

**AI/ML Programming**

**MCA-475**

**Assignment – 01**

***BY***

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**SUBMITTED TO**

**Dr. Manjula Shannhog**

**SCHOOL OF SCIENCES**

**2025-26**

**Importing Libraries**

import pandas as pd

import numpy as np

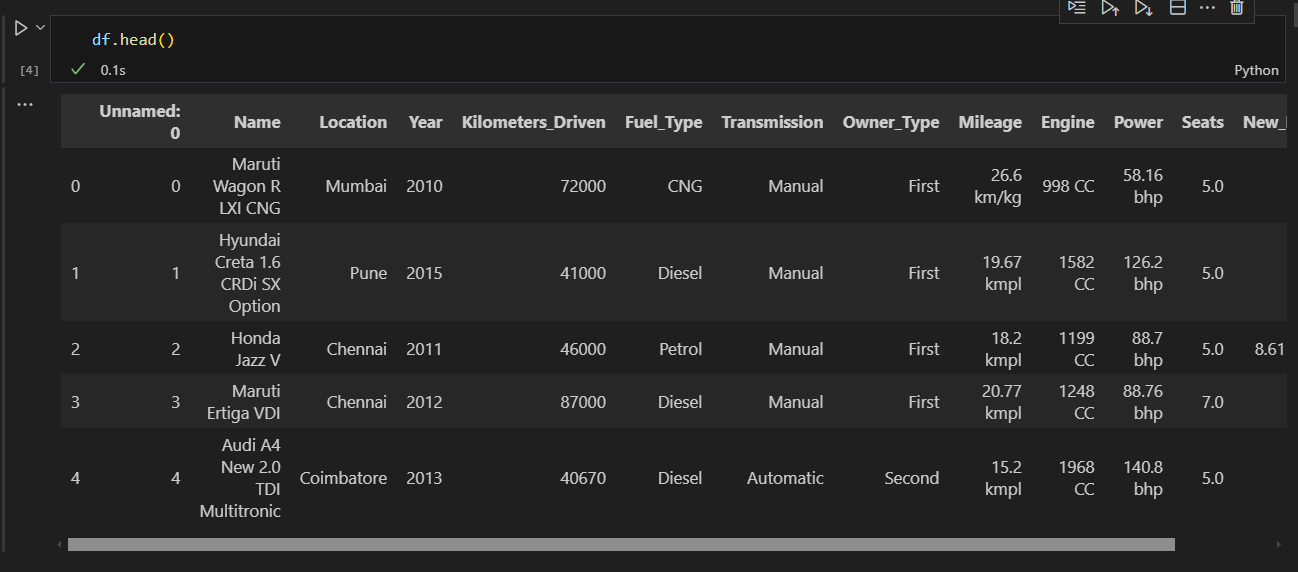
import matplotlib.pyplot as plt

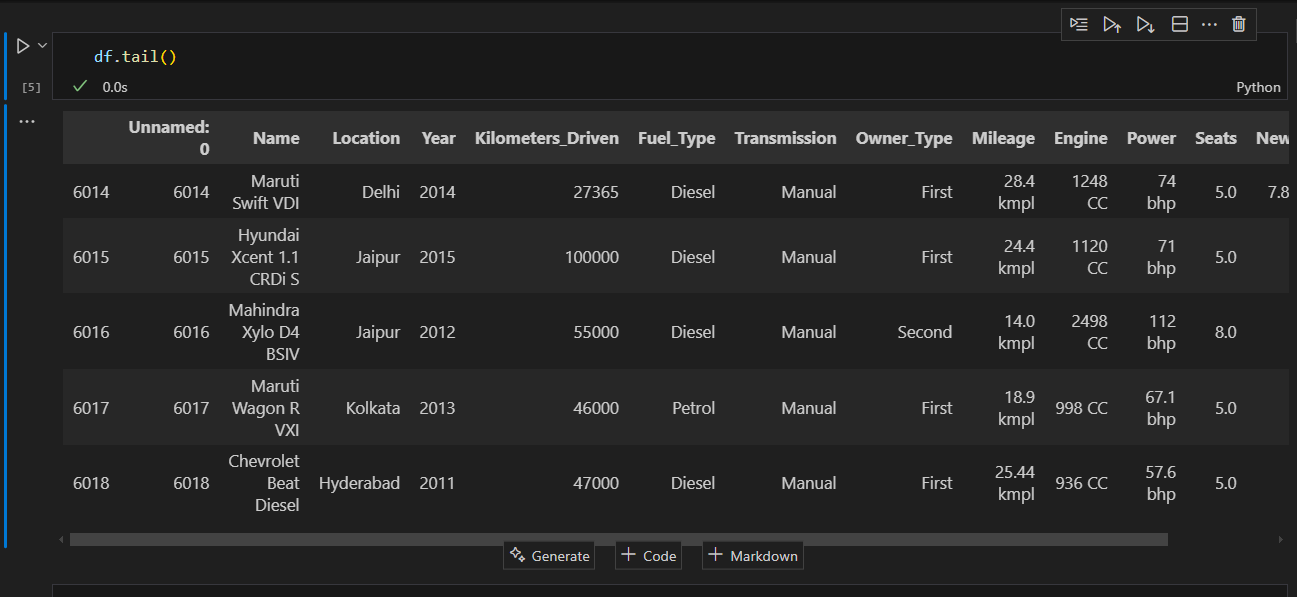
import seaborn as sns

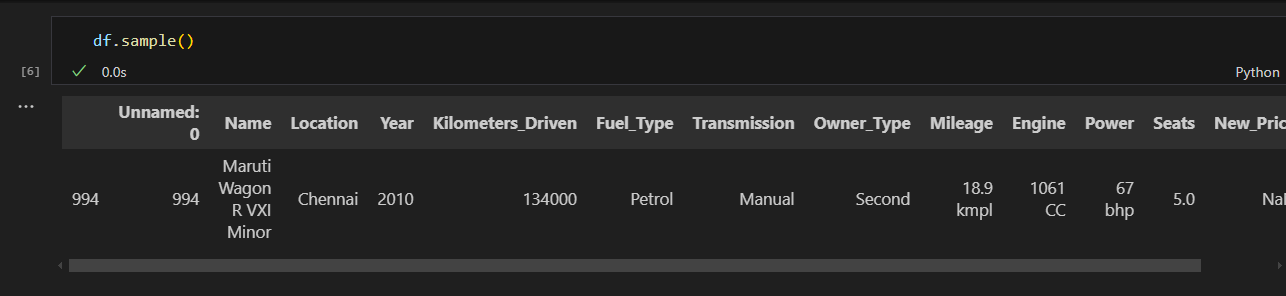
from datetime import date

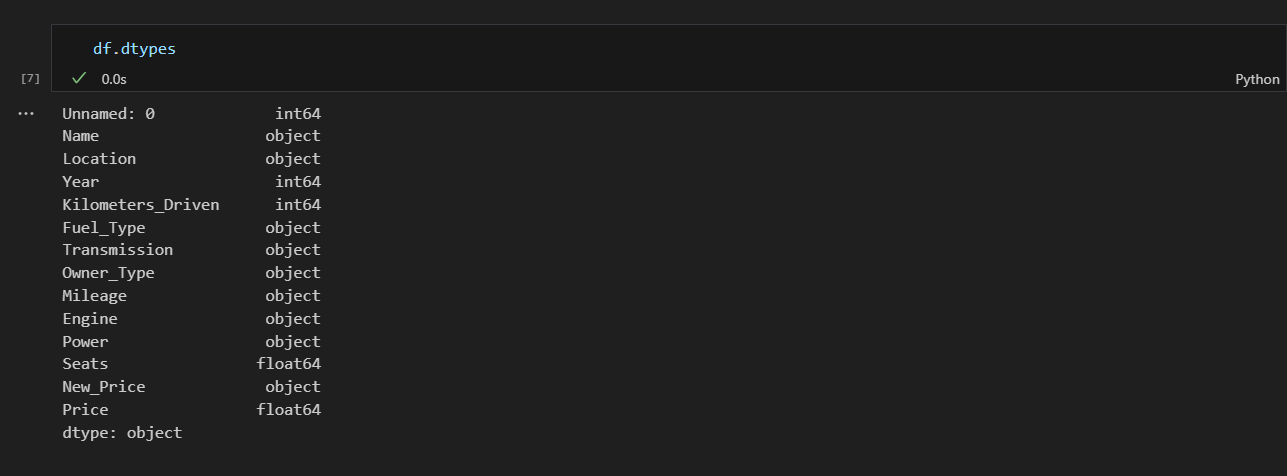
df = pd.read\_csv('./Dataset/used\_car\_dataset.csv')

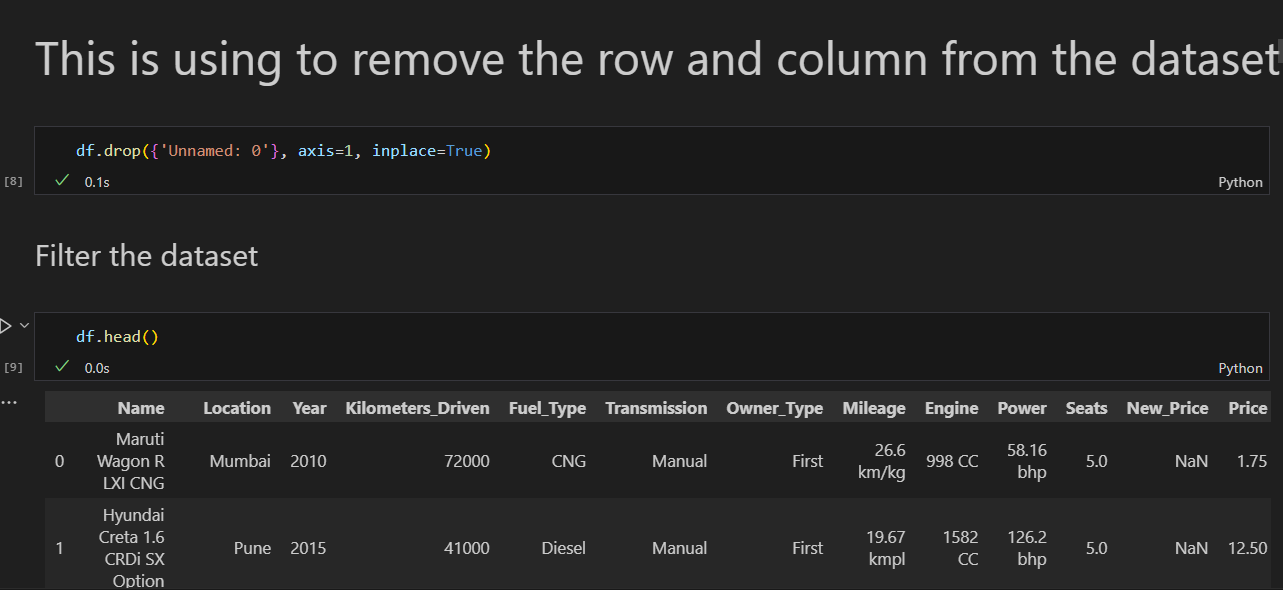
df.head()

