Car Manufacturer Web Service

Files for This Project

CarMfg_jar.zip – The executable jar file

Inside this zip file, there are two files: executable jar file and the static manufacturer data file:

CarMfg-1.0.jar

carmfg_data.json

CarMfg_src.zip – All source files. It is a maven project, was developed with Eclipse IDE

CarMfg-Instructions.pdf – i.e. this file, containing a few simple instructions on how to test this app.

Start the Web Service by Running the Executable Jar File

A few Notes

1. JRE 8 must be installed on the machine where this application is running.
2. Port **8090** is free, which is the default port number to be used by this CarMfg service. If it is used and not free, then you need to decide what port number to use, e.g. **6789**, and then pass *'-Dserver.port=**6789**'* to java command to start the web service, as shown below.
3. The data file, *carmfg_data.json*, is required for the server to start up since it will try to load it on startup. This file is in the same folder as the jar file if you unzip *CarMfg_jar.zip*.
   If you start the web service using command line from folder where the *CarMfg-1.0.jar* resides, then it everything should be ok. But if you start the wen service from a different folder where the jar file is not present, then you need to pass *'-Dcar.mfg.data.folder=<the folder containing the carmfg_data.json>'*. See examples below.

Follow the steps:

Unzip the attached *CarMfg_jar.zip* in a folder, say *C:\CarMfg*

From command prompt,

cd to *C:\ CarMfg*

Java -jar CarMfg -1.0.jar

Or a different port number is preferred, do this:

*Java -**Dserver.port**=6789 -jar CarMfg-1.0.jar*

Or if the *carmfg_data.json* file is not in the current folder you are running the jar file from, then do this:

*Java -**Dserver.port**=6789 -D Dcar.mfg.data.folder= <the folder containing the carmfg_data.json> -jar CarMfg-1.0.jar*

e.g.

*Java -**Dserver.port**=6789 -D Dcar.mfg.data.folder=C:\temp -jar CarMfg/CarMfg-1.0.jar*

After the web service is started, you should see on the console, the message similar to

Started CarMfgApplication in 2.531 seconds.

This indicates that the web service is successfully started and is ready to accept REST calls.

Running and Testing the Car Manufacturer Web Service

Please note that for all methods:

application/json;charset=UTF-8

Also please note that the following examples and screen shots are from using ***POSTMAN***.

Get all manufacturers in Json response Format. Optionally sort and order and search

GET:

http://localhost:8090/api/car/mfg/v1/manufacturers?sort=true&orderByDesc=true&q=<queryString>

NOTES:

1. If *sort*=true, will sort by Country, then Name. Default NO sorting
2. If *orderByDesc*=true, Default NO sorting
3. Searching pattern must be in the format below, i.e. country, mfr_name or vehicletypeName are separated by a semi colon. This is equivalent to AND operations:

