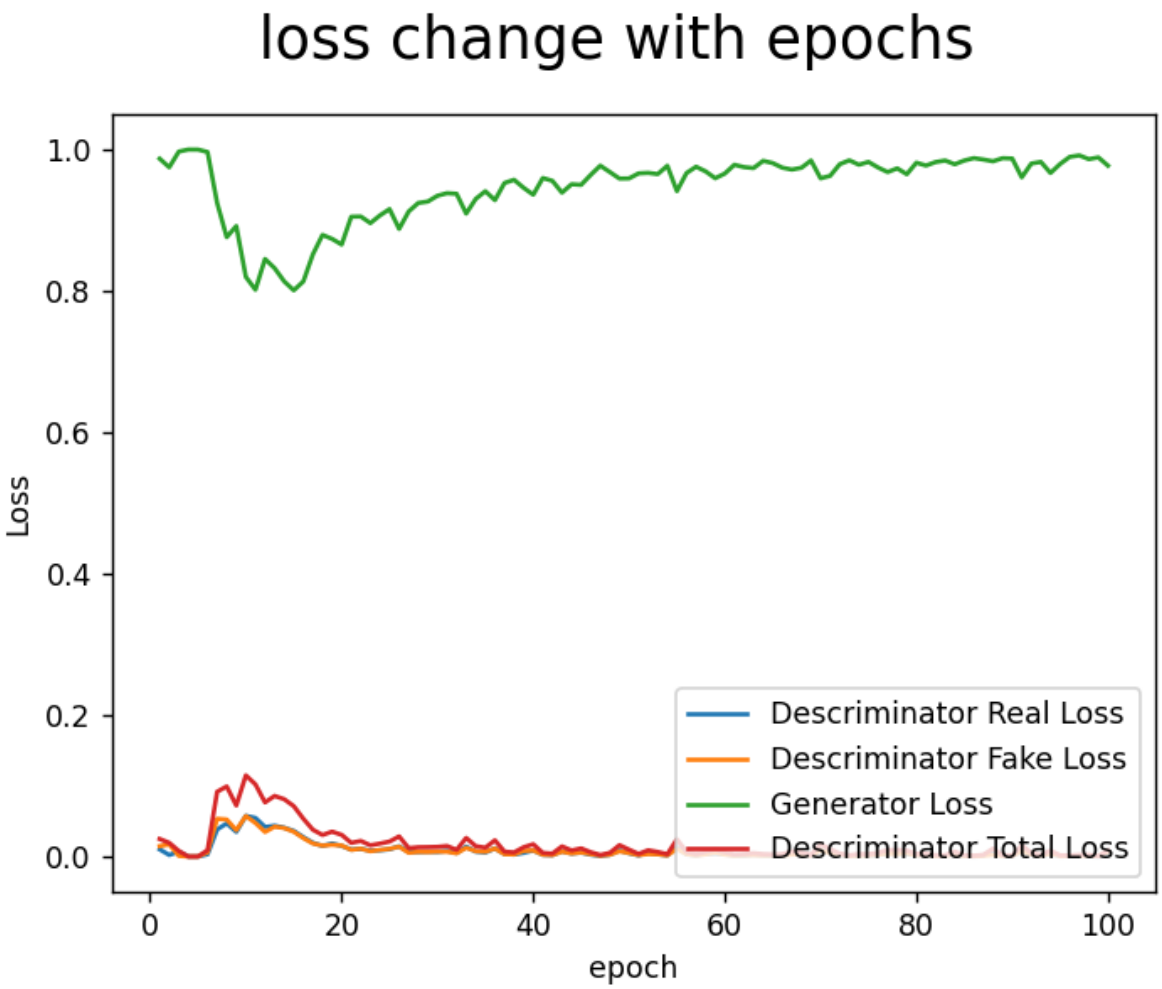
COMP5214 Assignment3 Report

DCGAN

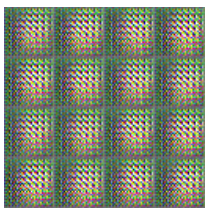
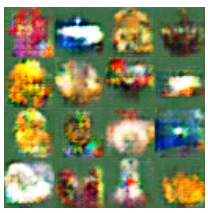
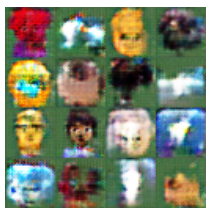
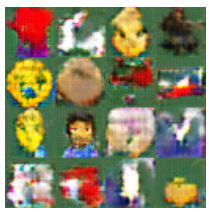
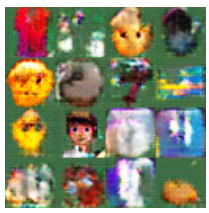
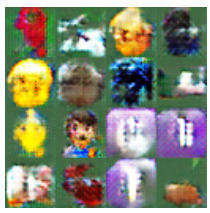
The DCGAN was trained with a `learing_rate` of 0.01, `batch_size` of 16, for a total of 100 epochs.

