

Java Microservices MOOC

Lesson 1-4: Exchanging Data with JSON



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Exchanging Data with REST

- To create REST applications, you need to define a way to exchange information between clients and servers.
 - HTML provides no easy way to identify data types.
 - Typically, the choice is between two text formats.
- **Extensible Markup Language (XML)**
 - A text file format that marks up text using tags
 - Data representation is verbose, more processing required
- **JavaScript Object Notation (JSON)**
 - A text file format that stores data in attribute value pairs
 - More lightweight to transfer and process



JSON

- JavaScript Object Notation is a simple format to represent objects, arrays, and values as strings.
- Many programming language libraries include functions to convert objects, arrays, and values to JSON strings and vice versa.

The word "JSON" is rendered in a large, bold, sans-serif font. The letters "J", "S", and "N" are a dark red color. The letter "O" is a black ring with a 3D effect, showing a white inner surface and a grey outer surface.

<http://json.org/>

JSON Strings

Arrays:

- `[1, 2, 3]`
- `["a", "b", "c"]`

Objects:

- `{"name": "john", "age": 31}`
- `{"itemId": ["a", "b"], "total": 2, "active": true}`

- JSON is very similar to declaring JavaScript literal values.
- JSON does not have a representation for functions.
- Only values are allowed in JSON.

JSON Example

- Employee example shows JSON data.
 - Note that the ID is shown as a number.
 - Notice pairs of fieldname/value.

```
1  {  
2    "id": 100,  
3    "firstName": "Hugh",  
4    "lastName": "Jast",  
5    "email": "Hugh.Jast@example.com",  
6    "phone": "730-715-4446",  
7    "birthDate": "1970-11-28T08:28:48.078Z",  
8    "title": "National\r\nData Strategist",  
9    "department": "Mobility"  
10 }  
11
```

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