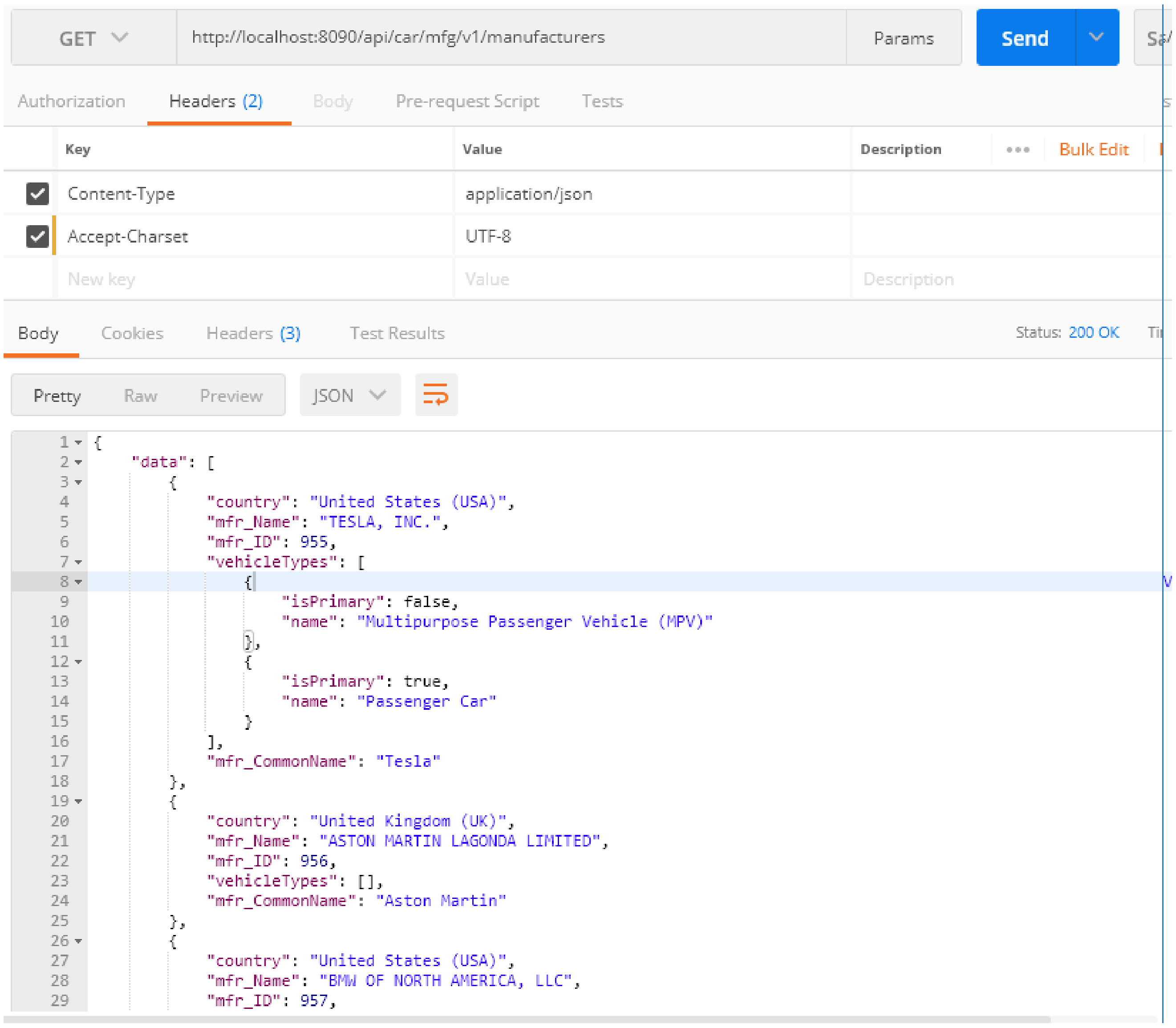
   Country:"USA";Mfr_Name:"TESLA, INC.”;"VehicleTypeName:"Passenger Car"

   Default NO Search, display ALL. The names are not case sensitive though.

For example:

