Train Epoch: 3 [20000/50000 (40%)] Loss: 1.407207
Train Epoch: 3 [21000/50000 (42%)] Loss: 1.450931
Train Epoch: 3 [22000/50000 (44%)] Loss: 1.662007
Train Epoch: 3 [23000/50000 (46%)] Loss: 1.399322
Train Epoch: 3 [24000/50000 (48%)] Loss: 1.435221
Train Epoch: 3 [25000/50000 (50%)] Loss: 1.425313
Train Epoch: 3 [26000/50000 (52%)] Loss: 1.637804
Train Epoch: 3 [27000/50000 (54%)] Loss: 1.611059
Train Epoch: 3 [28000/50000 (56%)] Loss: 1.642994
Train Epoch: 3 [29000/50000 (58%)] Loss: 1.568161
Train Epoch: 3 [30000/50000 (60%)] Loss: 1.587576
Train Epoch: 3 [31000/50000 (62%)] Loss: 1.463546
Train Epoch: 3 [32000/50000 (64%)] Loss: 1.519175
Train Epoch: 3 [33000/50000 (66%)] Loss: 1.387632
Train Epoch: 3 [34000/50000 (68%)] Loss: 1.644403
Train Epoch: 3 [35000/50000 (70%)] Loss: 1.717335
Train Epoch: 3 [36000/50000 (72%)] Loss: 1.724267
Train Epoch: 3 [37000/50000 (74%)] Loss: 1.600536
Train Epoch: 3 [38000/50000 (76%)] Loss: 1.499384
Train Epoch: 3 [39000/50000 (78%)] Loss: 1.534265
Train Epoch: 3 [40000/50000 (80%)] Loss: 1.529783

Train Epoch: 3 [41000/50000 (82%)] Loss: 1.709048
Train Epoch: 3 [42000/50000 (84%)] Loss: 1.603045
Train Epoch: 3 [43000/50000 (86%)] Loss: 1.439162
Train Epoch: 3 [44000/50000 (88%)] Loss: 1.526007
Train Epoch: 3 [45000/50000 (90%)] Loss: 1.644977
Train Epoch: 3 [46000/50000 (92%)] Loss: 1.502643
Train Epoch: 3 [47000/50000 (94%)] Loss: 1.294305
Train Epoch: 3 [48000/50000 (96%)] Loss: 1.500266
Train Epoch: 3 [49000/50000 (98%)] Loss: 1.572338

Test set: Average loss: 1.4076, Accuracy: 4978/10000 (50%)

Train Epoch: 4 [0/50000 (0%)] Loss: 1.327379
Train Epoch: 4 [1000/50000 (2%)] Loss: 1.591334
Train Epoch: 4 [2000/50000 (4%)] Loss: 1.631466
Train Epoch: 4 [3000/50000 (6%)] Loss: 1.374865
Train Epoch: 4 [4000/50000 (8%)] Loss: 1.468344
Train Epoch: 4 [5000/50000 (10%)] Loss: 1.470250
Train Epoch: 4 [6000/50000 (12%)] Loss: 1.252136
Train Epoch: 4 [7000/50000 (14%)] Loss: 1.370361
Train Epoch: 4 [8000/50000 (16%)] Loss: 1.663883
Train Epoch: 4 [9000/50000 (18%)] Loss: 1.686198
Train Epoch: 4 [10000/50000 (20%)] Loss: 1.576212
Train Epoch: 4 [11000/50000 (22%)] Loss: 1.598017
Train Epoch: 4 [12000/50000 (24%)] Loss: 1.524533
Train Epoch: 4 [13000/50000 (26%)] Loss: 1.427020
Train Epoch: 4 [14000/50000 (28%)] Loss: 1.484043
Train Epoch: 4 [15000/50000 (30%)] Loss: 1.500041
Train Epoch: 4 [16000/50000 (32%)] Loss: 1.608793
Train Epoch: 4 [17000/50000 (34%)] Loss: 1.721239
Train Epoch: 4 [18000/50000 (36%)] Loss: 1.491636
Train Epoch: 4 [19000/50000 (38%)] Loss: 1.322432
Train Epoch: 4 [20000/50000 (40%)] Loss: 1.499654
Train Epoch: 4 [21000/50000 (42%)] Loss: 1.594848
Train Epoch: 4 [22000/50000 (44%)] Loss: 1.493218
Train Epoch: 4 [23000/50000 (46%)] Loss: 1.633103
Train Epoch: 4 [24000/50000 (48%)] Loss: 1.438022
Train Epoch: 4 [25000/50000 (50%)] Loss: 1.501025
Train Epoch: 4 [26000/50000 (52%)] Loss: 1.338190
Train Epoch: 4 [27000/50000 (54%)] Loss: 1.543496

Train Epoch: 4 [28000/50000 (56%)] Loss: 1.498199
Train Epoch: 4 [29000/50000 (58%)] Loss: 1.475455
Train Epoch: 4 [30000/50000 (60%)] Loss: 1.467553
Train Epoch: 4 [31000/50000 (62%)] Loss: 1.757964
Train Epoch: 4 [32000/50000 (64%)] Loss: 1.409453
Train Epoch: 4 [33000/50000 (66%)] Loss: 1.545802
Train Epoch: 4 [34000/50000 (68%)] Loss: 1.508077
Train Epoch: 4 [35000/50000 (70%)] Loss: 1.450782
Train Epoch: 4 [36000/50000 (72%)] Loss: 1.509771
Train Epoch: 4 [37000/50000 (74%)] Loss: 1.538585
Train Epoch: 4 [38000/50000 (76%)] Loss: 1.415164
Train Epoch: 4 [39000/50000 (78%)] Loss: 1.422772
Train Epoch: 4 [40000/50000 (80%)] Loss: 1.289827
Train Epoch: 4 [41000/50000 (82%)] Loss: 1.423699
Train Epoch: 4 [42000/50000 (84%)] Loss: 1.728017
Train Epoch: 4 [43000/50000 (86%)] Loss: 1.487091
Train Epoch: 4 [44000/50000 (88%)] Loss: 1.618284
Train Epoch: 4 [45000/50000 (90%)] Loss: 1.423743
Train Epoch: 4 [46000/50000 (92%)] Loss: 1.381685
Train Epoch: 4 [47000/50000 (94%)] Loss: 1.552057
Train Epoch: 4 [48000/50000 (96%)] Loss: 1.444037
Train Epoch: 4 [49000/50000 (98%)] Loss: 1.811055

Test set: Average loss: 1.4346, Accuracy: 4903/10000 (49%)

Train Epoch: 5 [0/50000 (0%)] Loss: 1.460839
Train Epoch: 5 [1000/50000 (2%)] Loss: 1.454334
Train Epoch: 5 [2000/50000 (4%)] Loss: 1.515460
Train Epoch: 5 [3000/50000 (6%)] Loss: 1.416148
Train Epoch: 5 [4000/50000 (8%)] Loss: 1.382671
Train Epoch: 5 [5000/50000 (10%)] Loss: 1.566521
Train Epoch: 5 [6000/50000 (12%)] Loss: 1.576075
Train Epoch: 5 [7000/50000 (14%)] Loss: 1.646983
Train Epoch: 5 [8000/50000 (16%)] Loss: 1.524736
Train Epoch: 5 [9000/50000 (18%)] Loss: 1.388263
Train Epoch: 5 [10000/50000 (20%)] Loss: 1.493148
Train Epoch: 5 [11000/50000 (22%)] Loss: 1.488903
Train Epoch: 5 [12000/50000 (24%)] Loss: 1.514801
Train Epoch: 5 [13000/50000 (26%)] Loss: 1.329054
Train Epoch: 5 [14000/50000 (28%)] Loss: 1.549226

Train Epoch: 5 [15000/50000 (30%)] Loss: 1.520425
Train Epoch: 5 [16000/50000 (32%)] Loss: 1.575407
Train Epoch: 5 [17000/50000 (34%)] Loss: 1.548578
Train Epoch: 5 [18000/50000 (36%)] Loss: 1.460086
Train Epoch: 5 [19000/50000 (38%)] Loss: 1.441416
Train Epoch: 5 [20000/50000 (40%)] Loss: 1.543502
Train Epoch: 5 [21000/50000 (42%)] Loss: 1.530927
Train Epoch: 5 [22000/50000 (44%)] Loss: 1.539817
Train Epoch: 5 [23000/50000 (46%)] Loss: 1.472156
Train Epoch: 5 [24000/50000 (48%)] Loss: 1.551383
Train Epoch: 5 [25000/50000 (50%)] Loss: 1.498448
Train Epoch: 5 [26000/50000 (52%)] Loss: 1.400257
Train Epoch: 5 [27000/50000 (54%)] Loss: 1.758157
Train Epoch: 5 [28000/50000 (56%)] Loss: 1.387251
Train Epoch: 5 [29000/50000 (58%)] Loss: 1.422530
Train Epoch: 5 [30000/50000 (60%)] Loss: 1.668285
Train Epoch: 5 [31000/50000 (62%)] Loss: 1.696322
Train Epoch: 5 [32000/50000 (64%)] Loss: 1.714562
Train Epoch: 5 [33000/50000 (66%)] Loss: 1.583900
Train Epoch: 5 [34000/50000 (68%)] Loss: 1.371353
Train Epoch: 5 [35000/50000 (70%)] Loss: 1.389738
Train Epoch: 5 [36000/50000 (72%)] Loss: 1.460688
Train Epoch: 5 [37000/50000 (74%)] Loss: 1.460859
Train Epoch: 5 [38000/50000 (76%)] Loss: 1.529526
Train Epoch: 5 [39000/50000 (78%)] Loss: 1.605589
Train Epoch: 5 [40000/50000 (80%)] Loss: 1.396006
Train Epoch: 5 [41000/50000 (82%)] Loss: 1.444015
Train Epoch: 5 [42000/50000 (84%)] Loss: 1.463931
Train Epoch: 5 [43000/50000 (86%)] Loss: 1.495749
Train Epoch: 5 [44000/50000 (88%)] Loss: 1.636310
Train Epoch: 5 [45000/50000 (90%)] Loss: 1.440468
Train Epoch: 5 [46000/50000 (92%)] Loss: 1.727998
Train Epoch: 5 [47000/50000 (94%)] Loss: 1.488509
Train Epoch: 5 [48000/50000 (96%)] Loss: 1.500785
Train Epoch: 5 [49000/50000 (98%)] Loss: 1.487875

Test set: Average loss: 1.4276, Accuracy: 4969/10000 (50%)

Train Epoch: 6 [0/50000 (0%)] Loss: 1.515491
Train Epoch: 6 [1000/50000 (2%)] Loss: 1.485202

Train Epoch: 6 [2000/50000 (4%)] Loss: 1.573298
Train Epoch: 6 [3000/50000 (6%)] Loss: 1.731907
Train Epoch: 6 [4000/50000 (8%)] Loss: 1.567187
Train Epoch: 6 [5000/50000 (10%)] Loss: 1.436611
Train Epoch: 6 [6000/50000 (12%)] Loss: 1.586635
Train Epoch: 6 [7000/50000 (14%)] Loss: 1.495482
Train Epoch: 6 [8000/50000 (16%)] Loss: 1.498445
Train Epoch: 6 [9000/50000 (18%)] Loss: 1.688141
Train Epoch: 6 [10000/50000 (20%)] Loss: 1.360158
Train Epoch: 6 [11000/50000 (22%)] Loss: 1.517886
Train Epoch: 6 [12000/50000 (24%)] Loss: 1.315122
Train Epoch: 6 [13000/50000 (26%)] Loss: 1.622565
Train Epoch: 6 [14000/50000 (28%)] Loss: 1.337027
Train Epoch: 6 [15000/50000 (30%)] Loss: 1.411471
Train Epoch: 6 [16000/50000 (32%)] Loss: 1.441764
Train Epoch: 6 [17000/50000 (34%)] Loss: 1.604846
Train Epoch: 6 [18000/50000 (36%)] Loss: 1.437572
Train Epoch: 6 [19000/50000 (38%)] Loss: 1.465665
Train Epoch: 6 [20000/50000 (40%)] Loss: 1.649791
Train Epoch: 6 [21000/50000 (42%)] Loss: 1.408507
Train Epoch: 6 [22000/50000 (44%)] Loss: 1.618381
Train Epoch: 6 [23000/50000 (46%)] Loss: 1.517125
Train Epoch: 6 [24000/50000 (48%)] Loss: 1.571951
Train Epoch: 6 [25000/50000 (50%)] Loss: 1.428393
Train Epoch: 6 [26000/50000 (52%)] Loss: 1.313411
Train Epoch: 6 [27000/50000 (54%)] Loss: 1.538920
Train Epoch: 6 [28000/50000 (56%)] Loss: 1.434064
Train Epoch: 6 [29000/50000 (58%)] Loss: 1.583723
Train Epoch: 6 [30000/50000 (60%)] Loss: 1.556575
Train Epoch: 6 [31000/50000 (62%)] Loss: 1.274496
Train Epoch: 6 [32000/50000 (64%)] Loss: 1.381841
Train Epoch: 6 [33000/50000 (66%)] Loss: 1.264373
Train Epoch: 6 [34000/50000 (68%)] Loss: 1.463861
Train Epoch: 6 [35000/50000 (70%)] Loss: 1.549634
Train Epoch: 6 [36000/50000 (72%)] Loss: 1.353560
Train Epoch: 6 [37000/50000 (74%)] Loss: 1.424822
Train Epoch: 6 [38000/50000 (76%)] Loss: 1.489458
Train Epoch: 6 [39000/50000 (78%)] Loss: 1.399668
Train Epoch: 6 [40000/50000 (80%)] Loss: 1.568999
Train Epoch: 6 [41000/50000 (82%)] Loss: 1.554259

Train Epoch: 6 [42000/50000 (84%)] Loss: 1.421508
Train Epoch: 6 [43000/50000 (86%)] Loss: 1.271529
Train Epoch: 6 [44000/50000 (88%)] Loss: 1.802002
Train Epoch: 6 [45000/50000 (90%)] Loss: 1.718096
Train Epoch: 6 [46000/50000 (92%)] Loss: 1.282601
Train Epoch: 6 [47000/50000 (94%)] Loss: 1.528311
Train Epoch: 6 [48000/50000 (96%)] Loss: 1.183712
Train Epoch: 6 [49000/50000 (98%)] Loss: 1.492255

Test set: Average loss: 1.3455, Accuracy: 5211/10000 (52%)

Train Epoch: 7 [0/50000 (0%)] Loss: 1.372328
Train Epoch: 7 [1000/50000 (2%)] Loss: 1.478891
Train Epoch: 7 [2000/50000 (4%)] Loss: 1.447887
Train Epoch: 7 [3000/50000 (6%)] Loss: 1.489230
Train Epoch: 7 [4000/50000 (8%)] Loss: 1.253462
Train Epoch: 7 [5000/50000 (10%)] Loss: 1.322814
Train Epoch: 7 [6000/50000 (12%)] Loss: 1.384185
Train Epoch: 7 [7000/50000 (14%)] Loss: 1.234956
Train Epoch: 7 [8000/50000 (16%)] Loss: 1.366306
Train Epoch: 7 [9000/50000 (18%)] Loss: 1.353961
Train Epoch: 7 [10000/50000 (20%)] Loss: 1.314497
Train Epoch: 7 [11000/50000 (22%)] Loss: 1.406046
Train Epoch: 7 [12000/50000 (24%)] Loss: 1.362135
Train Epoch: 7 [13000/50000 (26%)] Loss: 1.568126
Train Epoch: 7 [14000/50000 (28%)] Loss: 1.329816
Train Epoch: 7 [15000/50000 (30%)] Loss: 1.535305
Train Epoch: 7 [16000/50000 (32%)] Loss: 1.667581
Train Epoch: 7 [17000/50000 (34%)] Loss: 1.563814
Train Epoch: 7 [18000/50000 (36%)] Loss: 1.316980
Train Epoch: 7 [19000/50000 (38%)] Loss: 1.589166
Train Epoch: 7 [20000/50000 (40%)] Loss: 1.252996
Train Epoch: 7 [21000/50000 (42%)] Loss: 1.343959
Train Epoch: 7 [22000/50000 (44%)] Loss: 1.404452
Train Epoch: 7 [23000/50000 (46%)] Loss: 1.180640
Train Epoch: 7 [24000/50000 (48%)] Loss: 1.442833
Train Epoch: 7 [25000/50000 (50%)] Loss: 1.516186
Train Epoch: 7 [26000/50000 (52%)] Loss: 1.257774
Train Epoch: 7 [27000/50000 (54%)] Loss: 1.397220
Train Epoch: 7 [28000/50000 (56%)] Loss: 1.423466

Train Epoch: 7 [29000/50000 (58%)] Loss: 1.522812
Train Epoch: 7 [30000/50000 (60%)] Loss: 1.311958
Train Epoch: 7 [31000/50000 (62%)] Loss: 1.637479
Train Epoch: 7 [32000/50000 (64%)] Loss: 1.339144
Train Epoch: 7 [33000/50000 (66%)] Loss: 1.481920
Train Epoch: 7 [34000/50000 (68%)] Loss: 1.483005
Train Epoch: 7 [35000/50000 (70%)] Loss: 1.420324
Train Epoch: 7 [36000/50000 (72%)] Loss: 1.421903
Train Epoch: 7 [37000/50000 (74%)] Loss: 1.349118
Train Epoch: 7 [38000/50000 (76%)] Loss: 1.339399
Train Epoch: 7 [39000/50000 (78%)] Loss: 1.556839
Train Epoch: 7 [40000/50000 (80%)] Loss: 1.543374
Train Epoch: 7 [41000/50000 (82%)] Loss: 1.464296
Train Epoch: 7 [42000/50000 (84%)] Loss: 1.763795
Train Epoch: 7 [43000/50000 (86%)] Loss: 1.632758
Train Epoch: 7 [44000/50000 (88%)] Loss: 1.588117
Train Epoch: 7 [45000/50000 (90%)] Loss: 1.540667
Train Epoch: 7 [46000/50000 (92%)] Loss: 1.354615
Train Epoch: 7 [47000/50000 (94%)] Loss: 1.457838
Train Epoch: 7 [48000/50000 (96%)] Loss: 1.398300
Train Epoch: 7 [49000/50000 (98%)] Loss: 1.515976

Test set: Average loss: 1.3716, Accuracy: 5162/10000 (52%)

Train Epoch: 8 [0/50000 (0%)] Loss: 1.570709
Train Epoch: 8 [1000/50000 (2%)] Loss: 1.319262
Train Epoch: 8 [2000/50000 (4%)] Loss: 1.372124
Train Epoch: 8 [3000/50000 (6%)] Loss: 1.380526
Train Epoch: 8 [4000/50000 (8%)] Loss: 1.609584
Train Epoch: 8 [5000/50000 (10%)] Loss: 1.481861
Train Epoch: 8 [6000/50000 (12%)] Loss: 1.272051
Train Epoch: 8 [7000/50000 (14%)] Loss: 1.481252
Train Epoch: 8 [8000/50000 (16%)] Loss: 1.463641
Train Epoch: 8 [9000/50000 (18%)] Loss: 1.503965
Train Epoch: 8 [10000/50000 (20%)] Loss: 1.600450
Train Epoch: 8 [11000/50000 (22%)] Loss: 1.341874
Train Epoch: 8 [12000/50000 (24%)] Loss: 1.503902
Train Epoch: 8 [13000/50000 (26%)] Loss: 1.483475
Train Epoch: 8 [14000/50000 (28%)] Loss: 1.500146
Train Epoch: 8 [15000/50000 (30%)] Loss: 1.445867

Train Epoch: 8 [16000/50000 (32%)] Loss: 1.118375
Train Epoch: 8 [17000/50000 (34%)] Loss: 1.593877
Train Epoch: 8 [18000/50000 (36%)] Loss: 1.409167
Train Epoch: 8 [19000/50000 (38%)] Loss: 1.436235
Train Epoch: 8 [20000/50000 (40%)] Loss: 1.319384
Train Epoch: 8 [21000/50000 (42%)] Loss: 1.381717
Train Epoch: 8 [22000/50000 (44%)] Loss: 1.415082
Train Epoch: 8 [23000/50000 (46%)] Loss: 1.481250
Train Epoch: 8 [24000/50000 (48%)] Loss: 1.396849
Train Epoch: 8 [25000/50000 (50%)] Loss: 1.591773
Train Epoch: 8 [26000/50000 (52%)] Loss: 1.330319
Train Epoch: 8 [27000/50000 (54%)] Loss: 1.632725
Train Epoch: 8 [28000/50000 (56%)] Loss: 1.748461
Train Epoch: 8 [29000/50000 (58%)] Loss: 1.242321
Train Epoch: 8 [30000/50000 (60%)] Loss: 1.386430
Train Epoch: 8 [31000/50000 (62%)] Loss: 1.491190
Train Epoch: 8 [32000/50000 (64%)] Loss: 1.247603
Train Epoch: 8 [33000/50000 (66%)] Loss: 1.408402
Train Epoch: 8 [34000/50000 (68%)] Loss: 1.457814
Train Epoch: 8 [35000/50000 (70%)] Loss: 1.500859
Train Epoch: 8 [36000/50000 (72%)] Loss: 1.290742
Train Epoch: 8 [37000/50000 (74%)] Loss: 1.443120
Train Epoch: 8 [38000/50000 (76%)] Loss: 1.368583
Train Epoch: 8 [39000/50000 (78%)] Loss: 1.353429
Train Epoch: 8 [40000/50000 (80%)] Loss: 1.388366
Train Epoch: 8 [41000/50000 (82%)] Loss: 1.523487
Train Epoch: 8 [42000/50000 (84%)] Loss: 1.620203
Train Epoch: 8 [43000/50000 (86%)] Loss: 1.398737
Train Epoch: 8 [44000/50000 (88%)] Loss: 1.512547
Train Epoch: 8 [45000/50000 (90%)] Loss: 1.349807
Train Epoch: 8 [46000/50000 (92%)] Loss: 1.523573
Train Epoch: 8 [47000/50000 (94%)] Loss: 1.290235
Train Epoch: 8 [48000/50000 (96%)] Loss: 1.413365
Train Epoch: 8 [49000/50000 (98%)] Loss: 1.448036

