

Structured Text Data Format: JSON

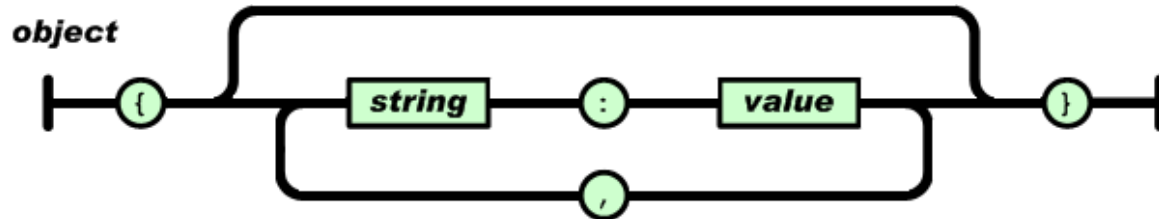
Used in modern web applications

JSON: Basic Information

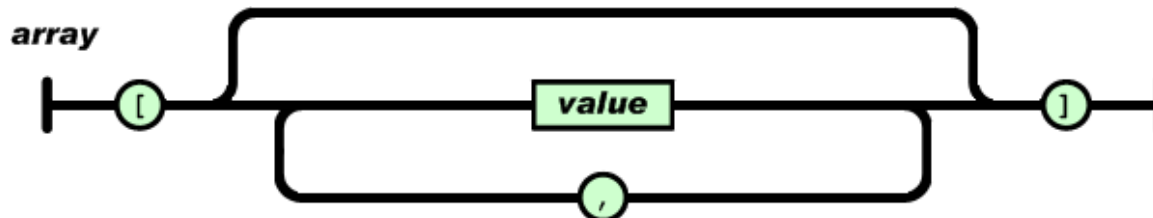
- JSON = JavaScript Object Notation
 - Originally specified by Douglas Crockford in 2001
 - Derived **from JavaScript** scripting language
 - Uses conventions of the C-family of languages
- Filename: *.json
- Internet media (MIME) type: **application/json**

JSON: Data Types (1)

- **object** – an **unordered** set of **key+value** pairs
 - these pairs are called **properties** (members) of an object
 - syntax: **{ key: value, key: value, key: value, ... }**

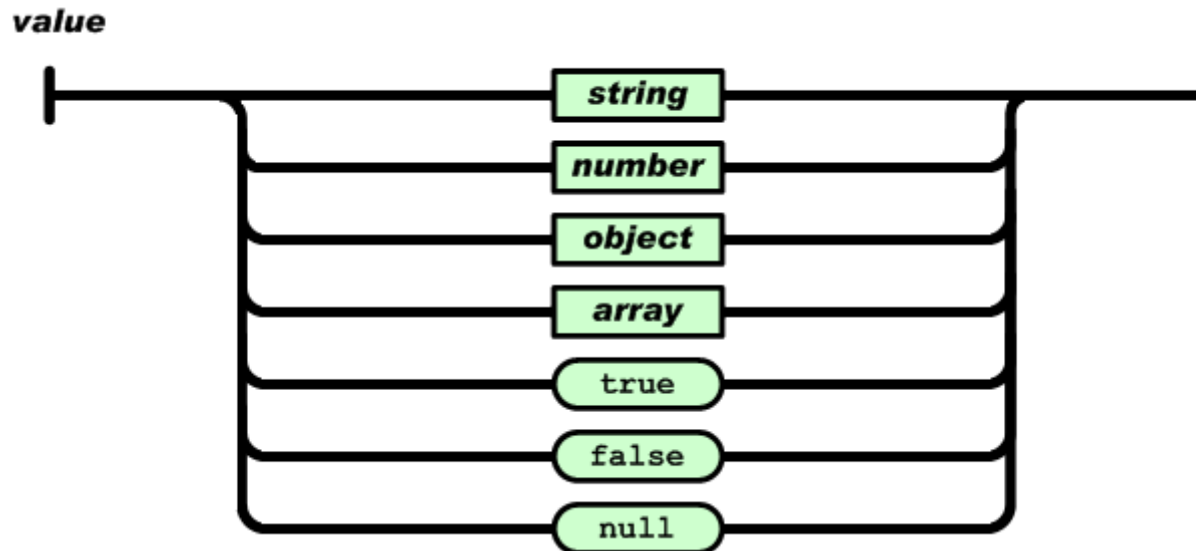


- **array** – an **ordered** collection of **values** (elements)
 - syntax: **[comma-separated values]**



