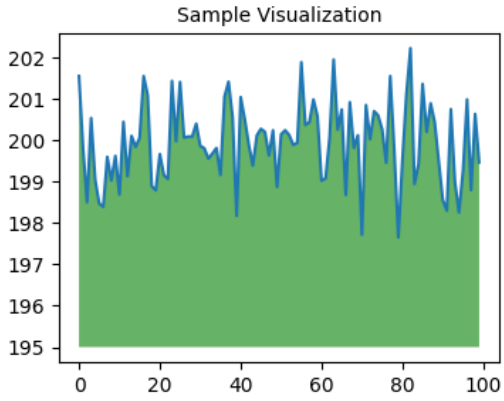
Data Collection and Preprocessing Phase

Date	15 july 2024
Team ID	740771
Project Title	Car Performance Prediction
Maximum Marks	6 Marks

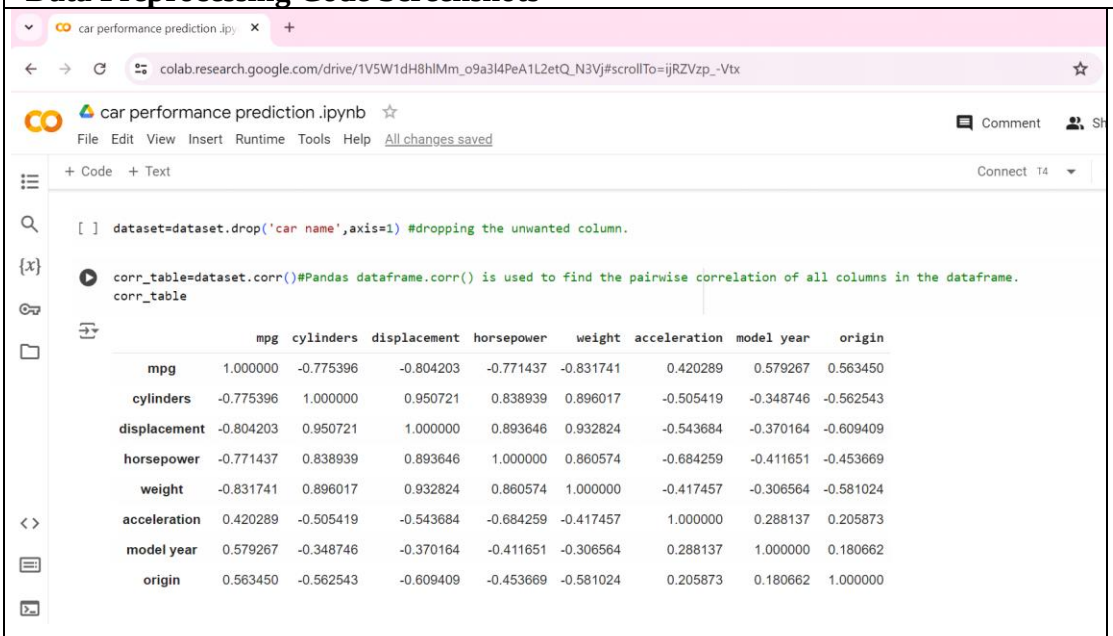
Data Exploration and Preprocessing Report

Analyzed dataset for car performance prediction, handling missing values, outliers, and ensuring data normalization. Performed feature selection and engineering to enhance model accuracy. Final dataset prepared for model training.

Section	Description
	Basic statistics, dimensions, and structure of the data. s
Univariate Analysis	Exploration of individual variables (mean, median, mode, etc.).
	Relationships between two variables (correlation, scatter plots).

	
Multivariate Analysis	Patterns and relationships involving multiple variables. Data Overview
Outliers and Anomalies	Identification and treatment of outliers.

