**EV-Market-Segmentation**

**Team Members:**

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**Fermi estimation (problem breakdown):**

* **Define the Problem:** Start by clarifying the overarching goal of the project: "Segment the EV market"
* **Identify Key Metrics:** What are the specific metrics or criteria used to segment the market? These could include factors like vehicle type (e.g., passenger cars, trucks), geographic regions, customer demographics, or any other relevant variables.
* **Data Requirements:** Estimate the amount of data needed to effectively segment the market. This would include both the quantity and quality of data. For instance, you might estimate the number of EV sales records required, the diversity of data sources, and the level of data cleanliness needed.
* **Data Collection:** Estimate the time and effort required to collect and preprocess the necessary data. This might involve web scraping, data cleaning, merging datasets, and dealing with missing values.
* **Feature Engineering:** Consider the complexity of feature engineering. Estimate the number of relevant features that need to be created or extracted from the raw data. This could include engineering features from vehicle specifications, user behavior, or external factors like weather or economic indicators.
* **Algorithm Selection:** Estimate the time and computational resources needed to choose and implement suitable machine learning algorithms for market segmentation. This could involve clustering, classification, or regression techniques.
* **Model Training:** Estimate the time and computational resources required to train the machine learning models on the prepared dataset. This can be influenced by the size of the dataset and the complexity of the chosen algorithms.
* **Hyperparameter Tuning:** Estimate the time needed for hyperparameter tuning to optimize the performance of the models. This is an iterative process that involves adjusting model parameters to improve accuracy.
* **Model Evaluation:** Estimate the effort required to evaluate the models' performance using appropriate metrics such as accuracy, precision, recall, or F1-score. Consider cross-validation and validation set preparation.
* **Interpretation and Visualization:** Estimate the time and effort needed to interpret and visualize the results of market segmentation. How will the segments be presented and communicated to stakeholders?

**Data Sources:**

Dataset link

dataset

├── Adhiban

│ ├── Cars-Conventional engine and EVs

│ │ ├── Cars 1.csv

│ │ ├── cars.csv

│ │ ├── Electric Car.csv

│ │ ├── Electric Vehicle Population Data.csv

│ │ └── FEV data.csv

│ ├── Electric Vehicle Charging Stations in India

│ │ └── ev-charging-stations-india.csv

│ ├── Electric Vehicle in India 2022

│ │ └── EV\_India.csv

│ ├── Electric Vehicle Population Data

│ │ └── Electric\_Vehicle\_Population\_Data.csv

│ ├── Electric Vehicles User Reviews India

│ │ ├── 2-wheeler-EV-bikewale.csv

│ │ ├── 4-wheeler-EV-cardekho.csv

│ │ └── 4-wheeler-EV-carwale.csv

│ ├── EV\_CARS available in "INDIA" till oct-2021

│ │ └── EV\_CARS \_INDIA.csv

│ ├── EV\_Cars\_India\_2023

│ │ └── EV\_cars\_India\_2023.csv

│ ├── Google Trends

│ │ ├── geoMap.csv

│ │ └── multiTimeline.csv

│ └── Vehicle dataset

│ ├── car data.csv

│ ├── CAR DETAILS FROM CAR DEKHO.csv

│ ├── Car details v3.csv

│ └── car details v4.csv

├── Malay

│ └── IEA-EV-dataEV\_salesHistoricalCars.csv

├── pranay

│ ├── RS\_Session\_255\_AU\_749.C.csv

│ ├── RS\_Session\_257\_AU\_1736\_A\_to\_G.csv

│ └── RS\_Session\_258\_AU\_429\_1.csv

├── Shreyash

│ ├── Chaganti-Reddy EVMarket-India.csv

│ ├── ElectricCarData\_Norm.csv

│ ├── IEA-EV-dataEV\_salesHistoricalCars.csv

│ ├── India\_Electric\_Vehicle\_Market\_1671628312425\_1.csv

│ ├── RS\_Session\_256\_AU\_2673\_2.ii\_.csv

│ ├── RS\_Session\_257\_AU\_2368\_B\_3.csv

│ └── RS\_Session\_259\_AU\_1769\_2.csv

└── Yash

└── data.gov.in

├── RS\_Session\_256\_AU\_2673\_1.csv

├── RS\_Session\_256\_AU\_2673\_2.i.csv

└── RS\_Session\_257\_AU\_2368\_A.csv

15 directories, 33 files