Data Collection and Preprocessing Phase

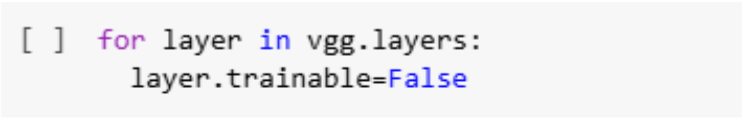
Date	11-03-2025
Team ID	740047
Project Title	AI-POWERED VEHICLE DAMAGE ASSESSMENT FOR COST ESTIMATION AND INSURANCE CLAIMS
Maximum Marks	6 Marks

Data Exploration and Preprocessing Template:

It focuses on cleaning and analyzing image and meta data for AI-powered vehicle damage assessment. It includes steps for normalizing images and extracting features like damage severity and part location. This preprocessing ensures high quality inputs for accurate cost estimation and insurance claim validation.

Section	Description
Image Augmentation	**Image data augmentation** `# Setting parameters for data augmentation` `train_datagen = ImageDataGenerator(` `rescale=1./255,` `shear_range=0.1,` `zoom_range=0.1,` `horizontal_flip=True` `)` `val_datagen = ImageDataGenerator(rescale=1./255)`

Body Damage	**For Body Damage** [ ] ```# Flow from directory training_set = train_datagen.flow_from_directory(trainPath, target_size=(224, 224), batch_size=10, class_mode='categorical') test_set = val_datagen.flow_from_directory(testPath, target_size=(224, 224), batch_size=10, class_mode='categorical')``` ```Found 1150 images belonging to 1 classes. Found 1150 images belonging to 1 classes.```
Level Damage	**For the level of damage** ```# Flow from directory training_set = train_datagen.flow_from_directory(trainPath, target_size=(224, 224), batch_size=10, class_mode='categorical') test_set = val_datagen.flow_from_directory(testPath, target_size=(224, 224), batch_size=10, class_mode='categorical')``` ```Found 1150 images belonging to 1 classes. Found 1150 images belonging to 1 classes.```

Data Preprocessing Code Screenshots	
Image pre-processing	
	 
	
Feature Engineering	Attached the codes in final submission.
Save Processed Data	-