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# === groupPlot.ipynb ===

#%%
%matplotlib notebook
get_ipython().run_line_magic('matplotlib', 'notebook')


#%%
# Import Dependencies
import matplotlib.pyplot as plt
import pandas as pd


#%%
# ------------------------------------------------------------------------------
# pandas also allows users to plot based on groupped by objects
# making it painless for users to build summary grapghs
# ------------------------------------------------------------------------------

# example takes used car data from Germany and so to allow users
# to determine what categories influence the pricing of a car

# Import our data into pandas from CSV
used_string = '../Resources/used_cars.csv'
used_car_df = pd.read_csv(used_string)

used_car_df


#%%
# the original DataFrame is grouped by the values contained within the "maker"
# column. Those values are then counted and eventually charted using Pandas

# Create a group based on the values in the 'maker' column
maker_group = used_car_df.groupby('maker')

# Count how many times each maker appears in our group
count_makers = maker_group['maker'].count()

count_makers


#%%
# When charting a GroupBy element, some analysis must have been performed
# beforehand. Without performing some kind of analysis, the chart would
# simply look the same as if the original DataFrame had been plotted.

# Create a bar chart based off of the group series from before
count_chart = count_makers.plot(kind='bar')

# Set the xlabel and ylabel using class methods
count_chart.set_xlabel("Car Manufacturer")
count_chart.set_ylabel("Number of Cars")


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56 plt.show()
57 plt.tight_layout()
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