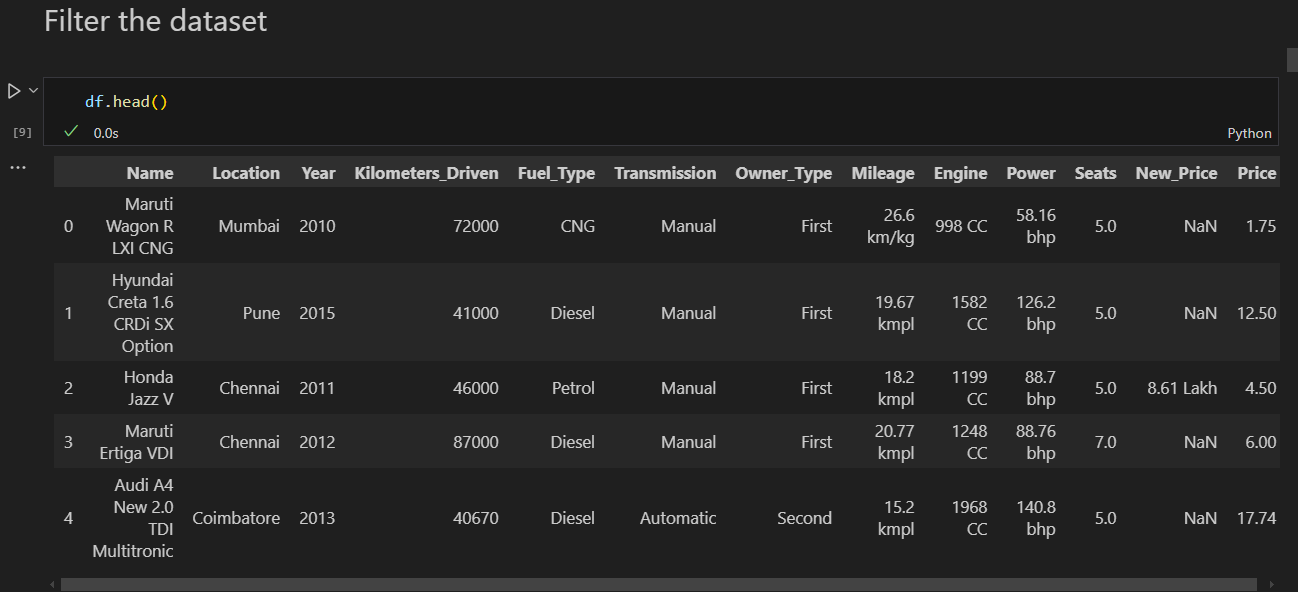
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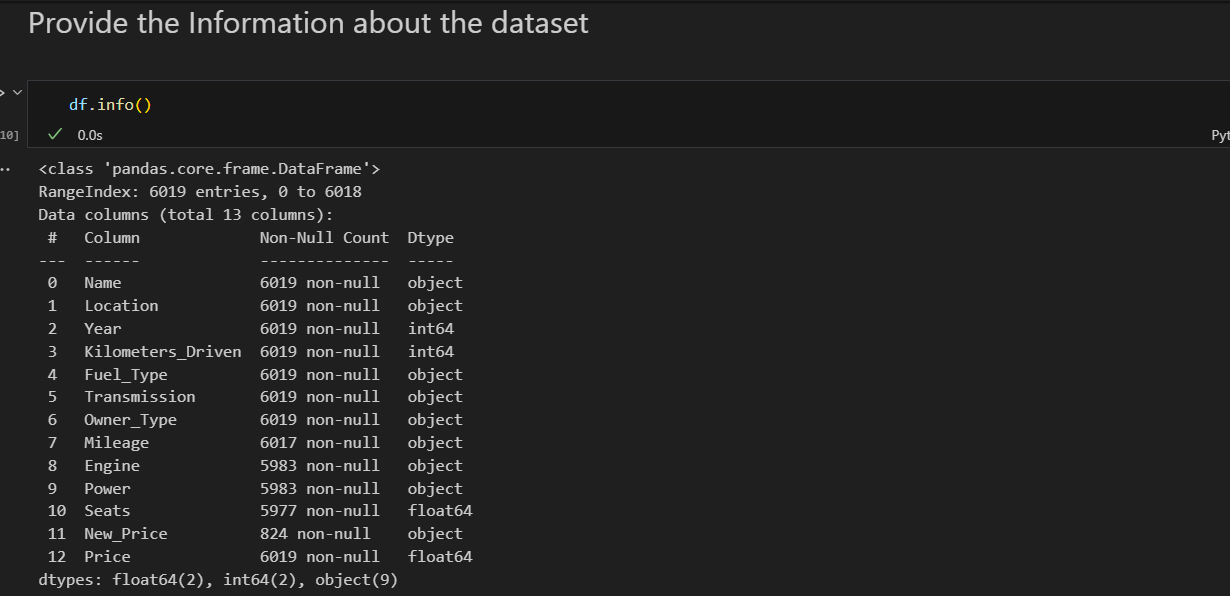
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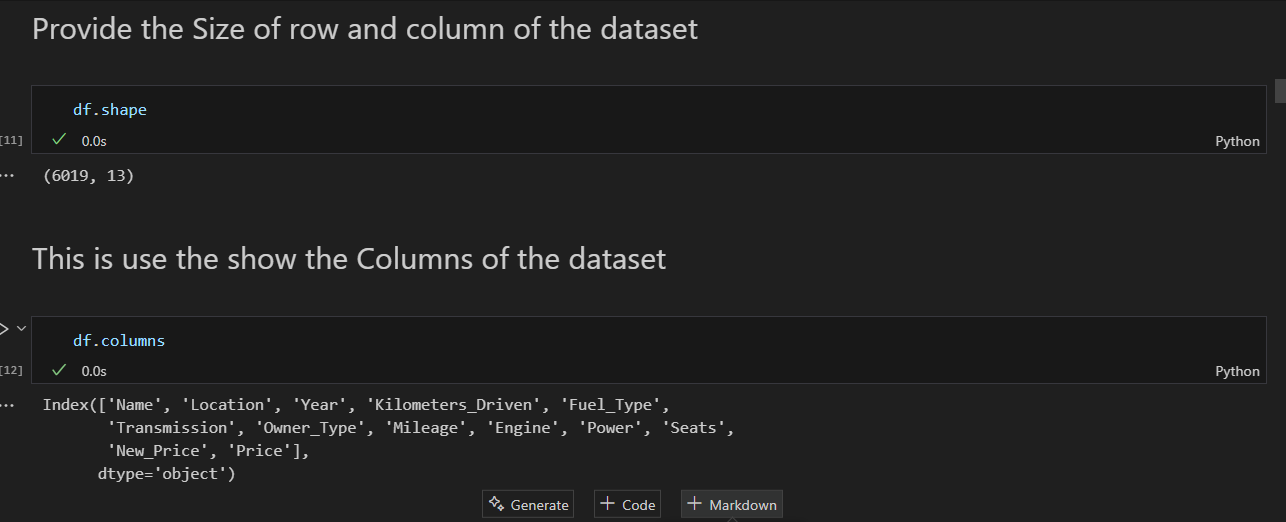
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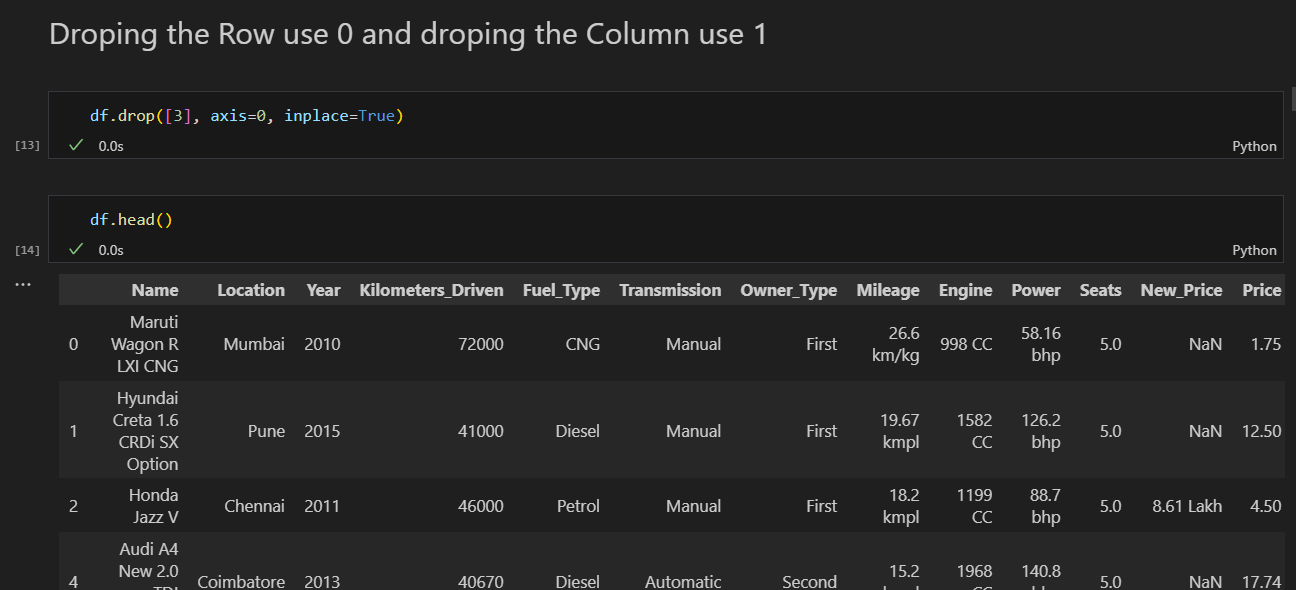
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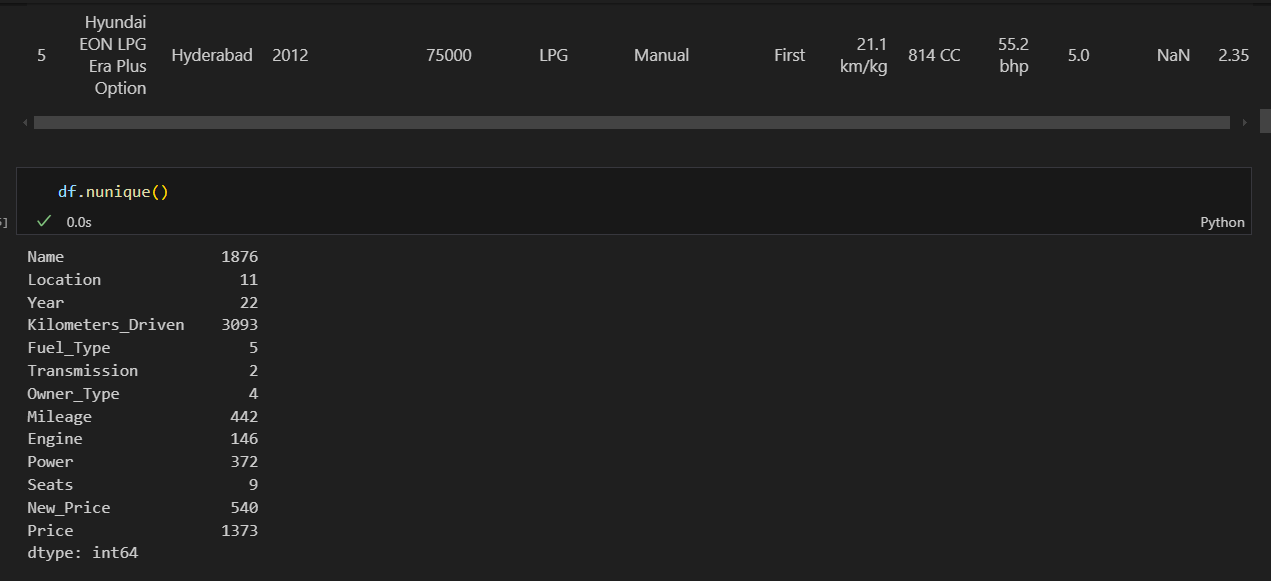
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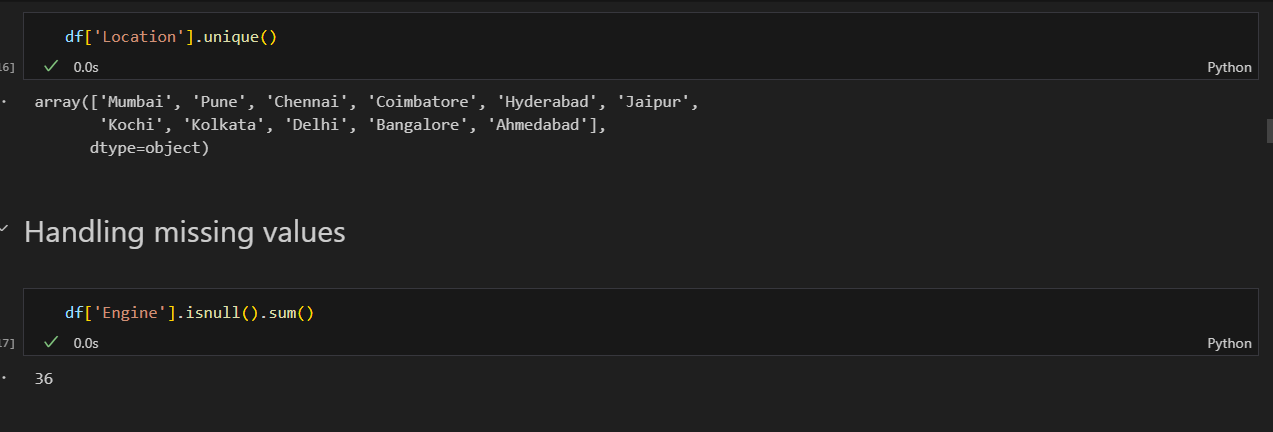
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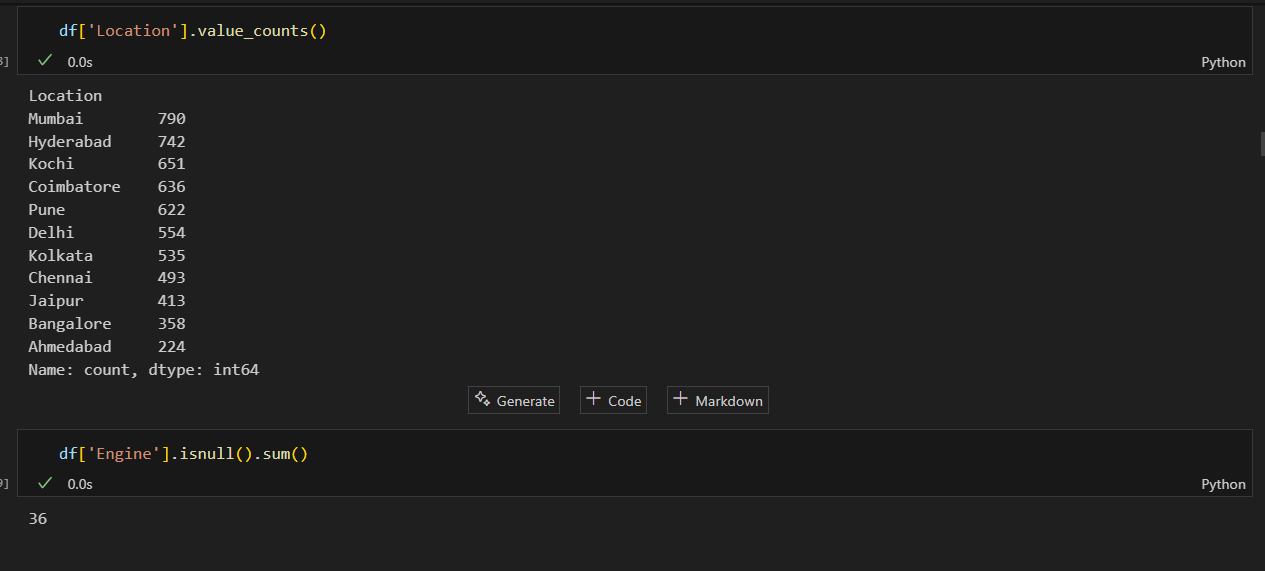
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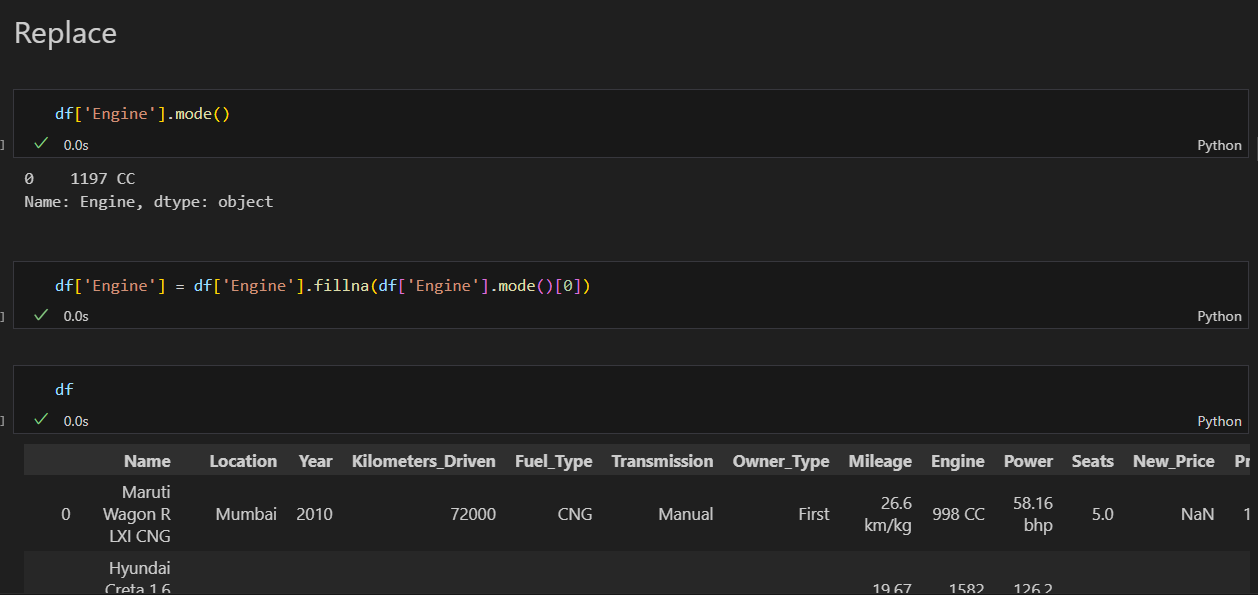
