Instructions to run the project.

Please make sure you have these modules installed in your system.

torch

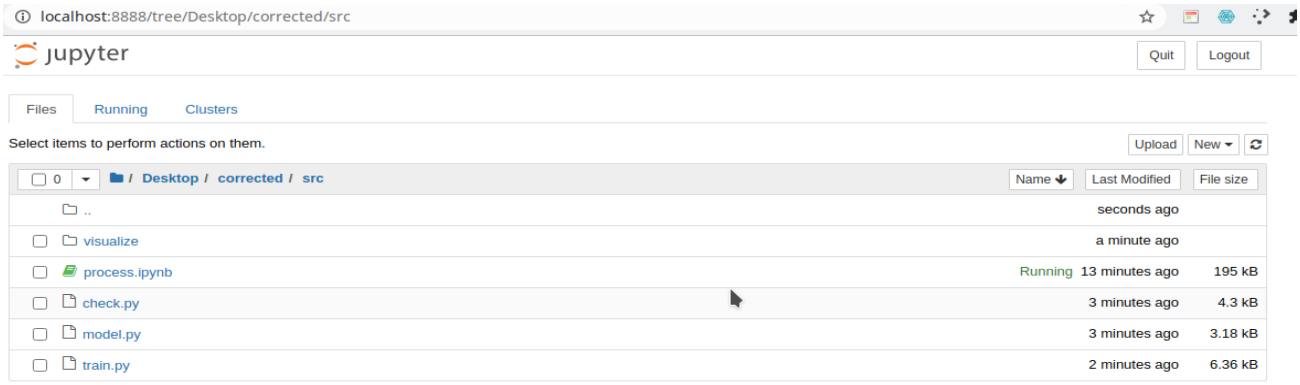
Numpy

pandas

csv

PIL import Image

The project comes with 4 folders the test, src, trained and dataset,
the src folder contains the code, and also has another folder inside it with a grad_cam.py file which is used to generate the final prediction image, the trained folder contains the files for the pytorch model, its saved as .t7 files, the dataset folder contains the data.
In order to avoid errors when running the whole project, do not upload the project to the Jupyter notebook but open the file as demonstrated in the picture below



The model will need more time to train

Dataset - the model has been trained with dataset from kaggle competitions and pytorch nn model with 3 convolutional layers and SGD optimization

Dataset can be found here, it was from one of the kaggle's competionss

The cov2d can be described as $\text{out}(N_i, C\text{out}_j) = \text{bias}(C\text{out}_j) + \sum_{k=0}^{C\text{in}-1} \text{weight}(C\text{out}_j, k) \star \text{input}(N_i, k)$ source here

SGD is the basic algorithm responsible for having neural networks converge, i.e. we shift towards the optimum of the cost function.