Test set: Average loss: 1.4475, Accuracy: 5013/10000 (50%)

Train Epoch: 9 [0/50000 (0%)] Loss: 1.589250
Train Epoch: 9 [1000/50000 (2%)] Loss: 1.385505
Train Epoch: 9 [2000/50000 (4%)] Loss: 1.453935

Train Epoch: 9 [3000/50000 (6%)] Loss: 1.309483
Train Epoch: 9 [4000/50000 (8%)] Loss: 1.562237
Train Epoch: 9 [5000/50000 (10%)] Loss: 1.449934
Train Epoch: 9 [6000/50000 (12%)] Loss: 1.346544
Train Epoch: 9 [7000/50000 (14%)] Loss: 1.328996
Train Epoch: 9 [8000/50000 (16%)] Loss: 1.499344
Train Epoch: 9 [9000/50000 (18%)] Loss: 1.267789
Train Epoch: 9 [10000/50000 (20%)] Loss: 1.496267
Train Epoch: 9 [11000/50000 (22%)] Loss: 1.314841
Train Epoch: 9 [12000/50000 (24%)] Loss: 1.597270
Train Epoch: 9 [13000/50000 (26%)] Loss: 1.539526
Train Epoch: 9 [14000/50000 (28%)] Loss: 1.300759
Train Epoch: 9 [15000/50000 (30%)] Loss: 1.497104
Train Epoch: 9 [16000/50000 (32%)] Loss: 1.517534
Train Epoch: 9 [17000/50000 (34%)] Loss: 1.295545
Train Epoch: 9 [18000/50000 (36%)] Loss: 1.347284
Train Epoch: 9 [19000/50000 (38%)] Loss: 1.285850
Train Epoch: 9 [20000/50000 (40%)] Loss: 1.350842
Train Epoch: 9 [21000/50000 (42%)] Loss: 1.452761
Train Epoch: 9 [22000/50000 (44%)] Loss: 1.366924
Train Epoch: 9 [23000/50000 (46%)] Loss: 1.636062
Train Epoch: 9 [24000/50000 (48%)] Loss: 1.514015
Train Epoch: 9 [25000/50000 (50%)] Loss: 1.495610
Train Epoch: 9 [26000/50000 (52%)] Loss: 1.455941
Train Epoch: 9 [27000/50000 (54%)] Loss: 1.477399
Train Epoch: 9 [28000/50000 (56%)] Loss: 1.289603
Train Epoch: 9 [29000/50000 (58%)] Loss: 1.468400
Train Epoch: 9 [30000/50000 (60%)] Loss: 1.497016
Train Epoch: 9 [31000/50000 (62%)] Loss: 1.539397
Train Epoch: 9 [32000/50000 (64%)] Loss: 1.302908
Train Epoch: 9 [33000/50000 (66%)] Loss: 1.457488
Train Epoch: 9 [34000/50000 (68%)] Loss: 1.700400
Train Epoch: 9 [35000/50000 (70%)] Loss: 1.394888
Train Epoch: 9 [36000/50000 (72%)] Loss: 1.446061
Train Epoch: 9 [37000/50000 (74%)] Loss: 1.556614
Train Epoch: 9 [38000/50000 (76%)] Loss: 1.405674
Train Epoch: 9 [39000/50000 (78%)] Loss: 1.265753
Train Epoch: 9 [40000/50000 (80%)] Loss: 1.405718
Train Epoch: 9 [41000/50000 (82%)] Loss: 1.477504
Train Epoch: 9 [42000/50000 (84%)] Loss: 1.375593

Train Epoch: 9 [43000/50000 (86%)] Loss: 1.303762
Train Epoch: 9 [44000/50000 (88%)] Loss: 1.527687
Train Epoch: 9 [45000/50000 (90%)] Loss: 1.564131
Train Epoch: 9 [46000/50000 (92%)] Loss: 1.317821
Train Epoch: 9 [47000/50000 (94%)] Loss: 1.511618
Train Epoch: 9 [48000/50000 (96%)] Loss: 1.327016
Train Epoch: 9 [49000/50000 (98%)] Loss: 1.435995

Test set: Average loss: 1.3231, Accuracy: 5384/10000 (54%)

Train Epoch: 10 [0/50000 (0%)] Loss: 1.427241
Train Epoch: 10 [1000/50000 (2%)] Loss: 1.381230
Train Epoch: 10 [2000/50000 (4%)] Loss: 1.159166
Train Epoch: 10 [3000/50000 (6%)] Loss: 1.400213
Train Epoch: 10 [4000/50000 (8%)] Loss: 1.482898
Train Epoch: 10 [5000/50000 (10%)] Loss: 1.424620
Train Epoch: 10 [6000/50000 (12%)] Loss: 1.210531
Train Epoch: 10 [7000/50000 (14%)] Loss: 1.427489
Train Epoch: 10 [8000/50000 (16%)] Loss: 1.218331
Train Epoch: 10 [9000/50000 (18%)] Loss: 1.266606
Train Epoch: 10 [10000/50000 (20%)] Loss: 1.423649
Train Epoch: 10 [11000/50000 (22%)] Loss: 1.277330
Train Epoch: 10 [12000/50000 (24%)] Loss: 1.236635
Train Epoch: 10 [13000/50000 (26%)] Loss: 1.323140
Train Epoch: 10 [14000/50000 (28%)] Loss: 1.398716
Train Epoch: 10 [15000/50000 (30%)] Loss: 1.376556
Train Epoch: 10 [16000/50000 (32%)] Loss: 1.556574
Train Epoch: 10 [17000/50000 (34%)] Loss: 1.173316
Train Epoch: 10 [18000/50000 (36%)] Loss: 1.354694
Train Epoch: 10 [19000/50000 (38%)] Loss: 1.607042
Train Epoch: 10 [20000/50000 (40%)] Loss: 1.371534
Train Epoch: 10 [21000/50000 (42%)] Loss: 1.349985
Train Epoch: 10 [22000/50000 (44%)] Loss: 1.402577
Train Epoch: 10 [23000/50000 (46%)] Loss: 1.551528
Train Epoch: 10 [24000/50000 (48%)] Loss: 1.407112
Train Epoch: 10 [25000/50000 (50%)] Loss: 1.124040
Train Epoch: 10 [26000/50000 (52%)] Loss: 1.308971
Train Epoch: 10 [27000/50000 (54%)] Loss: 1.419708
Train Epoch: 10 [28000/50000 (56%)] Loss: 1.500440
Train Epoch: 10 [29000/50000 (58%)] Loss: 1.563791

Train Epoch: 10 [30000/50000 (60%)]	Loss: 1.644017
Train Epoch: 10 [31000/50000 (62%)]	Loss: 1.360517
Train Epoch: 10 [32000/50000 (64%)]	Loss: 1.341734
Train Epoch: 10 [33000/50000 (66%)]	Loss: 1.583343
Train Epoch: 10 [34000/50000 (68%)]	Loss: 1.570118
Train Epoch: 10 [35000/50000 (70%)]	Loss: 1.536991
Train Epoch: 10 [36000/50000 (72%)]	Loss: 1.211462
Train Epoch: 10 [37000/50000 (74%)]	Loss: 1.309098
Train Epoch: 10 [38000/50000 (76%)]	Loss: 1.464957
Train Epoch: 10 [39000/50000 (78%)]	Loss: 1.687716
Train Epoch: 10 [40000/50000 (80%)]	Loss: 1.430287
Train Epoch: 10 [41000/50000 (82%)]	Loss: 1.251731
Train Epoch: 10 [42000/50000 (84%)]	Loss: 1.303246
Train Epoch: 10 [43000/50000 (86%)]	Loss: 1.475887
Train Epoch: 10 [44000/50000 (88%)]	Loss: 1.249177
Train Epoch: 10 [45000/50000 (90%)]	Loss: 1.604491
Train Epoch: 10 [46000/50000 (92%)]	Loss: 1.380230
Train Epoch: 10 [47000/50000 (94%)]	Loss: 1.420220
Train Epoch: 10 [48000/50000 (96%)]	Loss: 1.219077
Train Epoch: 10 [49000/50000 (98%)]	Loss: 1.481535

Test set: Average loss: 1.3289, Accuracy: 5377/10000 (54%)

Train Epoch: 11 [0/50000 (0%)]	Loss: 1.389038
Train Epoch: 11 [1000/50000 (2%)]	Loss: 1.358256
Train Epoch: 11 [2000/50000 (4%)]	Loss: 1.294822
Train Epoch: 11 [3000/50000 (6%)]	Loss: 1.487279
Train Epoch: 11 [4000/50000 (8%)]	Loss: 1.433863
Train Epoch: 11 [5000/50000 (10%)]	Loss: 1.339714
Train Epoch: 11 [6000/50000 (12%)]	Loss: 1.456121
Train Epoch: 11 [7000/50000 (14%)]	Loss: 1.535133
Train Epoch: 11 [8000/50000 (16%)]	Loss: 1.495088
Train Epoch: 11 [9000/50000 (18%)]	Loss: 1.235872
Train Epoch: 11 [10000/50000 (20%)]	Loss: 1.410950
Train Epoch: 11 [11000/50000 (22%)]	Loss: 1.302435
Train Epoch: 11 [12000/50000 (24%)]	Loss: 1.351786
Train Epoch: 11 [13000/50000 (26%)]	Loss: 1.379729
Train Epoch: 11 [14000/50000 (28%)]	Loss: 1.478126
Train Epoch: 11 [15000/50000 (30%)]	Loss: 1.473254
Train Epoch: 11 [16000/50000 (32%)]	Loss: 1.126173

Train Epoch: 11 [17000/50000 (34%)]	Loss: 1.569354
Train Epoch: 11 [18000/50000 (36%)]	Loss: 1.359390
Train Epoch: 11 [19000/50000 (38%)]	Loss: 1.423077
Train Epoch: 11 [20000/50000 (40%)]	Loss: 1.328356
Train Epoch: 11 [21000/50000 (42%)]	Loss: 1.169310
Train Epoch: 11 [22000/50000 (44%)]	Loss: 1.350932
Train Epoch: 11 [23000/50000 (46%)]	Loss: 1.338829
Train Epoch: 11 [24000/50000 (48%)]	Loss: 1.381720
Train Epoch: 11 [25000/50000 (50%)]	Loss: 1.434360
Train Epoch: 11 [26000/50000 (52%)]	Loss: 1.362079
Train Epoch: 11 [27000/50000 (54%)]	Loss: 1.418918
Train Epoch: 11 [28000/50000 (56%)]	Loss: 1.524362
Train Epoch: 11 [29000/50000 (58%)]	Loss: 1.338470
Train Epoch: 11 [30000/50000 (60%)]	Loss: 1.194562
Train Epoch: 11 [31000/50000 (62%)]	Loss: 1.256216
Train Epoch: 11 [32000/50000 (64%)]	Loss: 1.319813
Train Epoch: 11 [33000/50000 (66%)]	Loss: 1.215816
Train Epoch: 11 [34000/50000 (68%)]	Loss: 1.362554
Train Epoch: 11 [35000/50000 (70%)]	Loss: 1.416362
Train Epoch: 11 [36000/50000 (72%)]	Loss: 1.620249
Train Epoch: 11 [37000/50000 (74%)]	Loss: 1.244766
Train Epoch: 11 [38000/50000 (76%)]	Loss: 1.323932
Train Epoch: 11 [39000/50000 (78%)]	Loss: 1.587942
Train Epoch: 11 [40000/50000 (80%)]	Loss: 1.414896
Train Epoch: 11 [41000/50000 (82%)]	Loss: 1.292804
Train Epoch: 11 [42000/50000 (84%)]	Loss: 1.443897
Train Epoch: 11 [43000/50000 (86%)]	Loss: 1.524842
Train Epoch: 11 [44000/50000 (88%)]	Loss: 1.716078
Train Epoch: 11 [45000/50000 (90%)]	Loss: 1.396554
Train Epoch: 11 [46000/50000 (92%)]	Loss: 1.319605
Train Epoch: 11 [47000/50000 (94%)]	Loss: 1.358229
Train Epoch: 11 [48000/50000 (96%)]	Loss: 1.336262
Train Epoch: 11 [49000/50000 (98%)]	Loss: 1.196267

Test set: Average loss: 1.3317, Accuracy: 5337/10000 (53%)

Train Epoch: 12 [0/50000 (0%)]	Loss: 1.751410
Train Epoch: 12 [1000/50000 (2%)]	Loss: 1.383876
Train Epoch: 12 [2000/50000 (4%)]	Loss: 1.266451
Train Epoch: 12 [3000/50000 (6%)]	Loss: 1.404949

Train Epoch: 12 [4000/50000 (8%)]	Loss: 1.264958
Train Epoch: 12 [5000/50000 (10%)]	Loss: 1.489073
Train Epoch: 12 [6000/50000 (12%)]	Loss: 1.245243
Train Epoch: 12 [7000/50000 (14%)]	Loss: 1.566662
Train Epoch: 12 [8000/50000 (16%)]	Loss: 1.493505
Train Epoch: 12 [9000/50000 (18%)]	Loss: 1.302750
Train Epoch: 12 [10000/50000 (20%)]	Loss: 1.288356
Train Epoch: 12 [11000/50000 (22%)]	Loss: 1.387829
Train Epoch: 12 [12000/50000 (24%)]	Loss: 1.616365
Train Epoch: 12 [13000/50000 (26%)]	Loss: 1.535430
Train Epoch: 12 [14000/50000 (28%)]	Loss: 1.490301
Train Epoch: 12 [15000/50000 (30%)]	Loss: 1.614352
Train Epoch: 12 [16000/50000 (32%)]	Loss: 1.493005
Train Epoch: 12 [17000/50000 (34%)]	Loss: 1.308317
Train Epoch: 12 [18000/50000 (36%)]	Loss: 1.644671
Train Epoch: 12 [19000/50000 (38%)]	Loss: 1.219699
Train Epoch: 12 [20000/50000 (40%)]	Loss: 1.514325
Train Epoch: 12 [21000/50000 (42%)]	Loss: 1.490858
Train Epoch: 12 [22000/50000 (44%)]	Loss: 1.372923
Train Epoch: 12 [23000/50000 (46%)]	Loss: 1.314466
Train Epoch: 12 [24000/50000 (48%)]	Loss: 1.270750
Train Epoch: 12 [25000/50000 (50%)]	Loss: 1.363363
Train Epoch: 12 [26000/50000 (52%)]	Loss: 1.360119
Train Epoch: 12 [27000/50000 (54%)]	Loss: 1.339972
Train Epoch: 12 [28000/50000 (56%)]	Loss: 1.517078
Train Epoch: 12 [29000/50000 (58%)]	Loss: 1.289970
Train Epoch: 12 [30000/50000 (60%)]	Loss: 1.524894
Train Epoch: 12 [31000/50000 (62%)]	Loss: 1.359187
Train Epoch: 12 [32000/50000 (64%)]	Loss: 1.531870
Train Epoch: 12 [33000/50000 (66%)]	Loss: 1.372483
Train Epoch: 12 [34000/50000 (68%)]	Loss: 1.406643
Train Epoch: 12 [35000/50000 (70%)]	Loss: 1.318752
Train Epoch: 12 [36000/50000 (72%)]	Loss: 1.381302
Train Epoch: 12 [37000/50000 (74%)]	Loss: 1.374289
Train Epoch: 12 [38000/50000 (76%)]	Loss: 1.500792
Train Epoch: 12 [39000/50000 (78%)]	Loss: 1.531828
Train Epoch: 12 [40000/50000 (80%)]	Loss: 1.205448
Train Epoch: 12 [41000/50000 (82%)]	Loss: 1.425991
Train Epoch: 12 [42000/50000 (84%)]	Loss: 1.351818
Train Epoch: 12 [43000/50000 (86%)]	Loss: 1.405753

Train Epoch: 12 [44000/50000 (88%)]	Loss: 1.187194
Train Epoch: 12 [45000/50000 (90%)]	Loss: 1.597272
Train Epoch: 12 [46000/50000 (92%)]	Loss: 1.538787
Train Epoch: 12 [47000/50000 (94%)]	Loss: 1.355107
Train Epoch: 12 [48000/50000 (96%)]	Loss: 1.210697
Train Epoch: 12 [49000/50000 (98%)]	Loss: 1.514590

Test set: Average loss: 1.2928, Accuracy: 5448/10000 (54%)

Train Epoch: 13 [0/50000 (0%)]	Loss: 1.229990
Train Epoch: 13 [1000/50000 (2%)]	Loss: 1.487006
Train Epoch: 13 [2000/50000 (4%)]	Loss: 1.310134
Train Epoch: 13 [3000/50000 (6%)]	Loss: 1.534653
Train Epoch: 13 [4000/50000 (8%)]	Loss: 1.270529
Train Epoch: 13 [5000/50000 (10%)]	Loss: 1.434841
Train Epoch: 13 [6000/50000 (12%)]	Loss: 1.189934
Train Epoch: 13 [7000/50000 (14%)]	Loss: 1.464489
Train Epoch: 13 [8000/50000 (16%)]	Loss: 1.443166
Train Epoch: 13 [9000/50000 (18%)]	Loss: 1.273459
Train Epoch: 13 [10000/50000 (20%)]	Loss: 1.617265
Train Epoch: 13 [11000/50000 (22%)]	Loss: 1.358161
Train Epoch: 13 [12000/50000 (24%)]	Loss: 1.446187
Train Epoch: 13 [13000/50000 (26%)]	Loss: 1.155789
Train Epoch: 13 [14000/50000 (28%)]	Loss: 1.622143
Train Epoch: 13 [15000/50000 (30%)]	Loss: 1.257318
Train Epoch: 13 [16000/50000 (32%)]	Loss: 1.615839
Train Epoch: 13 [17000/50000 (34%)]	Loss: 1.311080
Train Epoch: 13 [18000/50000 (36%)]	Loss: 1.289936
Train Epoch: 13 [19000/50000 (38%)]	Loss: 1.376428
Train Epoch: 13 [20000/50000 (40%)]	Loss: 1.174052
Train Epoch: 13 [21000/50000 (42%)]	Loss: 1.606493
Train Epoch: 13 [22000/50000 (44%)]	Loss: 1.314661
Train Epoch: 13 [23000/50000 (46%)]	Loss: 1.286236
Train Epoch: 13 [24000/50000 (48%)]	Loss: 1.295970
Train Epoch: 13 [25000/50000 (50%)]	Loss: 1.328055
Train Epoch: 13 [26000/50000 (52%)]	Loss: 1.428908
Train Epoch: 13 [27000/50000 (54%)]	Loss: 1.472784
Train Epoch: 13 [28000/50000 (56%)]	Loss: 1.463470
Train Epoch: 13 [29000/50000 (58%)]	Loss: 1.492707
Train Epoch: 13 [30000/50000 (60%)]	Loss: 1.324926

Train Epoch: 13 [31000/50000 (62%)]	Loss: 1.416558
Train Epoch: 13 [32000/50000 (64%)]	Loss: 1.503470
Train Epoch: 13 [33000/50000 (66%)]	Loss: 1.363201
Train Epoch: 13 [34000/50000 (68%)]	Loss: 1.333287
Train Epoch: 13 [35000/50000 (70%)]	Loss: 1.389801
Train Epoch: 13 [36000/50000 (72%)]	Loss: 1.307801
Train Epoch: 13 [37000/50000 (74%)]	Loss: 1.335096
Train Epoch: 13 [38000/50000 (76%)]	Loss: 1.366483
Train Epoch: 13 [39000/50000 (78%)]	Loss: 1.277538
Train Epoch: 13 [40000/50000 (80%)]	Loss: 1.472052
Train Epoch: 13 [41000/50000 (82%)]	Loss: 1.466293
Train Epoch: 13 [42000/50000 (84%)]	Loss: 1.473080
Train Epoch: 13 [43000/50000 (86%)]	Loss: 1.312540
Train Epoch: 13 [44000/50000 (88%)]	Loss: 1.254499
Train Epoch: 13 [45000/50000 (90%)]	Loss: 1.617567
Train Epoch: 13 [46000/50000 (92%)]	Loss: 1.278928
Train Epoch: 13 [47000/50000 (94%)]	Loss: 1.472365
Train Epoch: 13 [48000/50000 (96%)]	Loss: 1.322443
Train Epoch: 13 [49000/50000 (98%)]	Loss: 1.240257

Test set: Average loss: 1.3208, Accuracy: 5470/10000 (55%)

