DEEP LEARNING ASSIGNMENT – 2

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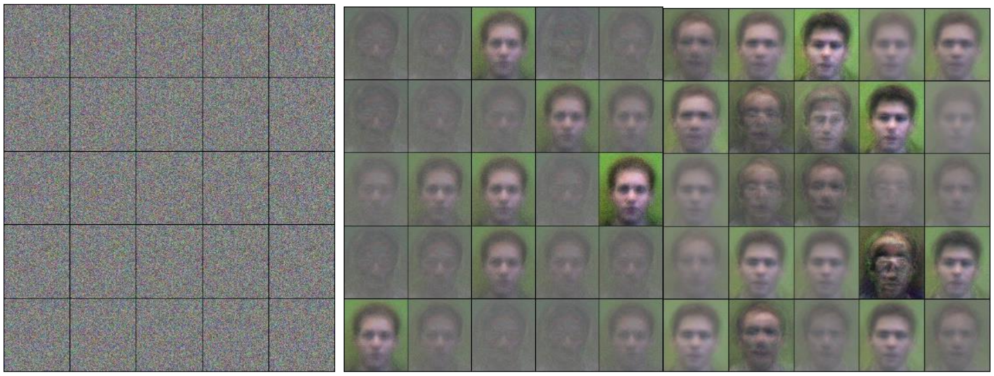
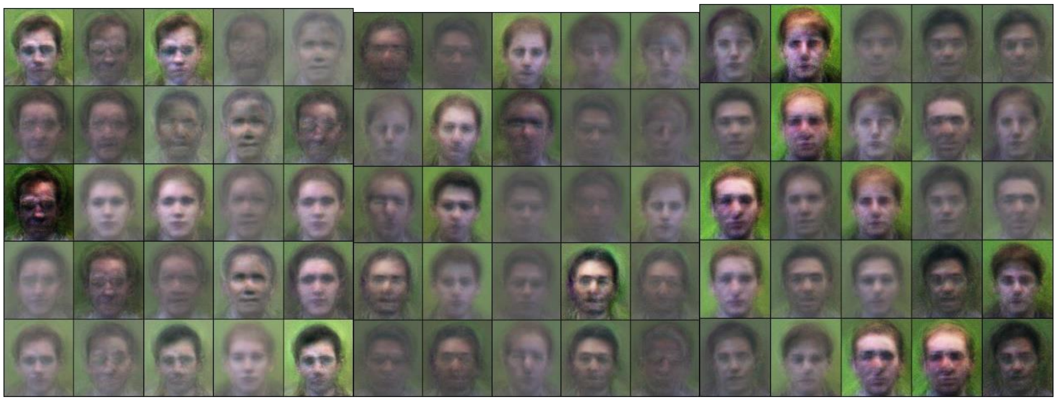
(1) Implement the basic GAN model for Generating the images in the given dataset. The input noise may be approximated by any suitable distribution.

