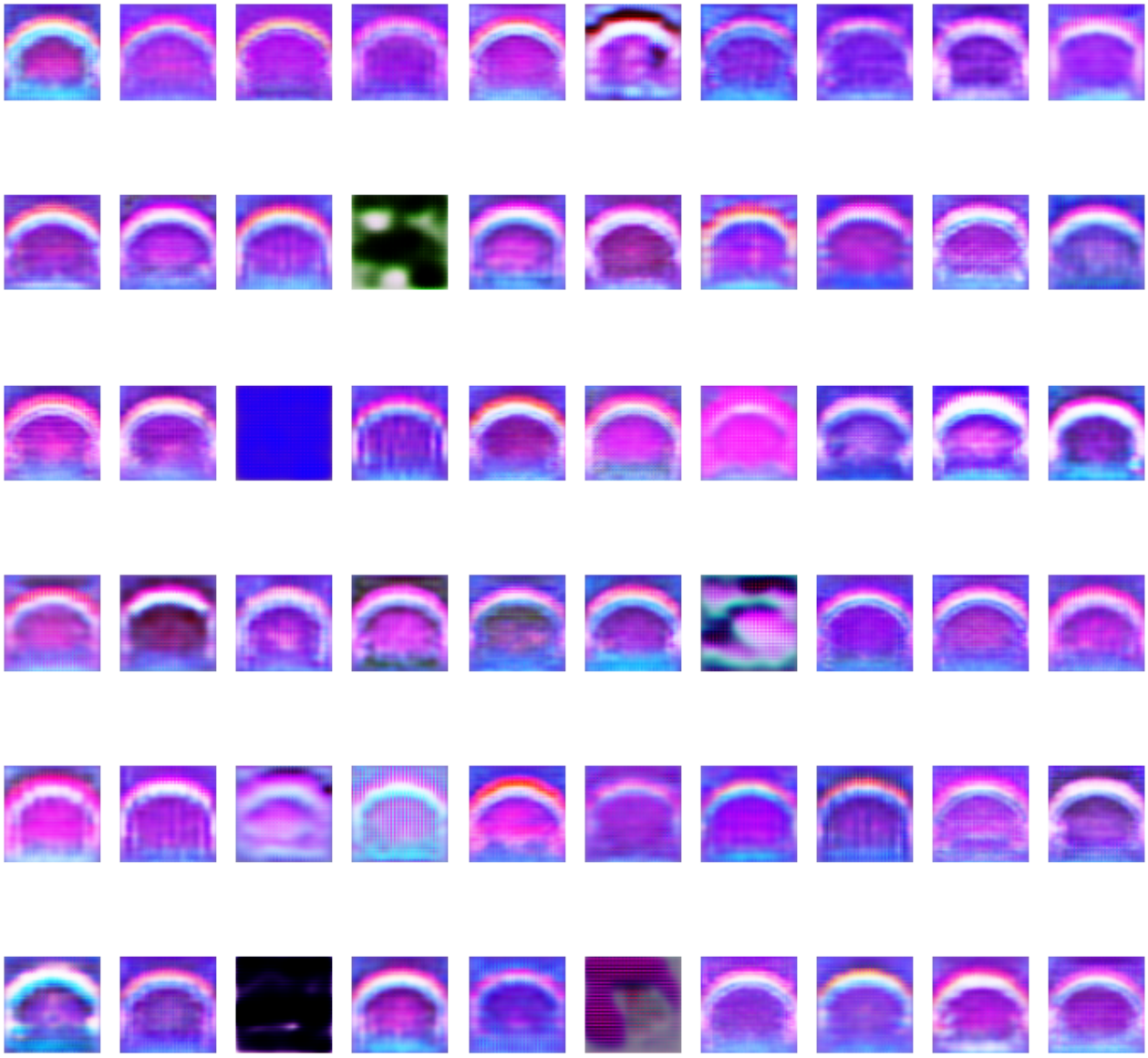
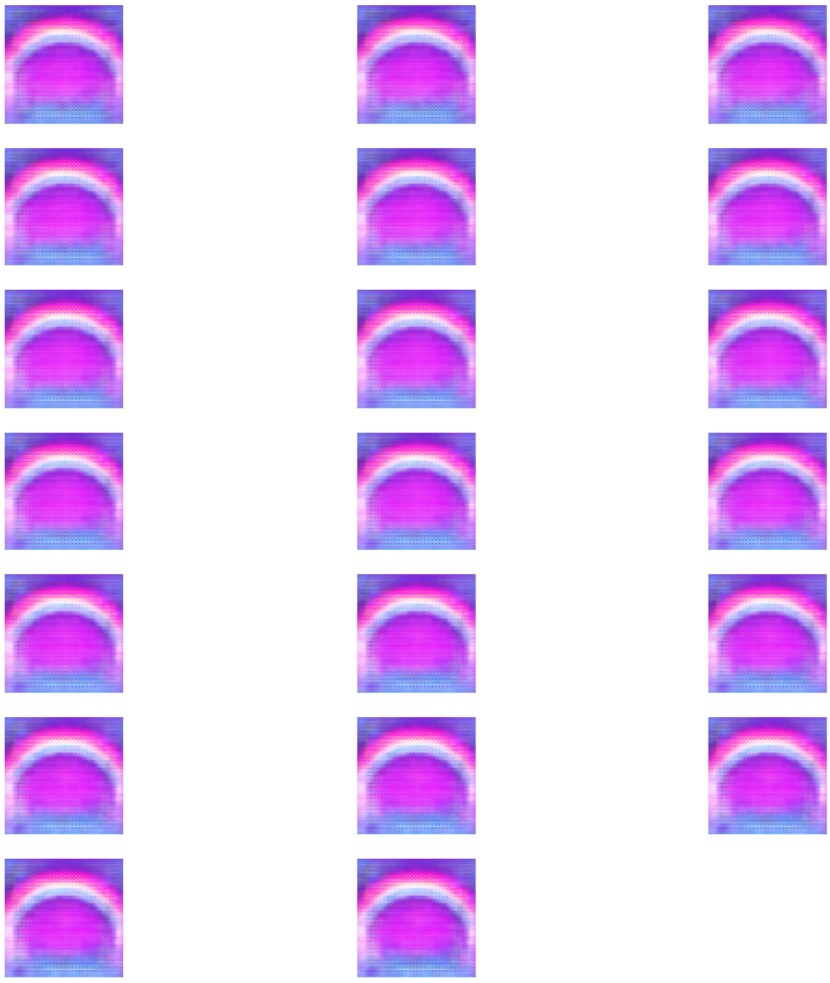
Assignment 3: Training a DCGAN