- **The training loss graph of DCGAN is as follows:**



DCGAN Loss change with epochs

- **Here are some sample images generated by the DCGAN:**

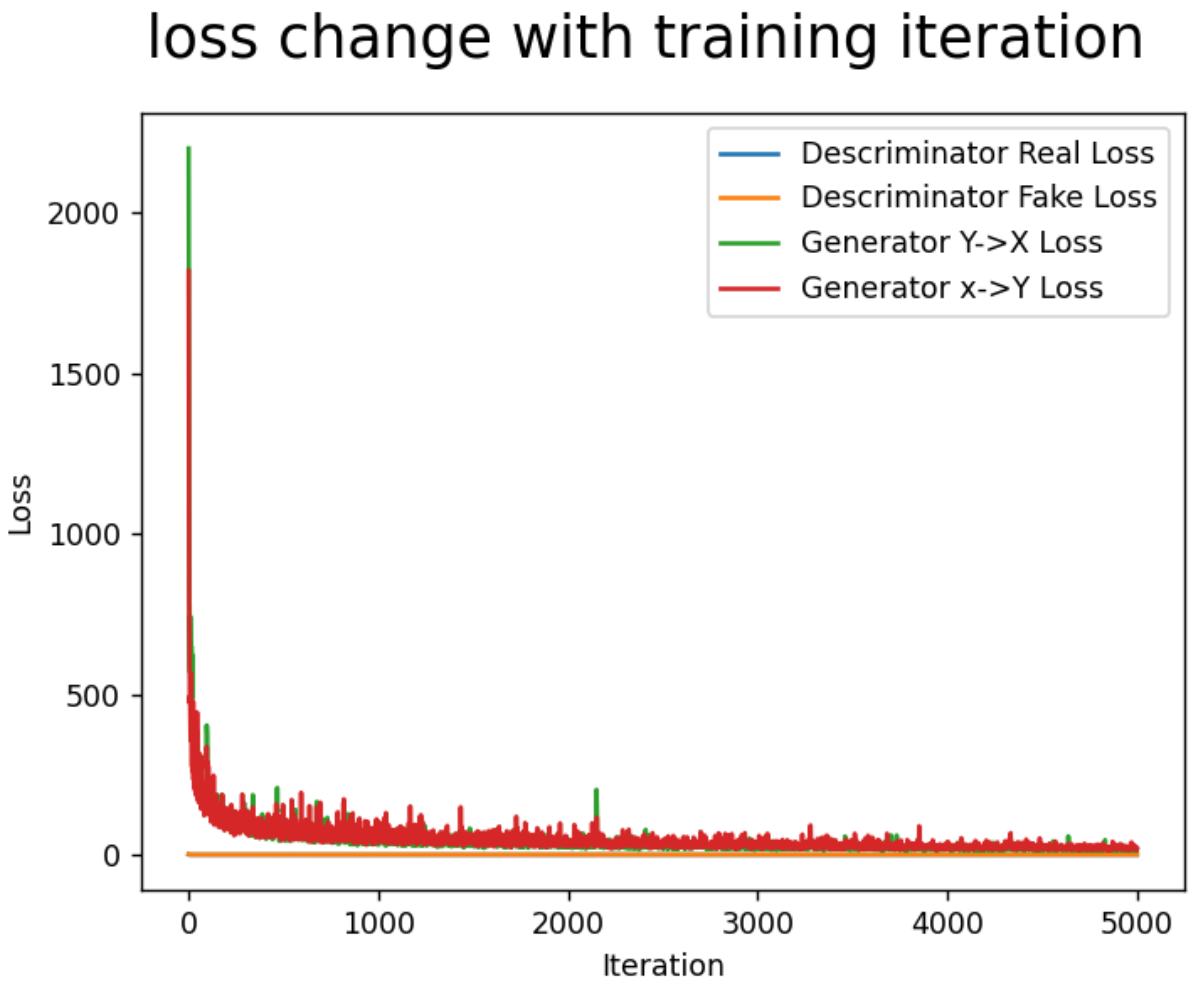
1st epoch	20th epoch	40th epoch	60th epoch	80th epoch	100th epoch
					

We can see that the countours of the pictures becomes clear approximately after the 20th epoch