Train Epoch: 14 [0/50000 (0%)]	Loss: 1.369127
Train Epoch: 14 [1000/50000 (2%)]	Loss: 1.519496
Train Epoch: 14 [2000/50000 (4%)]	Loss: 1.419131
Train Epoch: 14 [3000/50000 (6%)]	Loss: 1.398988
Train Epoch: 14 [4000/50000 (8%)]	Loss: 1.399591
Train Epoch: 14 [5000/50000 (10%)]	Loss: 1.437332
Train Epoch: 14 [6000/50000 (12%)]	Loss: 1.398860
Train Epoch: 14 [7000/50000 (14%)]	Loss: 1.318009
Train Epoch: 14 [8000/50000 (16%)]	Loss: 1.352301
Train Epoch: 14 [9000/50000 (18%)]	Loss: 1.541479
Train Epoch: 14 [10000/50000 (20%)]	Loss: 1.545626
Train Epoch: 14 [11000/50000 (22%)]	Loss: 1.403736
Train Epoch: 14 [12000/50000 (24%)]	Loss: 1.400133
Train Epoch: 14 [13000/50000 (26%)]	Loss: 1.536269
Train Epoch: 14 [14000/50000 (28%)]	Loss: 1.519298
Train Epoch: 14 [15000/50000 (30%)]	Loss: 1.482174
Train Epoch: 14 [16000/50000 (32%)]	Loss: 1.380840
Train Epoch: 14 [17000/50000 (34%)]	Loss: 1.366348

Train Epoch: 14 [18000/50000 (36%)]	Loss: 1.540749
Train Epoch: 14 [19000/50000 (38%)]	Loss: 1.406248
Train Epoch: 14 [20000/50000 (40%)]	Loss: 1.440052
Train Epoch: 14 [21000/50000 (42%)]	Loss: 1.391048
Train Epoch: 14 [22000/50000 (44%)]	Loss: 1.328226
Train Epoch: 14 [23000/50000 (46%)]	Loss: 1.340167
Train Epoch: 14 [24000/50000 (48%)]	Loss: 1.448312
Train Epoch: 14 [25000/50000 (50%)]	Loss: 1.236315
Train Epoch: 14 [26000/50000 (52%)]	Loss: 1.351863
Train Epoch: 14 [27000/50000 (54%)]	Loss: 1.369038
Train Epoch: 14 [28000/50000 (56%)]	Loss: 1.604927
Train Epoch: 14 [29000/50000 (58%)]	Loss: 1.174177
Train Epoch: 14 [30000/50000 (60%)]	Loss: 1.421032
Train Epoch: 14 [31000/50000 (62%)]	Loss: 1.273405
Train Epoch: 14 [32000/50000 (64%)]	Loss: 1.214339
Train Epoch: 14 [33000/50000 (66%)]	Loss: 1.599212
Train Epoch: 14 [34000/50000 (68%)]	Loss: 1.383220
Train Epoch: 14 [35000/50000 (70%)]	Loss: 1.418453
Train Epoch: 14 [36000/50000 (72%)]	Loss: 1.237834
Train Epoch: 14 [37000/50000 (74%)]	Loss: 1.167728
Train Epoch: 14 [38000/50000 (76%)]	Loss: 1.386744
Train Epoch: 14 [39000/50000 (78%)]	Loss: 1.343309
Train Epoch: 14 [40000/50000 (80%)]	Loss: 1.212974
Train Epoch: 14 [41000/50000 (82%)]	Loss: 1.330768
Train Epoch: 14 [42000/50000 (84%)]	Loss: 1.510270
Train Epoch: 14 [43000/50000 (86%)]	Loss: 1.299063
Train Epoch: 14 [44000/50000 (88%)]	Loss: 1.594801
Train Epoch: 14 [45000/50000 (90%)]	Loss: 1.362821
Train Epoch: 14 [46000/50000 (92%)]	Loss: 1.610570
Train Epoch: 14 [47000/50000 (94%)]	Loss: 1.586840
Train Epoch: 14 [48000/50000 (96%)]	Loss: 1.339935
Train Epoch: 14 [49000/50000 (98%)]	Loss: 1.280290

Test set: Average loss: 1.2957, Accuracy: 5488/10000 (55%)

Train Epoch: 15 [0/50000 (0%)]	Loss: 1.484347
Train Epoch: 15 [1000/50000 (2%)]	Loss: 1.649843
Train Epoch: 15 [2000/50000 (4%)]	Loss: 1.408340
Train Epoch: 15 [3000/50000 (6%)]	Loss: 1.532364
Train Epoch: 15 [4000/50000 (8%)]	Loss: 1.413952

Train Epoch: 15 [5000/50000 (10%)]	Loss: 1.495124
Train Epoch: 15 [6000/50000 (12%)]	Loss: 1.547081
Train Epoch: 15 [7000/50000 (14%)]	Loss: 1.338145
Train Epoch: 15 [8000/50000 (16%)]	Loss: 1.512166
Train Epoch: 15 [9000/50000 (18%)]	Loss: 1.342459
Train Epoch: 15 [10000/50000 (20%)]	Loss: 1.370876
Train Epoch: 15 [11000/50000 (22%)]	Loss: 1.568073
Train Epoch: 15 [12000/50000 (24%)]	Loss: 1.274466
Train Epoch: 15 [13000/50000 (26%)]	Loss: 1.365394
Train Epoch: 15 [14000/50000 (28%)]	Loss: 1.421183
Train Epoch: 15 [15000/50000 (30%)]	Loss: 1.369447
Train Epoch: 15 [16000/50000 (32%)]	Loss: 1.200283
Train Epoch: 15 [17000/50000 (34%)]	Loss: 1.421136
Train Epoch: 15 [18000/50000 (36%)]	Loss: 1.388146
Train Epoch: 15 [19000/50000 (38%)]	Loss: 1.467095
Train Epoch: 15 [20000/50000 (40%)]	Loss: 1.400328
Train Epoch: 15 [21000/50000 (42%)]	Loss: 1.435159
Train Epoch: 15 [22000/50000 (44%)]	Loss: 1.467781
Train Epoch: 15 [23000/50000 (46%)]	Loss: 1.465695
Train Epoch: 15 [24000/50000 (48%)]	Loss: 1.435482
Train Epoch: 15 [25000/50000 (50%)]	Loss: 1.226914
Train Epoch: 15 [26000/50000 (52%)]	Loss: 1.472492
Train Epoch: 15 [27000/50000 (54%)]	Loss: 1.551282
Train Epoch: 15 [28000/50000 (56%)]	Loss: 1.263348
Train Epoch: 15 [29000/50000 (58%)]	Loss: 1.053721
Train Epoch: 15 [30000/50000 (60%)]	Loss: 1.374309
Train Epoch: 15 [31000/50000 (62%)]	Loss: 1.453862
Train Epoch: 15 [32000/50000 (64%)]	Loss: 1.349530
Train Epoch: 15 [33000/50000 (66%)]	Loss: 1.351616
Train Epoch: 15 [34000/50000 (68%)]	Loss: 1.293579
Train Epoch: 15 [35000/50000 (70%)]	Loss: 1.394816
Train Epoch: 15 [36000/50000 (72%)]	Loss: 1.325362
Train Epoch: 15 [37000/50000 (74%)]	Loss: 1.456519
Train Epoch: 15 [38000/50000 (76%)]	Loss: 1.545808
Train Epoch: 15 [39000/50000 (78%)]	Loss: 1.374603
Train Epoch: 15 [40000/50000 (80%)]	Loss: 1.363301
Train Epoch: 15 [41000/50000 (82%)]	Loss: 1.566630
Train Epoch: 15 [42000/50000 (84%)]	Loss: 1.652506
Train Epoch: 15 [43000/50000 (86%)]	Loss: 1.309829
Train Epoch: 15 [44000/50000 (88%)]	Loss: 1.388783

Train Epoch: 15 [45000/50000 (90%)]	Loss: 1.112069
Train Epoch: 15 [46000/50000 (92%)]	Loss: 1.184432
Train Epoch: 15 [47000/50000 (94%)]	Loss: 1.451344
Train Epoch: 15 [48000/50000 (96%)]	Loss: 1.341419
Train Epoch: 15 [49000/50000 (98%)]	Loss: 1.491228

Test set: Average loss: 1.2803, Accuracy: 5543/10000 (55%)

Training and Testing total execution time is: 990.4335172176361 seconds

2. Modified LeNet with an Additional Dropout Layer

==> Preparing data..

Train Epoch: 1 [0/50000 (0%)]	Loss: 2.304064
Train Epoch: 1 [1000/50000 (2%)]	Loss: 2.283091
Train Epoch: 1 [2000/50000 (4%)]	Loss: 2.242663
Train Epoch: 1 [3000/50000 (6%)]	Loss: 2.159604
Train Epoch: 1 [4000/50000 (8%)]	Loss: 2.179492
Train Epoch: 1 [5000/50000 (10%)]	Loss: 2.131876
Train Epoch: 1 [6000/50000 (12%)]	Loss: 2.003077
Train Epoch: 1 [7000/50000 (14%)]	Loss: 2.040812
Train Epoch: 1 [8000/50000 (16%)]	Loss: 2.026763
Train Epoch: 1 [9000/50000 (18%)]	Loss: 2.043369
Train Epoch: 1 [10000/50000 (20%)]	Loss: 1.954019
Train Epoch: 1 [11000/50000 (22%)]	Loss: 1.960453
Train Epoch: 1 [12000/50000 (24%)]	Loss: 2.010653
Train Epoch: 1 [13000/50000 (26%)]	Loss: 1.950442
Train Epoch: 1 [14000/50000 (28%)]	Loss: 2.002996
Train Epoch: 1 [15000/50000 (30%)]	Loss: 1.964892
Train Epoch: 1 [16000/50000 (32%)]	Loss: 2.008039
Train Epoch: 1 [17000/50000 (34%)]	Loss: 1.835652
Train Epoch: 1 [18000/50000 (36%)]	Loss: 1.993724
Train Epoch: 1 [19000/50000 (38%)]	Loss: 1.923910
Train Epoch: 1 [20000/50000 (40%)]	Loss: 1.929004
Train Epoch: 1 [21000/50000 (42%)]	Loss: 1.874609
Train Epoch: 1 [22000/50000 (44%)]	Loss: 1.853928
Train Epoch: 1 [23000/50000 (46%)]	Loss: 1.987274
Train Epoch: 1 [24000/50000 (48%)]	Loss: 2.067653
Train Epoch: 1 [25000/50000 (50%)]	Loss: 1.694123
Train Epoch: 1 [26000/50000 (52%)]	Loss: 1.829218

Train Epoch: 1 [27000/50000 (54%)] Loss: 1.768881
Train Epoch: 1 [28000/50000 (56%)] Loss: 1.802696
Train Epoch: 1 [29000/50000 (58%)] Loss: 1.881743
Train Epoch: 1 [30000/50000 (60%)] Loss: 1.969157
Train Epoch: 1 [31000/50000 (62%)] Loss: 1.901315
Train Epoch: 1 [32000/50000 (64%)] Loss: 1.929027
Train Epoch: 1 [33000/50000 (66%)] Loss: 1.761327
Train Epoch: 1 [34000/50000 (68%)] Loss: 1.779145
Train Epoch: 1 [35000/50000 (70%)] Loss: 1.848097
Train Epoch: 1 [36000/50000 (72%)] Loss: 1.696060
Train Epoch: 1 [37000/50000 (74%)] Loss: 1.776242
Train Epoch: 1 [38000/50000 (76%)] Loss: 1.769960
Train Epoch: 1 [39000/50000 (78%)] Loss: 1.878654
Train Epoch: 1 [40000/50000 (80%)] Loss: 1.752921
Train Epoch: 1 [41000/50000 (82%)] Loss: 1.858295
Train Epoch: 1 [42000/50000 (84%)] Loss: 1.761633
Train Epoch: 1 [43000/50000 (86%)] Loss: 1.667387
Train Epoch: 1 [44000/50000 (88%)] Loss: 1.987402
Train Epoch: 1 [45000/50000 (90%)] Loss: 2.016875
Train Epoch: 1 [46000/50000 (92%)] Loss: 1.841093
Train Epoch: 1 [47000/50000 (94%)] Loss: 1.967024
Train Epoch: 1 [48000/50000 (96%)] Loss: 1.703951
Train Epoch: 1 [49000/50000 (98%)] Loss: 1.775034

Test set: Average loss: 1.7260, Accuracy: 3419/10000 (34%)

Train Epoch: 2 [0/50000 (0%)] Loss: 1.854015
Train Epoch: 2 [1000/50000 (2%)] Loss: 1.882143
Train Epoch: 2 [2000/50000 (4%)] Loss: 1.835746
Train Epoch: 2 [3000/50000 (6%)] Loss: 1.667284
Train Epoch: 2 [4000/50000 (8%)] Loss: 1.808436
Train Epoch: 2 [5000/50000 (10%)] Loss: 1.842888
Train Epoch: 2 [6000/50000 (12%)] Loss: 1.701118
Train Epoch: 2 [7000/50000 (14%)] Loss: 1.834832
Train Epoch: 2 [8000/50000 (16%)] Loss: 1.618619
Train Epoch: 2 [9000/50000 (18%)] Loss: 1.774616
Train Epoch: 2 [10000/50000 (20%)] Loss: 1.579607
Train Epoch: 2 [11000/50000 (22%)] Loss: 1.834712
Train Epoch: 2 [12000/50000 (24%)] Loss: 1.872749
Train Epoch: 2 [13000/50000 (26%)] Loss: 1.984624

Train Epoch: 2 [14000/50000 (28%)] Loss: 1.733682
Train Epoch: 2 [15000/50000 (30%)] Loss: 1.698742
Train Epoch: 2 [16000/50000 (32%)] Loss: 1.753645
Train Epoch: 2 [17000/50000 (34%)] Loss: 1.755406
Train Epoch: 2 [18000/50000 (36%)] Loss: 1.762294
Train Epoch: 2 [19000/50000 (38%)] Loss: 1.797551
Train Epoch: 2 [20000/50000 (40%)] Loss: 1.579347
Train Epoch: 2 [21000/50000 (42%)] Loss: 1.727909
Train Epoch: 2 [22000/50000 (44%)] Loss: 1.676595
Train Epoch: 2 [23000/50000 (46%)] Loss: 1.729776
Train Epoch: 2 [24000/50000 (48%)] Loss: 1.945124
Train Epoch: 2 [25000/50000 (50%)] Loss: 1.753322
Train Epoch: 2 [26000/50000 (52%)] Loss: 1.689625
Train Epoch: 2 [27000/50000 (54%)] Loss: 1.765260
Train Epoch: 2 [28000/50000 (56%)] Loss: 1.831426
Train Epoch: 2 [29000/50000 (58%)] Loss: 1.937646
Train Epoch: 2 [30000/50000 (60%)] Loss: 1.918831
Train Epoch: 2 [31000/50000 (62%)] Loss: 1.692528
Train Epoch: 2 [32000/50000 (64%)] Loss: 1.743684
Train Epoch: 2 [33000/50000 (66%)] Loss: 1.781773
Train Epoch: 2 [34000/50000 (68%)] Loss: 1.542717
Train Epoch: 2 [35000/50000 (70%)] Loss: 1.859442
Train Epoch: 2 [36000/50000 (72%)] Loss: 1.718071
Train Epoch: 2 [37000/50000 (74%)] Loss: 1.764852
Train Epoch: 2 [38000/50000 (76%)] Loss: 1.791788
Train Epoch: 2 [39000/50000 (78%)] Loss: 1.783767
Train Epoch: 2 [40000/50000 (80%)] Loss: 1.906726
Train Epoch: 2 [41000/50000 (82%)] Loss: 1.819875
Train Epoch: 2 [42000/50000 (84%)] Loss: 1.572290
Train Epoch: 2 [43000/50000 (86%)] Loss: 1.862706
Train Epoch: 2 [44000/50000 (88%)] Loss: 1.748767
Train Epoch: 2 [45000/50000 (90%)] Loss: 1.556981
Train Epoch: 2 [46000/50000 (92%)] Loss: 2.083031
Train Epoch: 2 [47000/50000 (94%)] Loss: 1.693225
Train Epoch: 2 [48000/50000 (96%)] Loss: 1.728226
Train Epoch: 2 [49000/50000 (98%)] Loss: 1.898346

Test set: Average loss: 1.6148, Accuracy: 4195/10000 (42%)

Train Epoch: 3 [0/50000 (0%)] Loss: 1.778453

Train Epoch: 3 [1000/50000 (2%)] Loss: 1.711249
Train Epoch: 3 [2000/50000 (4%)] Loss: 1.734703
Train Epoch: 3 [3000/50000 (6%)] Loss: 1.663574
Train Epoch: 3 [4000/50000 (8%)] Loss: 1.642149
Train Epoch: 3 [5000/50000 (10%)] Loss: 1.750761
Train Epoch: 3 [6000/50000 (12%)] Loss: 1.778933
Train Epoch: 3 [7000/50000 (14%)] Loss: 1.679121
Train Epoch: 3 [8000/50000 (16%)] Loss: 1.625209
Train Epoch: 3 [9000/50000 (18%)] Loss: 1.680715
Train Epoch: 3 [10000/50000 (20%)] Loss: 1.742310
Train Epoch: 3 [11000/50000 (22%)] Loss: 1.896127
Train Epoch: 3 [12000/50000 (24%)] Loss: 1.745001
Train Epoch: 3 [13000/50000 (26%)] Loss: 1.710126
Train Epoch: 3 [14000/50000 (28%)] Loss: 1.774583
Train Epoch: 3 [15000/50000 (30%)] Loss: 1.645680
Train Epoch: 3 [16000/50000 (32%)] Loss: 1.792924
Train Epoch: 3 [17000/50000 (34%)] Loss: 1.586142
Train Epoch: 3 [18000/50000 (36%)] Loss: 1.840648
Train Epoch: 3 [19000/50000 (38%)] Loss: 1.574408
Train Epoch: 3 [20000/50000 (40%)] Loss: 1.749534
Train Epoch: 3 [21000/50000 (42%)] Loss: 1.702074
Train Epoch: 3 [22000/50000 (44%)] Loss: 1.848804
Train Epoch: 3 [23000/50000 (46%)] Loss: 1.610342
Train Epoch: 3 [24000/50000 (48%)] Loss: 1.755127
Train Epoch: 3 [25000/50000 (50%)] Loss: 1.775784
Train Epoch: 3 [26000/50000 (52%)] Loss: 1.452453
Train Epoch: 3 [27000/50000 (54%)] Loss: 1.583367
Train Epoch: 3 [28000/50000 (56%)] Loss: 1.691603
Train Epoch: 3 [29000/50000 (58%)] Loss: 1.564826
Train Epoch: 3 [30000/50000 (60%)] Loss: 1.691409
Train Epoch: 3 [31000/50000 (62%)] Loss: 1.791422
Train Epoch: 3 [32000/50000 (64%)] Loss: 1.563564
Train Epoch: 3 [33000/50000 (66%)] Loss: 1.767124
Train Epoch: 3 [34000/50000 (68%)] Loss: 1.780671
Train Epoch: 3 [35000/50000 (70%)] Loss: 1.654681
Train Epoch: 3 [36000/50000 (72%)] Loss: 1.690023
Train Epoch: 3 [37000/50000 (74%)] Loss: 1.853203
Train Epoch: 3 [38000/50000 (76%)] Loss: 1.403958
Train Epoch: 3 [39000/50000 (78%)] Loss: 1.527674
Train Epoch: 3 [40000/50000 (80%)] Loss: 1.563086

Train Epoch: 3 [41000/50000 (82%)] Loss: 1.663426
Train Epoch: 3 [42000/50000 (84%)] Loss: 1.645994
Train Epoch: 3 [43000/50000 (86%)] Loss: 1.697695
Train Epoch: 3 [44000/50000 (88%)] Loss: 1.705716
Train Epoch: 3 [45000/50000 (90%)] Loss: 1.810881
Train Epoch: 3 [46000/50000 (92%)] Loss: 1.727952
Train Epoch: 3 [47000/50000 (94%)] Loss: 1.633157
Train Epoch: 3 [48000/50000 (96%)] Loss: 1.611408
Train Epoch: 3 [49000/50000 (98%)] Loss: 1.611445

Test set: Average loss: 1.5703, Accuracy: 4225/10000 (42%)

Train Epoch: 4 [0/50000 (0%)] Loss: 1.703384
Train Epoch: 4 [1000/50000 (2%)] Loss: 1.640269
Train Epoch: 4 [2000/50000 (4%)] Loss: 1.665828
Train Epoch: 4 [3000/50000 (6%)] Loss: 1.572379
Train Epoch: 4 [4000/50000 (8%)] Loss: 1.840847
Train Epoch: 4 [5000/50000 (10%)] Loss: 1.743568
Train Epoch: 4 [6000/50000 (12%)] Loss: 1.874973
Train Epoch: 4 [7000/50000 (14%)] Loss: 1.575062
Train Epoch: 4 [8000/50000 (16%)] Loss: 1.732070
Train Epoch: 4 [9000/50000 (18%)] Loss: 1.622611
Train Epoch: 4 [10000/50000 (20%)] Loss: 1.750147
Train Epoch: 4 [11000/50000 (22%)] Loss: 1.690507
Train Epoch: 4 [12000/50000 (24%)] Loss: 1.597962
Train Epoch: 4 [13000/50000 (26%)] Loss: 1.605253
Train Epoch: 4 [14000/50000 (28%)] Loss: 1.562109
Train Epoch: 4 [15000/50000 (30%)] Loss: 1.686910
Train Epoch: 4 [16000/50000 (32%)] Loss: 1.602227
Train Epoch: 4 [17000/50000 (34%)] Loss: 1.548992
Train Epoch: 4 [18000/50000 (36%)] Loss: 1.513010
Train Epoch: 4 [19000/50000 (38%)] Loss: 1.609555
Train Epoch: 4 [20000/50000 (40%)] Loss: 1.880114
Train Epoch: 4 [21000/50000 (42%)] Loss: 1.717940
Train Epoch: 4 [22000/50000 (44%)] Loss: 1.573496
Train Epoch: 4 [23000/50000 (46%)] Loss: 1.568211
Train Epoch: 4 [24000/50000 (48%)] Loss: 1.682364
Train Epoch: 4 [25000/50000 (50%)] Loss: 1.720930
Train Epoch: 4 [26000/50000 (52%)] Loss: 1.644045
Train Epoch: 4 [27000/50000 (54%)] Loss: 1.582709

