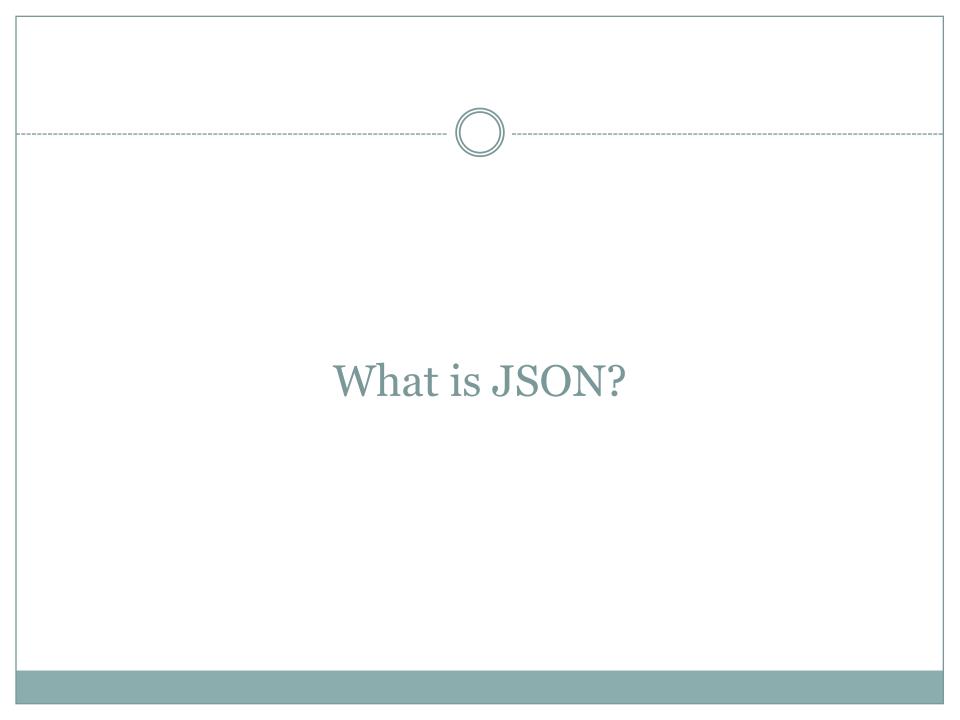
#### Overview

- What is JSON?
- Comparisons with XML
- Syntax
- Data Types
- Usage
- Live Examples





#### JSON is...



- A lightweight text based data-interchange format
- Completely language independent
- Based on a subset of the JavaScript Programming Language
- Easy to understand, manipulate and generate



#### JSON is NOT...



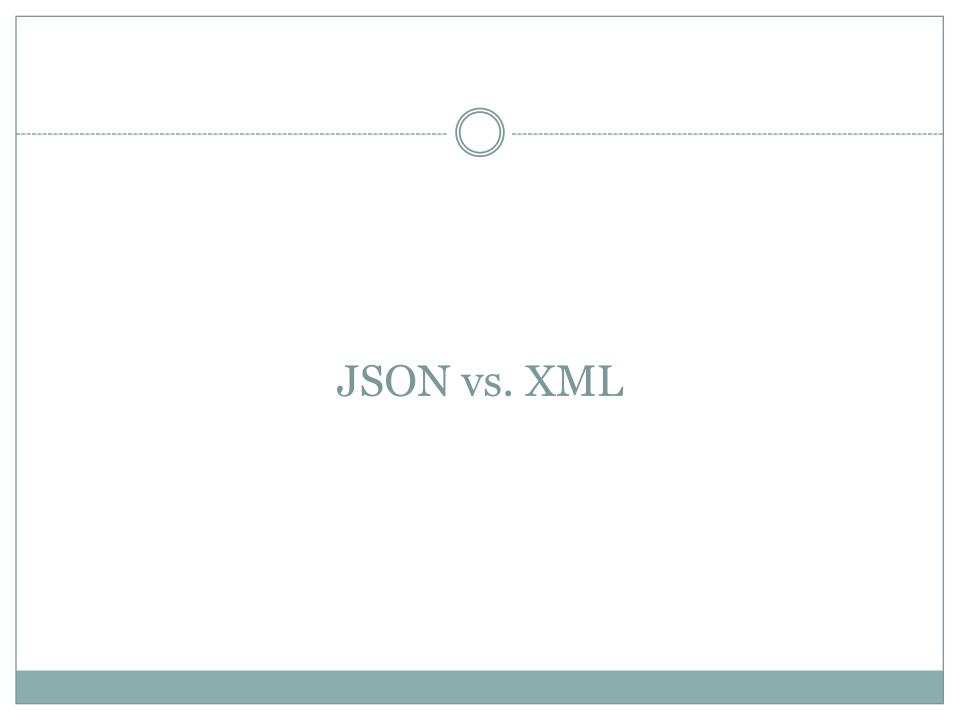
- Overly Complex
- A "document" format

- A markup language
- A programming language

# Why use JSON?



- Straightforward syntax
- Easy to create and manipulate
- Can be natively parsed in JavaScript using eval()
- Supported by all major JavaScript frameworks
- Supported by most backend technologies