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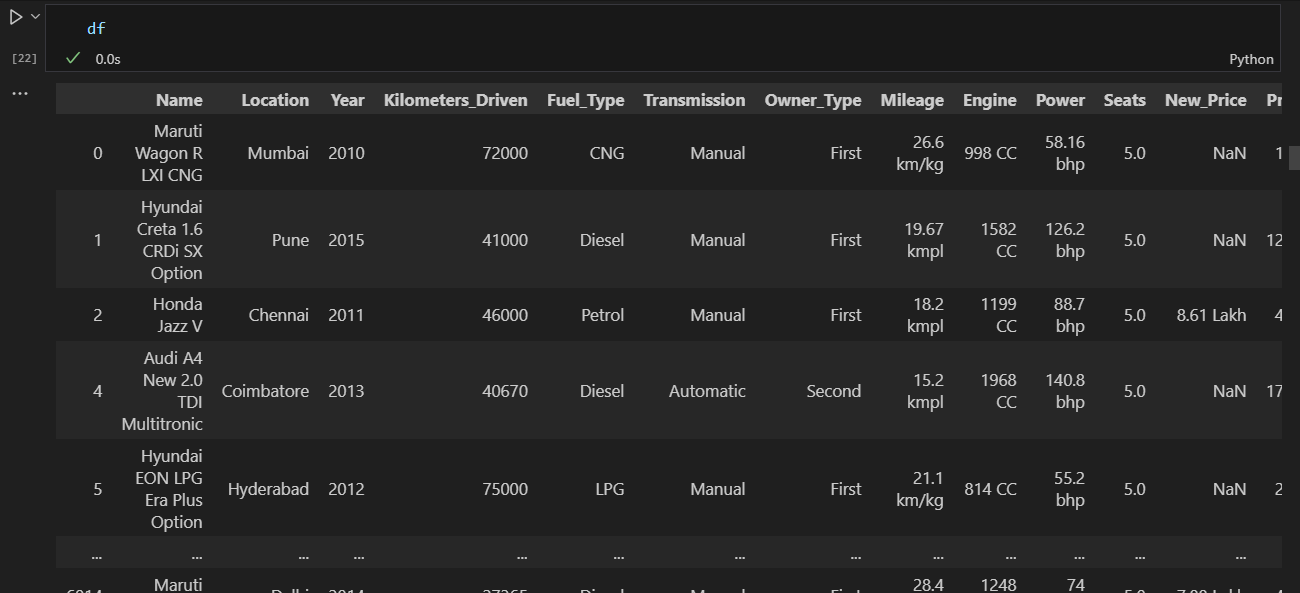
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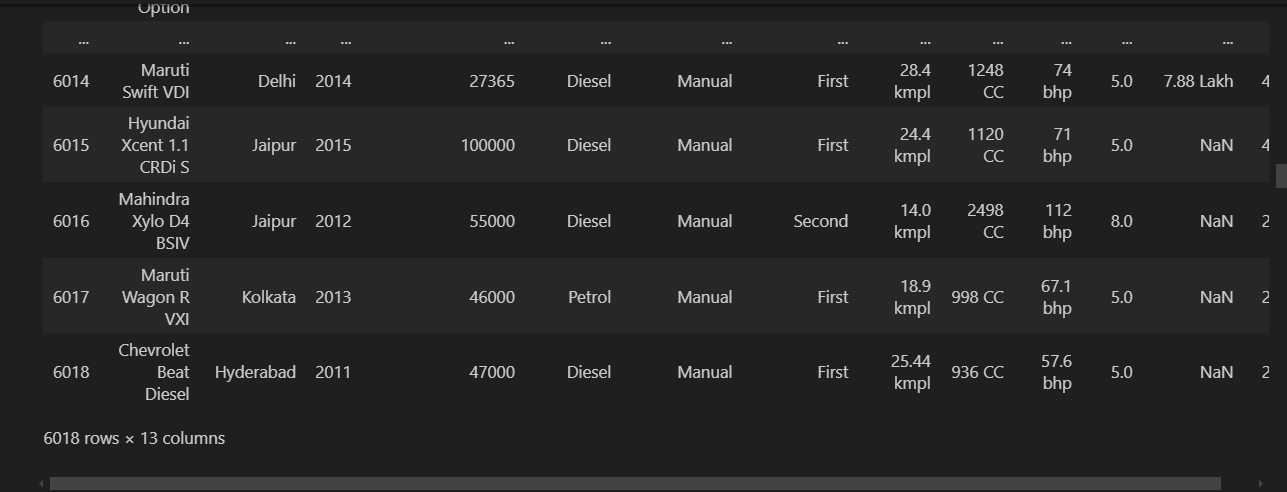
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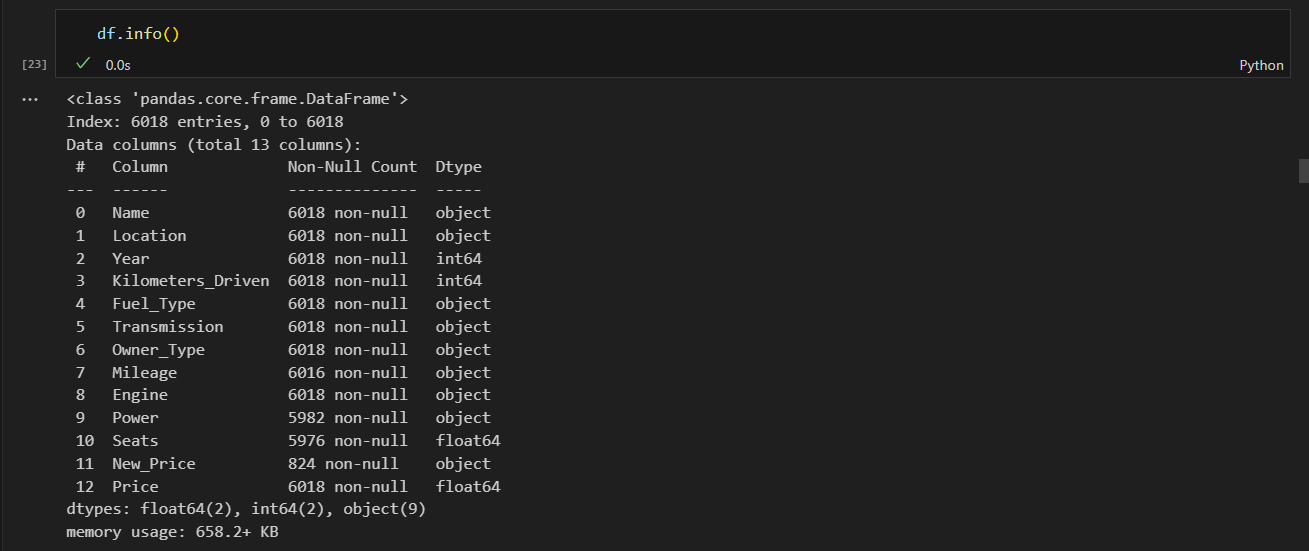
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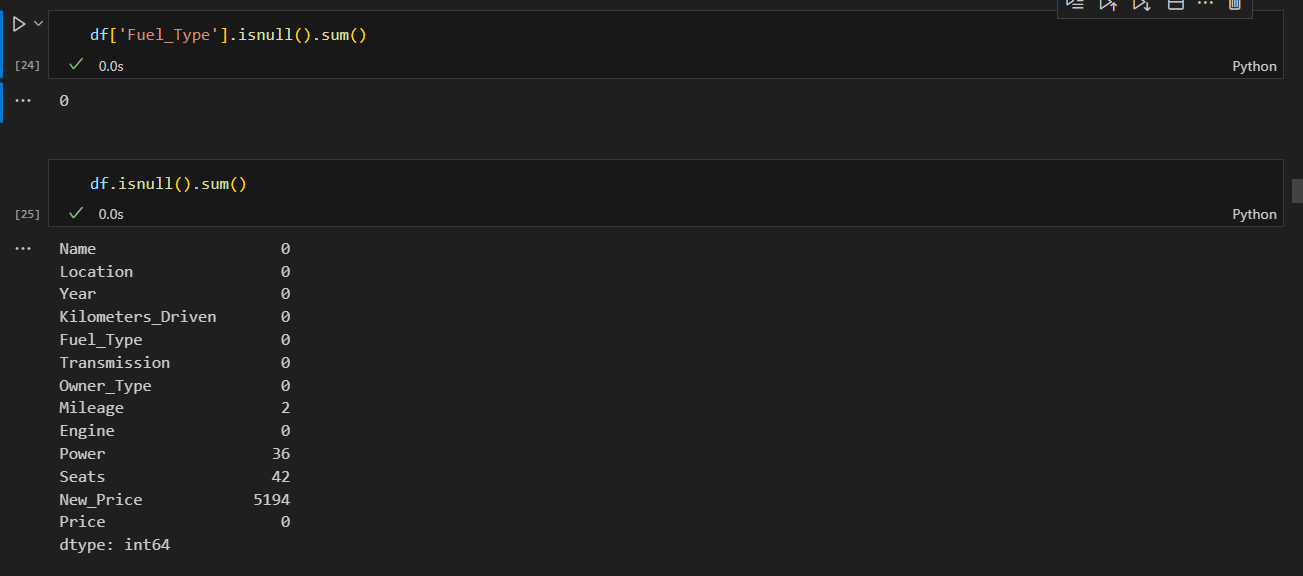
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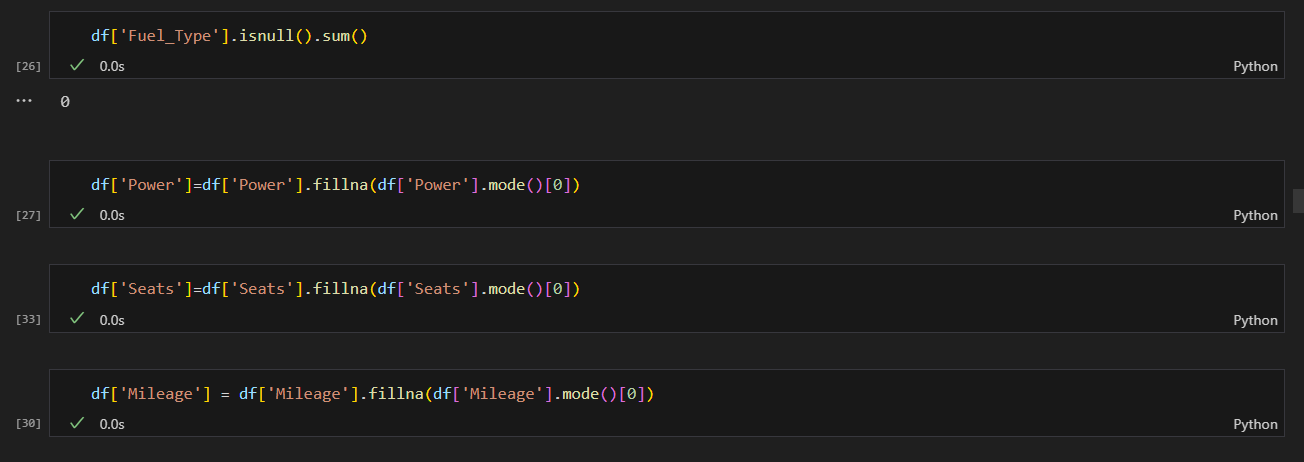
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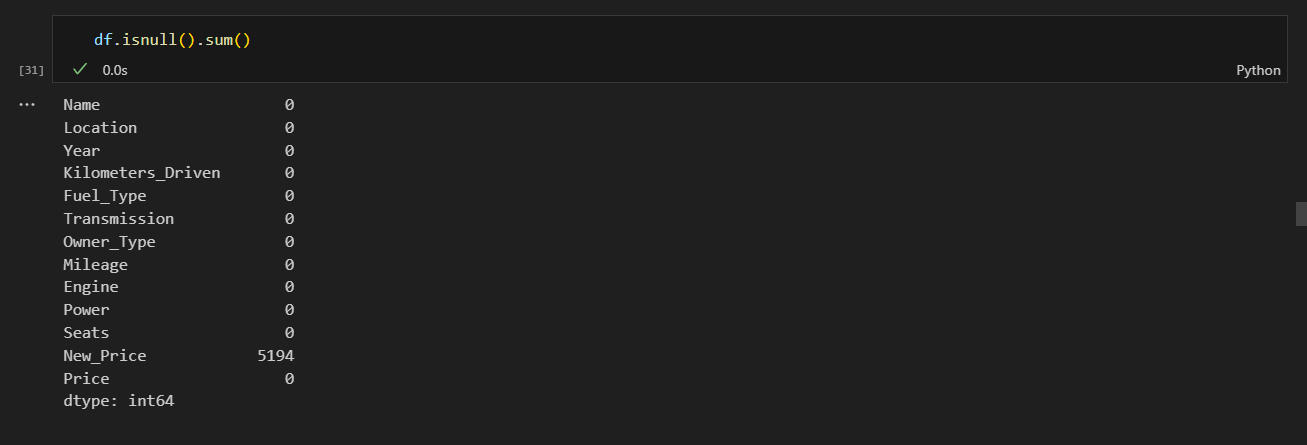
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plt.figure(figsize=(16, 8))