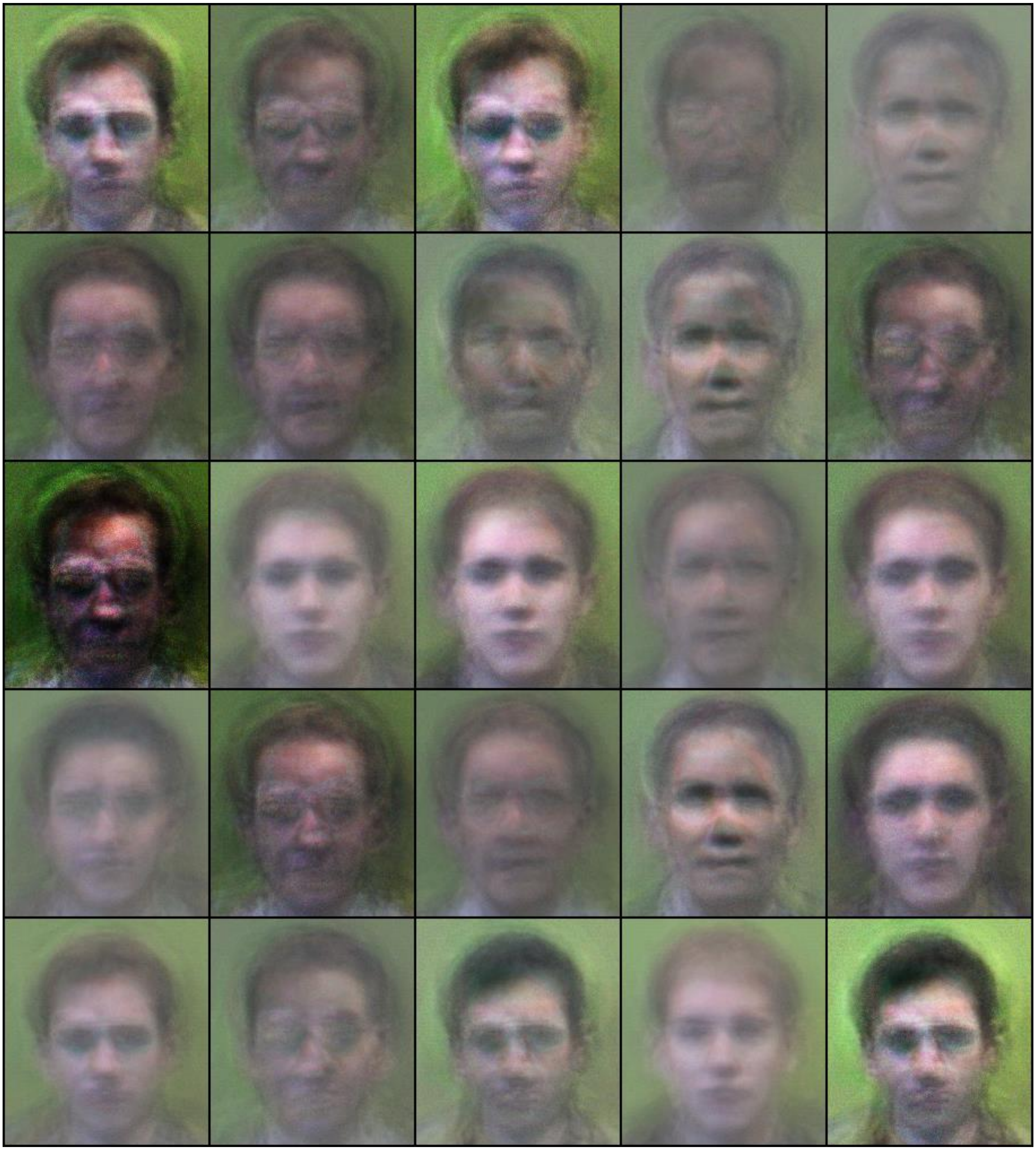
Deliverables:

Implemented the basic GAN model on the given dataset and stored the generated images from the generator which were tested by Discriminator.

Final Output Images:







We can generate better images by increasing the number of epochs. The above images were generated by setting epoch value 10.

