Google Colab Document Explanation

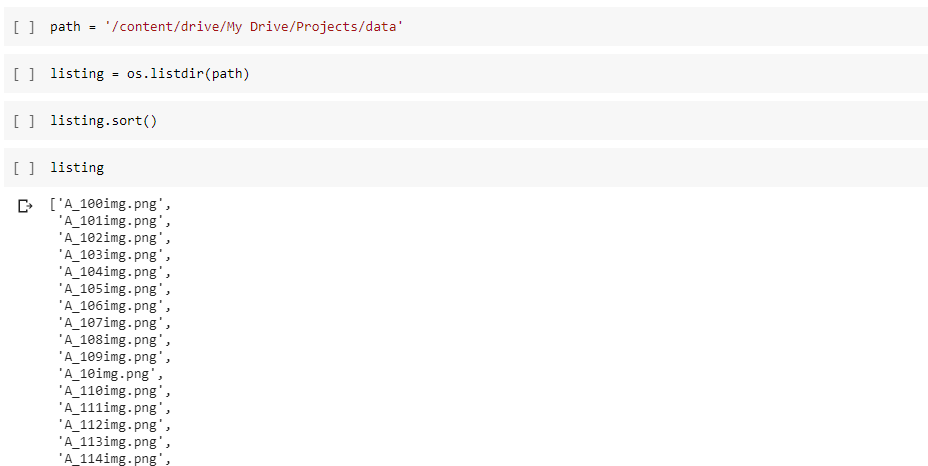
1. Changing the version of **tensorflow** to make the environment compatible.



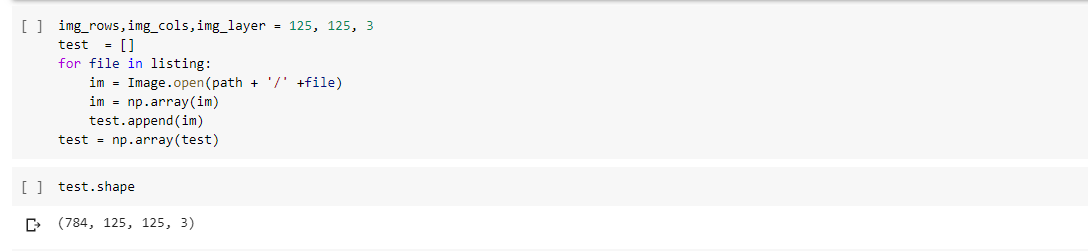
1. Mount the colab with the drive to access the data



1. Get the path of data in variable **path**. Sort the list of all images so that labeling of data can be easier. Check by printing the **listing** variable.



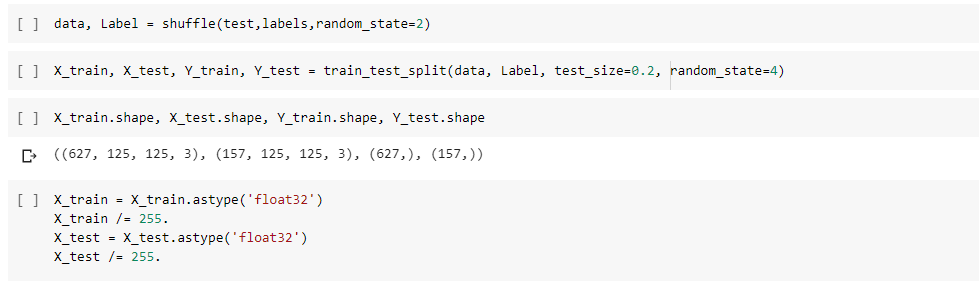
1. Convert the images as **np** array. There are total 784 images (size: 125\*125)



