Analysis 2 :

1. Can you tell me No of Vehicles by Brand Available on ebay for sale with the help of visualization.

* I have used the code:
* df = datac.groupby(['brand'])['brand'].count()

df.plot(kind="bar")

plt.xlabel("count")

plt.ylabel("brand")

plt.title("No of Vehicles by Brand Available on ebay for sale")

plt.show()

* datac.groupby(['brand'])['brand'].count()` is used to group the "datac" dataset by the "brand" column and count the number of occurrences for each brand. This creates a new DataFrame with the brand names as the index and the corresponding count of vehicles for each brand.
* Next, I used the `plot()` function with `kind="bar"` to create a bar plot based on the counts. The x-axis is labeled as "count" using `plt.xlabel()`, and the y-axis is labeled as "brand" using `plt.ylabel()`. The title of the plot is set to "No of Vehicles by Brand Available on eBay for sale" with `plt.title()`. Finally, it displays the plot using `plt.show()`.
* This visualization helps to understand the distribution of vehicles available on eBay for sale by brand.

1. **What is the Average price for vehicles based on the type of vehicle as well as on the type of gearbox.Explain me with both numerical and visualization analysis.**

* I have used the code :
* avg\_price=datac.groupby(["vehicleType","gearbox"])["price"].mean()

avg\_price avg\_price=datac.groupby(["vehicleType","gearbox"])["price"].mean()

avg\_price.plot(kind="bar")

plt.xlabel("vehicleType and gearbox type")

plt.ylabel("average price")

plt.title("avg price of vehicletype and gearbox")

plt.show()

* In the code I grouped the "datac" dataset by the combination of "vehicleType" and "gearbox" columns and calculated the mean price for each combination using `mean()`. This created a new DataFrame with the average price for each vehicle type and gearbox type.
* Then, I created a bar plot to visualize the average prices using `plot(kind="bar")`. The x-axis represents the vehicle type and gearbox type, and the y-axis represents the average price. The plot title is set as "Average Price of Vehicle Type and Gearbox".
* By creating this visualization, we can easily compare the average prices of different vehicle types and gearbox combinations. It provides a visual representation of the data.

1. **What is the marginal probability of private seller.**

* I have used this code :
* pd.crosstab(index=datac["seller"]=="privat",columns=data["seller"]=="gewerblich",rownames=["privat"],colnames=["gewerblich"],normalize="all",margins=True)
* In the code I grouped the "datac" dataset by the combination of "vehicleType" and "gearbox" columns and calculated the mean price for each combination using `mean()`.
* This created a new DataFrame with the average price for each vehicle type and gearbox type.
* Then, I created a bar plot to visualize the average prices using `plot(kind="bar")`. The x-axis represents the vehicle type and gearbox type, and the y-axis represents the average price. The plot title is set as "Average Price of Vehicle Type and Gearbox".
* By creating this visualization, we can easily compare the average prices of different vehicle types and gearbox combinations. It provides a visual representation of the data.