CT SCAN IMAGE CLASSIFICATION

AIM: To create a Deep learning model of CT scan image classification which will classify images of Covid and Non-Covid disease.

APPROACH:

- Download the dataset from Kaggle or the drive link mentioned on the link. https://drive.google.com/drive/folders/1WOeodRmv1Mw5Cswuip3nUIi6ViQWKpo_?usp=sharing
- Import all needed libraries to perform the task.
- Then load the dataset and view few images from it of both the classes i.e Covid and Non-Covid.
- Resize images.
- Plot Histogram so to see count of each class and verify whether dataset is a balanced dataset.
- Did *Data Augmentation.*
- Then trained my model on ResNet 50.
- But while I was using early stopping I got to know that model was getting over fitted. So I used ReduceLROnPlateau which will reduce the learning rate if the metric is not improving or getting overfitted and the accuracy was good.
- Used the confusion matrix and also plot the line plot for the accuracy and loss of the model.
- Then predicted an image of Covid whether that image is of Ct scan is infected by Covid-19 or not.

CONCLUSION AND FUTURE SCOPE:

As per the dataset the accuracy was above 90% and loss is getting decreased in every epoch. So more the training would give good accuracy. Also did used the model for the prediction which was good enough to give accurate decisions. Also the model was not over fitted or under fitted. The future scope would be to use real world data (primary data) also compare the model with the various other model Xception and VGG19. Also to choose between them which model is good or which model is giving the good accuracy.