

## Installation Instructions:

GAN15 is a portable Generative Adversarial Network. There is no need to install it. User should have all the code files in the GAN15\_Codes in a single folder and then to run the model user has two options,

- 1) Jupyter Notebook (Main.ipynb)
- 2) Graphical User Interface (GUI.py)

The Functionality of both Jupyter Notebook (Main.ipynb) and Graphical User Interface (GUI.py) is same. Both have 2 Functions,

## Train Model:

**train(real\_dataset, epochs, learning\_rate, batch\_size, save\_model, model\_name, path)**

- Train function has 7 arguments:
- 1st argument you have to give your real unpreprocessed dataset.
- 2nd, 3rd and 4th arguments are epochs, learning rate, batch size respectively.
- 5th Argument is an optional argument, if set True then the function will save the model with the same name as you have specified in the 6th argument.
- 6th argument is also an optional argument which is actually the name of the model you want to save.
- 7th argument is the path where you want to save your model. The default folder name would be new\_model

When your 5th argument is set True, the function will save 3 files:

- 1) The trained model. extension will be (.h5)
- 2) The min max scaling file named as (scaling.pkl)
- 3) The features file, which contains the column names, and some unique features. named as (features.pkl)

## Generate Samples:

**generate\_sample(trained\_model, features\_file, number\_of\_samples, saving\_file\_name, path)**

- generator function has 4 arguments.
- As first argument you must give the name of trained model file.
- 2nd is the number of samples you want to generate.
- 3rd is the name of file with which you want to save the generated samples.
- 4th is the path where your model is saved. The output will also be saved at that path.

## Required Python Packages:

- Numpy
- Pandas
- Tensorflow
- Keras
- Pickle
- Table\_evaluator
- Matplotlib
- Sklearn
- Seaborn
- Prettytable
- PySimplegui