Train Epoch: 4 [28000/50000 (56%)] Loss: 1.619088
Train Epoch: 4 [29000/50000 (58%)] Loss: 1.648480
Train Epoch: 4 [30000/50000 (60%)] Loss: 1.848270
Train Epoch: 4 [31000/50000 (62%)] Loss: 1.733279
Train Epoch: 4 [32000/50000 (64%)] Loss: 1.568483
Train Epoch: 4 [33000/50000 (66%)] Loss: 1.711742
Train Epoch: 4 [34000/50000 (68%)] Loss: 1.624047
Train Epoch: 4 [35000/50000 (70%)] Loss: 1.687382
Train Epoch: 4 [36000/50000 (72%)] Loss: 1.662555
Train Epoch: 4 [37000/50000 (74%)] Loss: 1.692446
Train Epoch: 4 [38000/50000 (76%)] Loss: 1.767456
Train Epoch: 4 [39000/50000 (78%)] Loss: 1.585213
Train Epoch: 4 [40000/50000 (80%)] Loss: 1.561149
Train Epoch: 4 [41000/50000 (82%)] Loss: 1.694451
Train Epoch: 4 [42000/50000 (84%)] Loss: 1.887867
Train Epoch: 4 [43000/50000 (86%)] Loss: 1.520111
Train Epoch: 4 [44000/50000 (88%)] Loss: 1.804600
Train Epoch: 4 [45000/50000 (90%)] Loss: 1.807433
Train Epoch: 4 [46000/50000 (92%)] Loss: 1.625623
Train Epoch: 4 [47000/50000 (94%)] Loss: 1.652906
Train Epoch: 4 [48000/50000 (96%)] Loss: 1.375952
Train Epoch: 4 [49000/50000 (98%)] Loss: 1.614579

Test set: Average loss: 1.5067, Accuracy: 4403/10000 (44%)

Train Epoch: 5 [0/50000 (0%)] Loss: 1.591899
Train Epoch: 5 [1000/50000 (2%)] Loss: 1.657206
Train Epoch: 5 [2000/50000 (4%)] Loss: 1.765095
Train Epoch: 5 [3000/50000 (6%)] Loss: 1.664708
Train Epoch: 5 [4000/50000 (8%)] Loss: 1.596116
Train Epoch: 5 [5000/50000 (10%)] Loss: 1.759499
Train Epoch: 5 [6000/50000 (12%)] Loss: 1.645279
Train Epoch: 5 [7000/50000 (14%)] Loss: 1.634100
Train Epoch: 5 [8000/50000 (16%)] Loss: 1.670859
Train Epoch: 5 [9000/50000 (18%)] Loss: 1.827392
Train Epoch: 5 [10000/50000 (20%)] Loss: 1.577963
Train Epoch: 5 [11000/50000 (22%)] Loss: 1.782982
Train Epoch: 5 [12000/50000 (24%)] Loss: 1.612214
Train Epoch: 5 [13000/50000 (26%)] Loss: 1.640973
Train Epoch: 5 [14000/50000 (28%)] Loss: 1.892733

Train Epoch: 5 [15000/50000 (30%)] Loss: 1.631766
Train Epoch: 5 [16000/50000 (32%)] Loss: 1.839940
Train Epoch: 5 [17000/50000 (34%)] Loss: 1.601027
Train Epoch: 5 [18000/50000 (36%)] Loss: 1.769932
Train Epoch: 5 [19000/50000 (38%)] Loss: 1.775314
Train Epoch: 5 [20000/50000 (40%)] Loss: 1.744144
Train Epoch: 5 [21000/50000 (42%)] Loss: 1.659126
Train Epoch: 5 [22000/50000 (44%)] Loss: 1.553181
Train Epoch: 5 [23000/50000 (46%)] Loss: 1.763885
Train Epoch: 5 [24000/50000 (48%)] Loss: 1.639983
Train Epoch: 5 [25000/50000 (50%)] Loss: 1.621999
Train Epoch: 5 [26000/50000 (52%)] Loss: 1.530165
Train Epoch: 5 [27000/50000 (54%)] Loss: 1.625990
Train Epoch: 5 [28000/50000 (56%)] Loss: 1.662812
Train Epoch: 5 [29000/50000 (58%)] Loss: 1.654791
Train Epoch: 5 [30000/50000 (60%)] Loss: 1.567228
Train Epoch: 5 [31000/50000 (62%)] Loss: 1.450258
Train Epoch: 5 [32000/50000 (64%)] Loss: 1.567286
Train Epoch: 5 [33000/50000 (66%)] Loss: 1.640012
Train Epoch: 5 [34000/50000 (68%)] Loss: 1.654295
Train Epoch: 5 [35000/50000 (70%)] Loss: 1.431312
Train Epoch: 5 [36000/50000 (72%)] Loss: 1.737877
Train Epoch: 5 [37000/50000 (74%)] Loss: 1.804692
Train Epoch: 5 [38000/50000 (76%)] Loss: 1.702429
Train Epoch: 5 [39000/50000 (78%)] Loss: 1.857860
Train Epoch: 5 [40000/50000 (80%)] Loss: 1.700545
Train Epoch: 5 [41000/50000 (82%)] Loss: 1.790620
Train Epoch: 5 [42000/50000 (84%)] Loss: 1.650386
Train Epoch: 5 [43000/50000 (86%)] Loss: 1.735226
Train Epoch: 5 [44000/50000 (88%)] Loss: 1.663842
Train Epoch: 5 [45000/50000 (90%)] Loss: 1.455134
Train Epoch: 5 [46000/50000 (92%)] Loss: 1.812253
Train Epoch: 5 [47000/50000 (94%)] Loss: 1.692461
Train Epoch: 5 [48000/50000 (96%)] Loss: 1.675903
Train Epoch: 5 [49000/50000 (98%)] Loss: 1.671253

Test set: Average loss: 1.5207, Accuracy: 4567/10000 (46%)

Train Epoch: 6 [0/50000 (0%)] Loss: 1.714647
Train Epoch: 6 [1000/50000 (2%)] Loss: 1.672182

Train Epoch: 6 [2000/50000 (4%)] Loss: 1.583109
Train Epoch: 6 [3000/50000 (6%)] Loss: 1.841985
Train Epoch: 6 [4000/50000 (8%)] Loss: 1.575179
Train Epoch: 6 [5000/50000 (10%)] Loss: 1.680951
Train Epoch: 6 [6000/50000 (12%)] Loss: 1.627239
Train Epoch: 6 [7000/50000 (14%)] Loss: 1.767735
Train Epoch: 6 [8000/50000 (16%)] Loss: 1.632217
Train Epoch: 6 [9000/50000 (18%)] Loss: 1.623581
Train Epoch: 6 [10000/50000 (20%)] Loss: 1.768380
Train Epoch: 6 [11000/50000 (22%)] Loss: 1.473837
Train Epoch: 6 [12000/50000 (24%)] Loss: 1.728541
Train Epoch: 6 [13000/50000 (26%)] Loss: 1.618803
Train Epoch: 6 [14000/50000 (28%)] Loss: 1.711384
Train Epoch: 6 [15000/50000 (30%)] Loss: 1.432480
Train Epoch: 6 [16000/50000 (32%)] Loss: 1.480028
Train Epoch: 6 [17000/50000 (34%)] Loss: 1.872006
Train Epoch: 6 [18000/50000 (36%)] Loss: 1.579298
Train Epoch: 6 [19000/50000 (38%)] Loss: 1.561938
Train Epoch: 6 [20000/50000 (40%)] Loss: 1.684754
Train Epoch: 6 [21000/50000 (42%)] Loss: 1.532475
Train Epoch: 6 [22000/50000 (44%)] Loss: 1.454987
Train Epoch: 6 [23000/50000 (46%)] Loss: 1.714409
Train Epoch: 6 [24000/50000 (48%)] Loss: 1.425598
Train Epoch: 6 [25000/50000 (50%)] Loss: 1.668043
Train Epoch: 6 [26000/50000 (52%)] Loss: 1.724174
Train Epoch: 6 [27000/50000 (54%)] Loss: 1.904025
Train Epoch: 6 [28000/50000 (56%)] Loss: 1.473726
Train Epoch: 6 [29000/50000 (58%)] Loss: 1.870220
Train Epoch: 6 [30000/50000 (60%)] Loss: 1.662543
Train Epoch: 6 [31000/50000 (62%)] Loss: 1.762318
Train Epoch: 6 [32000/50000 (64%)] Loss: 1.547750
Train Epoch: 6 [33000/50000 (66%)] Loss: 1.532351
Train Epoch: 6 [34000/50000 (68%)] Loss: 1.495339
Train Epoch: 6 [35000/50000 (70%)] Loss: 1.596768
Train Epoch: 6 [36000/50000 (72%)] Loss: 1.606991
Train Epoch: 6 [37000/50000 (74%)] Loss: 1.648466
Train Epoch: 6 [38000/50000 (76%)] Loss: 1.608069
Train Epoch: 6 [39000/50000 (78%)] Loss: 1.676780
Train Epoch: 6 [40000/50000 (80%)] Loss: 1.679356
Train Epoch: 6 [41000/50000 (82%)] Loss: 1.716902

Train Epoch: 6 [42000/50000 (84%)] Loss: 1.777396
Train Epoch: 6 [43000/50000 (86%)] Loss: 1.508269
Train Epoch: 6 [44000/50000 (88%)] Loss: 1.730803
Train Epoch: 6 [45000/50000 (90%)] Loss: 1.579772
Train Epoch: 6 [46000/50000 (92%)] Loss: 1.657536
Train Epoch: 6 [47000/50000 (94%)] Loss: 1.505707
Train Epoch: 6 [48000/50000 (96%)] Loss: 1.630820
Train Epoch: 6 [49000/50000 (98%)] Loss: 1.697489

Test set: Average loss: 1.5605, Accuracy: 4378/10000 (44%)

Train Epoch: 7 [0/50000 (0%)] Loss: 1.795203
Train Epoch: 7 [1000/50000 (2%)] Loss: 1.603625
Train Epoch: 7 [2000/50000 (4%)] Loss: 1.639332
Train Epoch: 7 [3000/50000 (6%)] Loss: 1.402179
Train Epoch: 7 [4000/50000 (8%)] Loss: 1.505933
Train Epoch: 7 [5000/50000 (10%)] Loss: 1.636047
Train Epoch: 7 [6000/50000 (12%)] Loss: 1.486364
Train Epoch: 7 [7000/50000 (14%)] Loss: 1.594896
Train Epoch: 7 [8000/50000 (16%)] Loss: 1.618679
Train Epoch: 7 [9000/50000 (18%)] Loss: 1.704257
Train Epoch: 7 [10000/50000 (20%)] Loss: 1.563841
Train Epoch: 7 [11000/50000 (22%)] Loss: 1.560825
Train Epoch: 7 [12000/50000 (24%)] Loss: 1.654723
Train Epoch: 7 [13000/50000 (26%)] Loss: 1.535938
Train Epoch: 7 [14000/50000 (28%)] Loss: 1.657193
Train Epoch: 7 [15000/50000 (30%)] Loss: 1.501412
Train Epoch: 7 [16000/50000 (32%)] Loss: 1.881423
Train Epoch: 7 [17000/50000 (34%)] Loss: 1.675514
Train Epoch: 7 [18000/50000 (36%)] Loss: 1.762855
Train Epoch: 7 [19000/50000 (38%)] Loss: 1.581360
Train Epoch: 7 [20000/50000 (40%)] Loss: 1.572514
Train Epoch: 7 [21000/50000 (42%)] Loss: 1.668800
Train Epoch: 7 [22000/50000 (44%)] Loss: 1.662904
Train Epoch: 7 [23000/50000 (46%)] Loss: 1.631658
Train Epoch: 7 [24000/50000 (48%)] Loss: 1.766114
Train Epoch: 7 [25000/50000 (50%)] Loss: 1.669028
Train Epoch: 7 [26000/50000 (52%)] Loss: 1.576898
Train Epoch: 7 [27000/50000 (54%)] Loss: 1.665580
Train Epoch: 7 [28000/50000 (56%)] Loss: 1.515798

Train Epoch: 7 [29000/50000 (58%)] Loss: 1.721636
Train Epoch: 7 [30000/50000 (60%)] Loss: 1.626195
Train Epoch: 7 [31000/50000 (62%)] Loss: 1.545171
Train Epoch: 7 [32000/50000 (64%)] Loss: 1.690666
Train Epoch: 7 [33000/50000 (66%)] Loss: 1.590415
Train Epoch: 7 [34000/50000 (68%)] Loss: 1.532650
Train Epoch: 7 [35000/50000 (70%)] Loss: 1.897513
Train Epoch: 7 [36000/50000 (72%)] Loss: 1.664239
Train Epoch: 7 [37000/50000 (74%)] Loss: 1.501577
Train Epoch: 7 [38000/50000 (76%)] Loss: 1.664604
Train Epoch: 7 [39000/50000 (78%)] Loss: 1.600857
Train Epoch: 7 [40000/50000 (80%)] Loss: 1.584909
Train Epoch: 7 [41000/50000 (82%)] Loss: 1.531541
Train Epoch: 7 [42000/50000 (84%)] Loss: 1.620188
Train Epoch: 7 [43000/50000 (86%)] Loss: 1.775669
Train Epoch: 7 [44000/50000 (88%)] Loss: 1.566960
Train Epoch: 7 [45000/50000 (90%)] Loss: 1.598513
Train Epoch: 7 [46000/50000 (92%)] Loss: 1.783451
Train Epoch: 7 [47000/50000 (94%)] Loss: 1.540577
Train Epoch: 7 [48000/50000 (96%)] Loss: 1.503386
Train Epoch: 7 [49000/50000 (98%)] Loss: 1.712523

Test set: Average loss: 1.4260, Accuracy: 5022/10000 (50%)

Train Epoch: 8 [0/50000 (0%)] Loss: 1.530178
Train Epoch: 8 [1000/50000 (2%)] Loss: 1.717474
Train Epoch: 8 [2000/50000 (4%)] Loss: 1.697932
Train Epoch: 8 [3000/50000 (6%)] Loss: 1.567644
Train Epoch: 8 [4000/50000 (8%)] Loss: 1.644240
Train Epoch: 8 [5000/50000 (10%)] Loss: 1.598323
Train Epoch: 8 [6000/50000 (12%)] Loss: 1.525825
Train Epoch: 8 [7000/50000 (14%)] Loss: 1.476779
Train Epoch: 8 [8000/50000 (16%)] Loss: 1.493223
Train Epoch: 8 [9000/50000 (18%)] Loss: 1.546277
Train Epoch: 8 [10000/50000 (20%)] Loss: 1.668255
Train Epoch: 8 [11000/50000 (22%)] Loss: 1.820206
Train Epoch: 8 [12000/50000 (24%)] Loss: 1.699741
Train Epoch: 8 [13000/50000 (26%)] Loss: 1.551251
Train Epoch: 8 [14000/50000 (28%)] Loss: 1.649516
Train Epoch: 8 [15000/50000 (30%)] Loss: 1.465595

Train Epoch: 8 [16000/50000 (32%)] Loss: 1.502102
Train Epoch: 8 [17000/50000 (34%)] Loss: 1.451954
Train Epoch: 8 [18000/50000 (36%)] Loss: 1.541788
Train Epoch: 8 [19000/50000 (38%)] Loss: 1.622513
Train Epoch: 8 [20000/50000 (40%)] Loss: 1.577117
Train Epoch: 8 [21000/50000 (42%)] Loss: 1.888938
Train Epoch: 8 [22000/50000 (44%)] Loss: 1.588441
Train Epoch: 8 [23000/50000 (46%)] Loss: 1.592501
Train Epoch: 8 [24000/50000 (48%)] Loss: 1.748234
Train Epoch: 8 [25000/50000 (50%)] Loss: 1.521385
Train Epoch: 8 [26000/50000 (52%)] Loss: 1.455413
Train Epoch: 8 [27000/50000 (54%)] Loss: 1.686999
Train Epoch: 8 [28000/50000 (56%)] Loss: 1.965611
Train Epoch: 8 [29000/50000 (58%)] Loss: 1.555963
Train Epoch: 8 [30000/50000 (60%)] Loss: 1.670248
Train Epoch: 8 [31000/50000 (62%)] Loss: 1.502498
Train Epoch: 8 [32000/50000 (64%)] Loss: 1.744951
Train Epoch: 8 [33000/50000 (66%)] Loss: 1.764633
Train Epoch: 8 [34000/50000 (68%)] Loss: 1.527950
Train Epoch: 8 [35000/50000 (70%)] Loss: 1.553699
Train Epoch: 8 [36000/50000 (72%)] Loss: 1.628348
Train Epoch: 8 [37000/50000 (74%)] Loss: 1.675552
Train Epoch: 8 [38000/50000 (76%)] Loss: 1.618162
Train Epoch: 8 [39000/50000 (78%)] Loss: 1.562066
Train Epoch: 8 [40000/50000 (80%)] Loss: 1.690474
Train Epoch: 8 [41000/50000 (82%)] Loss: 1.594853
Train Epoch: 8 [42000/50000 (84%)] Loss: 1.497104
Train Epoch: 8 [43000/50000 (86%)] Loss: 1.686506
Train Epoch: 8 [44000/50000 (88%)] Loss: 1.649367
Train Epoch: 8 [45000/50000 (90%)] Loss: 1.608874
Train Epoch: 8 [46000/50000 (92%)] Loss: 1.492222
Train Epoch: 8 [47000/50000 (94%)] Loss: 1.653375
Train Epoch: 8 [48000/50000 (96%)] Loss: 1.493555
Train Epoch: 8 [49000/50000 (98%)] Loss: 1.567654

Test set: Average loss: 1.4279, Accuracy: 5015/10000 (50%)

Train Epoch: 9 [0/50000 (0%)] Loss: 1.704003
Train Epoch: 9 [1000/50000 (2%)] Loss: 1.460840
Train Epoch: 9 [2000/50000 (4%)] Loss: 1.678539

Train Epoch: 9 [3000/50000 (6%)] Loss: 1.553965
Train Epoch: 9 [4000/50000 (8%)] Loss: 1.919950
Train Epoch: 9 [5000/50000 (10%)] Loss: 1.592401
Train Epoch: 9 [6000/50000 (12%)] Loss: 1.538790
Train Epoch: 9 [7000/50000 (14%)] Loss: 1.476560
Train Epoch: 9 [8000/50000 (16%)] Loss: 1.633440
Train Epoch: 9 [9000/50000 (18%)] Loss: 1.562635
Train Epoch: 9 [10000/50000 (20%)] Loss: 1.713843
Train Epoch: 9 [11000/50000 (22%)] Loss: 1.469724
Train Epoch: 9 [12000/50000 (24%)] Loss: 1.661603
Train Epoch: 9 [13000/50000 (26%)] Loss: 1.640441
Train Epoch: 9 [14000/50000 (28%)] Loss: 1.699117
Train Epoch: 9 [15000/50000 (30%)] Loss: 1.479635
Train Epoch: 9 [16000/50000 (32%)] Loss: 1.633028
Train Epoch: 9 [17000/50000 (34%)] Loss: 1.877613
Train Epoch: 9 [18000/50000 (36%)] Loss: 1.722758
Train Epoch: 9 [19000/50000 (38%)] Loss: 1.796774
Train Epoch: 9 [20000/50000 (40%)] Loss: 1.776651
Train Epoch: 9 [21000/50000 (42%)] Loss: 1.662998
Train Epoch: 9 [22000/50000 (44%)] Loss: 1.500192
Train Epoch: 9 [23000/50000 (46%)] Loss: 1.526062
Train Epoch: 9 [24000/50000 (48%)] Loss: 1.378580
Train Epoch: 9 [25000/50000 (50%)] Loss: 1.518965
Train Epoch: 9 [26000/50000 (52%)] Loss: 1.720851
Train Epoch: 9 [27000/50000 (54%)] Loss: 1.435170
Train Epoch: 9 [28000/50000 (56%)] Loss: 1.576591
Train Epoch: 9 [29000/50000 (58%)] Loss: 1.739280
Train Epoch: 9 [30000/50000 (60%)] Loss: 1.500795
Train Epoch: 9 [31000/50000 (62%)] Loss: 1.582322
Train Epoch: 9 [32000/50000 (64%)] Loss: 1.440541
Train Epoch: 9 [33000/50000 (66%)] Loss: 1.471774
Train Epoch: 9 [34000/50000 (68%)] Loss: 1.500161
Train Epoch: 9 [35000/50000 (70%)] Loss: 1.701214
Train Epoch: 9 [36000/50000 (72%)] Loss: 1.705022
Train Epoch: 9 [37000/50000 (74%)] Loss: 1.604645
Train Epoch: 9 [38000/50000 (76%)] Loss: 1.854998
Train Epoch: 9 [39000/50000 (78%)] Loss: 1.652470
Train Epoch: 9 [40000/50000 (80%)] Loss: 1.666823
Train Epoch: 9 [41000/50000 (82%)] Loss: 1.571020
Train Epoch: 9 [42000/50000 (84%)] Loss: 1.665845