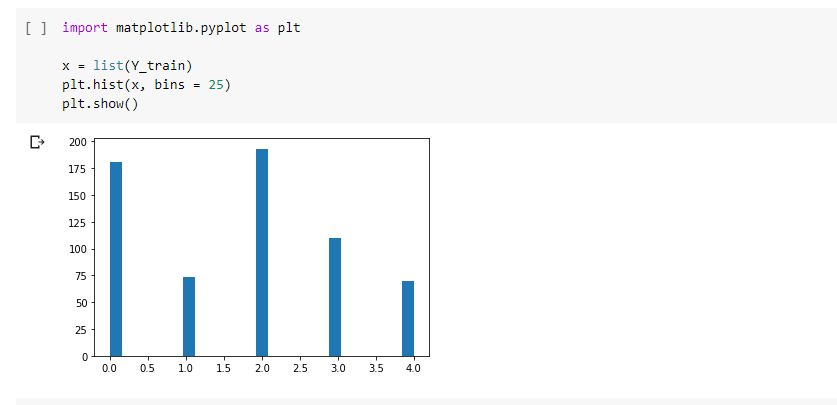
1. Create an **np** array of size 784 for the labels and assign the value from 0-4 (5 types of images)



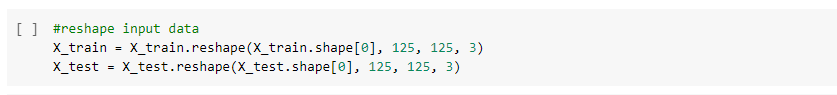
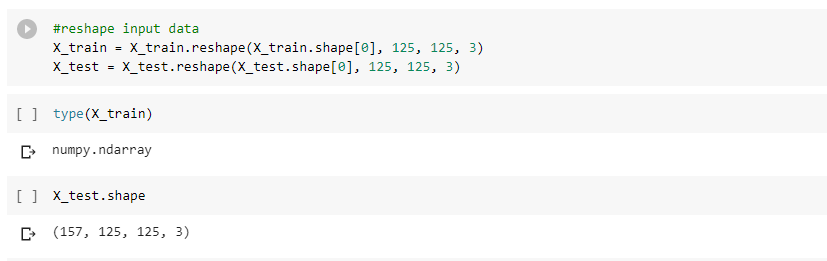
1. Shuffle the data as well as label for unbiased training of the model. Split the data in training and testing (size of 80% -20%)



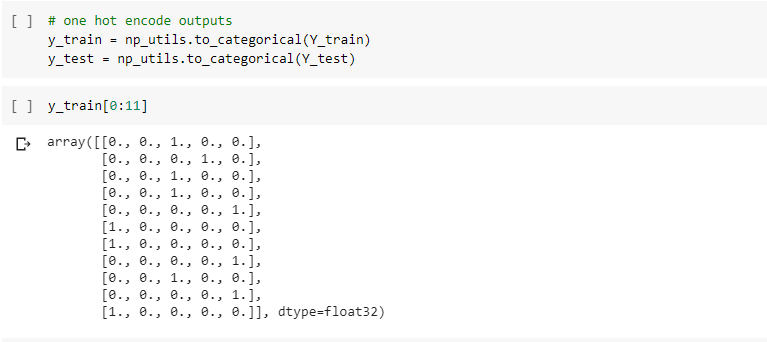
1. Checking the distribution of data in the five classes.



1. Reshaping the X variable



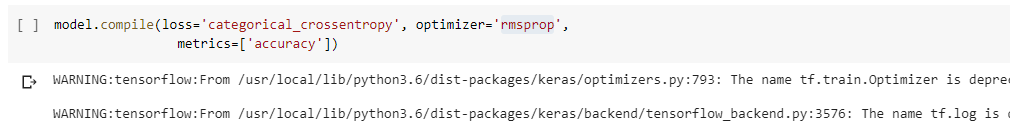
1. Convert the Y independent variable to the categorical data