1. Get all manufacturer data, not sorting, no ordering:

   http://localhost:8090/api/car/mfg/v1/manufacturers



http://localhost:8090/api/car/mfg/v1/manufacturers

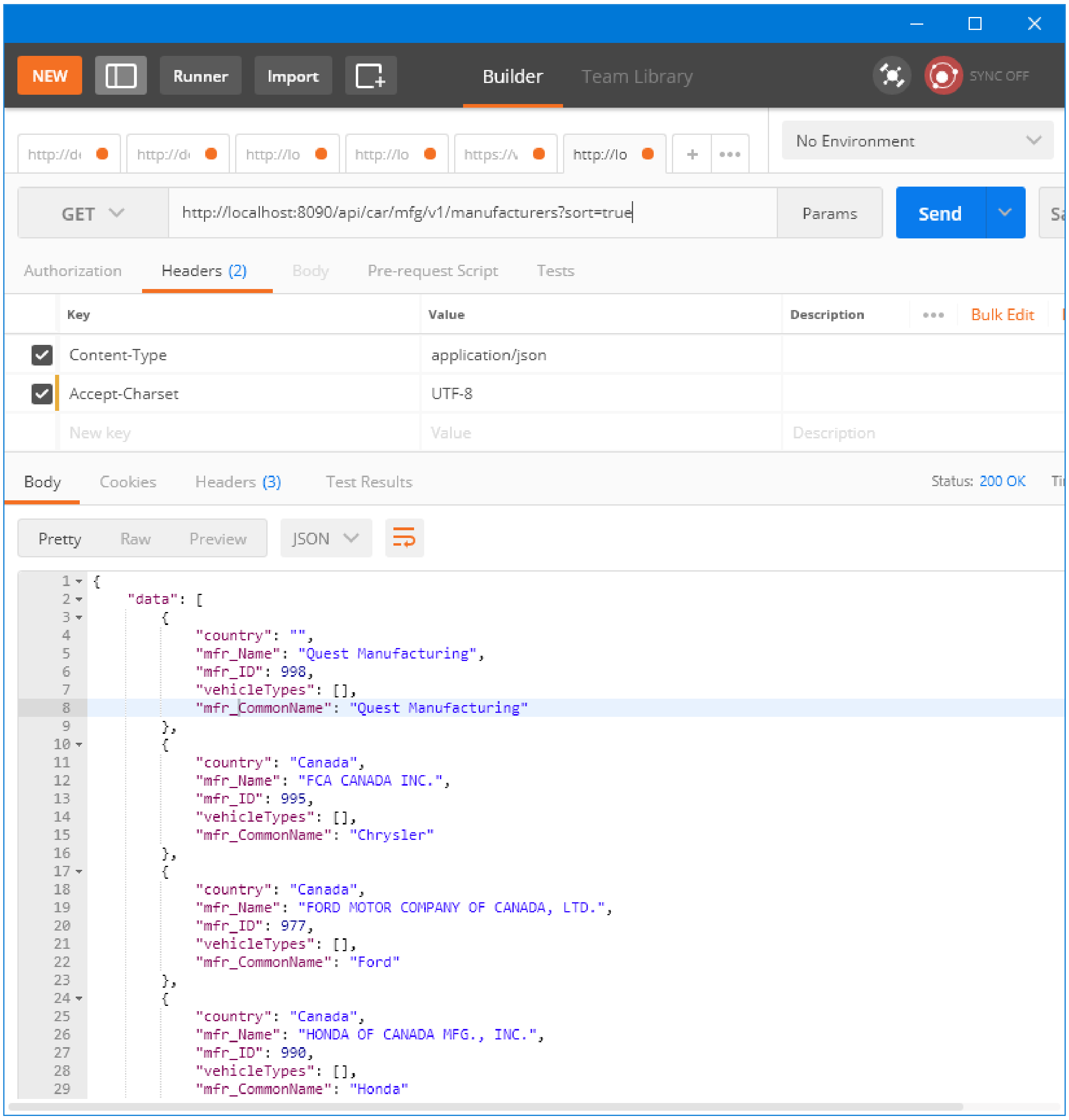
Key	Value	Description
Content-Type	application/json	
Accept-Charset	UTF-8	
New key	Value	Description

Status: 200 OK

```
{
    "data": [
        {
            "country": "United States (USA)",
            "mfr_Name": "TESLA, INC.",
            "mfr_ID": 955,
            "vehicleTypes": [
                {
                    "isPrimary": false,
                    "name": "Multipurpose Passenger Vehicle (MPV)"
                },
                {
                    "isPrimary": true,
                    "name": "Passenger Car"
                }
            ],
            "mfr_CommonName": "Tesla"
        },
        {
            "country": "United Kingdom (UK)",
            "mfr_Name": "ASTON MARTIN LAGONDA LIMITED",
            "mfr_ID": 956,
            "vehicleTypes": [],
            "mfr_CommonName": "Aston Martin"
        },
        {
            "country": "United States (USA)",
            "mfr_Name": "BMW OF NORTH AMERICA, LLC",
            "mfr_ID": 957,
```