Train Epoch: 9 [43000/50000 (86%)] Loss: 1.822626
Train Epoch: 9 [44000/50000 (88%)] Loss: 1.583972
Train Epoch: 9 [45000/50000 (90%)] Loss: 1.664424
Train Epoch: 9 [46000/50000 (92%)] Loss: 1.569817
Train Epoch: 9 [47000/50000 (94%)] Loss: 1.722870
Train Epoch: 9 [48000/50000 (96%)] Loss: 1.515309
Train Epoch: 9 [49000/50000 (98%)] Loss: 1.679333

Test set: Average loss: 1.4480, Accuracy: 4923/10000 (49%)

Train Epoch: 10 [0/50000 (0%)] Loss: 1.864122
Train Epoch: 10 [1000/50000 (2%)] Loss: 1.623640
Train Epoch: 10 [2000/50000 (4%)] Loss: 1.599937
Train Epoch: 10 [3000/50000 (6%)] Loss: 1.477199
Train Epoch: 10 [4000/50000 (8%)] Loss: 1.645212
Train Epoch: 10 [5000/50000 (10%)] Loss: 1.639056
Train Epoch: 10 [6000/50000 (12%)] Loss: 1.582645
Train Epoch: 10 [7000/50000 (14%)] Loss: 1.750589
Train Epoch: 10 [8000/50000 (16%)] Loss: 1.735533
Train Epoch: 10 [9000/50000 (18%)] Loss: 1.563793
Train Epoch: 10 [10000/50000 (20%)] Loss: 1.740950
Train Epoch: 10 [11000/50000 (22%)] Loss: 1.720939
Train Epoch: 10 [12000/50000 (24%)] Loss: 1.582472
Train Epoch: 10 [13000/50000 (26%)] Loss: 1.472530
Train Epoch: 10 [14000/50000 (28%)] Loss: 1.531814
Train Epoch: 10 [15000/50000 (30%)] Loss: 1.737204
Train Epoch: 10 [16000/50000 (32%)] Loss: 1.364076
Train Epoch: 10 [17000/50000 (34%)] Loss: 1.704403
Train Epoch: 10 [18000/50000 (36%)] Loss: 1.653942
Train Epoch: 10 [19000/50000 (38%)] Loss: 1.715109
Train Epoch: 10 [20000/50000 (40%)] Loss: 1.715537
Train Epoch: 10 [21000/50000 (42%)] Loss: 1.615601
Train Epoch: 10 [22000/50000 (44%)] Loss: 1.448009
Train Epoch: 10 [23000/50000 (46%)] Loss: 1.519062
Train Epoch: 10 [24000/50000 (48%)] Loss: 1.640902
Train Epoch: 10 [25000/50000 (50%)] Loss: 1.646450
Train Epoch: 10 [26000/50000 (52%)] Loss: 1.648854
Train Epoch: 10 [27000/50000 (54%)] Loss: 1.631538
Train Epoch: 10 [28000/50000 (56%)] Loss: 1.728133
Train Epoch: 10 [29000/50000 (58%)] Loss: 1.364112

Train Epoch: 10 [30000/50000 (60%)]	Loss: 1.745666
Train Epoch: 10 [31000/50000 (62%)]	Loss: 1.506988
Train Epoch: 10 [32000/50000 (64%)]	Loss: 1.609614
Train Epoch: 10 [33000/50000 (66%)]	Loss: 1.491907
Train Epoch: 10 [34000/50000 (68%)]	Loss: 1.658766
Train Epoch: 10 [35000/50000 (70%)]	Loss: 1.569083
Train Epoch: 10 [36000/50000 (72%)]	Loss: 1.460535
Train Epoch: 10 [37000/50000 (74%)]	Loss: 1.670790
Train Epoch: 10 [38000/50000 (76%)]	Loss: 1.658811
Train Epoch: 10 [39000/50000 (78%)]	Loss: 1.750606
Train Epoch: 10 [40000/50000 (80%)]	Loss: 1.651300
Train Epoch: 10 [41000/50000 (82%)]	Loss: 1.544988
Train Epoch: 10 [42000/50000 (84%)]	Loss: 1.511177
Train Epoch: 10 [43000/50000 (86%)]	Loss: 1.441995
Train Epoch: 10 [44000/50000 (88%)]	Loss: 1.256665
Train Epoch: 10 [45000/50000 (90%)]	Loss: 1.441432
Train Epoch: 10 [46000/50000 (92%)]	Loss: 1.669150
Train Epoch: 10 [47000/50000 (94%)]	Loss: 1.590392
Train Epoch: 10 [48000/50000 (96%)]	Loss: 1.594411
Train Epoch: 10 [49000/50000 (98%)]	Loss: 1.526267

Test set: Average loss: 1.4673, Accuracy: 4793/10000 (48%)

Train Epoch: 11 [0/50000 (0%)]	Loss: 1.747262
Train Epoch: 11 [1000/50000 (2%)]	Loss: 1.725381
Train Epoch: 11 [2000/50000 (4%)]	Loss: 1.462971
Train Epoch: 11 [3000/50000 (6%)]	Loss: 1.681211
Train Epoch: 11 [4000/50000 (8%)]	Loss: 1.563867
Train Epoch: 11 [5000/50000 (10%)]	Loss: 1.733313
Train Epoch: 11 [6000/50000 (12%)]	Loss: 1.265155
Train Epoch: 11 [7000/50000 (14%)]	Loss: 1.489816
Train Epoch: 11 [8000/50000 (16%)]	Loss: 1.564132
Train Epoch: 11 [9000/50000 (18%)]	Loss: 1.470307
Train Epoch: 11 [10000/50000 (20%)]	Loss: 1.551592
Train Epoch: 11 [11000/50000 (22%)]	Loss: 1.531843
Train Epoch: 11 [12000/50000 (24%)]	Loss: 1.643394
Train Epoch: 11 [13000/50000 (26%)]	Loss: 1.492401
Train Epoch: 11 [14000/50000 (28%)]	Loss: 1.659650
Train Epoch: 11 [15000/50000 (30%)]	Loss: 1.459057
Train Epoch: 11 [16000/50000 (32%)]	Loss: 1.850388

Train Epoch: 11 [17000/50000 (34%)]	Loss: 1.658619
Train Epoch: 11 [18000/50000 (36%)]	Loss: 1.669676
Train Epoch: 11 [19000/50000 (38%)]	Loss: 1.448475
Train Epoch: 11 [20000/50000 (40%)]	Loss: 1.708728
Train Epoch: 11 [21000/50000 (42%)]	Loss: 1.698667
Train Epoch: 11 [22000/50000 (44%)]	Loss: 1.498035
Train Epoch: 11 [23000/50000 (46%)]	Loss: 1.582101
Train Epoch: 11 [24000/50000 (48%)]	Loss: 1.529505
Train Epoch: 11 [25000/50000 (50%)]	Loss: 1.734554
Train Epoch: 11 [26000/50000 (52%)]	Loss: 1.557002
Train Epoch: 11 [27000/50000 (54%)]	Loss: 1.668103
Train Epoch: 11 [28000/50000 (56%)]	Loss: 1.551854
Train Epoch: 11 [29000/50000 (58%)]	Loss: 1.588632
Train Epoch: 11 [30000/50000 (60%)]	Loss: 1.606462
Train Epoch: 11 [31000/50000 (62%)]	Loss: 1.773706
Train Epoch: 11 [32000/50000 (64%)]	Loss: 1.301946
Train Epoch: 11 [33000/50000 (66%)]	Loss: 1.542477
Train Epoch: 11 [34000/50000 (68%)]	Loss: 1.537445
Train Epoch: 11 [35000/50000 (70%)]	Loss: 1.571501
Train Epoch: 11 [36000/50000 (72%)]	Loss: 1.600678
Train Epoch: 11 [37000/50000 (74%)]	Loss: 1.610835
Train Epoch: 11 [38000/50000 (76%)]	Loss: 1.532196
Train Epoch: 11 [39000/50000 (78%)]	Loss: 1.680956
Train Epoch: 11 [40000/50000 (80%)]	Loss: 1.604696
Train Epoch: 11 [41000/50000 (82%)]	Loss: 1.590446
Train Epoch: 11 [42000/50000 (84%)]	Loss: 1.425194
Train Epoch: 11 [43000/50000 (86%)]	Loss: 1.495047
Train Epoch: 11 [44000/50000 (88%)]	Loss: 1.367638
Train Epoch: 11 [45000/50000 (90%)]	Loss: 1.497482
Train Epoch: 11 [46000/50000 (92%)]	Loss: 1.457845
Train Epoch: 11 [47000/50000 (94%)]	Loss: 1.319521
Train Epoch: 11 [48000/50000 (96%)]	Loss: 1.493868
Train Epoch: 11 [49000/50000 (98%)]	Loss: 1.548574

Test set: Average loss: 1.3955, Accuracy: 5121/10000 (51%)

Train Epoch: 12 [0/50000 (0%)]	Loss: 1.544687
Train Epoch: 12 [1000/50000 (2%)]	Loss: 1.382743
Train Epoch: 12 [2000/50000 (4%)]	Loss: 1.515700
Train Epoch: 12 [3000/50000 (6%)]	Loss: 1.908833

Train Epoch: 12 [4000/50000 (8%)]	Loss: 1.640355
Train Epoch: 12 [5000/50000 (10%)]	Loss: 1.421692
Train Epoch: 12 [6000/50000 (12%)]	Loss: 1.664473
Train Epoch: 12 [7000/50000 (14%)]	Loss: 1.612679
Train Epoch: 12 [8000/50000 (16%)]	Loss: 1.622296
Train Epoch: 12 [9000/50000 (18%)]	Loss: 1.393924
Train Epoch: 12 [10000/50000 (20%)]	Loss: 1.767495
Train Epoch: 12 [11000/50000 (22%)]	Loss: 1.584991
Train Epoch: 12 [12000/50000 (24%)]	Loss: 1.831922
Train Epoch: 12 [13000/50000 (26%)]	Loss: 1.533319
Train Epoch: 12 [14000/50000 (28%)]	Loss: 1.639817
Train Epoch: 12 [15000/50000 (30%)]	Loss: 1.484264
Train Epoch: 12 [16000/50000 (32%)]	Loss: 1.425205
Train Epoch: 12 [17000/50000 (34%)]	Loss: 1.893312
Train Epoch: 12 [18000/50000 (36%)]	Loss: 1.475008
Train Epoch: 12 [19000/50000 (38%)]	Loss: 1.602884
Train Epoch: 12 [20000/50000 (40%)]	Loss: 1.612136
Train Epoch: 12 [21000/50000 (42%)]	Loss: 1.506434
Train Epoch: 12 [22000/50000 (44%)]	Loss: 1.833522
Train Epoch: 12 [23000/50000 (46%)]	Loss: 1.650853
Train Epoch: 12 [24000/50000 (48%)]	Loss: 1.563836
Train Epoch: 12 [25000/50000 (50%)]	Loss: 1.628887
Train Epoch: 12 [26000/50000 (52%)]	Loss: 1.608641
Train Epoch: 12 [27000/50000 (54%)]	Loss: 1.729097
Train Epoch: 12 [28000/50000 (56%)]	Loss: 1.671664
Train Epoch: 12 [29000/50000 (58%)]	Loss: 1.421207
Train Epoch: 12 [30000/50000 (60%)]	Loss: 1.872514
Train Epoch: 12 [31000/50000 (62%)]	Loss: 1.516913
Train Epoch: 12 [32000/50000 (64%)]	Loss: 1.468571
Train Epoch: 12 [33000/50000 (66%)]	Loss: 1.388363
Train Epoch: 12 [34000/50000 (68%)]	Loss: 1.491422
Train Epoch: 12 [35000/50000 (70%)]	Loss: 1.514642
Train Epoch: 12 [36000/50000 (72%)]	Loss: 1.569147
Train Epoch: 12 [37000/50000 (74%)]	Loss: 1.562806
Train Epoch: 12 [38000/50000 (76%)]	Loss: 1.486054
Train Epoch: 12 [39000/50000 (78%)]	Loss: 1.490760
Train Epoch: 12 [40000/50000 (80%)]	Loss: 1.692588
Train Epoch: 12 [41000/50000 (82%)]	Loss: 1.445638
Train Epoch: 12 [42000/50000 (84%)]	Loss: 1.568064
Train Epoch: 12 [43000/50000 (86%)]	Loss: 1.543022

Train Epoch: 12 [44000/50000 (88%)]	Loss: 1.444962
Train Epoch: 12 [45000/50000 (90%)]	Loss: 1.611194
Train Epoch: 12 [46000/50000 (92%)]	Loss: 1.582686
Train Epoch: 12 [47000/50000 (94%)]	Loss: 1.676835
Train Epoch: 12 [48000/50000 (96%)]	Loss: 1.700594
Train Epoch: 12 [49000/50000 (98%)]	Loss: 1.299556

Test set: Average loss: 1.4281, Accuracy: 4998/10000 (50%)

Train Epoch: 13 [0/50000 (0%)]	Loss: 1.665764
Train Epoch: 13 [1000/50000 (2%)]	Loss: 1.515686
Train Epoch: 13 [2000/50000 (4%)]	Loss: 1.453034
Train Epoch: 13 [3000/50000 (6%)]	Loss: 1.471444
Train Epoch: 13 [4000/50000 (8%)]	Loss: 1.954313
Train Epoch: 13 [5000/50000 (10%)]	Loss: 1.848437
Train Epoch: 13 [6000/50000 (12%)]	Loss: 1.543287
Train Epoch: 13 [7000/50000 (14%)]	Loss: 1.604364
Train Epoch: 13 [8000/50000 (16%)]	Loss: 1.779548
Train Epoch: 13 [9000/50000 (18%)]	Loss: 1.778800
Train Epoch: 13 [10000/50000 (20%)]	Loss: 1.762252
Train Epoch: 13 [11000/50000 (22%)]	Loss: 1.720207
Train Epoch: 13 [12000/50000 (24%)]	Loss: 1.597060
Train Epoch: 13 [13000/50000 (26%)]	Loss: 1.594041
Train Epoch: 13 [14000/50000 (28%)]	Loss: 1.442268
Train Epoch: 13 [15000/50000 (30%)]	Loss: 1.707561
Train Epoch: 13 [16000/50000 (32%)]	Loss: 1.572273
Train Epoch: 13 [17000/50000 (34%)]	Loss: 1.526340
Train Epoch: 13 [18000/50000 (36%)]	Loss: 1.613018
Train Epoch: 13 [19000/50000 (38%)]	Loss: 1.673003
Train Epoch: 13 [20000/50000 (40%)]	Loss: 1.658844
Train Epoch: 13 [21000/50000 (42%)]	Loss: 1.724485
Train Epoch: 13 [22000/50000 (44%)]	Loss: 1.313053
Train Epoch: 13 [23000/50000 (46%)]	Loss: 1.502226
Train Epoch: 13 [24000/50000 (48%)]	Loss: 1.398533
Train Epoch: 13 [25000/50000 (50%)]	Loss: 1.635599
Train Epoch: 13 [26000/50000 (52%)]	Loss: 1.642776
Train Epoch: 13 [27000/50000 (54%)]	Loss: 1.460937
Train Epoch: 13 [28000/50000 (56%)]	Loss: 1.616505
Train Epoch: 13 [29000/50000 (58%)]	Loss: 1.366858
Train Epoch: 13 [30000/50000 (60%)]	Loss: 1.468419

Train Epoch: 13 [31000/50000 (62%)]	Loss: 1.415777
Train Epoch: 13 [32000/50000 (64%)]	Loss: 1.342475
Train Epoch: 13 [33000/50000 (66%)]	Loss: 1.489471
Train Epoch: 13 [34000/50000 (68%)]	Loss: 1.337393
Train Epoch: 13 [35000/50000 (70%)]	Loss: 1.640587
Train Epoch: 13 [36000/50000 (72%)]	Loss: 1.745884
Train Epoch: 13 [37000/50000 (74%)]	Loss: 1.664800
Train Epoch: 13 [38000/50000 (76%)]	Loss: 1.583697
Train Epoch: 13 [39000/50000 (78%)]	Loss: 1.710692
Train Epoch: 13 [40000/50000 (80%)]	Loss: 1.587009
Train Epoch: 13 [41000/50000 (82%)]	Loss: 1.481043
Train Epoch: 13 [42000/50000 (84%)]	Loss: 1.563667
Train Epoch: 13 [43000/50000 (86%)]	Loss: 1.673398
Train Epoch: 13 [44000/50000 (88%)]	Loss: 1.552810
Train Epoch: 13 [45000/50000 (90%)]	Loss: 1.502448
Train Epoch: 13 [46000/50000 (92%)]	Loss: 1.673777
Train Epoch: 13 [47000/50000 (94%)]	Loss: 1.558637
Train Epoch: 13 [48000/50000 (96%)]	Loss: 1.618121
Train Epoch: 13 [49000/50000 (98%)]	Loss: 1.474031

Test set: Average loss: 1.3415, Accuracy: 5298/10000 (53%)

Train Epoch: 14 [0/50000 (0%)]	Loss: 1.567317
Train Epoch: 14 [1000/50000 (2%)]	Loss: 1.736742
Train Epoch: 14 [2000/50000 (4%)]	Loss: 1.752747
Train Epoch: 14 [3000/50000 (6%)]	Loss: 1.524480
Train Epoch: 14 [4000/50000 (8%)]	Loss: 1.908378
Train Epoch: 14 [5000/50000 (10%)]	Loss: 1.674300
Train Epoch: 14 [6000/50000 (12%)]	Loss: 1.443247
Train Epoch: 14 [7000/50000 (14%)]	Loss: 1.873090
Train Epoch: 14 [8000/50000 (16%)]	Loss: 1.576352
Train Epoch: 14 [9000/50000 (18%)]	Loss: 1.544324
Train Epoch: 14 [10000/50000 (20%)]	Loss: 1.656608
Train Epoch: 14 [11000/50000 (22%)]	Loss: 1.396374
Train Epoch: 14 [12000/50000 (24%)]	Loss: 1.560962
Train Epoch: 14 [13000/50000 (26%)]	Loss: 1.601689
Train Epoch: 14 [14000/50000 (28%)]	Loss: 1.496154
Train Epoch: 14 [15000/50000 (30%)]	Loss: 1.672125
Train Epoch: 14 [16000/50000 (32%)]	Loss: 1.485409
Train Epoch: 14 [17000/50000 (34%)]	Loss: 1.496457

Train Epoch: 14 [18000/50000 (36%)]	Loss: 1.508901
Train Epoch: 14 [19000/50000 (38%)]	Loss: 1.494969
Train Epoch: 14 [20000/50000 (40%)]	Loss: 1.645381
Train Epoch: 14 [21000/50000 (42%)]	Loss: 1.564530
Train Epoch: 14 [22000/50000 (44%)]	Loss: 1.633413
Train Epoch: 14 [23000/50000 (46%)]	Loss: 1.568552
Train Epoch: 14 [24000/50000 (48%)]	Loss: 1.606367
Train Epoch: 14 [25000/50000 (50%)]	Loss: 1.721715
Train Epoch: 14 [26000/50000 (52%)]	Loss: 1.663409
Train Epoch: 14 [27000/50000 (54%)]	Loss: 1.759779
Train Epoch: 14 [28000/50000 (56%)]	Loss: 1.603499
Train Epoch: 14 [29000/50000 (58%)]	Loss: 1.515162
Train Epoch: 14 [30000/50000 (60%)]	Loss: 1.459816
Train Epoch: 14 [31000/50000 (62%)]	Loss: 1.597649
Train Epoch: 14 [32000/50000 (64%)]	Loss: 1.572843
Train Epoch: 14 [33000/50000 (66%)]	Loss: 1.410107
Train Epoch: 14 [34000/50000 (68%)]	Loss: 1.481843
Train Epoch: 14 [35000/50000 (70%)]	Loss: 1.541193
Train Epoch: 14 [36000/50000 (72%)]	Loss: 1.610401
Train Epoch: 14 [37000/50000 (74%)]	Loss: 1.443827
Train Epoch: 14 [38000/50000 (76%)]	Loss: 1.695211
Train Epoch: 14 [39000/50000 (78%)]	Loss: 1.476675
Train Epoch: 14 [40000/50000 (80%)]	Loss: 1.596933
Train Epoch: 14 [41000/50000 (82%)]	Loss: 1.516275
Train Epoch: 14 [42000/50000 (84%)]	Loss: 1.442740
Train Epoch: 14 [43000/50000 (86%)]	Loss: 1.657121
Train Epoch: 14 [44000/50000 (88%)]	Loss: 1.367752
Train Epoch: 14 [45000/50000 (90%)]	Loss: 1.507096
Train Epoch: 14 [46000/50000 (92%)]	Loss: 1.718620
Train Epoch: 14 [47000/50000 (94%)]	Loss: 1.484548
Train Epoch: 14 [48000/50000 (96%)]	Loss: 1.595340
Train Epoch: 14 [49000/50000 (98%)]	Loss: 1.578610

Test set: Average loss: 1.3337, Accuracy: 5275/10000 (53%)

Train Epoch: 15 [0/50000 (0%)]	Loss: 1.480873
Train Epoch: 15 [1000/50000 (2%)]	Loss: 1.421009
Train Epoch: 15 [2000/50000 (4%)]	Loss: 1.505748
Train Epoch: 15 [3000/50000 (6%)]	Loss: 1.579306
Train Epoch: 15 [4000/50000 (8%)]	Loss: 1.665229

