1. Which Neural Network and why

I used CNN network.

A convolutional neural network, or CNN, is a deep learning neural network sketched for processing structured arrays of data such as portrayals.CNN are very satisfactory at picking up on design in the input image, such as lines, gradients, circles, or even eyes and faces.This characteristic that makes convolutional neural network so robust for computer vision.CNN can run directly on a underdone image and do not need any preprocessing.A convolutional neural network is a feed forward neural network, seldom with up to 20.

1. Which optimizer and why

Adam is the optimizer used.Adaptive Moment Estimation (Adam) is the next optimizer, and probably also the optimizer that performs the best on average. Taking a big step forward from the SGD algorithm to explain Adam does require some explanation of some clever techniques from other algorithms adopted in Adam, as well as the unique approaches Adam bring.

c)   Which accuracy metric and why

Accuracy is the quintessential classification metric. It is pretty easy to understand. And easily suited for binary as well as a multiclass classification problem.Accuracy is the proportion of true results among the total number of cases examined.

1. Which loss function and why

Categorical crossentropy is a **loss function** that is used in multi-class classification tasks. These are tasks where an example can only belong to one out of many possible categories, and the model must decide which one. Formally, it is designed to quantify the difference between two probability distributions.

Brief information on how the cleaning/preprocessing was done (if any)

1. Pillow (PIL)
2. OpenCV
3. Scikit-Image
4. **keras load\_img function**
5. **Keras augmented images flow**
6. What functions/features of OpenCV were used

OpenCV (Open Source Computer Vision Library) is an open-source computer vision and machine learning software library. OpenCV was built to provide a common infrastructure for computer vision applications and to **accelerate the use of machine perception in commercial products**.

1. Which dataset have you used? Or if generated data using webcam

I used webcam to generate dataset.