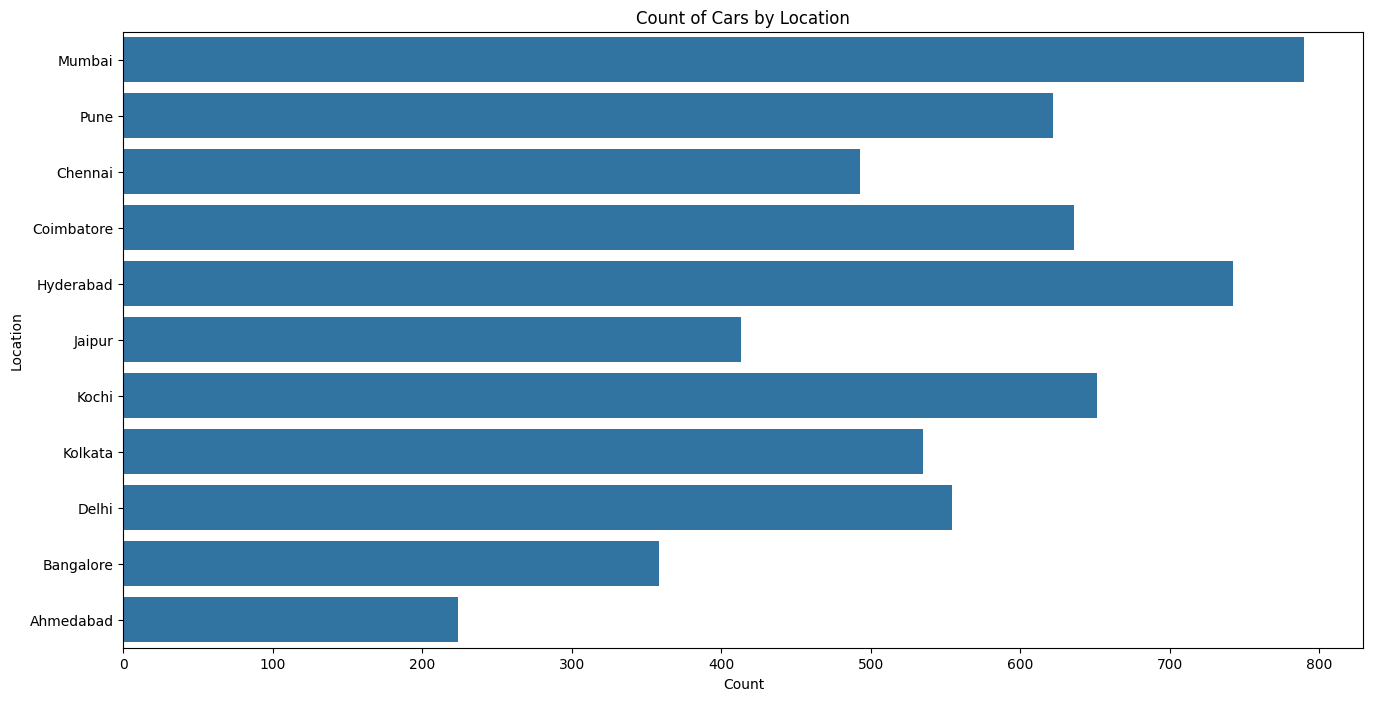
sns.countplot(data=df, y='Location')