2. Get all manufacturer data, sorting and ordering in ascending order:

http://localhost:8090/api/car/mfg/v1/manufacturers?sort=true



http://localhost:8090/api/car/mfg/v1/manufacturers?sort=true

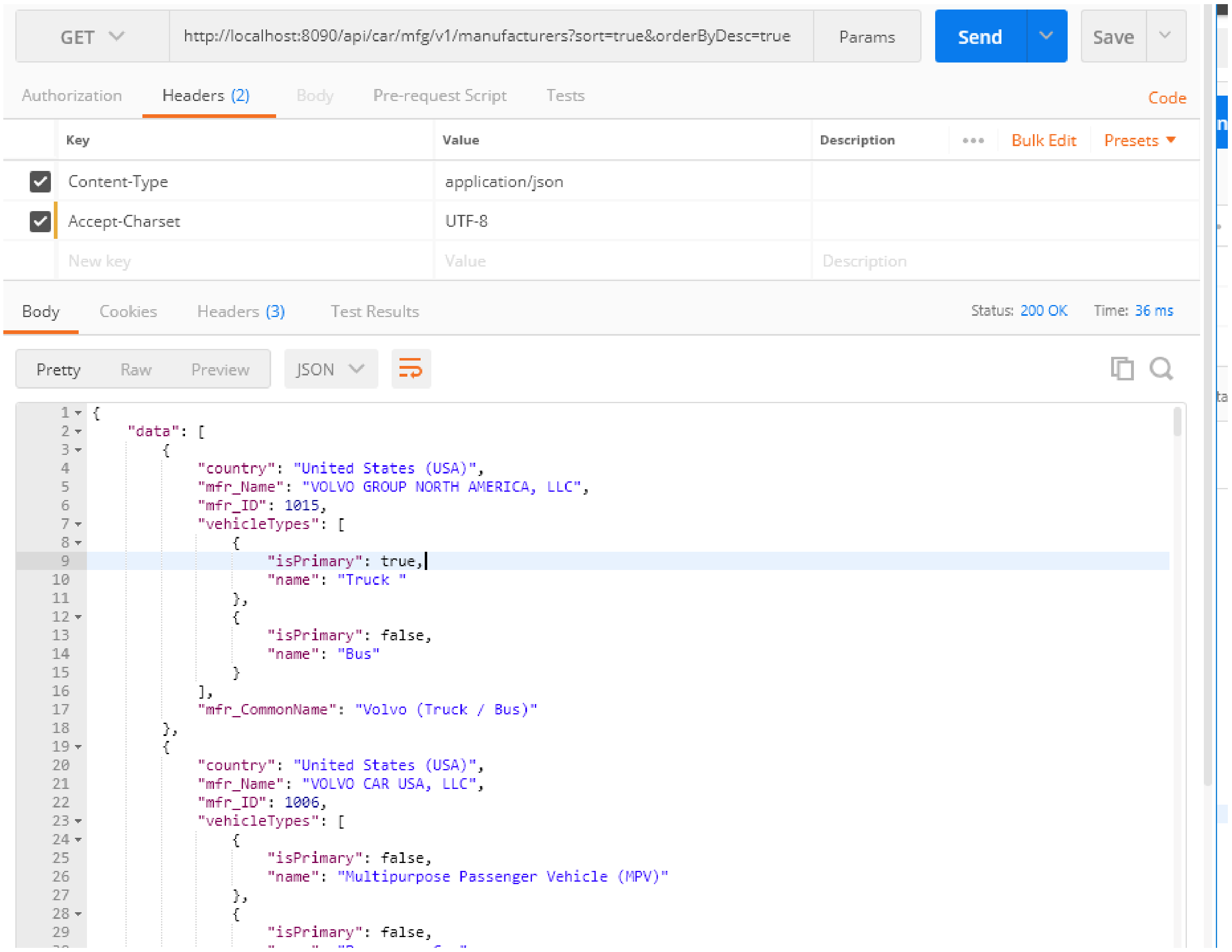
Key	Value	Description
Content-Type	application/json	
Accept-Charset	UTF-8	

