**Python Project Explanation**

**Video Explanation Link:-** *https://drive.google.com/file/d/12ipY2HMKhBFx1XTSSH3CjMbAzZiGWFzZ/view?usp=sharing*

**Task 1:-**

a)In this task I filter out the EVs based on customer budget of 350,000 PLN and wants an EV with a minimum range of 400 km.

b)In this task I grouped the filtered EVs by their manufacturer using .gropuby() function.

c) In this task I calculate mean of each manufacturer group by using .mean() function. And concluded that Audi has the highest average battery life.

**Task 2:-** To complete this task I calculate the minimum and maximum value of mean-Energy Consumption and use them to filter the data to find the outliers.

And in the conclusion I did not found any outliers meant all energy consumption values are within a normal range this suggests that the data is consistent

**Task 3:-**

a)In this task I plot a scatter graph to visualize the relationship between battery capacity and range using seaborn

b)In this task I need to analyze the insights that based on scatter graph And from scatter plot we can conclude that there is positive correlation between battery capacity and range, indicating that vehicles with larger batteries typically offer longer driving ranges.

**Task 4:-** In this task I create a class EVRecommendation this class allow user to input their budget, desired range, and battery capacity it then filters the dataset and returns the top three EVs based on given data. In this we give input as like budget, range, and battery capacity are passed to the recommend() function as arguments, while the constructor is used only to load and store the dataset (self.data)

**Task 5:-** In this task first I import ttest\_ind from scipy.stats module and then I conducted a two-sample t-test to compare the average engine power of Tesla and Audi vehicles to see if the difference in engine power between these two manufacturers is statistically significant.

And on the basis of my analysis I can conclude that “There is no significant difference in average engine power between Tesla and Audi” because the p value is greater than 0.05.

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