plt.title('Count of Cars by Location')

plt.xlabel('Count')

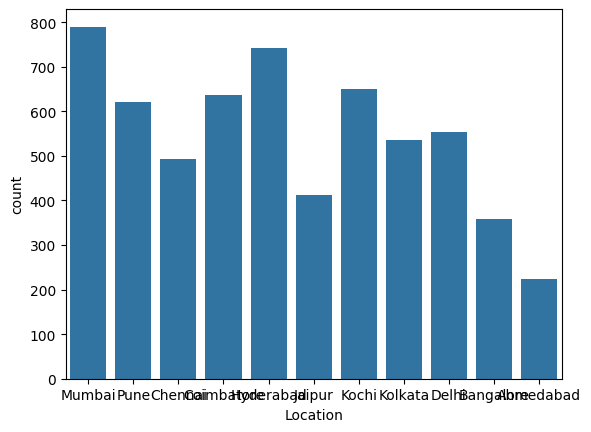
plt.ylabel('Location')

plt.show()

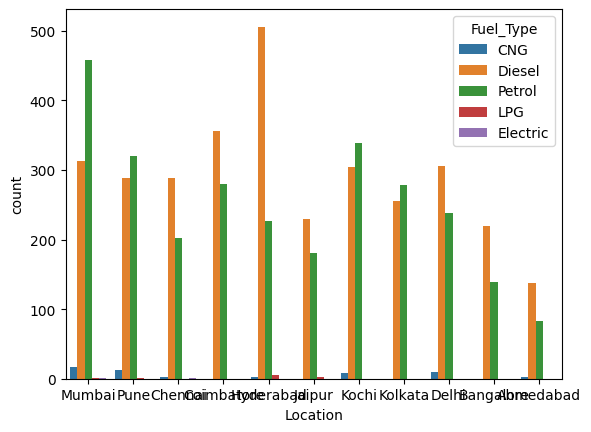
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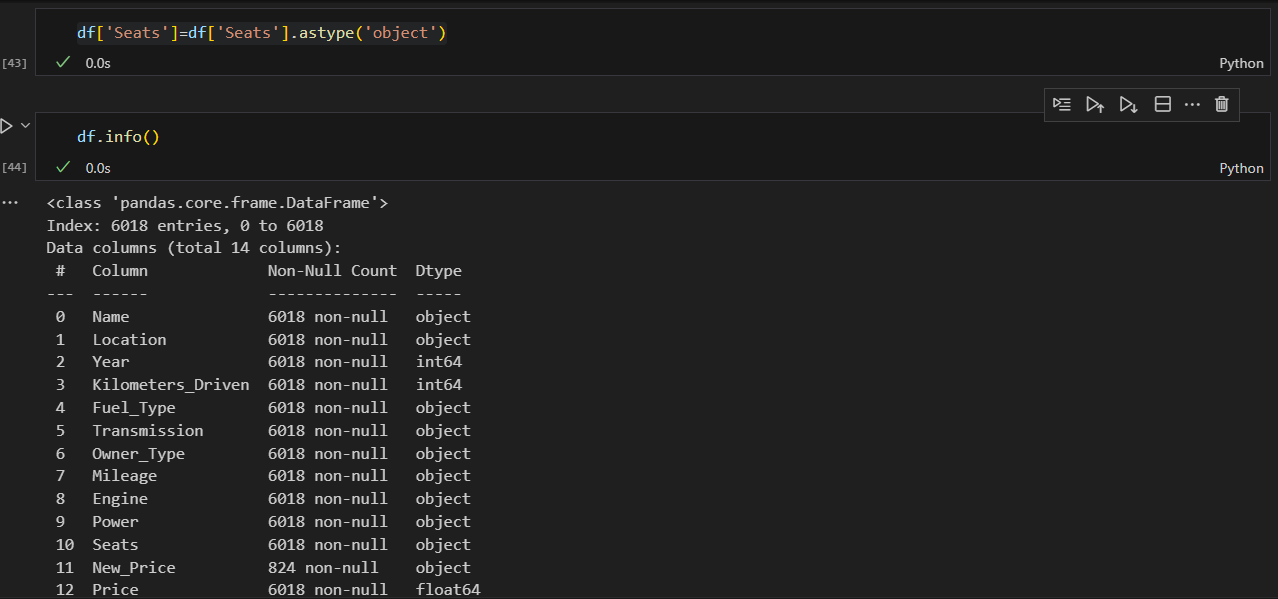
sns.countplot(data=df, x='Location')

plt.figure(figsize=(16, 8))