Status: 200 OK

```
{
    "data": [
        {
            "country": "",
            "mfr_Name": "Quest Manufacturing",
            "mfr_ID": 998,
            "vehicleTypes": [],
            "mfr_CommonName": "Quest Manufacturing"
        },
        {
            "country": "Canada",
            "mfr_Name": "FCA CANADA INC.",
            "mfr_ID": 995,
            "vehicleTypes": [],
            "mfr_CommonName": "Chrysler"
        },
        {
            "country": "Canada",
            "mfr_Name": "FORD MOTOR COMPANY OF CANADA, LTD.",
            "mfr_ID": 977,
            "vehicleTypes": [],
            "mfr_CommonName": "Ford"
        },
        {
            "country": "Canada",
            "mfr_Name": "HONDA OF CANADA MFG., INC.",
            "mfr_ID": 990,
            "vehicleTypes": [],
            "mfr_CommonName": "Honda"
```

3. Get all manufacturer data, sorting in descending order:

http://localhost:8090/api/car/mfg/v1/manufacturers?sort=true&orderByDesc=true



```
http://localhost:8090/api/car/mfg/v1/manufacturers?sort=true&orderByDesc=true
```

Key	Value	Description
✓ Content-Type	application/json	
✓ Accept-Charset	UTF-8	
New key	Value	Description

Status: 200 OK Time: 36 ms

```
{
    "data": [
        {
            "country": "United States (USA)",
            "mfr_Name": "VOLVO GROUP NORTH AMERICA, LLC",
            "mfr_ID": 1015,
            "vehicleTypes": [
                {
                    "isPrimary": true,
                    "name": "Truck "
                },
                {
                    "isPrimary": false,
                    "name": "Bus"
                }
            ],
            "mfr_CommonName": "Volvo (Truck / Bus)"
        },
        {
            "country": "United States (USA)",
            "mfr_Name": "VOLVO CAR USA, LLC",
            "mfr_ID": 1006,
            "vehicleTypes": [
                {
                    "isPrimary": false,
                    "name": "Multipurpose Passenger Vehicle (MPV)"
                },
                {
                    "isPrimary": false,
```