#### Much Like XML



Plain text formats

• "Self-describing" (human readable)

• Hierarchical (Values can contain lists of objects or

values)

#### Not Like XML



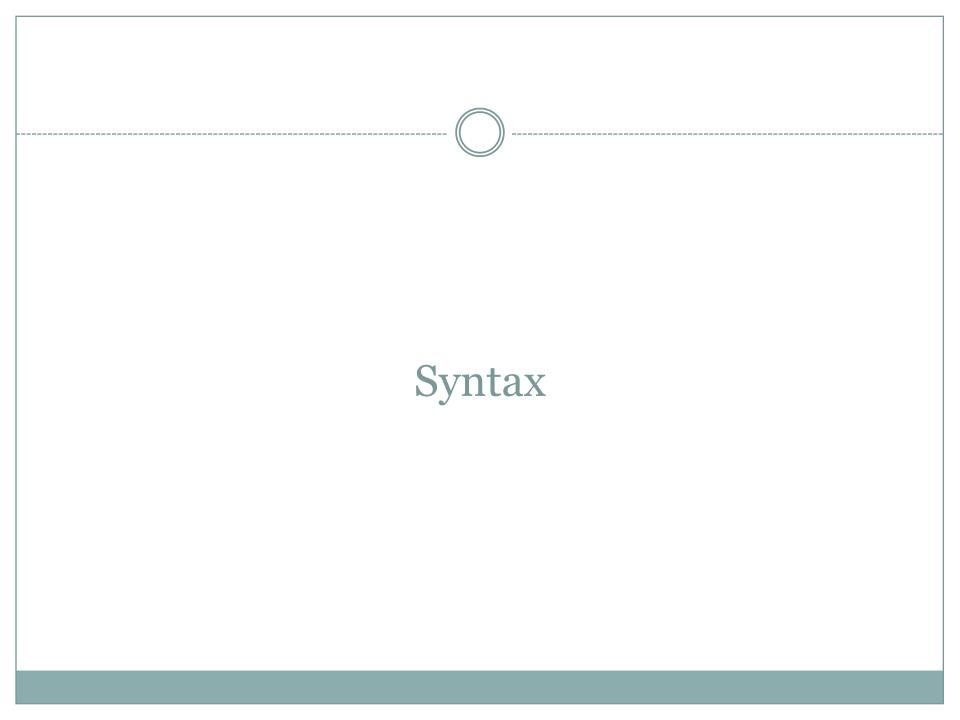
- Lighter and faster than XML
- JSON uses typed objects. All XML values are typeless strings and must be parsed at runtime.
- Less syntax, no semantics
- Properties are immediately accessible to JavaScript code

# Knocks against JSON

- Lack of namespaces
- No inherit validation (XML has DTD and templates, but there is JSONlint)
- Not extensible

It's basically just not XML





## JSON Object Syntax

- Unordered sets of name/value pairs
- Begins with { (left brace)
- Ends with } (right brace)
- Each name is followed by: (colon)
- Name/value pairs are separated by , (comma)

## JSON Example

```
var employeeData = {
 "employee id": 1234567,
 "name": "Jeff Fox",
 "hire date": "1/1/2013",
 "location": "Norwalk, CT",
 "consultant": false
} ;
```

## Arrays in JSON

An ordered collection of values

Begins with [ (left bracket)

Ends with ] (right bracket)

Name/value pairs are separated by , (comma)

## JSON Array Example

```
var employeeData = {
 "employee id": 1236937,
 "name": "Jeff Fox",
 "hire date": "1/1/2013",
 "location": "Norwalk, CT",
 "consultant": false,
  "random nums": [ 24,65,12,94 ]
```



# Data Types: Strings

Sequence of o or more Unicode characters

Wrapped in "double quotes"

Backslash escapement

## Data Types: Numbers

- Integer
- Real
- Scientific
- No octal or hex
- No NaN or Infinity Use null instead.

## Data Types: Booleans & Null

• Booleans: true or false

Null: A value that specifies nothing or no value.

# Data Types: Objects & Arrays

- Objects: Unordered key/value pairs wrapped in { }
- Arrays: Ordered key/value pairs wrapped in []



#### How & When to use JSON

- Transfer data to and from a server
- Perform asynchronous data calls without requiring a page refresh
- Working with data stores
- