Exam Preparation II

01.   Automotive Data Organization Challenge

You can check your solutions in Judge.

Welcome to the **Automotive Enthusiast Project**! Our mission is to gather and analyze data on various car models to assist enthusiasts and potential buyers in making informed decisions. Unfortunately, our comprehensive car database has encountered some disorganization issues. **Structured and detailed data** are vital for accurately comparing car models and understanding their key features. The scrambled data includes essential information about different car models.

You will be provided information on **7 car models**. Each entry includes the **model's ID, name, year of manufacture, fuel efficiency, and a list of features**. The details are presented in a sentence format:

1. "Model ID **501**: **Tesla Model 3**, manufactured in **2020**, achieves a fuel efficiency of **130.1** MPGe. Key features include **Autopilot**, **All-Electric**, **Touchscreen Display**."
2. "Model ID **502**: **Honda Civic Type R**, **2021** model, has a fuel efficiency of **28.2** MPG. Features: **Turbocharged Engine**, **Sport Seats**, **Adaptive Suspension**."
3. "Model ID **503**: **Ford F-150**, year **2021**, with a fuel efficiency of **24.3** MPG, features: **Hybrid Powertrain**, **Pro Trailer Backup Assist**, **Touchscreen Interface**."
4. "Model ID **504**: **Porsche 718 Boxster**, manufactured in **2021**, offers **22.4** MPG fuel efficiency. It features a **Mid-Engine Layout**, **Convertible Top**, **Porsche Communication Management**."
5. "Model ID **505**: **Chevrolet Corvette**, **2020** model, with **19.5** MPG fuel efficiency, boasts features such as **Mid-Engine Design**, **Leather Seating**, **Performance Data Recorder**."
6. "Model ID **506**: **BMW 330i**, from **2021**, has a fuel efficiency of **30.6** MPG. Its features include **TwinPower Turbo Engine**, **iDrive System**, **Dynamic Cruise Control**."
7. "Model ID **507**: **Mazda MX-5 Miata**, **2021** model, offers a fuel efficiency of **29.7** MPG and features like **Rear-Wheel Drive**, **Soft Top**, **Lane Departure Warning System**."
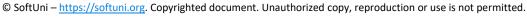
Convert the scrambled data into **structured JSON format manually:**

- **Use a text or a code editor** to write the JSON document. We recommend **Notepad++ or VS Code**.
- **Extract relevant details** from each cars' description.
- **Organize the data** into a structured JSON format.
- **Each car record** in the JSON document should include **the following attributes**:
  - **modelId: Integer** (A unique identifier for each car model)
  - **carName: String** (The name of the car model)
  - **yearOfManufacture:** Integer (The year the car model was manufactured)
  - **fuelEfficiency:** Double (The fuel efficiency of the car model, in MPG or MPGe)
  - **features:** Array of Strings (A list of describing three key features of the car model)

You are provided with a **JSON parser application**. Use it to **parse and validate** the JSON file you have created.

- **Replace the content of Cars.json** with the JSON data you created.
- After pasting your JSON data into the coresponding JSON file, **make sure to save any changes**.
- **Run the parser** application within your IDE.
- **The parser will process the chosen JSON file** and display the extracted data **in the console**.
- Carefully review the output in the console.

Follow us:

- If the parser displays an error message, check your JSON file for any syntax errors or formatting issues.
- Ensure all required keys are present and correctly named.
- **Copy the results from the console into the Judge System.**

*Use Ctrl + C to copy from the console.