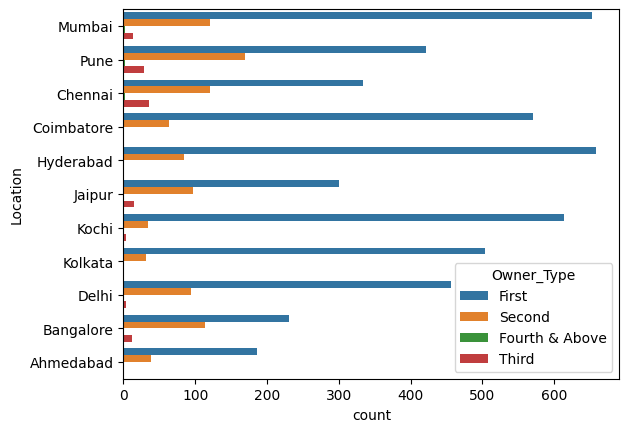
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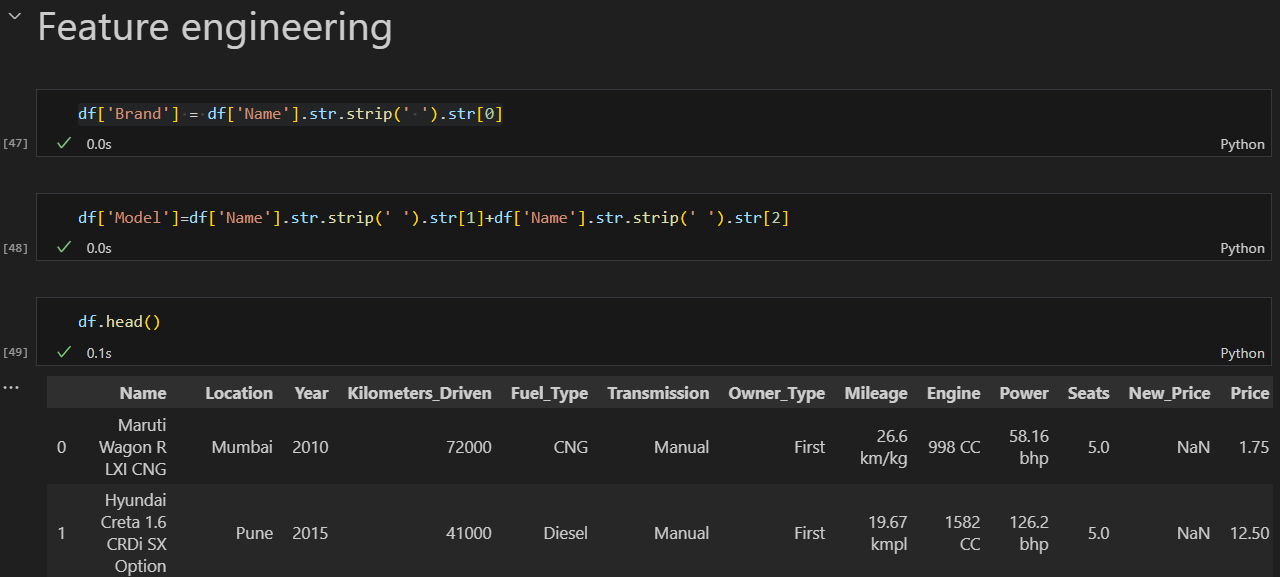
sns.countplot(data=df, x='Location', hue='Fuel\_Type')

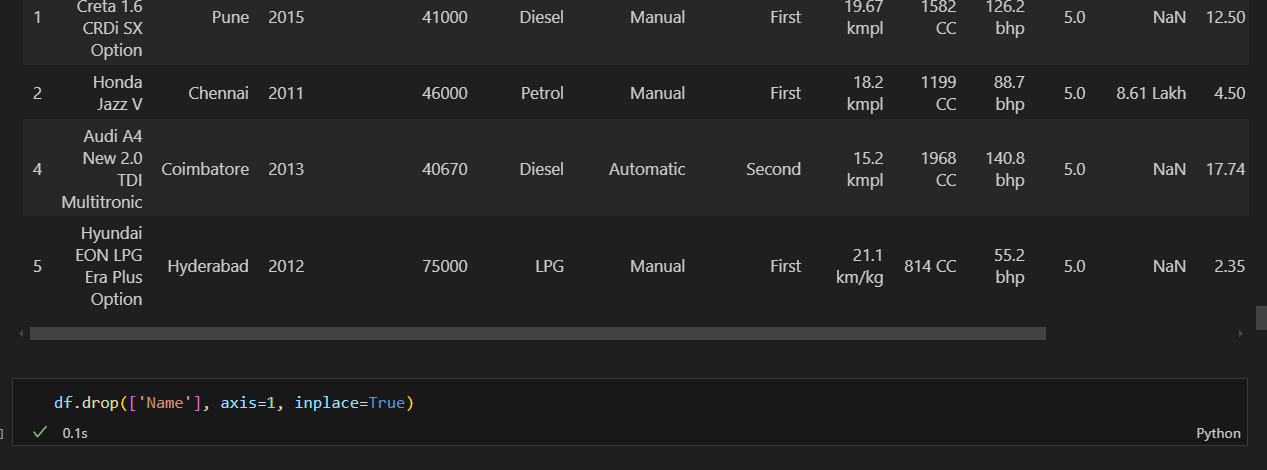
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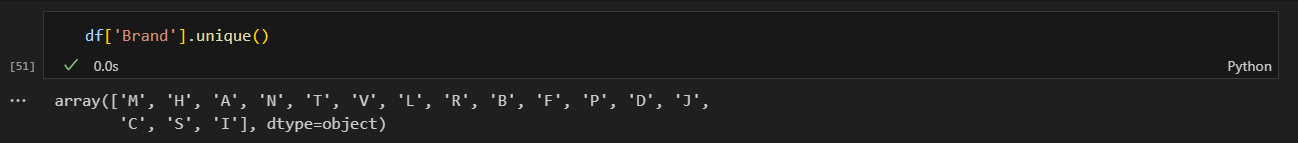
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sns.countplot(data=df, y='Location', hue='Owner\_Type')

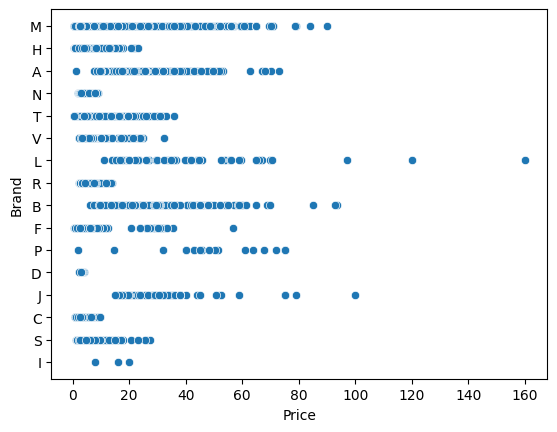
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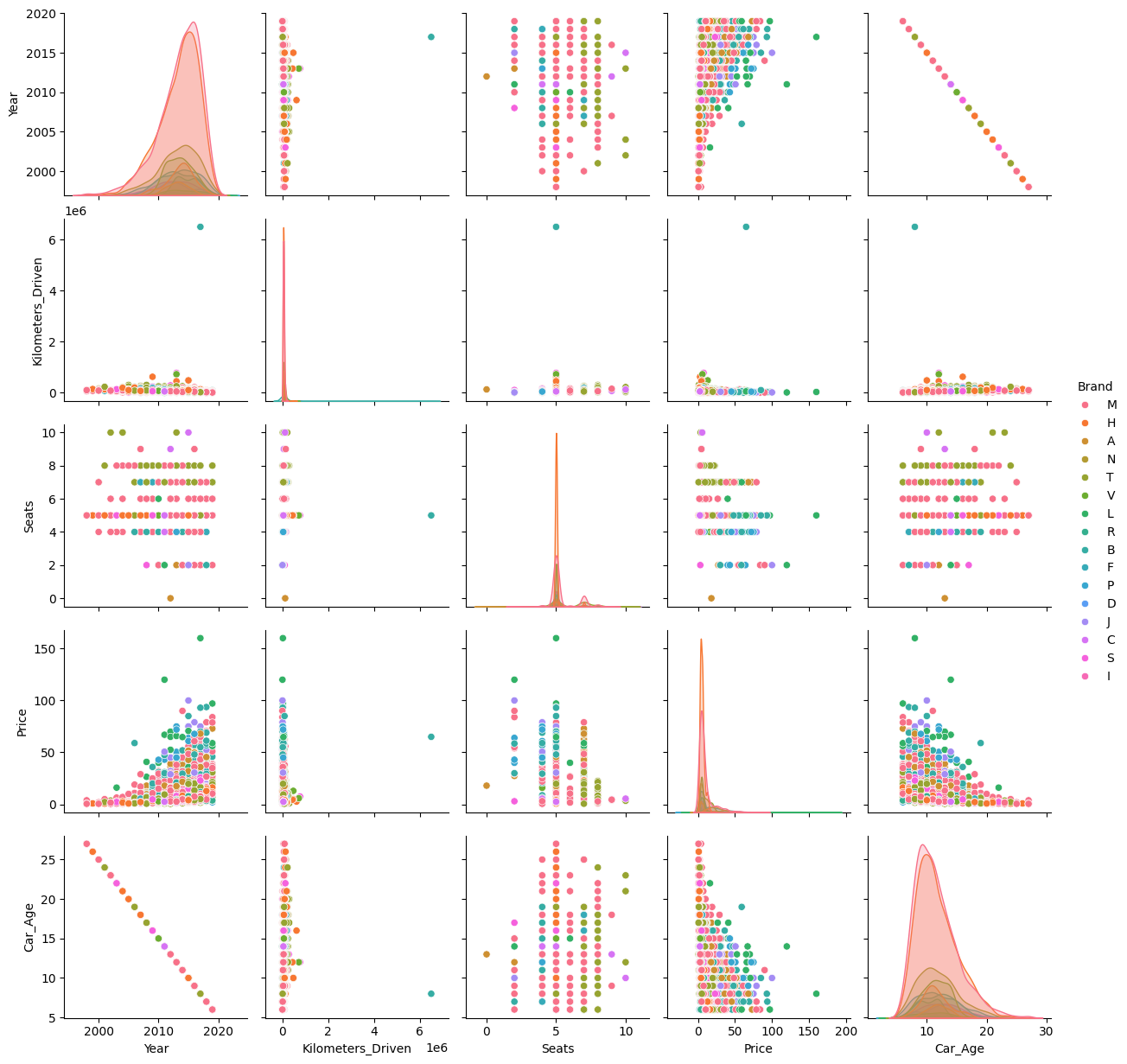
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sns.scatterplot(data=df, y='Brand' ,x='Price')

