

JSON

JavaScript Object Notation

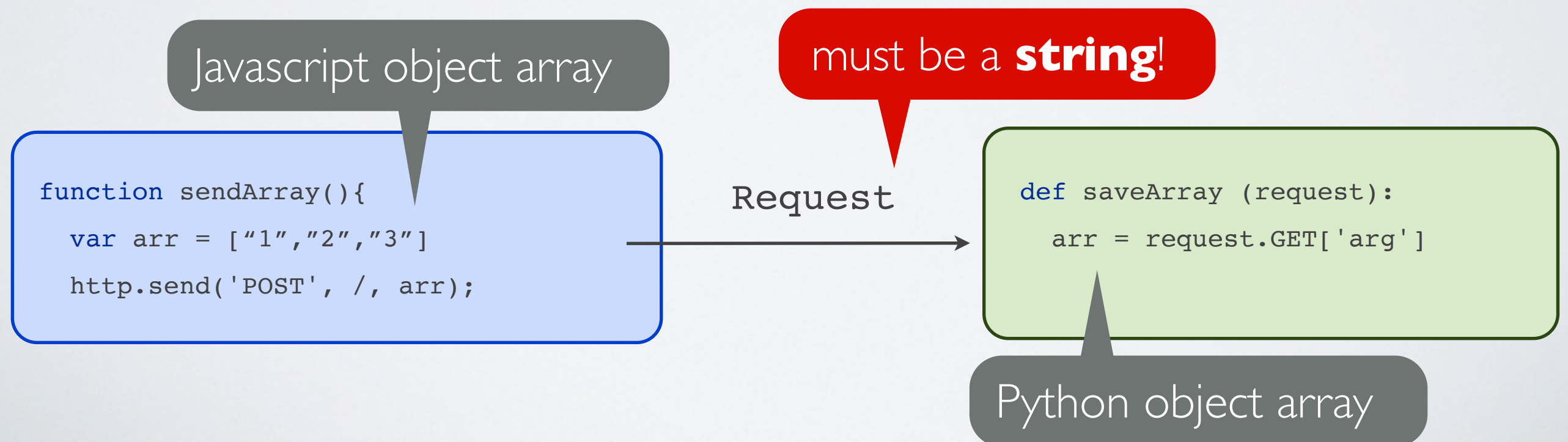
Thierry Sans

# Sending structured data

How to send a structured data (arrays or dictionaries) through an HTTP request or response?

➔ Only strings are send back and forth

✓ Have a string representation of a complex data structure



# Why do we need JSON?

**Original idea:** using XML

✓ **In practice:** JSON is used for its simplicity

# The JSON standard (RFC 4627)

- Lightweight open format to interchange data
- Human readable
- Used for serializing and transmitting structured data over a network connection (HTTP mostly)
- Since 2009 browsers support JSON natively

# Anatomy of JSON

- A JSON data structure is either

`array`      (indexed array)

`object`     (associative array)

- JSON values are

`string` – `number` – `true` – `false` – `null`



# JSON Array

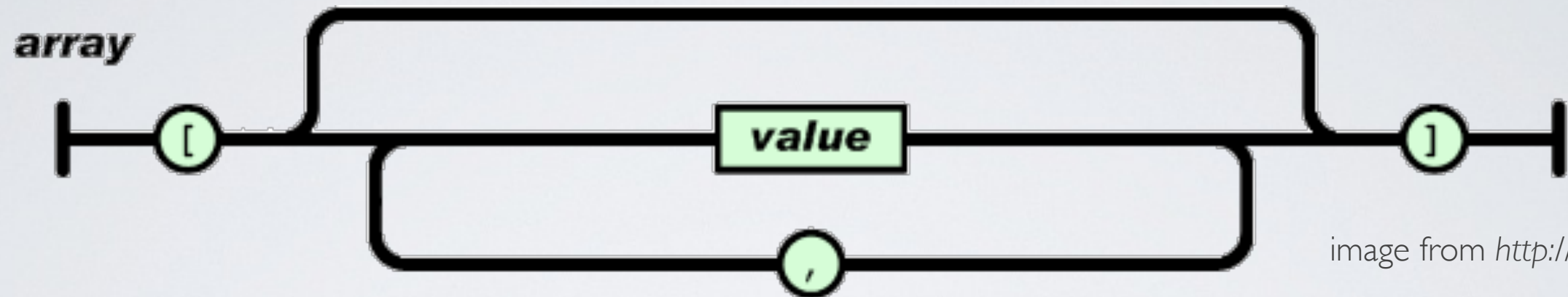


image from <http://www.json.org/>

```
[  
  {"name": "Thierry"},  
  {"name": "Jeff"},  
  {"name": "Bill"},  
  {"name": "Mark"},  
]
```

or

```
[1, 2, 3, 4, 5]
```

# JSON Object

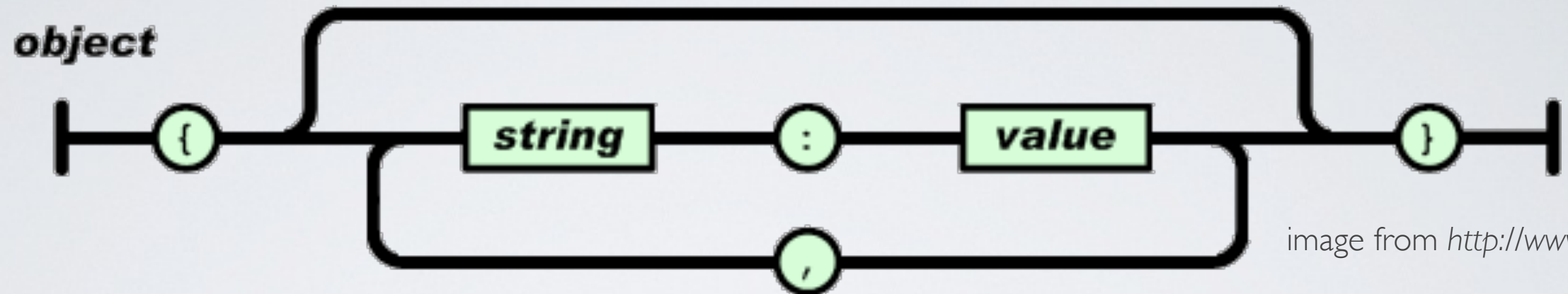


image from <http://www.json.org/>

```
{  
  "firstName": "John",  
  "lastName": "Smith",  
  "age": 25,  
  "male": true  
  "address":  
  {  
    "streetAddress": "21 2nd Street",  
    "additionalAddress": null  
    "city": "New York",  
    "state": "NY",  
    "postalCode": "10021"  
  }  
}
```

# JSON in Javascript (natively supported)

## **Serialization**

Javascript → JSON

```
var myJSONText = JSON.stringify(myObject);
```

## **Deserialization**

Javascript ← JSON

```
var myObject = JSON.parse(myJSONtext)
```



# Serialization - Deserialization