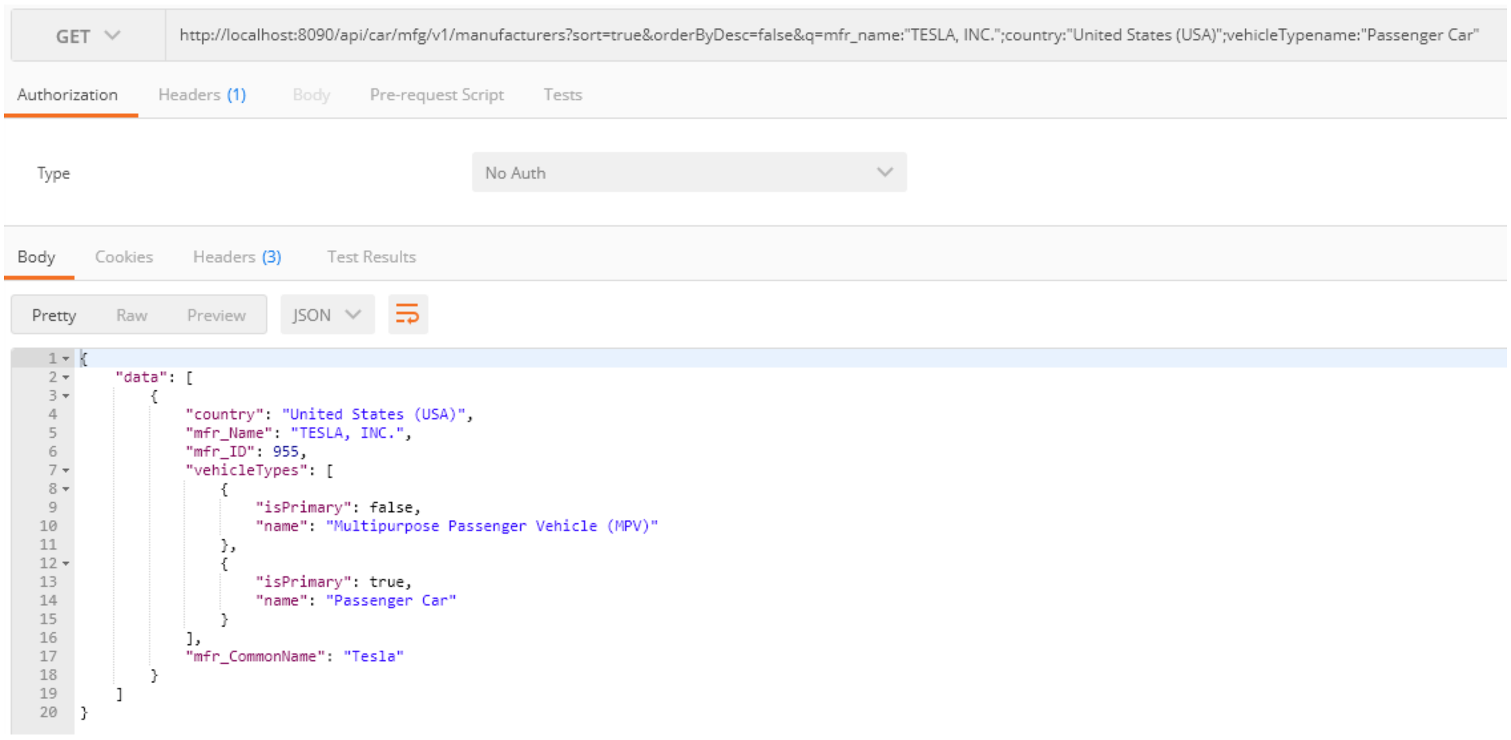
4. Search the manufacturer data by

   Country = United States (USA)

   mfr_name = TESLA, INC.

   vehicle type name = Passenger Car

   http://localhost:8090/api/car/mfg/v1/manufacturers?sort=true&orderByDesc=false&q=mfr_name:"TESLA, INC.";country:"United States (USA)";vehicleTypename:"Passenger Car"


GET http://localhost:8090/api/car/mfg/v1/manufacturers?sort=true&orderByDesc=false&q=mfr_name:"TESLA, INC.";country:"United States (USA)";vehicleTypename:"Passenger Car"

Type: No Auth

```
{
    "data": [
        {
            "country": "United States (USA)",
            "mfr_Name": "TESLA, INC.",
            "mfr_ID": 955,
            "vehicleTypes": [
                {
                    "isPrimary": false,
                    "name": "Multipurpose Passenger Vehicle (MPV)"
                },
                {
                    "isPrimary": true,
                    "name": "Passenger Car"
                }
            ],
            "mfr_CommonName": "Tesla"
        }
    ]
}
```