Train Epoch: 15 [5000/50000 (10%)]	Loss: 1.527009
Train Epoch: 15 [6000/50000 (12%)]	Loss: 1.289332
Train Epoch: 15 [7000/50000 (14%)]	Loss: 1.651368
Train Epoch: 15 [8000/50000 (16%)]	Loss: 1.716640
Train Epoch: 15 [9000/50000 (18%)]	Loss: 1.445475
Train Epoch: 15 [10000/50000 (20%)]	Loss: 1.536353
Train Epoch: 15 [11000/50000 (22%)]	Loss: 1.461503
Train Epoch: 15 [12000/50000 (24%)]	Loss: 1.379439
Train Epoch: 15 [13000/50000 (26%)]	Loss: 1.467496
Train Epoch: 15 [14000/50000 (28%)]	Loss: 1.608775
Train Epoch: 15 [15000/50000 (30%)]	Loss: 1.718969
Train Epoch: 15 [16000/50000 (32%)]	Loss: 1.627870
Train Epoch: 15 [17000/50000 (34%)]	Loss: 1.751921
Train Epoch: 15 [18000/50000 (36%)]	Loss: 1.674200
Train Epoch: 15 [19000/50000 (38%)]	Loss: 1.662535
Train Epoch: 15 [20000/50000 (40%)]	Loss: 1.759233
Train Epoch: 15 [21000/50000 (42%)]	Loss: 1.443885
Train Epoch: 15 [22000/50000 (44%)]	Loss: 1.518103
Train Epoch: 15 [23000/50000 (46%)]	Loss: 1.433216
Train Epoch: 15 [24000/50000 (48%)]	Loss: 1.416878
Train Epoch: 15 [25000/50000 (50%)]	Loss: 1.721357
Train Epoch: 15 [26000/50000 (52%)]	Loss: 1.303469
Train Epoch: 15 [27000/50000 (54%)]	Loss: 1.587787
Train Epoch: 15 [28000/50000 (56%)]	Loss: 1.392305
Train Epoch: 15 [29000/50000 (58%)]	Loss: 1.444827
Train Epoch: 15 [30000/50000 (60%)]	Loss: 1.515928
Train Epoch: 15 [31000/50000 (62%)]	Loss: 1.665926
Train Epoch: 15 [32000/50000 (64%)]	Loss: 1.602826
Train Epoch: 15 [33000/50000 (66%)]	Loss: 1.668272
Train Epoch: 15 [34000/50000 (68%)]	Loss: 1.799434
Train Epoch: 15 [35000/50000 (70%)]	Loss: 1.645797
Train Epoch: 15 [36000/50000 (72%)]	Loss: 1.396146
Train Epoch: 15 [37000/50000 (74%)]	Loss: 1.412289
Train Epoch: 15 [38000/50000 (76%)]	Loss: 1.642547
Train Epoch: 15 [39000/50000 (78%)]	Loss: 1.470131
Train Epoch: 15 [40000/50000 (80%)]	Loss: 1.356086
Train Epoch: 15 [41000/50000 (82%)]	Loss: 1.395437
Train Epoch: 15 [42000/50000 (84%)]	Loss: 1.615624
Train Epoch: 15 [43000/50000 (86%)]	Loss: 1.726738
Train Epoch: 15 [44000/50000 (88%)]	Loss: 1.646116

Train Epoch: 15 [45000/50000 (90%)]	Loss: 1.449297
Train Epoch: 15 [46000/50000 (92%)]	Loss: 1.594280
Train Epoch: 15 [47000/50000 (94%)]	Loss: 1.490048
Train Epoch: 15 [48000/50000 (96%)]	Loss: 1.653711
Train Epoch: 15 [49000/50000 (98%)]	Loss: 1.776319

Test set: Average loss: 1.3452, Accuracy: 5360/10000 (54%)

Traning and Testing total excution time is: 883.8906359672546 seconds

3. Modified LeNet with Dropout and Batch Normalization

==> Preparing data..

Train Epoch: 1 [0/50000 (0%)]	Loss: 2.306583
Train Epoch: 1 [1000/50000 (2%)]	Loss: 2.207193
Train Epoch: 1 [2000/50000 (4%)]	Loss: 2.093611
Train Epoch: 1 [3000/50000 (6%)]	Loss: 1.929434
Train Epoch: 1 [4000/50000 (8%)]	Loss: 1.894915
Train Epoch: 1 [5000/50000 (10%)]	Loss: 1.970038
Train Epoch: 1 [6000/50000 (12%)]	Loss: 1.879028
Train Epoch: 1 [7000/50000 (14%)]	Loss: 1.994964
Train Epoch: 1 [8000/50000 (16%)]	Loss: 1.906882
Train Epoch: 1 [9000/50000 (18%)]	Loss: 1.791028
Train Epoch: 1 [10000/50000 (20%)]	Loss: 1.961055
Train Epoch: 1 [11000/50000 (22%)]	Loss: 1.947787
Train Epoch: 1 [12000/50000 (24%)]	Loss: 1.945570
Train Epoch: 1 [13000/50000 (26%)]	Loss: 1.801443
Train Epoch: 1 [14000/50000 (28%)]	Loss: 1.754858
Train Epoch: 1 [15000/50000 (30%)]	Loss: 1.747707
Train Epoch: 1 [16000/50000 (32%)]	Loss: 1.761459
Train Epoch: 1 [17000/50000 (34%)]	Loss: 1.702361
Train Epoch: 1 [18000/50000 (36%)]	Loss: 1.891732
Train Epoch: 1 [19000/50000 (38%)]	Loss: 1.817746
Train Epoch: 1 [20000/50000 (40%)]	Loss: 1.718959
Train Epoch: 1 [21000/50000 (42%)]	Loss: 1.849420
Train Epoch: 1 [22000/50000 (44%)]	Loss: 1.591463
Train Epoch: 1 [23000/50000 (46%)]	Loss: 1.708143
Train Epoch: 1 [24000/50000 (48%)]	Loss: 1.891380
Train Epoch: 1 [25000/50000 (50%)]	Loss: 1.561054
Train Epoch: 1 [26000/50000 (52%)]	Loss: 1.682470
Train Epoch: 1 [27000/50000 (54%)]	Loss: 1.682299

Train Epoch: 1 [28000/50000 (56%)] Loss: 1.685255
Train Epoch: 1 [29000/50000 (58%)] Loss: 1.590414
Train Epoch: 1 [30000/50000 (60%)] Loss: 1.885037
Train Epoch: 1 [31000/50000 (62%)] Loss: 1.702847
Train Epoch: 1 [32000/50000 (64%)] Loss: 1.788555
Train Epoch: 1 [33000/50000 (66%)] Loss: 1.533102
Train Epoch: 1 [34000/50000 (68%)] Loss: 1.565339
Train Epoch: 1 [35000/50000 (70%)] Loss: 1.550389
Train Epoch: 1 [36000/50000 (72%)] Loss: 1.825432
Train Epoch: 1 [37000/50000 (74%)] Loss: 1.535036
Train Epoch: 1 [38000/50000 (76%)] Loss: 1.622164
Train Epoch: 1 [39000/50000 (78%)] Loss: 1.720599
Train Epoch: 1 [40000/50000 (80%)] Loss: 1.645465
Train Epoch: 1 [41000/50000 (82%)] Loss: 1.749399
Train Epoch: 1 [42000/50000 (84%)] Loss: 1.597033
Train Epoch: 1 [43000/50000 (86%)] Loss: 1.556638
Train Epoch: 1 [44000/50000 (88%)] Loss: 1.773036
Train Epoch: 1 [45000/50000 (90%)] Loss: 1.746419
Train Epoch: 1 [46000/50000 (92%)] Loss: 1.471285
Train Epoch: 1 [47000/50000 (94%)] Loss: 1.565763
Train Epoch: 1 [48000/50000 (96%)] Loss: 1.528156
Train Epoch: 1 [49000/50000 (98%)] Loss: 1.615397

Test set: Average loss: 1.5169, Accuracy: 4400/10000 (44%)

Train Epoch: 2 [0/50000 (0%)] Loss: 1.500584
Train Epoch: 2 [1000/50000 (2%)] Loss: 1.747736
Train Epoch: 2 [2000/50000 (4%)] Loss: 1.639567
Train Epoch: 2 [3000/50000 (6%)] Loss: 1.401784
Train Epoch: 2 [4000/50000 (8%)] Loss: 1.468481
Train Epoch: 2 [5000/50000 (10%)] Loss: 1.460912
Train Epoch: 2 [6000/50000 (12%)] Loss: 1.572422
Train Epoch: 2 [7000/50000 (14%)] Loss: 1.669593
Train Epoch: 2 [8000/50000 (16%)] Loss: 1.571919
Train Epoch: 2 [9000/50000 (18%)] Loss: 1.616469
Train Epoch: 2 [10000/50000 (20%)] Loss: 1.533190
Train Epoch: 2 [11000/50000 (22%)] Loss: 1.694630
Train Epoch: 2 [12000/50000 (24%)] Loss: 1.560841
Train Epoch: 2 [13000/50000 (26%)] Loss: 1.760565
Train Epoch: 2 [14000/50000 (28%)] Loss: 1.620001

Train Epoch: 2 [15000/50000 (30%)] Loss: 1.556164
Train Epoch: 2 [16000/50000 (32%)] Loss: 1.466191
Train Epoch: 2 [17000/50000 (34%)] Loss: 1.494966
Train Epoch: 2 [18000/50000 (36%)] Loss: 1.613383
Train Epoch: 2 [19000/50000 (38%)] Loss: 1.672051
Train Epoch: 2 [20000/50000 (40%)] Loss: 1.436391
Train Epoch: 2 [21000/50000 (42%)] Loss: 1.574382
Train Epoch: 2 [22000/50000 (44%)] Loss: 1.426541
Train Epoch: 2 [23000/50000 (46%)] Loss: 1.582013
Train Epoch: 2 [24000/50000 (48%)] Loss: 1.616490
Train Epoch: 2 [25000/50000 (50%)] Loss: 1.542964
Train Epoch: 2 [26000/50000 (52%)] Loss: 1.455704
Train Epoch: 2 [27000/50000 (54%)] Loss: 1.681802
Train Epoch: 2 [28000/50000 (56%)] Loss: 1.500769
Train Epoch: 2 [29000/50000 (58%)] Loss: 1.433624
Train Epoch: 2 [30000/50000 (60%)] Loss: 1.592139
Train Epoch: 2 [31000/50000 (62%)] Loss: 1.412614
Train Epoch: 2 [32000/50000 (64%)] Loss: 1.597960
Train Epoch: 2 [33000/50000 (66%)] Loss: 1.544155
Train Epoch: 2 [34000/50000 (68%)] Loss: 1.411868
Train Epoch: 2 [35000/50000 (70%)] Loss: 1.380496
Train Epoch: 2 [36000/50000 (72%)] Loss: 1.351452
Train Epoch: 2 [37000/50000 (74%)] Loss: 1.377960
Train Epoch: 2 [38000/50000 (76%)] Loss: 1.476655
Train Epoch: 2 [39000/50000 (78%)] Loss: 1.642945
Train Epoch: 2 [40000/50000 (80%)] Loss: 1.482037
Train Epoch: 2 [41000/50000 (82%)] Loss: 1.538870
Train Epoch: 2 [42000/50000 (84%)] Loss: 1.372887
Train Epoch: 2 [43000/50000 (86%)] Loss: 1.533117
Train Epoch: 2 [44000/50000 (88%)] Loss: 1.479742
Train Epoch: 2 [45000/50000 (90%)] Loss: 1.349863
Train Epoch: 2 [46000/50000 (92%)] Loss: 1.633832
Train Epoch: 2 [47000/50000 (94%)] Loss: 1.495481
Train Epoch: 2 [48000/50000 (96%)] Loss: 1.473030
Train Epoch: 2 [49000/50000 (98%)] Loss: 1.524041

Test set: Average loss: 1.4318, Accuracy: 4841/10000 (48%)

Train Epoch: 3 [0/50000 (0%)] Loss: 1.565189
Train Epoch: 3 [1000/50000 (2%)] Loss: 1.497353

Train Epoch: 3 [2000/50000 (4%)] Loss: 1.339949
Train Epoch: 3 [3000/50000 (6%)] Loss: 1.449078
Train Epoch: 3 [4000/50000 (8%)] Loss: 1.600520
Train Epoch: 3 [5000/50000 (10%)] Loss: 1.563282
Train Epoch: 3 [6000/50000 (12%)] Loss: 1.447774
Train Epoch: 3 [7000/50000 (14%)] Loss: 1.743387
Train Epoch: 3 [8000/50000 (16%)] Loss: 1.307255
Train Epoch: 3 [9000/50000 (18%)] Loss: 1.416839
Train Epoch: 3 [10000/50000 (20%)] Loss: 1.380642
Train Epoch: 3 [11000/50000 (22%)] Loss: 1.653390
Train Epoch: 3 [12000/50000 (24%)] Loss: 1.516080
Train Epoch: 3 [13000/50000 (26%)] Loss: 1.359778
Train Epoch: 3 [14000/50000 (28%)] Loss: 1.485368
Train Epoch: 3 [15000/50000 (30%)] Loss: 1.315179
Train Epoch: 3 [16000/50000 (32%)] Loss: 1.469297
Train Epoch: 3 [17000/50000 (34%)] Loss: 1.429979
Train Epoch: 3 [18000/50000 (36%)] Loss: 1.395014
Train Epoch: 3 [19000/50000 (38%)] Loss: 1.327959
Train Epoch: 3 [20000/50000 (40%)] Loss: 1.252668
Train Epoch: 3 [21000/50000 (42%)] Loss: 1.436384
Train Epoch: 3 [22000/50000 (44%)] Loss: 1.517123
Train Epoch: 3 [23000/50000 (46%)] Loss: 1.414206
Train Epoch: 3 [24000/50000 (48%)] Loss: 1.465628
Train Epoch: 3 [25000/50000 (50%)] Loss: 1.566728
Train Epoch: 3 [26000/50000 (52%)] Loss: 1.318562
Train Epoch: 3 [27000/50000 (54%)] Loss: 1.447803
Train Epoch: 3 [28000/50000 (56%)] Loss: 1.564730
Train Epoch: 3 [29000/50000 (58%)] Loss: 1.398221
Train Epoch: 3 [30000/50000 (60%)] Loss: 1.526823
Train Epoch: 3 [31000/50000 (62%)] Loss: 1.542283
Train Epoch: 3 [32000/50000 (64%)] Loss: 1.368725
Train Epoch: 3 [33000/50000 (66%)] Loss: 1.430853
Train Epoch: 3 [34000/50000 (68%)] Loss: 1.440714
Train Epoch: 3 [35000/50000 (70%)] Loss: 1.335161
Train Epoch: 3 [36000/50000 (72%)] Loss: 1.508896
Train Epoch: 3 [37000/50000 (74%)] Loss: 1.565664
Train Epoch: 3 [38000/50000 (76%)] Loss: 1.164641
Train Epoch: 3 [39000/50000 (78%)] Loss: 1.293163
Train Epoch: 3 [40000/50000 (80%)] Loss: 1.227556
Train Epoch: 3 [41000/50000 (82%)] Loss: 1.434581

Train Epoch: 3 [42000/50000 (84%)] Loss: 1.520483
Train Epoch: 3 [43000/50000 (86%)] Loss: 1.396036
Train Epoch: 3 [44000/50000 (88%)] Loss: 1.337892
Train Epoch: 3 [45000/50000 (90%)] Loss: 1.453337
Train Epoch: 3 [46000/50000 (92%)] Loss: 1.323390
Train Epoch: 3 [47000/50000 (94%)] Loss: 1.388381
Train Epoch: 3 [48000/50000 (96%)] Loss: 1.388813
Train Epoch: 3 [49000/50000 (98%)] Loss: 1.412404

Test set: Average loss: 1.2707, Accuracy: 5462/10000 (55%)

Train Epoch: 4 [0/50000 (0%)] Loss: 1.386080
Train Epoch: 4 [1000/50000 (2%)] Loss: 1.238523
Train Epoch: 4 [2000/50000 (4%)] Loss: 1.380176
Train Epoch: 4 [3000/50000 (6%)] Loss: 1.313228
Train Epoch: 4 [4000/50000 (8%)] Loss: 1.515594
Train Epoch: 4 [5000/50000 (10%)] Loss: 1.373303
Train Epoch: 4 [6000/50000 (12%)] Loss: 1.578483
Train Epoch: 4 [7000/50000 (14%)] Loss: 1.345900
Train Epoch: 4 [8000/50000 (16%)] Loss: 1.486013
Train Epoch: 4 [9000/50000 (18%)] Loss: 1.458766
Train Epoch: 4 [10000/50000 (20%)] Loss: 1.517525
Train Epoch: 4 [11000/50000 (22%)] Loss: 1.373533
Train Epoch: 4 [12000/50000 (24%)] Loss: 1.332534
Train Epoch: 4 [13000/50000 (26%)] Loss: 1.319628
Train Epoch: 4 [14000/50000 (28%)] Loss: 1.272518
Train Epoch: 4 [15000/50000 (30%)] Loss: 1.331280
Train Epoch: 4 [16000/50000 (32%)] Loss: 1.198124
Train Epoch: 4 [17000/50000 (34%)] Loss: 1.301388
Train Epoch: 4 [18000/50000 (36%)] Loss: 1.150295
Train Epoch: 4 [19000/50000 (38%)] Loss: 1.300469
Train Epoch: 4 [20000/50000 (40%)] Loss: 1.411645
Train Epoch: 4 [21000/50000 (42%)] Loss: 1.439352
Train Epoch: 4 [22000/50000 (44%)] Loss: 1.337199
Train Epoch: 4 [23000/50000 (46%)] Loss: 1.256040
Train Epoch: 4 [24000/50000 (48%)] Loss: 1.338276
Train Epoch: 4 [25000/50000 (50%)] Loss: 1.346882
Train Epoch: 4 [26000/50000 (52%)] Loss: 1.497583
Train Epoch: 4 [27000/50000 (54%)] Loss: 1.299556
Train Epoch: 4 [28000/50000 (56%)] Loss: 1.343259

Train Epoch: 4 [29000/50000 (58%)] Loss: 1.259198
Train Epoch: 4 [30000/50000 (60%)] Loss: 1.309177
Train Epoch: 4 [31000/50000 (62%)] Loss: 1.491160
Train Epoch: 4 [32000/50000 (64%)] Loss: 1.363000
Train Epoch: 4 [33000/50000 (66%)] Loss: 1.364945
Train Epoch: 4 [34000/50000 (68%)] Loss: 1.336251
Train Epoch: 4 [35000/50000 (70%)] Loss: 1.230908
Train Epoch: 4 [36000/50000 (72%)] Loss: 1.366909
Train Epoch: 4 [37000/50000 (74%)] Loss: 1.297171
Train Epoch: 4 [38000/50000 (76%)] Loss: 1.455830
Train Epoch: 4 [39000/50000 (78%)] Loss: 1.295464
Train Epoch: 4 [40000/50000 (80%)] Loss: 1.214127
Train Epoch: 4 [41000/50000 (82%)] Loss: 1.218376
Train Epoch: 4 [42000/50000 (84%)] Loss: 1.240433
Train Epoch: 4 [43000/50000 (86%)] Loss: 1.261416
Train Epoch: 4 [44000/50000 (88%)] Loss: 1.412991
Train Epoch: 4 [45000/50000 (90%)] Loss: 1.582614
Train Epoch: 4 [46000/50000 (92%)] Loss: 1.370168
Train Epoch: 4 [47000/50000 (94%)] Loss: 1.447379
Train Epoch: 4 [48000/50000 (96%)] Loss: 1.129337
Train Epoch: 4 [49000/50000 (98%)] Loss: 1.434982

Test set: Average loss: 1.1934, Accuracy: 5774/10000 (58%)

Train Epoch: 5 [0/50000 (0%)] Loss: 1.235089
Train Epoch: 5 [1000/50000 (2%)] Loss: 1.448812
Train Epoch: 5 [2000/50000 (4%)] Loss: 1.335720
Train Epoch: 5 [3000/50000 (6%)] Loss: 1.403535
Train Epoch: 5 [4000/50000 (8%)] Loss: 1.385715
Train Epoch: 5 [5000/50000 (10%)] Loss: 1.433494
Train Epoch: 5 [6000/50000 (12%)] Loss: 1.403300
Train Epoch: 5 [7000/50000 (14%)] Loss: 1.351664
Train Epoch: 5 [8000/50000 (16%)] Loss: 1.381662
Train Epoch: 5 [9000/50000 (18%)] Loss: 1.456648
Train Epoch: 5 [10000/50000 (20%)] Loss: 1.177706
Train Epoch: 5 [11000/50000 (22%)] Loss: 1.085420
Train Epoch: 5 [12000/50000 (24%)] Loss: 1.285073
Train Epoch: 5 [13000/50000 (26%)] Loss: 1.262731
Train Epoch: 5 [14000/50000 (28%)] Loss: 1.472964
Train Epoch: 5 [15000/50000 (30%)] Loss: 1.263226

