Problem Identification :

It's a multi-class classification problem because the label of the train set has 25 unique and discrete values(25 classes). Given an image dataset we used CNN based model architectures to get prediction y_pred on test set X_test and suppose to submit y_pred on kaggle in order to get a kaggle score.

Given Data Set : 1. SML_Train contains images for training
2. SML_Test contains images for testing

Pre-processing :

1. Normalization
2. Images converted from RGB to Grayscale
3. While not considering irrelevant images which are also present in the SML_Train directory.

Models which we applied :

1. Model: VGG11

2. Model : VGG16

3. Model : AlexNet

4. Model : MobileNet

5. Model : CNN

Explanation :

Firstly, we read images from SML_Train and SML_Test directories to form X_train and X_test Then normalize them and images converted into grayscale images with the range of pixel intensity between 0 to 1. After that we applied different models one by one like VGG11, VGG16, AlexNet, MobileNet and CNN. all these models were based on CNN architecture.