Suggested Improvement on this API

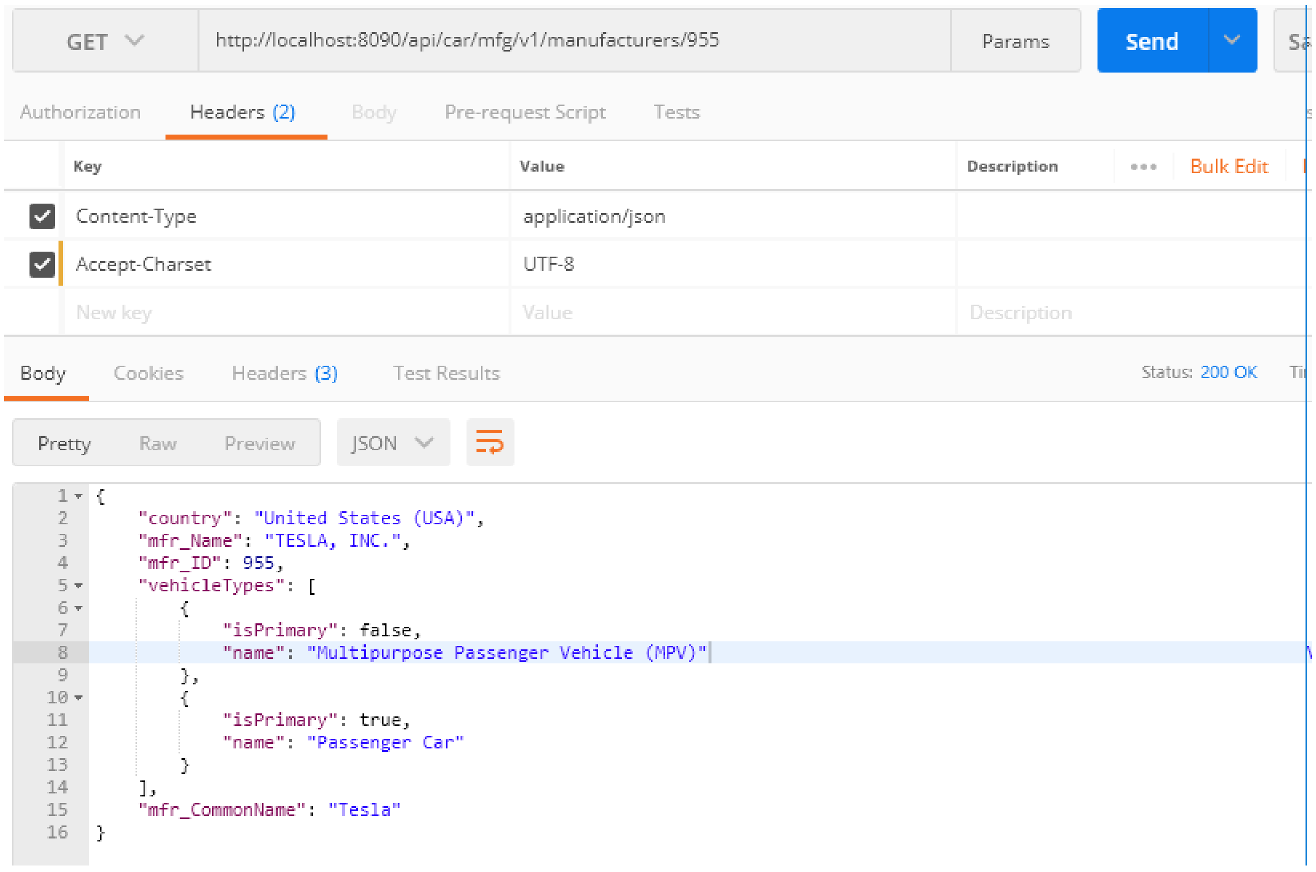
1. Pagination is desirable if a relative large number of manufacturers.
2. Support more advanced search capabilities, such as OR operations as well, and search other data types