Train Epoch: 5 [16000/50000 (32%)] Loss: 1.472424
Train Epoch: 5 [17000/50000 (34%)] Loss: 1.324769
Train Epoch: 5 [18000/50000 (36%)] Loss: 1.162068
Train Epoch: 5 [19000/50000 (38%)] Loss: 1.335268
Train Epoch: 5 [20000/50000 (40%)] Loss: 1.392128
Train Epoch: 5 [21000/50000 (42%)] Loss: 1.224181
Train Epoch: 5 [22000/50000 (44%)] Loss: 1.226718
Train Epoch: 5 [23000/50000 (46%)] Loss: 1.288180
Train Epoch: 5 [24000/50000 (48%)] Loss: 1.297634
Train Epoch: 5 [25000/50000 (50%)] Loss: 1.318374
Train Epoch: 5 [26000/50000 (52%)] Loss: 1.474986
Train Epoch: 5 [27000/50000 (54%)] Loss: 1.235066
Train Epoch: 5 [28000/50000 (56%)] Loss: 1.304682
Train Epoch: 5 [29000/50000 (58%)] Loss: 1.468755
Train Epoch: 5 [30000/50000 (60%)] Loss: 1.314989
Train Epoch: 5 [31000/50000 (62%)] Loss: 1.122561
Train Epoch: 5 [32000/50000 (64%)] Loss: 1.375450
Train Epoch: 5 [33000/50000 (66%)] Loss: 1.171382
Train Epoch: 5 [34000/50000 (68%)] Loss: 1.218942
Train Epoch: 5 [35000/50000 (70%)] Loss: 1.204981
Train Epoch: 5 [36000/50000 (72%)] Loss: 1.240152
Train Epoch: 5 [37000/50000 (74%)] Loss: 1.425546
Train Epoch: 5 [38000/50000 (76%)] Loss: 1.362684
Train Epoch: 5 [39000/50000 (78%)] Loss: 1.367697
Train Epoch: 5 [40000/50000 (80%)] Loss: 1.270709
Train Epoch: 5 [41000/50000 (82%)] Loss: 1.216110
Train Epoch: 5 [42000/50000 (84%)] Loss: 1.348356
Train Epoch: 5 [43000/50000 (86%)] Loss: 1.277313
Train Epoch: 5 [44000/50000 (88%)] Loss: 1.379071
Train Epoch: 5 [45000/50000 (90%)] Loss: 1.278190
Train Epoch: 5 [46000/50000 (92%)] Loss: 1.326904
Train Epoch: 5 [47000/50000 (94%)] Loss: 1.440388
Train Epoch: 5 [48000/50000 (96%)] Loss: 1.448770
Train Epoch: 5 [49000/50000 (98%)] Loss: 1.350110

Test set: Average loss: 1.2121, Accuracy: 5674/10000 (57%)

Train Epoch: 6 [0/50000 (0%)] Loss: 1.359713
Train Epoch: 6 [1000/50000 (2%)] Loss: 1.350772
Train Epoch: 6 [2000/50000 (4%)] Loss: 1.268232

Train Epoch: 6 [3000/50000 (6%)] Loss: 1.469599
Train Epoch: 6 [4000/50000 (8%)] Loss: 1.125221
Train Epoch: 6 [5000/50000 (10%)] Loss: 1.217473
Train Epoch: 6 [6000/50000 (12%)] Loss: 1.132285
Train Epoch: 6 [7000/50000 (14%)] Loss: 1.230412
Train Epoch: 6 [8000/50000 (16%)] Loss: 1.281355
Train Epoch: 6 [9000/50000 (18%)] Loss: 1.333015
Train Epoch: 6 [10000/50000 (20%)] Loss: 1.364739
Train Epoch: 6 [11000/50000 (22%)] Loss: 1.134984
Train Epoch: 6 [12000/50000 (24%)] Loss: 1.256827
Train Epoch: 6 [13000/50000 (26%)] Loss: 1.341723
Train Epoch: 6 [14000/50000 (28%)] Loss: 1.179646
Train Epoch: 6 [15000/50000 (30%)] Loss: 1.234158
Train Epoch: 6 [16000/50000 (32%)] Loss: 1.161943
Train Epoch: 6 [17000/50000 (34%)] Loss: 1.561029
Train Epoch: 6 [18000/50000 (36%)] Loss: 1.278594
Train Epoch: 6 [19000/50000 (38%)] Loss: 1.164075
Train Epoch: 6 [20000/50000 (40%)] Loss: 1.378974
Train Epoch: 6 [21000/50000 (42%)] Loss: 1.150651
Train Epoch: 6 [22000/50000 (44%)] Loss: 1.269024
Train Epoch: 6 [23000/50000 (46%)] Loss: 1.386377
Train Epoch: 6 [24000/50000 (48%)] Loss: 0.981396
Train Epoch: 6 [25000/50000 (50%)] Loss: 1.361623
Train Epoch: 6 [26000/50000 (52%)] Loss: 1.380306
Train Epoch: 6 [27000/50000 (54%)] Loss: 1.303960
Train Epoch: 6 [28000/50000 (56%)] Loss: 1.217741
Train Epoch: 6 [29000/50000 (58%)] Loss: 1.298445
Train Epoch: 6 [30000/50000 (60%)] Loss: 1.171031
Train Epoch: 6 [31000/50000 (62%)] Loss: 1.401180
Train Epoch: 6 [32000/50000 (64%)] Loss: 1.308295
Train Epoch: 6 [33000/50000 (66%)] Loss: 1.231783
Train Epoch: 6 [34000/50000 (68%)] Loss: 1.152997
Train Epoch: 6 [35000/50000 (70%)] Loss: 1.240125
Train Epoch: 6 [36000/50000 (72%)] Loss: 1.347986
Train Epoch: 6 [37000/50000 (74%)] Loss: 1.332067
Train Epoch: 6 [38000/50000 (76%)] Loss: 1.165615
Train Epoch: 6 [39000/50000 (78%)] Loss: 1.261939
Train Epoch: 6 [40000/50000 (80%)] Loss: 1.355156
Train Epoch: 6 [41000/50000 (82%)] Loss: 1.263038
Train Epoch: 6 [42000/50000 (84%)] Loss: 1.307613

Train Epoch: 6 [43000/50000 (86%)] Loss: 1.186169
Train Epoch: 6 [44000/50000 (88%)] Loss: 1.314124
Train Epoch: 6 [45000/50000 (90%)] Loss: 1.492069
Train Epoch: 6 [46000/50000 (92%)] Loss: 1.261196
Train Epoch: 6 [47000/50000 (94%)] Loss: 0.982091
Train Epoch: 6 [48000/50000 (96%)] Loss: 1.228933
Train Epoch: 6 [49000/50000 (98%)] Loss: 1.215047

Test set: Average loss: 1.2183, Accuracy: 5665/10000 (57%)

Train Epoch: 7 [0/50000 (0%)] Loss: 1.314217
Train Epoch: 7 [1000/50000 (2%)] Loss: 1.316692
Train Epoch: 7 [2000/50000 (4%)] Loss: 1.278065
Train Epoch: 7 [3000/50000 (6%)] Loss: 1.336495
Train Epoch: 7 [4000/50000 (8%)] Loss: 1.140424
Train Epoch: 7 [5000/50000 (10%)] Loss: 1.203015
Train Epoch: 7 [6000/50000 (12%)] Loss: 1.130508
Train Epoch: 7 [7000/50000 (14%)] Loss: 1.011848
Train Epoch: 7 [8000/50000 (16%)] Loss: 1.289640
Train Epoch: 7 [9000/50000 (18%)] Loss: 1.186434
Train Epoch: 7 [10000/50000 (20%)] Loss: 1.370729
Train Epoch: 7 [11000/50000 (22%)] Loss: 1.201490
Train Epoch: 7 [12000/50000 (24%)] Loss: 1.335399
Train Epoch: 7 [13000/50000 (26%)] Loss: 1.220222
Train Epoch: 7 [14000/50000 (28%)] Loss: 1.188787
Train Epoch: 7 [15000/50000 (30%)] Loss: 0.994208
Train Epoch: 7 [16000/50000 (32%)] Loss: 1.278888
Train Epoch: 7 [17000/50000 (34%)] Loss: 1.319622
Train Epoch: 7 [18000/50000 (36%)] Loss: 1.167326
Train Epoch: 7 [19000/50000 (38%)] Loss: 1.277795
Train Epoch: 7 [20000/50000 (40%)] Loss: 1.326957
Train Epoch: 7 [21000/50000 (42%)] Loss: 1.342259
Train Epoch: 7 [22000/50000 (44%)] Loss: 1.393811
Train Epoch: 7 [23000/50000 (46%)] Loss: 1.151906
Train Epoch: 7 [24000/50000 (48%)] Loss: 1.233722
Train Epoch: 7 [25000/50000 (50%)] Loss: 1.287749
Train Epoch: 7 [26000/50000 (52%)] Loss: 1.330878
Train Epoch: 7 [27000/50000 (54%)] Loss: 1.263035
Train Epoch: 7 [28000/50000 (56%)] Loss: 1.230952
Train Epoch: 7 [29000/50000 (58%)] Loss: 1.248233

Train Epoch: 7 [30000/50000 (60%)] Loss: 1.114757
Train Epoch: 7 [31000/50000 (62%)] Loss: 1.188907
Train Epoch: 7 [32000/50000 (64%)] Loss: 1.087585
Train Epoch: 7 [33000/50000 (66%)] Loss: 1.236697
Train Epoch: 7 [34000/50000 (68%)] Loss: 1.258997
Train Epoch: 7 [35000/50000 (70%)] Loss: 1.582556
Train Epoch: 7 [36000/50000 (72%)] Loss: 1.345689
Train Epoch: 7 [37000/50000 (74%)] Loss: 1.130867
Train Epoch: 7 [38000/50000 (76%)] Loss: 1.397127
Train Epoch: 7 [39000/50000 (78%)] Loss: 1.169258
Train Epoch: 7 [40000/50000 (80%)] Loss: 1.359589
Train Epoch: 7 [41000/50000 (82%)] Loss: 1.065240
Train Epoch: 7 [42000/50000 (84%)] Loss: 1.380259
Train Epoch: 7 [43000/50000 (86%)] Loss: 1.521145
Train Epoch: 7 [44000/50000 (88%)] Loss: 1.086080
Train Epoch: 7 [45000/50000 (90%)] Loss: 1.277765
Train Epoch: 7 [46000/50000 (92%)] Loss: 1.327833
Train Epoch: 7 [47000/50000 (94%)] Loss: 1.168921
Train Epoch: 7 [48000/50000 (96%)] Loss: 1.081450
Train Epoch: 7 [49000/50000 (98%)] Loss: 1.406024

Test set: Average loss: 1.1274, Accuracy: 5950/10000 (60%)

Train Epoch: 8 [0/50000 (0%)] Loss: 1.267755
Train Epoch: 8 [1000/50000 (2%)] Loss: 1.428840
Train Epoch: 8 [2000/50000 (4%)] Loss: 1.206095
Train Epoch: 8 [3000/50000 (6%)] Loss: 1.133300
Train Epoch: 8 [4000/50000 (8%)] Loss: 1.199209
Train Epoch: 8 [5000/50000 (10%)] Loss: 1.223830
Train Epoch: 8 [6000/50000 (12%)] Loss: 1.279735
Train Epoch: 8 [7000/50000 (14%)] Loss: 1.118998
Train Epoch: 8 [8000/50000 (16%)] Loss: 1.292983
Train Epoch: 8 [9000/50000 (18%)] Loss: 1.302042
Train Epoch: 8 [10000/50000 (20%)] Loss: 1.254100
Train Epoch: 8 [11000/50000 (22%)] Loss: 1.391358
Train Epoch: 8 [12000/50000 (24%)] Loss: 1.552435
Train Epoch: 8 [13000/50000 (26%)] Loss: 1.267196
Train Epoch: 8 [14000/50000 (28%)] Loss: 1.242712
Train Epoch: 8 [15000/50000 (30%)] Loss: 1.178069
Train Epoch: 8 [16000/50000 (32%)] Loss: 1.235303

Train Epoch: 8 [17000/50000 (34%)] Loss: 1.173580
Train Epoch: 8 [18000/50000 (36%)] Loss: 1.366254
Train Epoch: 8 [19000/50000 (38%)] Loss: 1.304536
Train Epoch: 8 [20000/50000 (40%)] Loss: 1.170908
Train Epoch: 8 [21000/50000 (42%)] Loss: 1.160493
Train Epoch: 8 [22000/50000 (44%)] Loss: 1.091205
Train Epoch: 8 [23000/50000 (46%)] Loss: 1.166809
Train Epoch: 8 [24000/50000 (48%)] Loss: 1.386856
Train Epoch: 8 [25000/50000 (50%)] Loss: 1.189368
Train Epoch: 8 [26000/50000 (52%)] Loss: 1.218623
Train Epoch: 8 [27000/50000 (54%)] Loss: 1.463454
Train Epoch: 8 [28000/50000 (56%)] Loss: 1.449322
Train Epoch: 8 [29000/50000 (58%)] Loss: 1.123757
Train Epoch: 8 [30000/50000 (60%)] Loss: 1.166979
Train Epoch: 8 [31000/50000 (62%)] Loss: 1.064999
Train Epoch: 8 [32000/50000 (64%)] Loss: 1.288622
Train Epoch: 8 [33000/50000 (66%)] Loss: 1.360331
Train Epoch: 8 [34000/50000 (68%)] Loss: 1.303892
Train Epoch: 8 [35000/50000 (70%)] Loss: 1.310350
Train Epoch: 8 [36000/50000 (72%)] Loss: 1.168614
Train Epoch: 8 [37000/50000 (74%)] Loss: 1.208397
Train Epoch: 8 [38000/50000 (76%)] Loss: 1.172860
Train Epoch: 8 [39000/50000 (78%)] Loss: 1.307685
Train Epoch: 8 [40000/50000 (80%)] Loss: 1.392208
Train Epoch: 8 [41000/50000 (82%)] Loss: 1.453575
Train Epoch: 8 [42000/50000 (84%)] Loss: 1.187087
Train Epoch: 8 [43000/50000 (86%)] Loss: 1.199987
Train Epoch: 8 [44000/50000 (88%)] Loss: 1.305327
Train Epoch: 8 [45000/50000 (90%)] Loss: 1.345947
Train Epoch: 8 [46000/50000 (92%)] Loss: 1.198006
Train Epoch: 8 [47000/50000 (94%)] Loss: 1.216400
Train Epoch: 8 [48000/50000 (96%)] Loss: 1.011158
Train Epoch: 8 [49000/50000 (98%)] Loss: 1.029215

Test set: Average loss: 1.1031, Accuracy: 6081/10000 (61%)

Train Epoch: 9 [0/50000 (0%)] Loss: 1.272507
Train Epoch: 9 [1000/50000 (2%)] Loss: 1.256172
Train Epoch: 9 [2000/50000 (4%)] Loss: 1.286150
Train Epoch: 9 [3000/50000 (6%)] Loss: 1.029564

Train Epoch: 9 [4000/50000 (8%)] Loss: 1.215752
Train Epoch: 9 [5000/50000 (10%)] Loss: 1.214861
Train Epoch: 9 [6000/50000 (12%)] Loss: 1.355492
Train Epoch: 9 [7000/50000 (14%)] Loss: 1.143019
Train Epoch: 9 [8000/50000 (16%)] Loss: 1.302743
Train Epoch: 9 [9000/50000 (18%)] Loss: 1.074091
Train Epoch: 9 [10000/50000 (20%)] Loss: 1.303026
Train Epoch: 9 [11000/50000 (22%)] Loss: 1.192683
Train Epoch: 9 [12000/50000 (24%)] Loss: 1.168442
Train Epoch: 9 [13000/50000 (26%)] Loss: 1.147135
Train Epoch: 9 [14000/50000 (28%)] Loss: 1.240367
Train Epoch: 9 [15000/50000 (30%)] Loss: 1.236069
Train Epoch: 9 [16000/50000 (32%)] Loss: 1.440554
Train Epoch: 9 [17000/50000 (34%)] Loss: 1.479150
Train Epoch: 9 [18000/50000 (36%)] Loss: 1.348820
Train Epoch: 9 [19000/50000 (38%)] Loss: 1.265422
Train Epoch: 9 [20000/50000 (40%)] Loss: 1.185666
Train Epoch: 9 [21000/50000 (42%)] Loss: 1.335400
Train Epoch: 9 [22000/50000 (44%)] Loss: 1.012870
Train Epoch: 9 [23000/50000 (46%)] Loss: 1.259652
Train Epoch: 9 [24000/50000 (48%)] Loss: 1.130744
Train Epoch: 9 [25000/50000 (50%)] Loss: 1.086929
Train Epoch: 9 [26000/50000 (52%)] Loss: 1.284841
Train Epoch: 9 [27000/50000 (54%)] Loss: 1.023876
Train Epoch: 9 [28000/50000 (56%)] Loss: 1.229721
Train Epoch: 9 [29000/50000 (58%)] Loss: 1.089643
Train Epoch: 9 [30000/50000 (60%)] Loss: 1.350972
Train Epoch: 9 [31000/50000 (62%)] Loss: 1.102669
Train Epoch: 9 [32000/50000 (64%)] Loss: 1.156792
Train Epoch: 9 [33000/50000 (66%)] Loss: 1.115096
Train Epoch: 9 [34000/50000 (68%)] Loss: 1.033408
Train Epoch: 9 [35000/50000 (70%)] Loss: 1.448988
Train Epoch: 9 [36000/50000 (72%)] Loss: 1.263231
Train Epoch: 9 [37000/50000 (74%)] Loss: 1.209200
Train Epoch: 9 [38000/50000 (76%)] Loss: 1.191738
Train Epoch: 9 [39000/50000 (78%)] Loss: 1.337907
Train Epoch: 9 [40000/50000 (80%)] Loss: 1.218938
Train Epoch: 9 [41000/50000 (82%)] Loss: 1.125543
Train Epoch: 9 [42000/50000 (84%)] Loss: 1.288351
Train Epoch: 9 [43000/50000 (86%)] Loss: 1.413972

Train Epoch: 9 [44000/50000 (88%)] Loss: 1.194399
Train Epoch: 9 [45000/50000 (90%)] Loss: 1.128304
Train Epoch: 9 [46000/50000 (92%)] Loss: 1.193687
Train Epoch: 9 [47000/50000 (94%)] Loss: 1.256290
Train Epoch: 9 [48000/50000 (96%)] Loss: 1.020206
Train Epoch: 9 [49000/50000 (98%)] Loss: 1.205503

Test set: Average loss: 1.1106, Accuracy: 6058/10000 (61%)

Train Epoch: 10 [0/50000 (0%)] Loss: 1.456357
Train Epoch: 10 [1000/50000 (2%)] Loss: 1.222327
Train Epoch: 10 [2000/50000 (4%)] Loss: 1.363169
Train Epoch: 10 [3000/50000 (6%)] Loss: 1.133329
Train Epoch: 10 [4000/50000 (8%)] Loss: 1.212878
Train Epoch: 10 [5000/50000 (10%)] Loss: 1.225523
Train Epoch: 10 [6000/50000 (12%)] Loss: 1.101761
Train Epoch: 10 [7000/50000 (14%)] Loss: 1.217951
Train Epoch: 10 [8000/50000 (16%)] Loss: 1.420786
Train Epoch: 10 [9000/50000 (18%)] Loss: 1.090205
Train Epoch: 10 [10000/50000 (20%)] Loss: 1.598988
Train Epoch: 10 [11000/50000 (22%)] Loss: 1.150865
Train Epoch: 10 [12000/50000 (24%)] Loss: 1.144335
Train Epoch: 10 [13000/50000 (26%)] Loss: 1.156724
Train Epoch: 10 [14000/50000 (28%)] Loss: 1.166131
Train Epoch: 10 [15000/50000 (30%)] Loss: 1.456064
Train Epoch: 10 [16000/50000 (32%)] Loss: 1.241654
Train Epoch: 10 [17000/50000 (34%)] Loss: 1.199795
Train Epoch: 10 [18000/50000 (36%)] Loss: 1.227052
Train Epoch: 10 [19000/50000 (38%)] Loss: 1.275989
Train Epoch: 10 [20000/50000 (40%)] Loss: 1.370529
Train Epoch: 10 [21000/50000 (42%)] Loss: 1.212629
Train Epoch: 10 [22000/50000 (44%)] Loss: 1.159179
Train Epoch: 10 [23000/50000 (46%)] Loss: 1.093899
Train Epoch: 10 [24000/50000 (48%)] Loss: 1.373478
Train Epoch: 10 [25000/50000 (50%)] Loss: 1.144479
Train Epoch: 10 [26000/50000 (52%)] Loss: 1.209351
Train Epoch: 10 [27000/50000 (54%)] Loss: 1.175529
Train Epoch: 10 [28000/50000 (56%)] Loss: 1.261528
Train Epoch: 10 [29000/50000 (58%)] Loss: 1.145761
Train Epoch: 10 [30000/50000 (60%)] Loss: 1.324787