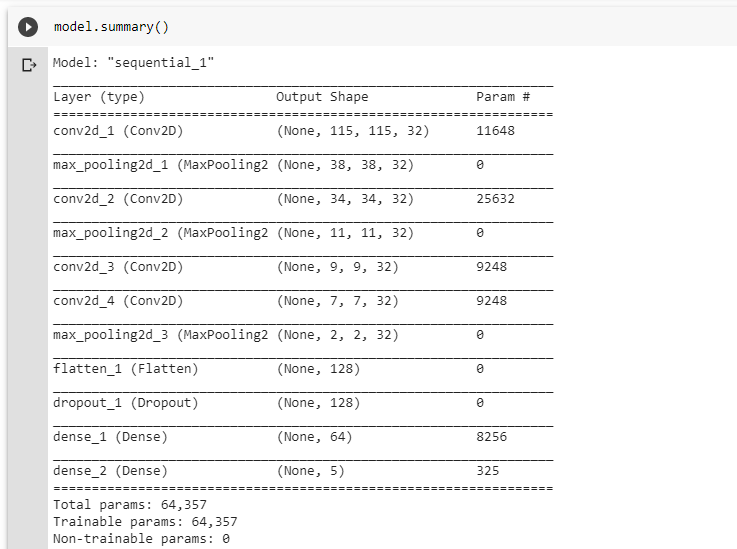
1. Model is designed with 5 convolution layer and two fully connected layer, dropout is used of 0.25 .The final layer is softmax function.

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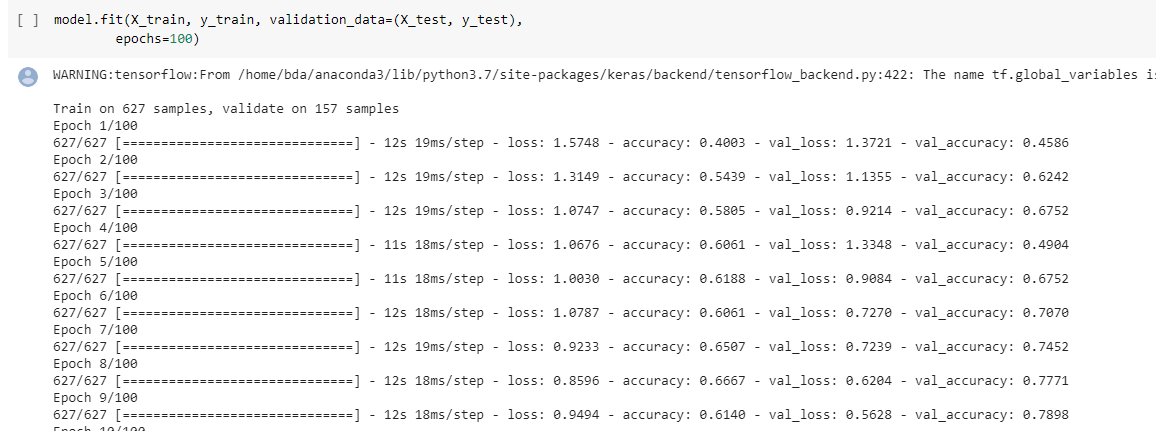
1. RsmProp Optimizer is used

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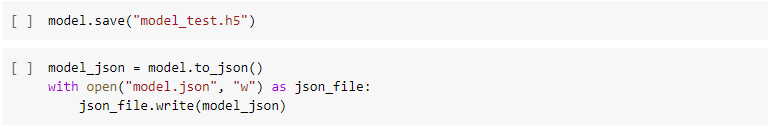
1. The model summary can be seen as