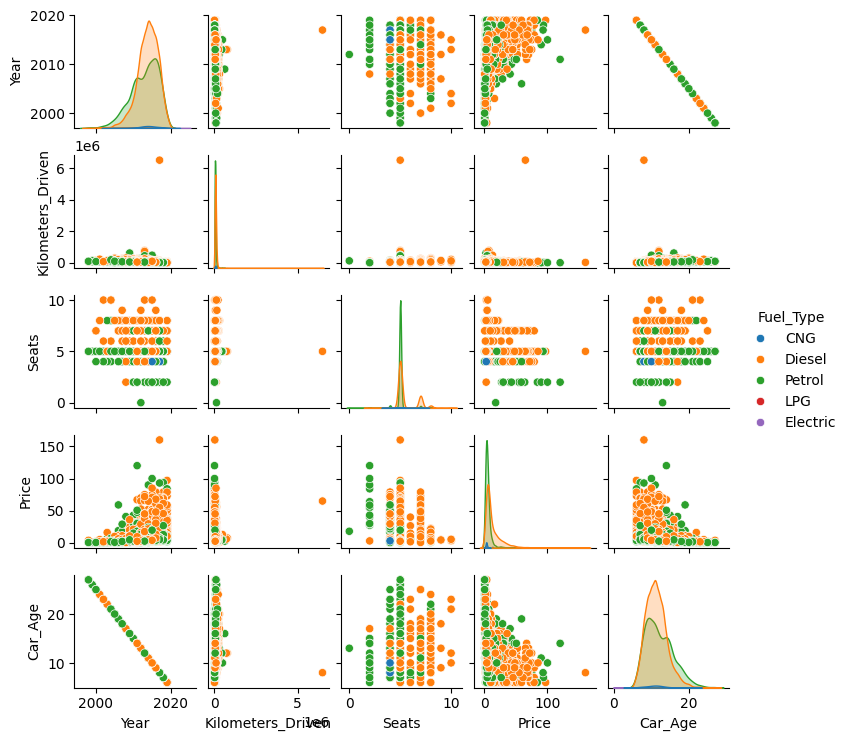
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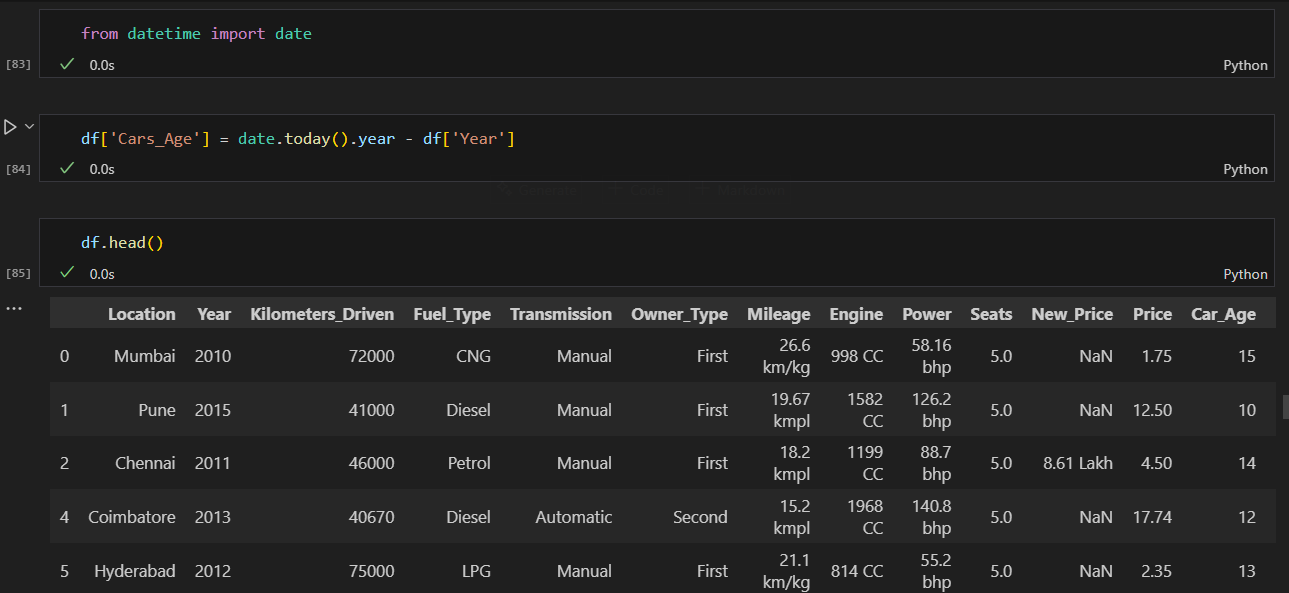
sns.pairplot(df, hue='Brand', diag\_kind='kde')

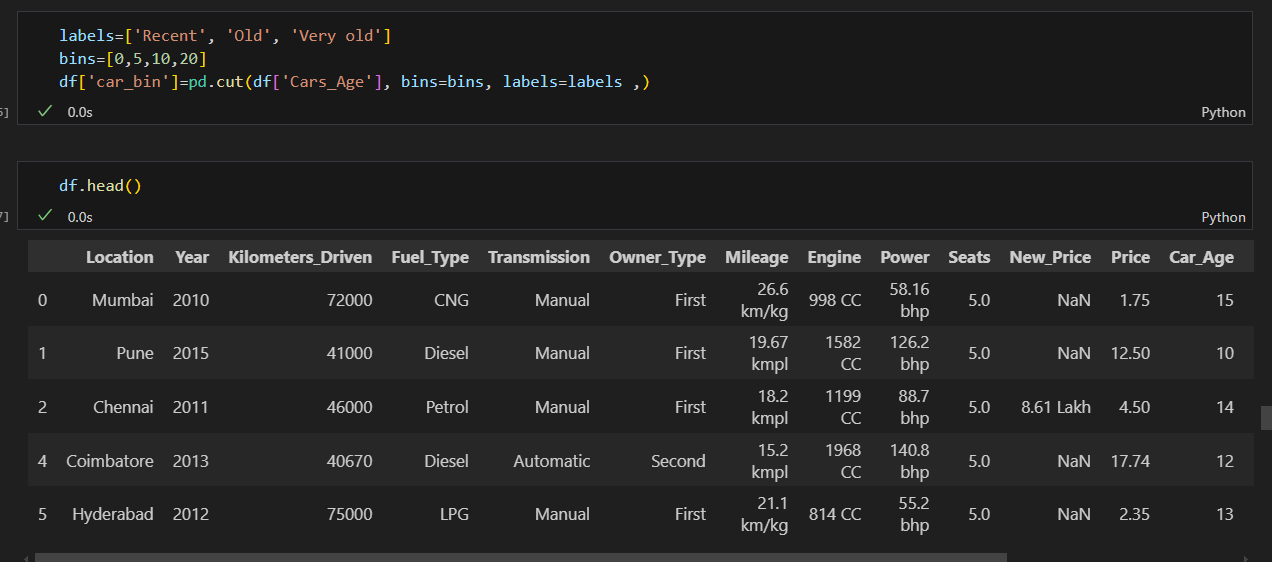
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sns.pairplot(data=df, height=1.5, hue='Fuel\_Type')

plt.show()

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# Plot bar graph for car\_bin distribution

df['car\_bin'].value\_counts().sort\_index().plot(kind='bar', color='skyblue')

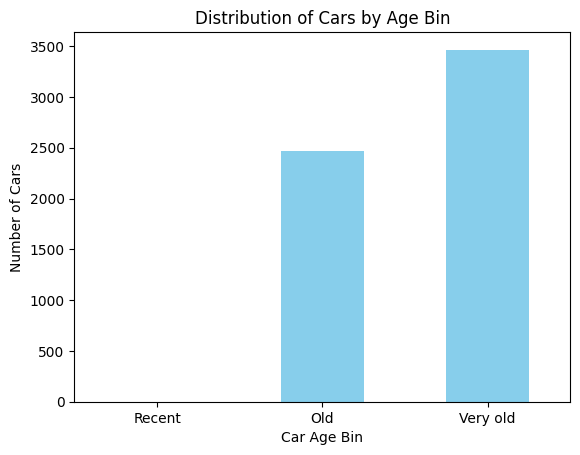
plt.title('Distribution of Cars by Age Bin')

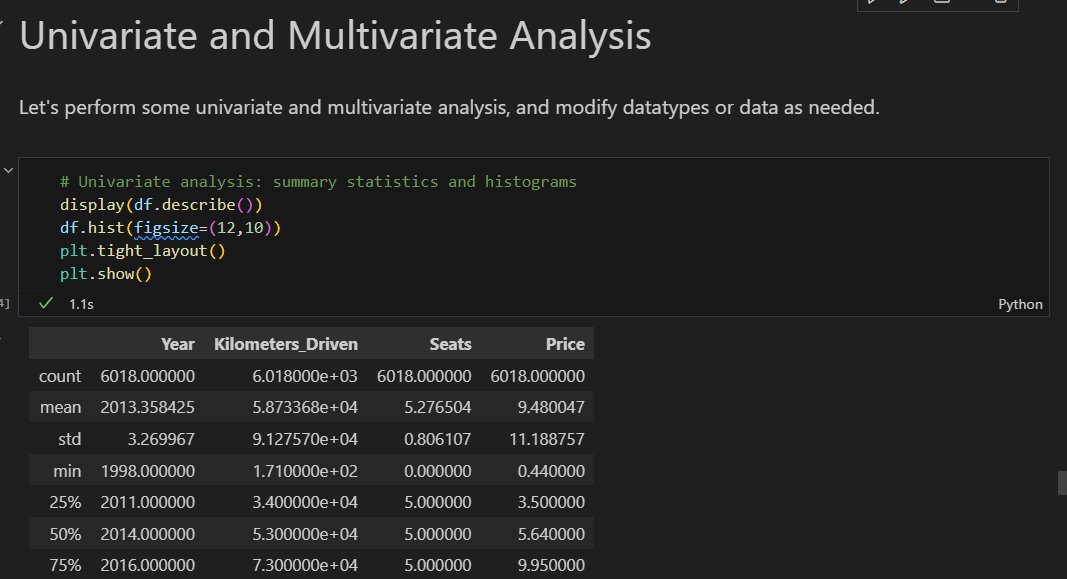
plt.xlabel('Car Age Bin')

