**CAR BRAND CLASSIFIER**

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**Summary:-**

1. Loading required libraries: In this step, I imported all the necessary libraries that are required for our image classification task such as TensorFlow, Keras, Numpy, Matplotlib etc.
2. Loading the Training and Testing data folder: In this step, I will load the training and testing data from their respective folders.
3. Preprocessing: In this step, I performed various preprocessing steps such as scaling the image array in range of (0,1), data augmentation, and image resizing to prepare the data for model training.
4. Build model: In this step, I built our image classification model using a deep learning architecture such as CNN. I also choose an optimizer as ‘adam’, loss function as categorical\_crossentropy, and evaluation metric such as ‘accuracy’ for our model.
5. Train the model: In this step, I trained the model on the preprocessed training data using a suitable batch size and number of epochs. We will also monitor the model's performance on the validation set during training.
6. Test the model performance: In this step, we will evaluate the model's performance on the test data. We will use the evaluation metric chosen earlier to measure the model's accuracy, precision, recall, and other performance metrics. We can also visualize the model's predictions on sample images from the test set.
7. At last I plotted graphs of accuracy and validation accuracy to find out is there overfitting is happened or not.

**Conclusion:-**

1. Our model accuracy score found to be 0.93 and validation accuracy score found to be 0.73.
2. Our model is now ready to classify the images of different car.
3. But in this I only choose 3 types of car brand so, now it only classify three types of car images like Lamborghini, Mercedes, Audi.
4. In future I will work on more classes of cars.