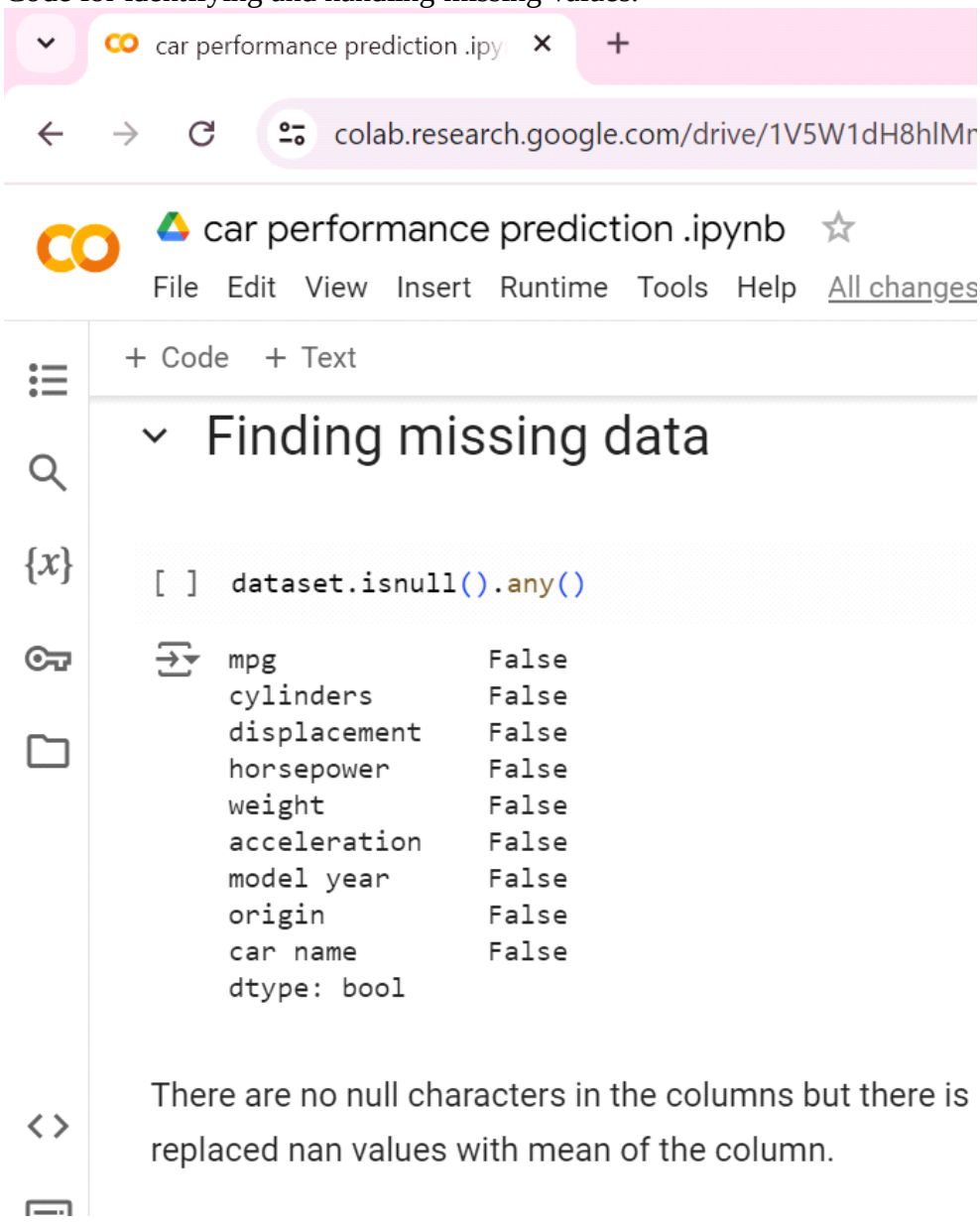
Data Preprocessing Code Screenshots



	mpg	cylinders	displacement	horsepower	weight	acceleration	model year	origin
mpg	1.000000	-0.775396	-0.804203	-0.771437	-0.831741	0.420289	0.579267	0.563450
cylinders	-0.775396	1.000000	0.950721	0.838939	0.896017	-0.505419	-0.348746	-0.562543
displacement	-0.804203	0.950721	1.000000	0.893646	0.932824	-0.543684	-0.370164	-0.609409
horsepower	-0.771437	0.838939	0.893646	1.000000	0.860574	-0.684259	-0.411651	-0.453669
weight	-0.831741	0.896017	0.932824	0.860574	1.000000	-0.417457	-0.306564	-0.581024
acceleration	0.420289	-0.505419	-0.543684	-0.684259	-0.417457	1.000000	0.288137	0.205873
model year	0.579267	-0.348746	-0.370164	-0.411651	-0.306564	0.288137	1.000000	0.180662
origin	0.563450	-0.562543	-0.609409	-0.453669	-0.581024	0.205873	0.180662	1.000000

Loading Data

Handling Missing Data	Code for identifying and handling missing values.



Data Transformation	Code for transforming variables (scaling, normalization).
Feature Engineering	Code for creating new features or modifying existing ones.