CycleGAN

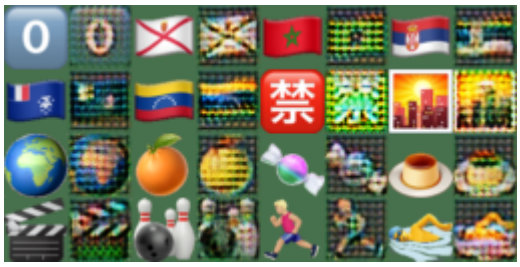
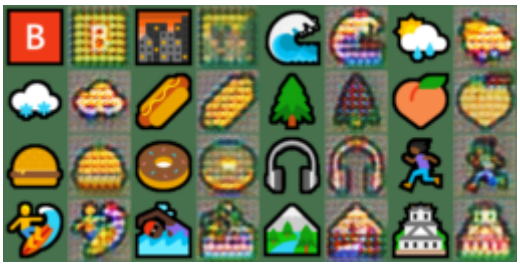
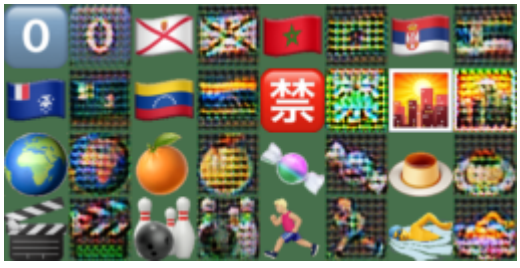
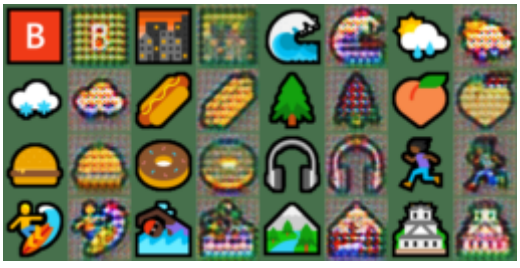
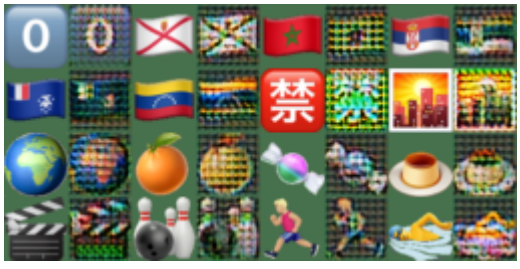
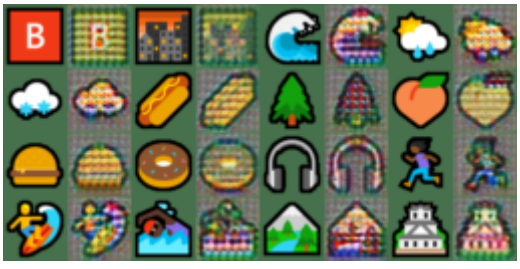
The DCGAN was trained with a `learing_rate` of 0.01, `batch_size` of 16, for a total of 5000 iterations.

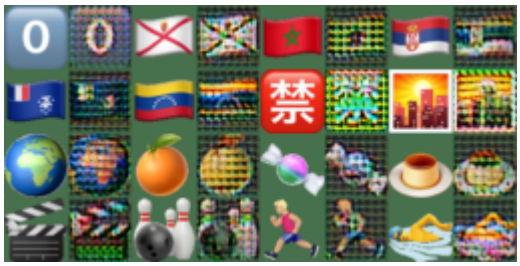
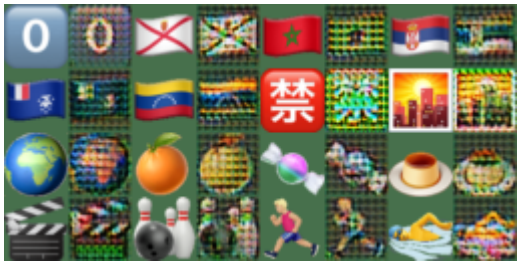
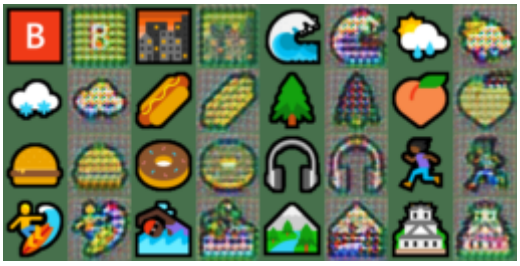
- **The training loss graph of DCGAN is as follows:**



CycleGAN Loss change with iterations

- **Here are some sample images generated by the CycleGAN:**

	X->Y	Y->X
1000 iteration		
2000 iteration		
3000 iteration		

	X->Y	Y->X
4000 iteration		
5000 iteration		

We can see that the results are already very good after the first 1000 iterations

Side Notes (Modification to the skelton that is not a part of "FILL IN")

- **latest `scipy` version no longer support `imsave()`, it was replaced by `imwrite()` from `imageio`**
- **the `if` statement for `device` choosing was reversed, it was designed to choose `cuda` when `torch.cuda.is_available()` returns `False`, which doesn't make sense**
- **the model creation in the `create_model()` function for both DCGAN and CycleGAN does not match the `__init()__` function of the corresponding classes. I have modified the function call to make them fit.**