# QA Back-End Technologies Basics

# Regular Exam II – 02.03.2024

## Automotive Data Organization Challenge

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.
* 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.