1. Train the model with 100 epochs



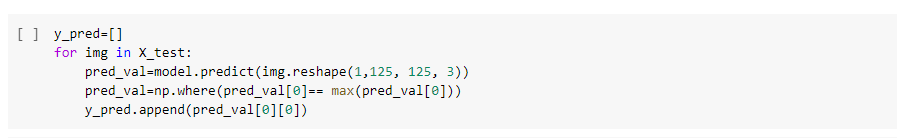
1. Save the model



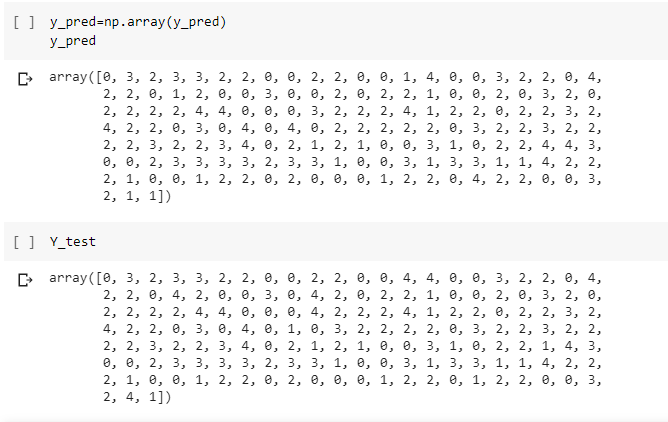
1. Load the model in **model** variable.



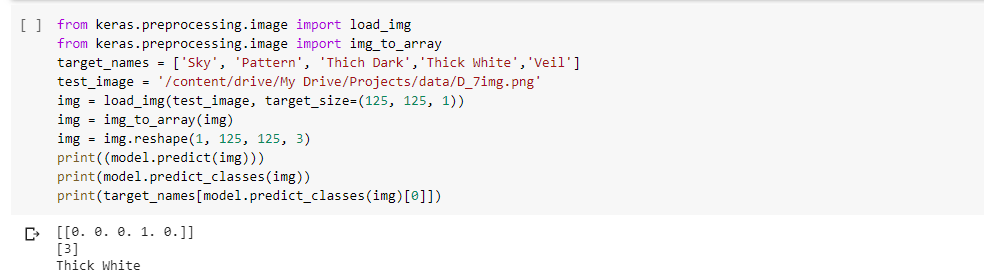
1. Calculate the predicted value of Y variable in **y\_pred**



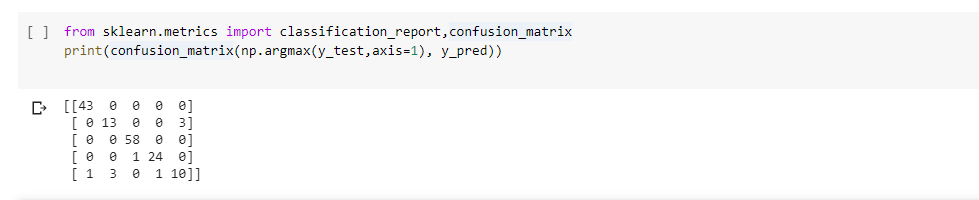
1. Similarity can be seen in actual and predicted vales of output

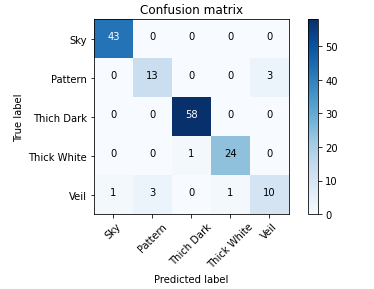


1. Predicting the new image

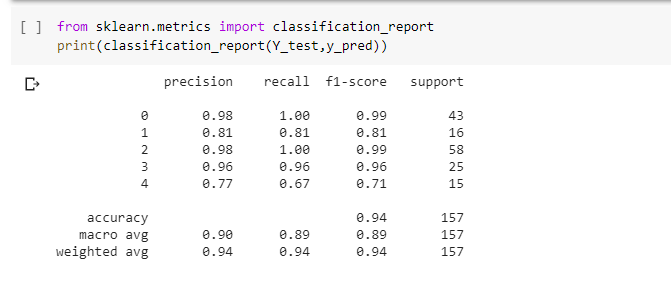


1. Calculation confusion matrix





1. Precision recall n F-measure



1. Plot the model in block diagram format

