Name:	
Roll No:	
Class/Sem:	BE/VII
Experiment No.:	5
Title:	Design the architecture and implement the autoencoder model for Image Compression.
Date of Performance:	
Date of Submission:	
Marks:	
Sign of Faculty:	

Aim: Design the architecture and implement the autoencoder model for Image Compression.

Theory:

AutoEncoder-

An autoencoder is an unsupervised learning technique for neural networks that learns efficient data representations (encoding) by training the network to ignore signal "noise."

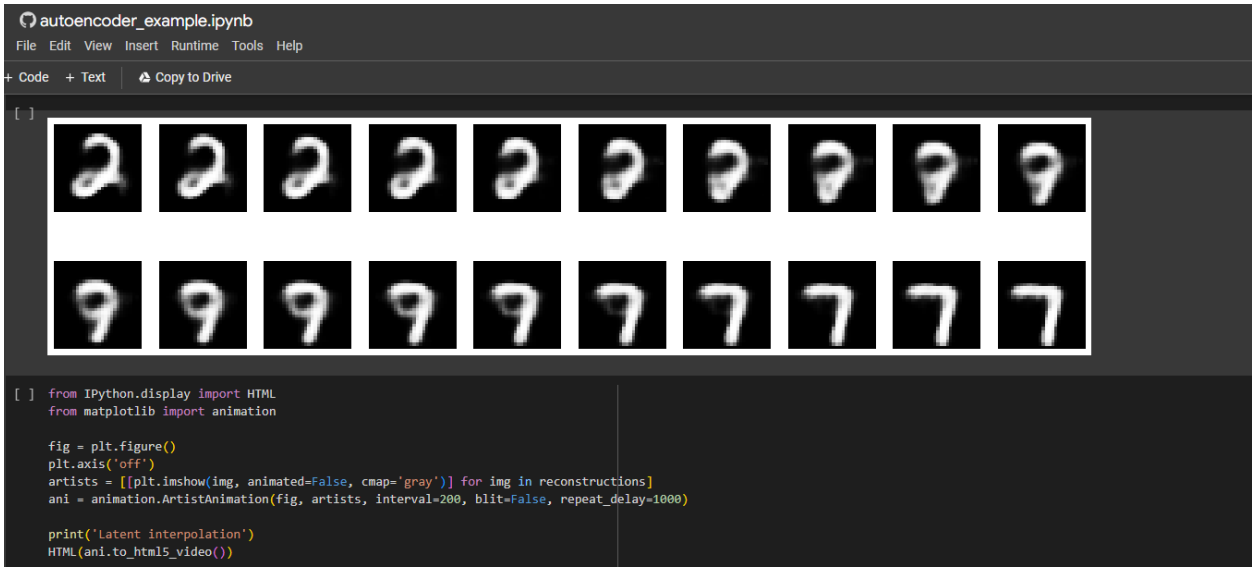
Autoencoders can be used for image denoising, image compression, and, in some cases, even generation of image data.

Autoencoders are a type of neural network that can be used for image compression and reconstruction. The process involves compressing an image into a smaller representation and then reconstructing it back to its original form. Image reconstruction is the process of creating an image from compressed data.

The compressed data can be thought of as a compressed version of the original image. To reconstruct the image, the compressed data is fed through a decoder network, which expands the data back to its original size. The reconstructed image will not be identical to the original, but it will be a close approximation.

Autoencoders use a loss function to determine how well the reconstructed image matches the original. The loss function calculates the difference between the reconstructed image and the original image. The goal of the autoencoder is to minimize the loss function so that the reconstructed image is as close to the original as possible.

Output-



Conclusion:

1. Explain autoencoder for image compression .
2. List types of Autoencoder.