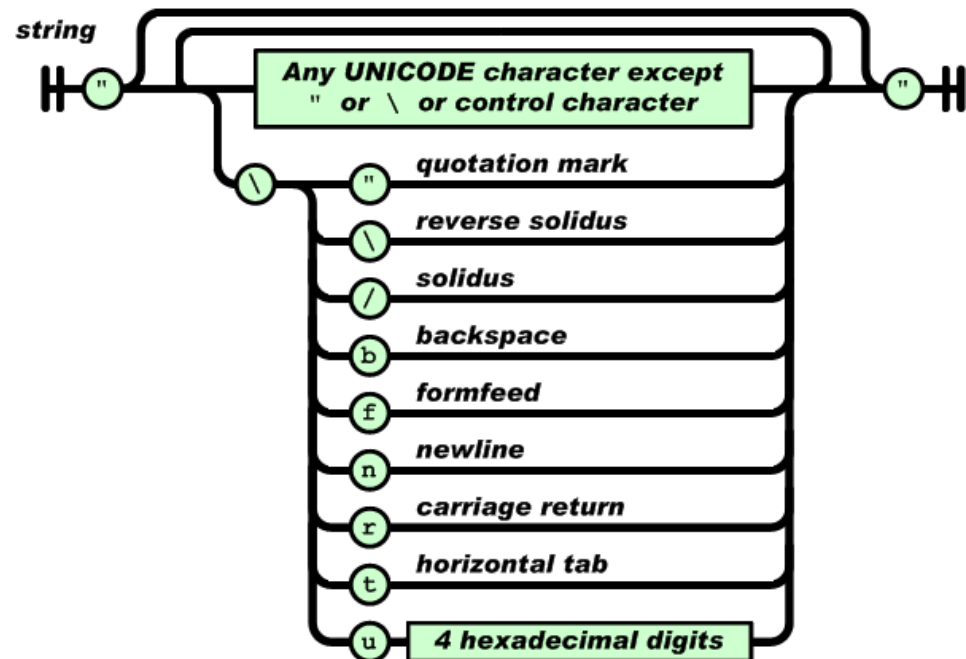
JSON: Data Types (2)

- **value** – **string** in double quotes / **number** / true or false (i.e., **Boolean**) / **null** / **object** / **array**
 - Can be nested



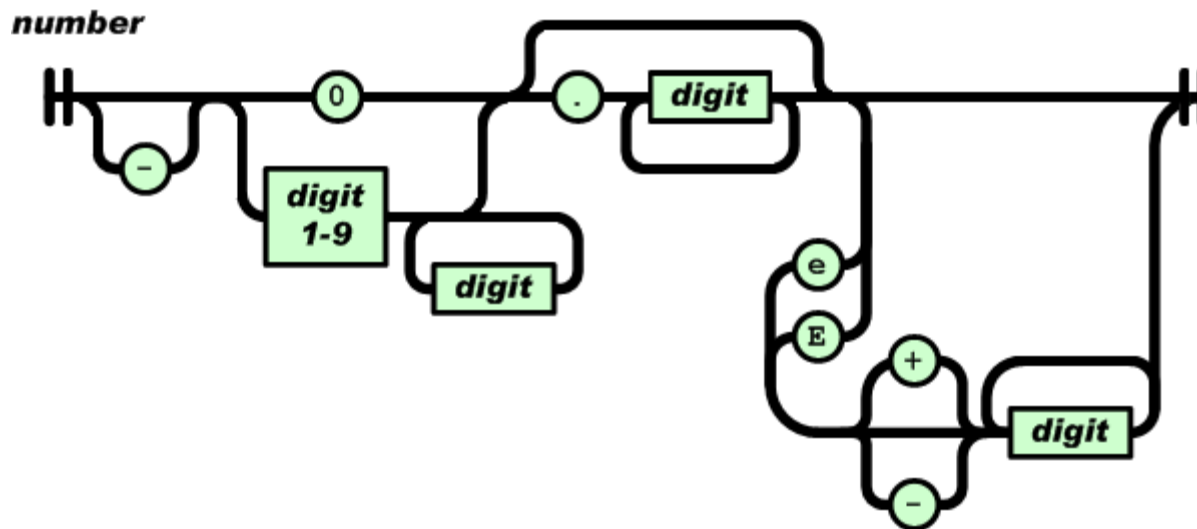
JSON: Data Types (3)

- **string** – **sequence** of zero or more Unicode **characters**, wrapped in **double quotes**
 - Backslash escaping



JSON: Data Types (4)

- **number** – like a C or Java number
 - Integer or float
 - Octal and hexadecimal formats are not used



JSON data: Example

```
{
  "firstName": "John",
  "lastName": "Smith",
  "age": 25,
  "address": {
    "streetAddress": "21 2nd Street",
    "city": "New York",
    "state": "NY",
    "postalCode": 10021
  },
  "phoneNumbers": [
    {
      "type": "home",
      "number": "212 555-1234"
    },
    {
      "type": "fax",
      "number": "646 555-4567"
    }
  ]
}
```