Train Epoch: 10 [31000/50000 (62%)]	Loss: 1.260018
Train Epoch: 10 [32000/50000 (64%)]	Loss: 1.058587
Train Epoch: 10 [33000/50000 (66%)]	Loss: 1.079459
Train Epoch: 10 [34000/50000 (68%)]	Loss: 1.433725
Train Epoch: 10 [35000/50000 (70%)]	Loss: 1.058212
Train Epoch: 10 [36000/50000 (72%)]	Loss: 1.187393
Train Epoch: 10 [37000/50000 (74%)]	Loss: 1.191945
Train Epoch: 10 [38000/50000 (76%)]	Loss: 1.299297
Train Epoch: 10 [39000/50000 (78%)]	Loss: 1.131694
Train Epoch: 10 [40000/50000 (80%)]	Loss: 1.266085
Train Epoch: 10 [41000/50000 (82%)]	Loss: 1.222617
Train Epoch: 10 [42000/50000 (84%)]	Loss: 1.049927
Train Epoch: 10 [43000/50000 (86%)]	Loss: 1.060852
Train Epoch: 10 [44000/50000 (88%)]	Loss: 1.119520
Train Epoch: 10 [45000/50000 (90%)]	Loss: 1.145262
Train Epoch: 10 [46000/50000 (92%)]	Loss: 1.235723
Train Epoch: 10 [47000/50000 (94%)]	Loss: 0.974698
Train Epoch: 10 [48000/50000 (96%)]	Loss: 1.153595
Train Epoch: 10 [49000/50000 (98%)]	Loss: 1.083440

Test set: Average loss: 1.1048, Accuracy: 6148/10000 (61%)

Train Epoch: 11 [0/50000 (0%)]	Loss: 1.268472
Train Epoch: 11 [1000/50000 (2%)]	Loss: 1.400770
Train Epoch: 11 [2000/50000 (4%)]	Loss: 1.108613
Train Epoch: 11 [3000/50000 (6%)]	Loss: 1.299475
Train Epoch: 11 [4000/50000 (8%)]	Loss: 1.267942
Train Epoch: 11 [5000/50000 (10%)]	Loss: 1.331578
Train Epoch: 11 [6000/50000 (12%)]	Loss: 1.011254
Train Epoch: 11 [7000/50000 (14%)]	Loss: 1.156250
Train Epoch: 11 [8000/50000 (16%)]	Loss: 1.047140
Train Epoch: 11 [9000/50000 (18%)]	Loss: 1.063455
Train Epoch: 11 [10000/50000 (20%)]	Loss: 1.198455
Train Epoch: 11 [11000/50000 (22%)]	Loss: 1.203969
Train Epoch: 11 [12000/50000 (24%)]	Loss: 1.207792
Train Epoch: 11 [13000/50000 (26%)]	Loss: 1.122381
Train Epoch: 11 [14000/50000 (28%)]	Loss: 1.227368
Train Epoch: 11 [15000/50000 (30%)]	Loss: 1.071753
Train Epoch: 11 [16000/50000 (32%)]	Loss: 1.214328
Train Epoch: 11 [17000/50000 (34%)]	Loss: 1.135651

Train Epoch: 11 [18000/50000 (36%)]	Loss: 1.302998
Train Epoch: 11 [19000/50000 (38%)]	Loss: 1.222155
Train Epoch: 11 [20000/50000 (40%)]	Loss: 1.247088
Train Epoch: 11 [21000/50000 (42%)]	Loss: 1.250175
Train Epoch: 11 [22000/50000 (44%)]	Loss: 1.131469
Train Epoch: 11 [23000/50000 (46%)]	Loss: 1.196619
Train Epoch: 11 [24000/50000 (48%)]	Loss: 1.092723
Train Epoch: 11 [25000/50000 (50%)]	Loss: 1.128677
Train Epoch: 11 [26000/50000 (52%)]	Loss: 0.960655
Train Epoch: 11 [27000/50000 (54%)]	Loss: 1.349101
Train Epoch: 11 [28000/50000 (56%)]	Loss: 1.219245
Train Epoch: 11 [29000/50000 (58%)]	Loss: 1.196150
Train Epoch: 11 [30000/50000 (60%)]	Loss: 1.102358
Train Epoch: 11 [31000/50000 (62%)]	Loss: 1.182013
Train Epoch: 11 [32000/50000 (64%)]	Loss: 1.026616
Train Epoch: 11 [33000/50000 (66%)]	Loss: 1.066263
Train Epoch: 11 [34000/50000 (68%)]	Loss: 1.091661
Train Epoch: 11 [35000/50000 (70%)]	Loss: 1.324088
Train Epoch: 11 [36000/50000 (72%)]	Loss: 1.493544
Train Epoch: 11 [37000/50000 (74%)]	Loss: 1.093924
Train Epoch: 11 [38000/50000 (76%)]	Loss: 1.440084
Train Epoch: 11 [39000/50000 (78%)]	Loss: 1.107273
Train Epoch: 11 [40000/50000 (80%)]	Loss: 1.109455
Train Epoch: 11 [41000/50000 (82%)]	Loss: 1.259740
Train Epoch: 11 [42000/50000 (84%)]	Loss: 1.065291
Train Epoch: 11 [43000/50000 (86%)]	Loss: 1.130065
Train Epoch: 11 [44000/50000 (88%)]	Loss: 0.988555
Train Epoch: 11 [45000/50000 (90%)]	Loss: 1.215184
Train Epoch: 11 [46000/50000 (92%)]	Loss: 1.152671
Train Epoch: 11 [47000/50000 (94%)]	Loss: 1.090013
Train Epoch: 11 [48000/50000 (96%)]	Loss: 1.199553
Train Epoch: 11 [49000/50000 (98%)]	Loss: 1.154013

Test set: Average loss: 1.0667, Accuracy: 6242/10000 (62%)

Train Epoch: 12 [0/50000 (0%)]	Loss: 1.024442
Train Epoch: 12 [1000/50000 (2%)]	Loss: 1.124959
Train Epoch: 12 [2000/50000 (4%)]	Loss: 1.228267
Train Epoch: 12 [3000/50000 (6%)]	Loss: 1.339206
Train Epoch: 12 [4000/50000 (8%)]	Loss: 1.334614

Train Epoch: 12 [5000/50000 (10%)]	Loss: 1.084245
Train Epoch: 12 [6000/50000 (12%)]	Loss: 0.996517
Train Epoch: 12 [7000/50000 (14%)]	Loss: 1.213830
Train Epoch: 12 [8000/50000 (16%)]	Loss: 1.485154
Train Epoch: 12 [9000/50000 (18%)]	Loss: 1.145485
Train Epoch: 12 [10000/50000 (20%)]	Loss: 1.084763
Train Epoch: 12 [11000/50000 (22%)]	Loss: 1.054158
Train Epoch: 12 [12000/50000 (24%)]	Loss: 1.402895
Train Epoch: 12 [13000/50000 (26%)]	Loss: 1.124497
Train Epoch: 12 [14000/50000 (28%)]	Loss: 1.260051
Train Epoch: 12 [15000/50000 (30%)]	Loss: 1.211840
Train Epoch: 12 [16000/50000 (32%)]	Loss: 0.943901
Train Epoch: 12 [17000/50000 (34%)]	Loss: 1.428525
Train Epoch: 12 [18000/50000 (36%)]	Loss: 0.997004
Train Epoch: 12 [19000/50000 (38%)]	Loss: 1.119476
Train Epoch: 12 [20000/50000 (40%)]	Loss: 1.307535
Train Epoch: 12 [21000/50000 (42%)]	Loss: 1.149418
Train Epoch: 12 [22000/50000 (44%)]	Loss: 1.334893
Train Epoch: 12 [23000/50000 (46%)]	Loss: 1.029321
Train Epoch: 12 [24000/50000 (48%)]	Loss: 1.245306
Train Epoch: 12 [25000/50000 (50%)]	Loss: 1.298277
Train Epoch: 12 [26000/50000 (52%)]	Loss: 1.157792
Train Epoch: 12 [27000/50000 (54%)]	Loss: 1.089698
Train Epoch: 12 [28000/50000 (56%)]	Loss: 1.274432
Train Epoch: 12 [29000/50000 (58%)]	Loss: 1.082617
Train Epoch: 12 [30000/50000 (60%)]	Loss: 1.186513
Train Epoch: 12 [31000/50000 (62%)]	Loss: 1.173126
Train Epoch: 12 [32000/50000 (64%)]	Loss: 1.267070
Train Epoch: 12 [33000/50000 (66%)]	Loss: 0.999984
Train Epoch: 12 [34000/50000 (68%)]	Loss: 1.176057
Train Epoch: 12 [35000/50000 (70%)]	Loss: 0.981002
Train Epoch: 12 [36000/50000 (72%)]	Loss: 1.359351
Train Epoch: 12 [37000/50000 (74%)]	Loss: 1.153095
Train Epoch: 12 [38000/50000 (76%)]	Loss: 1.341881
Train Epoch: 12 [39000/50000 (78%)]	Loss: 1.132735
Train Epoch: 12 [40000/50000 (80%)]	Loss: 1.295092
Train Epoch: 12 [41000/50000 (82%)]	Loss: 1.114936
Train Epoch: 12 [42000/50000 (84%)]	Loss: 1.301538
Train Epoch: 12 [43000/50000 (86%)]	Loss: 1.141237
Train Epoch: 12 [44000/50000 (88%)]	Loss: 1.148675

Train Epoch: 12 [45000/50000 (90%)]	Loss: 1.315750
Train Epoch: 12 [46000/50000 (92%)]	Loss: 1.114057
Train Epoch: 12 [47000/50000 (94%)]	Loss: 1.191033
Train Epoch: 12 [48000/50000 (96%)]	Loss: 1.257770
Train Epoch: 12 [49000/50000 (98%)]	Loss: 1.046211

Test set: Average loss: 1.0467, Accuracy: 6338/10000 (63%)

Train Epoch: 13 [0/50000 (0%)]	Loss: 1.260066
Train Epoch: 13 [1000/50000 (2%)]	Loss: 1.135737
Train Epoch: 13 [2000/50000 (4%)]	Loss: 1.154450
Train Epoch: 13 [3000/50000 (6%)]	Loss: 1.024134
Train Epoch: 13 [4000/50000 (8%)]	Loss: 1.264520
Train Epoch: 13 [5000/50000 (10%)]	Loss: 1.175700
Train Epoch: 13 [6000/50000 (12%)]	Loss: 1.025195
Train Epoch: 13 [7000/50000 (14%)]	Loss: 1.339752
Train Epoch: 13 [8000/50000 (16%)]	Loss: 1.274690
Train Epoch: 13 [9000/50000 (18%)]	Loss: 1.220248
Train Epoch: 13 [10000/50000 (20%)]	Loss: 1.226737
Train Epoch: 13 [11000/50000 (22%)]	Loss: 1.348589
Train Epoch: 13 [12000/50000 (24%)]	Loss: 1.173330
Train Epoch: 13 [13000/50000 (26%)]	Loss: 1.061451
Train Epoch: 13 [14000/50000 (28%)]	Loss: 1.161671
Train Epoch: 13 [15000/50000 (30%)]	Loss: 1.299605
Train Epoch: 13 [16000/50000 (32%)]	Loss: 1.074173
Train Epoch: 13 [17000/50000 (34%)]	Loss: 1.195850
Train Epoch: 13 [18000/50000 (36%)]	Loss: 1.176377
Train Epoch: 13 [19000/50000 (38%)]	Loss: 1.394688
Train Epoch: 13 [20000/50000 (40%)]	Loss: 1.221297
Train Epoch: 13 [21000/50000 (42%)]	Loss: 1.202739
Train Epoch: 13 [22000/50000 (44%)]	Loss: 1.125468
Train Epoch: 13 [23000/50000 (46%)]	Loss: 1.202491
Train Epoch: 13 [24000/50000 (48%)]	Loss: 1.012757
Train Epoch: 13 [25000/50000 (50%)]	Loss: 1.186330
Train Epoch: 13 [26000/50000 (52%)]	Loss: 1.255228
Train Epoch: 13 [27000/50000 (54%)]	Loss: 1.375617
Train Epoch: 13 [28000/50000 (56%)]	Loss: 1.207108
Train Epoch: 13 [29000/50000 (58%)]	Loss: 1.034328
Train Epoch: 13 [30000/50000 (60%)]	Loss: 1.219269
Train Epoch: 13 [31000/50000 (62%)]	Loss: 1.350443

Train Epoch: 13 [32000/50000 (64%)]	Loss: 1.077833
Train Epoch: 13 [33000/50000 (66%)]	Loss: 1.261422
Train Epoch: 13 [34000/50000 (68%)]	Loss: 0.986374
Train Epoch: 13 [35000/50000 (70%)]	Loss: 1.164163
Train Epoch: 13 [36000/50000 (72%)]	Loss: 1.345714
Train Epoch: 13 [37000/50000 (74%)]	Loss: 1.202784
Train Epoch: 13 [38000/50000 (76%)]	Loss: 1.167779
Train Epoch: 13 [39000/50000 (78%)]	Loss: 1.323921
Train Epoch: 13 [40000/50000 (80%)]	Loss: 1.388981
Train Epoch: 13 [41000/50000 (82%)]	Loss: 1.113482
Train Epoch: 13 [42000/50000 (84%)]	Loss: 1.143434
Train Epoch: 13 [43000/50000 (86%)]	Loss: 1.269331
Train Epoch: 13 [44000/50000 (88%)]	Loss: 1.235223
Train Epoch: 13 [45000/50000 (90%)]	Loss: 1.121652
Train Epoch: 13 [46000/50000 (92%)]	Loss: 1.309981
Train Epoch: 13 [47000/50000 (94%)]	Loss: 1.159806
Train Epoch: 13 [48000/50000 (96%)]	Loss: 1.233394
Train Epoch: 13 [49000/50000 (98%)]	Loss: 0.943402

Test set: Average loss: 0.9991, Accuracy: 6503/10000 (65%)

Train Epoch: 14 [0/50000 (0%)]	Loss: 1.139226
Train Epoch: 14 [1000/50000 (2%)]	Loss: 1.281426
Train Epoch: 14 [2000/50000 (4%)]	Loss: 1.174011
Train Epoch: 14 [3000/50000 (6%)]	Loss: 1.125060
Train Epoch: 14 [4000/50000 (8%)]	Loss: 1.332455
Train Epoch: 14 [5000/50000 (10%)]	Loss: 1.286570
Train Epoch: 14 [6000/50000 (12%)]	Loss: 1.130213
Train Epoch: 14 [7000/50000 (14%)]	Loss: 1.240563
Train Epoch: 14 [8000/50000 (16%)]	Loss: 1.204710
Train Epoch: 14 [9000/50000 (18%)]	Loss: 1.063342
Train Epoch: 14 [10000/50000 (20%)]	Loss: 1.335179
Train Epoch: 14 [11000/50000 (22%)]	Loss: 1.013041
Train Epoch: 14 [12000/50000 (24%)]	Loss: 1.197762
Train Epoch: 14 [13000/50000 (26%)]	Loss: 1.258525
Train Epoch: 14 [14000/50000 (28%)]	Loss: 1.305851
Train Epoch: 14 [15000/50000 (30%)]	Loss: 1.094171
Train Epoch: 14 [16000/50000 (32%)]	Loss: 1.129959
Train Epoch: 14 [17000/50000 (34%)]	Loss: 1.104184
Train Epoch: 14 [18000/50000 (36%)]	Loss: 1.195012

Train Epoch: 14 [19000/50000 (38%)]	Loss: 1.328036
Train Epoch: 14 [20000/50000 (40%)]	Loss: 1.186767
Train Epoch: 14 [21000/50000 (42%)]	Loss: 1.224457
Train Epoch: 14 [22000/50000 (44%)]	Loss: 1.195534
Train Epoch: 14 [23000/50000 (46%)]	Loss: 1.197467
Train Epoch: 14 [24000/50000 (48%)]	Loss: 1.321947
Train Epoch: 14 [25000/50000 (50%)]	Loss: 1.143476
Train Epoch: 14 [26000/50000 (52%)]	Loss: 1.464798
Train Epoch: 14 [27000/50000 (54%)]	Loss: 1.430529
Train Epoch: 14 [28000/50000 (56%)]	Loss: 0.974354
Train Epoch: 14 [29000/50000 (58%)]	Loss: 1.207537
Train Epoch: 14 [30000/50000 (60%)]	Loss: 1.132870
Train Epoch: 14 [31000/50000 (62%)]	Loss: 1.117373
Train Epoch: 14 [32000/50000 (64%)]	Loss: 1.251826
Train Epoch: 14 [33000/50000 (66%)]	Loss: 1.154197
Train Epoch: 14 [34000/50000 (68%)]	Loss: 0.876227
Train Epoch: 14 [35000/50000 (70%)]	Loss: 1.165054
Train Epoch: 14 [36000/50000 (72%)]	Loss: 1.235782
Train Epoch: 14 [37000/50000 (74%)]	Loss: 1.148918
Train Epoch: 14 [38000/50000 (76%)]	Loss: 1.202186
Train Epoch: 14 [39000/50000 (78%)]	Loss: 1.224503
Train Epoch: 14 [40000/50000 (80%)]	Loss: 1.163570
Train Epoch: 14 [41000/50000 (82%)]	Loss: 1.218391
Train Epoch: 14 [42000/50000 (84%)]	Loss: 0.964743
Train Epoch: 14 [43000/50000 (86%)]	Loss: 1.047006
Train Epoch: 14 [44000/50000 (88%)]	Loss: 0.945906
Train Epoch: 14 [45000/50000 (90%)]	Loss: 1.229750
Train Epoch: 14 [46000/50000 (92%)]	Loss: 1.388860
Train Epoch: 14 [47000/50000 (94%)]	Loss: 1.258289
Train Epoch: 14 [48000/50000 (96%)]	Loss: 1.052931
Train Epoch: 14 [49000/50000 (98%)]	Loss: 1.127943

Test set: Average loss: 1.0020, Accuracy: 6515/10000 (65%)

Train Epoch: 15 [0/50000 (0%)]	Loss: 1.062425
Train Epoch: 15 [1000/50000 (2%)]	Loss: 1.040905
Train Epoch: 15 [2000/50000 (4%)]	Loss: 1.113236
Train Epoch: 15 [3000/50000 (6%)]	Loss: 1.221702
Train Epoch: 15 [4000/50000 (8%)]	Loss: 1.204463
Train Epoch: 15 [5000/50000 (10%)]	Loss: 1.082717

Train Epoch: 15 [6000/50000 (12%)]	Loss: 1.067196
Train Epoch: 15 [7000/50000 (14%)]	Loss: 1.225806
Train Epoch: 15 [8000/50000 (16%)]	Loss: 1.188189
Train Epoch: 15 [9000/50000 (18%)]	Loss: 1.197893
Train Epoch: 15 [10000/50000 (20%)]	Loss: 1.006907
Train Epoch: 15 [11000/50000 (22%)]	Loss: 0.964054
Train Epoch: 15 [12000/50000 (24%)]	Loss: 1.169870
Train Epoch: 15 [13000/50000 (26%)]	Loss: 1.046430
Train Epoch: 15 [14000/50000 (28%)]	Loss: 1.182072
Train Epoch: 15 [15000/50000 (30%)]	Loss: 1.023364
Train Epoch: 15 [16000/50000 (32%)]	Loss: 1.053458
Train Epoch: 15 [17000/50000 (34%)]	Loss: 1.290341
Train Epoch: 15 [18000/50000 (36%)]	Loss: 1.249583
Train Epoch: 15 [19000/50000 (38%)]	Loss: 1.094537
Train Epoch: 15 [20000/50000 (40%)]	Loss: 1.160443
Train Epoch: 15 [21000/50000 (42%)]	Loss: 0.929343
Train Epoch: 15 [22000/50000 (44%)]	Loss: 1.157524
Train Epoch: 15 [23000/50000 (46%)]	Loss: 1.331182
Train Epoch: 15 [24000/50000 (48%)]	Loss: 1.164919
Train Epoch: 15 [25000/50000 (50%)]	Loss: 1.292065
Train Epoch: 15 [26000/50000 (52%)]	Loss: 1.113805
Train Epoch: 15 [27000/50000 (54%)]	Loss: 1.263276
Train Epoch: 15 [28000/50000 (56%)]	Loss: 0.942700
Train Epoch: 15 [29000/50000 (58%)]	Loss: 1.058362
Train Epoch: 15 [30000/50000 (60%)]	Loss: 1.138558
Train Epoch: 15 [31000/50000 (62%)]	Loss: 1.159595
Train Epoch: 15 [32000/50000 (64%)]	Loss: 1.063730
Train Epoch: 15 [33000/50000 (66%)]	Loss: 1.100200
Train Epoch: 15 [34000/50000 (68%)]	Loss: 1.371181
Train Epoch: 15 [35000/50000 (70%)]	Loss: 1.193020
Train Epoch: 15 [36000/50000 (72%)]	Loss: 1.159126
Train Epoch: 15 [37000/50000 (74%)]	Loss: 1.042228
Train Epoch: 15 [38000/50000 (76%)]	Loss: 1.278549
Train Epoch: 15 [39000/50000 (78%)]	Loss: 1.110192
Train Epoch: 15 [40000/50000 (80%)]	Loss: 1.166155
Train Epoch: 15 [41000/50000 (82%)]	Loss: 1.144573
Train Epoch: 15 [42000/50000 (84%)]	Loss: 1.059227
Train Epoch: 15 [43000/50000 (86%)]	Loss: 1.091495
Train Epoch: 15 [44000/50000 (88%)]	Loss: 1.098811
Train Epoch: 15 [45000/50000 (90%)]	Loss: 1.240350

Train Epoch: 15 [46000/50000 (92%)]	Loss: 1.109252
Train Epoch: 15 [47000/50000 (94%)]	Loss: 1.165684
Train Epoch: 15 [48000/50000 (96%)]	Loss: 1.252880
Train Epoch: 15 [49000/50000 (98%)]	Loss: 1.332597

Test set: Average loss: 0.9816, Accuracy: 6605/10000 (66%)

Training and Testing total execution time is: 464.4997498989105 seconds