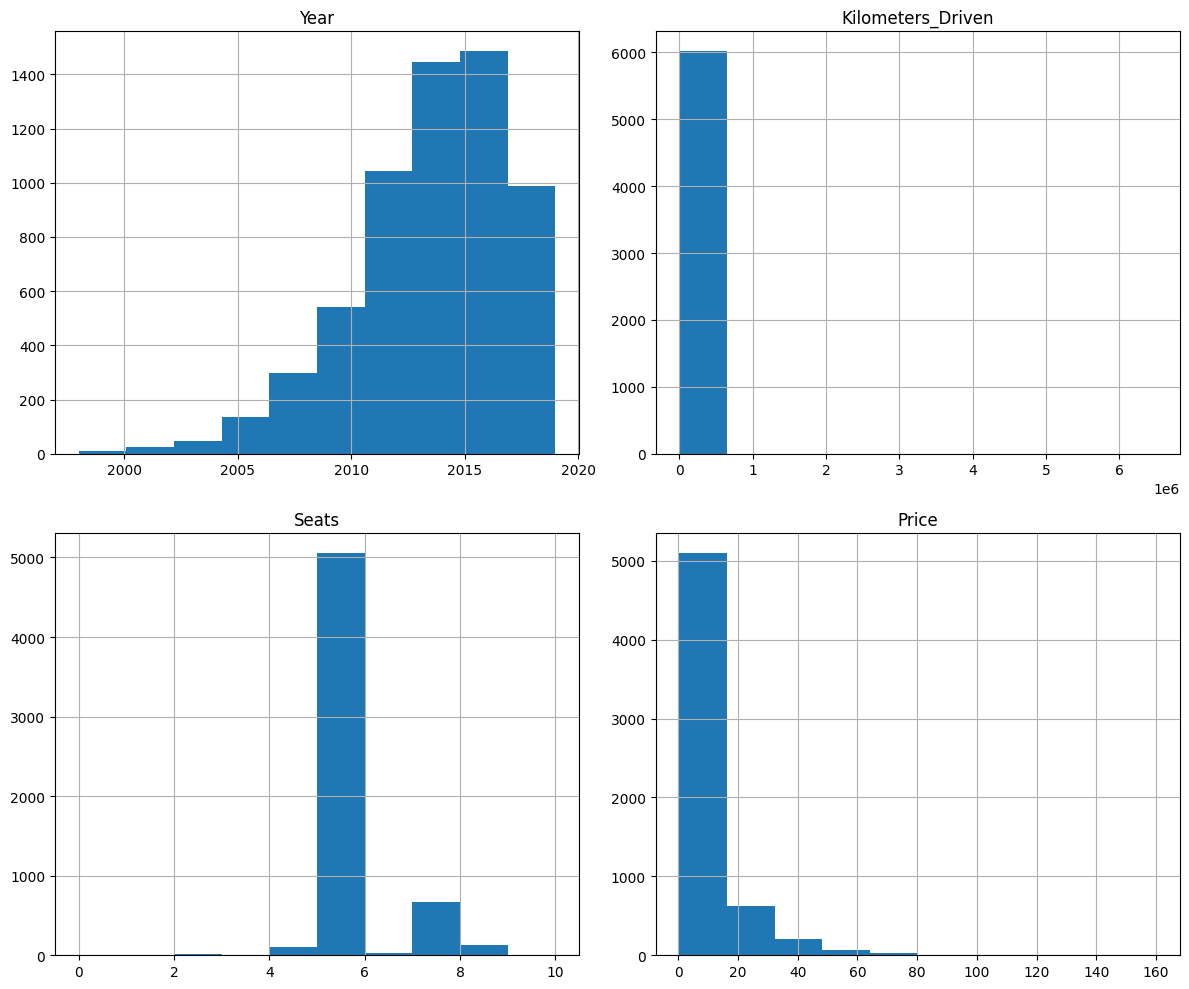
plt.ylabel('Number of Cars')

plt.xticks(rotation=0)

plt.show()

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# Multivariate analysis: correlation heatmap and pairplot

corr = df.corr(numeric\_only=True)

plt.figure(figsize=(10,8))

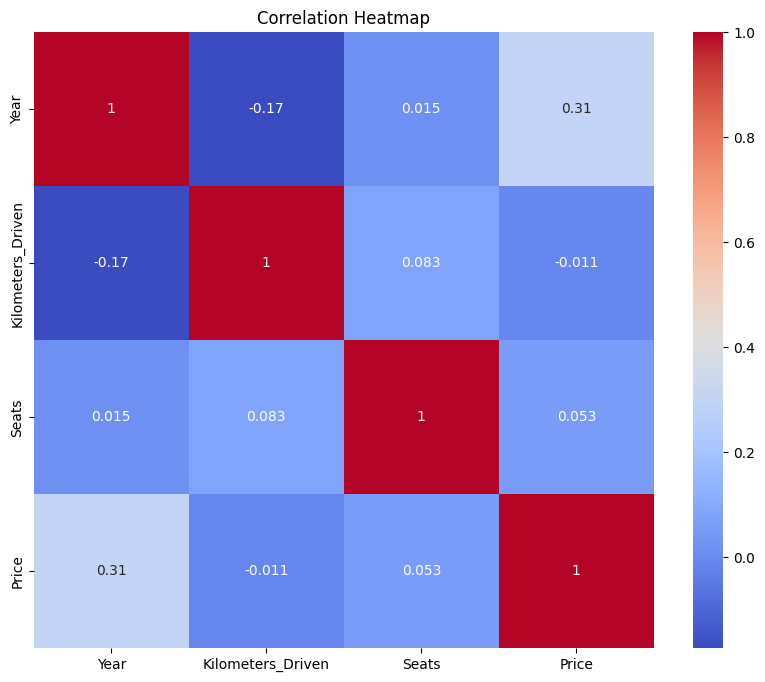
sns.heatmap(corr, annot=True, cmap='coolwarm')

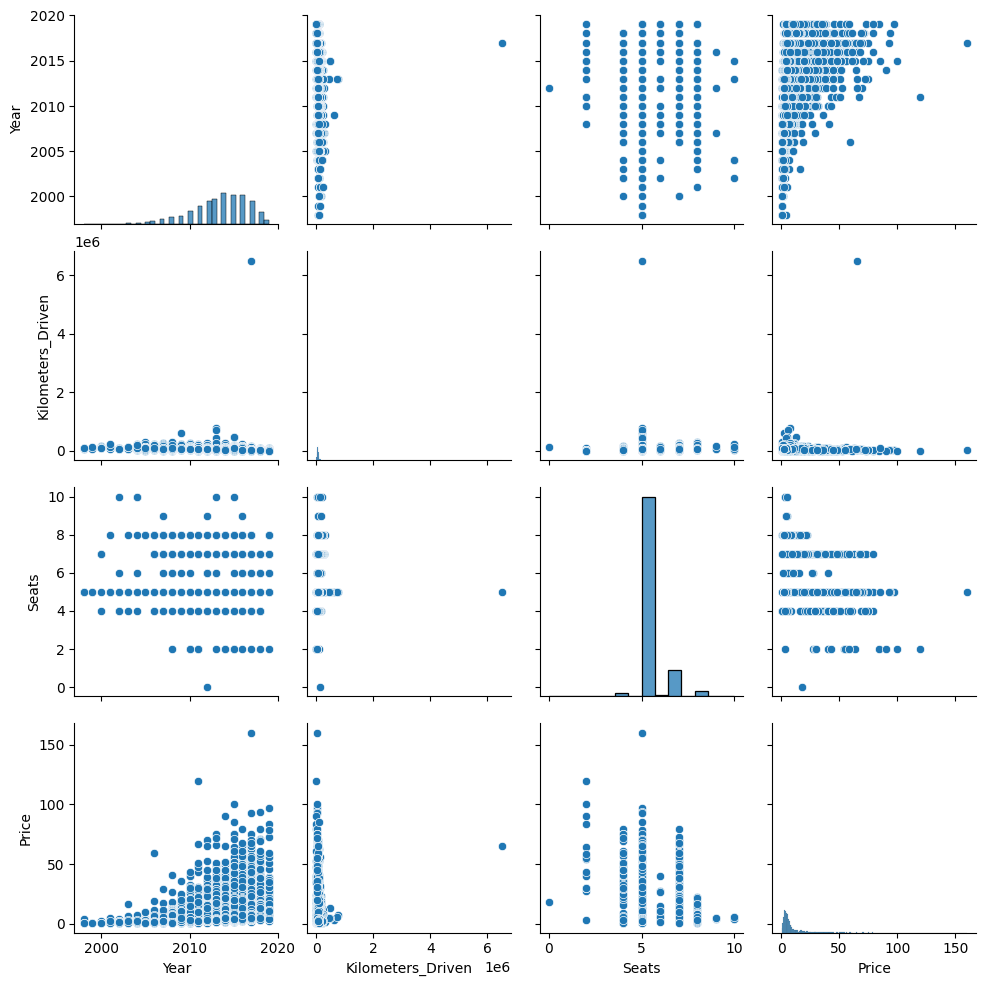
plt.title('Correlation Heatmap')

plt.show()

sns.pairplot(df.select\_dtypes(include=[np.number]))

plt.show()

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