GET 1 manufacturer based on id

GET:

http://localhost:8090/api/car/mfg/v1/manufacturers/{id}

e.g. http://localhost:8090/api/car/mfg/v1/manufacturers/955



GET http://localhost:8090/api/car/mfg/v1/manufacturers/955

Key	Value	Description
Content-Type	application/json	
Accept-Charset	UTF-8	

Status: 200 OK

```
{
    "country": "United States (USA)",
    "mfr_Name": "TESLA, INC.",
    "mfr_ID": 955,
    "vehicleTypes": [
        {
            "isPrimary": false,
            "name": "Multipurpose Passenger Vehicle (MPV)"
        },
        {
            "isPrimary": true,
            "name": "Passenger Car"
        }
    ],
    "mfr_CommonName": "Tesla"
}
```

Change 1 manufacturer

PATCH:

http://localhost:8090/api/car/mfg/v1/manufacturer

input or requestBody

```
{
  "country" : "United States (USA) testing",
  "mfr_ID" : 52,
  "mfr_Name" : "GENERAL MOTORS LLC testing",
  "vehicleTypes" : [ {
    "isPrimary" : false,
    "name" : "Passenger Car"
}
```

Insert one or more manufacturers

POST:

http://localhost:8090/api/car/mfg/v1/manufacturers

input or requestBody must be an array

```
[
{
  "country" : "United States (USA) added 1",
  "mfr_Name" : "GENERAL MOTORS LLC added 1",
  "vehicleTypes" : [ {
    "isPrimary" : false,
    "name" : "Passenger Car"
},
{
  "country" : "United States (USA) added 2",
  "mfr_Name" : "GENERAL MOTORS LLC added 2",
  "vehicleTypes" : [ {
    "isPrimary" : false,
    "name" : "Passenger Car"
}
]
```

Delete 1 manufacturer based on id

DELETE:

http://localhost:8090/api/car/mfg/v1/manufacturers/{id}

Delete all manufacturers

DELETE:

http://localhost:8090/api/car/mfg/v1/manufacturers

Save the manufacturer data into a file on the server

Please note that for delete/post/patch operations, the server saves the manufacturer data into a file, *carmfg_new_data.json*, in the same folder as *carmfg_data.json*. and the duplicates in *carmfg_data.json* are removed.

Some notes on the sources, build environment and testing

```
# Java 8 EE is required to compile this project
#unzip the sources into a folder

# To compile only
cd /d <the source folder that contains pom.xml>
mvn clean compile

# To package without running tests
cd /d <the source folder that contains pom.xml>
mvn clean package -Dmaven.test.skip=true

# To package and publish with running tests
cd /d <the source folder that contains pom.xml>
mvn clean install

# To run Tests only from the command ine
cd /d <the source folder that contains pom.xml>
mvn clean test

# To  package, test, and start the CarMfg web service from the command line using the source:
# NOTE: 1. the default port number is 8090, if need to run on different
#         port number see below
#       2. carmfg_data.json must be in the source folder, or
#         use '-Dcar.mfg.data.folder=<???> pointing to the folder
#         containing the file, carmfg_data.json
```

```
cd /d <the source folder that contains pom.xml>
mvn clean package && java -jar target/CarMfg-0.1.0.jar

# or
mvn clean package && java -Dcar.mfg.data.folder=<the folder containing the json file> -jar target/CarMfg-0.1.0.jar

# or if carmfg_data.json file is in the source folder, run by doing:
mvn spring-boot:run

# Please note that the default is 8090 that is
# specified in application.properties files
# To start the CarMfg web service from the command line using
# a non-default port number, e.g. 6789, use '-Dserver.port=<???>', e.g.
cd /d <the source folder that contains pom.xml>
mvn clean package && java -Dserver.port=6789 -jar target/CarMfg-0.1.0.jar

# TESTING
# There are junit tests in src/test/java, but there are many incomplete ones
```

# Save the manufacturer data into a file on the server

```
# Please note that for delete/post/patch operations, the server saves the manufacturer
# data into a file, carmfg_new_data.json, in the same folder as carmfg_data.json.
# and the duplicates in carmfg_data.json are removed.
```