Question 3: Training loss was the lowest in the 5th epoch at 0.0472 and highest in the 40th epoch at 0.7968. Training loss also fluctuated throughout the 60 epochs of training. The generated images were highly consistent throughout training where a rainbow could be seen in almost all images. Some images, such as the one generated at the end of the 5th epoch are highly precise and similar to the training data, but some images, such as the one generated at the end of 14th, 23rd, and 53rd epoch, do not resemble the training data set at all. The quality of the generated image fluctuates throughout the 60 epochs of training just like the training loss. However, none of the images managed to capture the presence of bubbles which were a constant part of the training data set. Below are the images generated after each epoch:



Question 4: Yes, the images generated have similar qualities and are nearly identical to each other. All the interpolated images feature the same, background, foreground, and a rainbow with consistent level of precision.



Question 5: Designers in the fashion industry regularly draw inspiration from movies, natures, and many other elements we are exposed to on a daily basis. This model can be used to generate colour palettes inspired by everyday things whereby a designer could train this model with videos/images of places/things that inspired them and the model would generate a series of images that feature colors and shapes/patters that could be incorporated into clothing. The two key advantages of using this generative method is speed with which the “inspired” images can be generated and the number of options that can be generated since the designer can choose to generate as many images as they want. However, a generative method would not allow the designer to customize the generated image much and it is likely some generated images would hold no semblance to the “inspired” images as seen in my experiment.