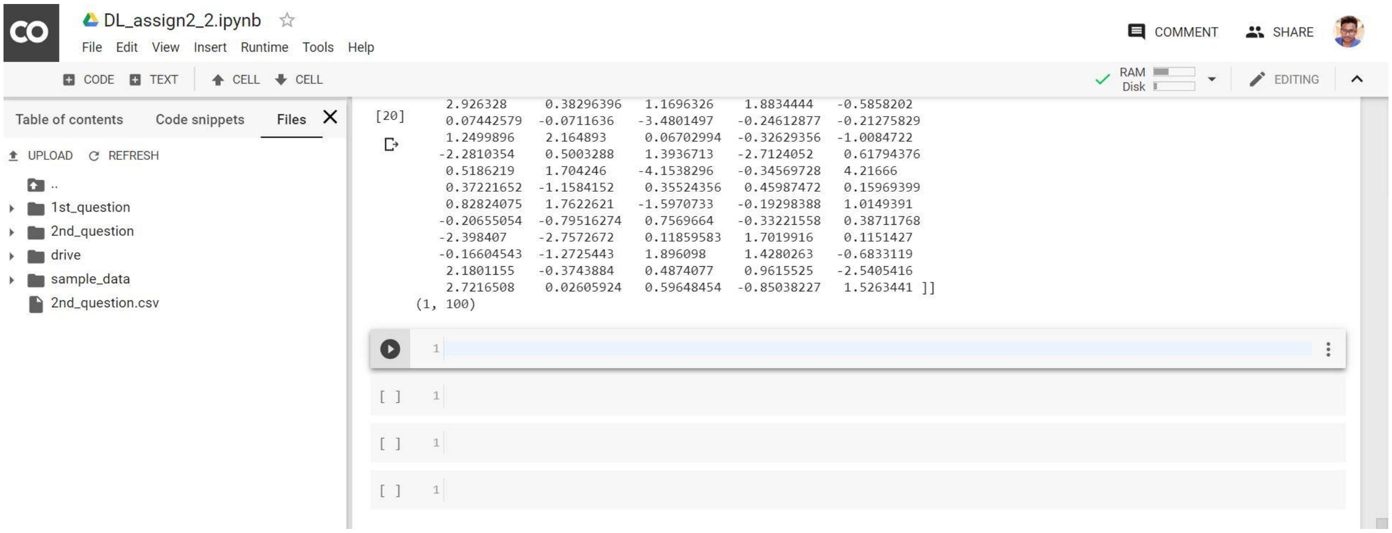
(2) Find a good latent representation of length 100 using autoencoder for the given dataset of images. Write the latent vector in a csv file with corresponding class label.

Deliverables:

Implemented autoencoder to find a good latent representation of length 100 for the given dataset

Output :

These are some of the generated images.



```
  2.926328    0.38296396  1.1696326   1.8834444  -0.5858202
  0.07442579 -0.0711636  -3.4801497  -0.24612877 -0.21275829
  1.2499896   2.164893    0.06702994 -0.32629356 -1.0084722
 -2.2810354   0.5003288   1.3936713  -2.7124052   0.61794376
  0.5186219   1.704246   -4.1538296  -0.34569728  4.21666
  0.37221652 -1.1584152   0.35524356  0.45987472  0.15969399
  0.82824075  1.7622621  -1.5970733  -0.19298388  1.0149391
 -0.20655054 -0.79516274  0.7569664  -0.33221558  0.38711768
 -2.398407   -2.7572672   0.11859583  1.7019916   0.1151427
 -0.16604543 -1.2725443   1.896098    1.4280263  -0.6833119
  2.1801155  -0.3743884   0.4874077   0.9615525  -2.5405416
  2.7216508   0.02605924  0.59648454 -0.85038227  1.5263441 ]]
(1, 100)
```

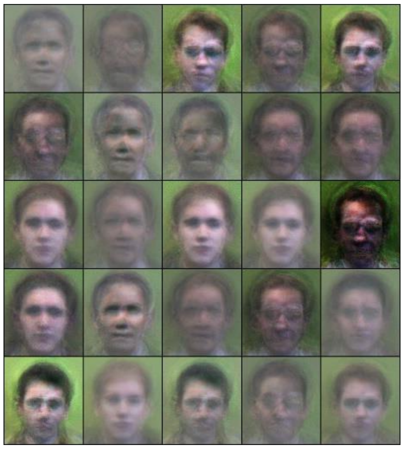
Here a CSV(2nd _question) file of latent vector with its corresponding class label is generated.

(3) Implement another GAN to reproduce images of the same dataset, where the previous autoencoder is used as generator.

Deliverables:

Implemented GANS using autoencoder as generator.

Output Images:



We can get better images by increasing the number of epochs.

Thank You