A report on the comparison of MiniBatch GAN and simple GAN
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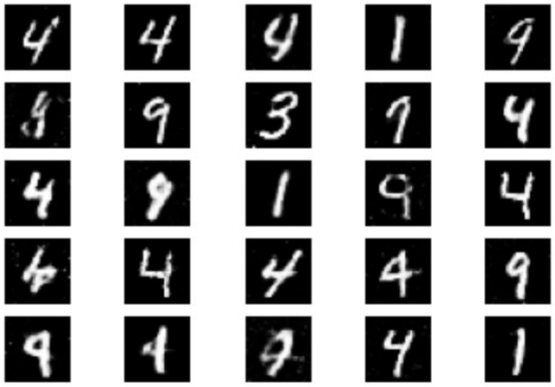
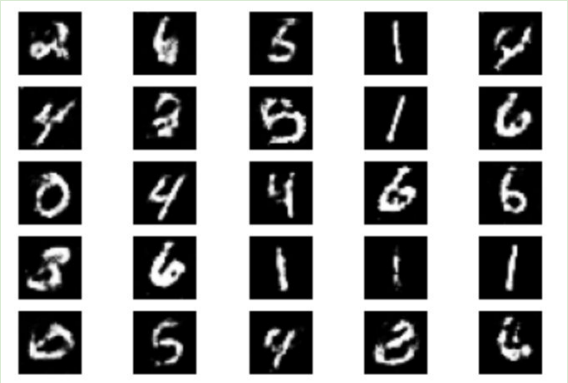
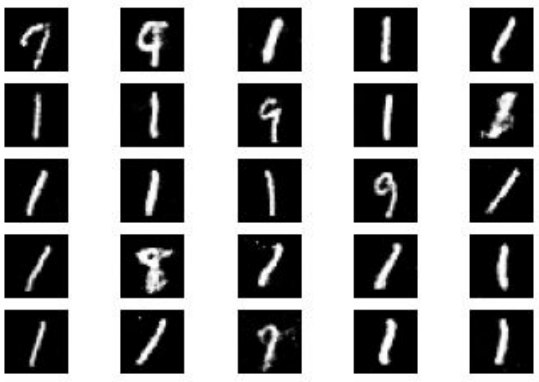
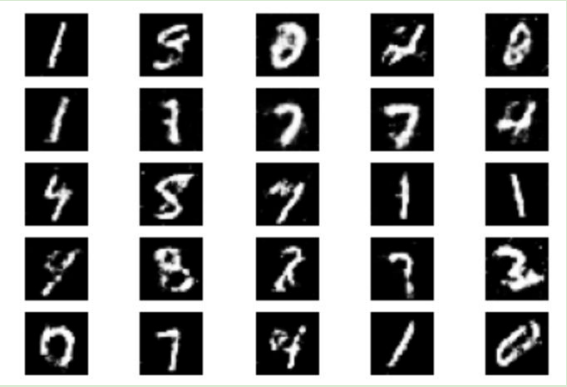
The description of the code has been thoroughly provided in the notebook. In this document, some additional experimental results have been illustrated to show how much a minibatch solution is effective.

MNIST dataset

MiniBatch	mode	iterations	loss G	Loss D	Final image
NO	4	10k	3.295	3.2958	
YES	4	10k	0.303	4.528	
NO	1	10k	2.154	0.343	

YES	1	10k			

It is clear that the number of modes appearance in both scenarios has been decreased.

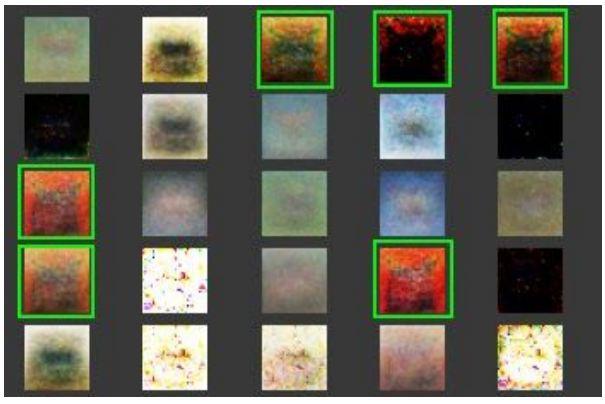
Cifar Dataset

In running the code we faced some difficulties. To tackle these issues, we tried many ways but it seems it needs a lot of time to output an acceptable result.

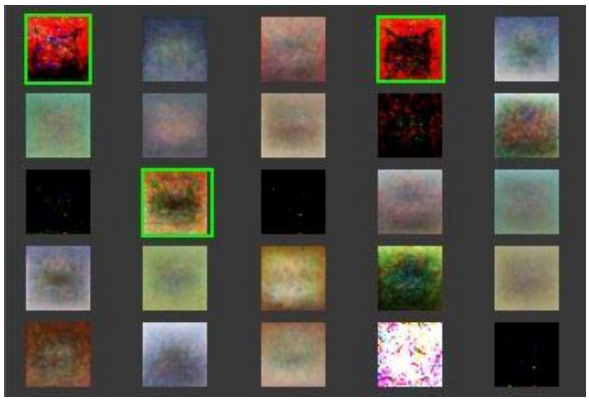
Due to lack of time and the long time for each run of for this dataset, we are only able to afford one comparison result

As illustrated below, in the figure left, cats are shaping into a more realistic version. We had to stop the experiment but it is enough for comparison.

In this experiment, we chose cats as the mode. The left figure is the result of the code without minibatch which contains 6 obvious cats. The right figure is the code in the same condition with minibatch which successfully reduced the number of cat appearances.



Without minibatch, iteration 8k



with minibatch, iteration 8k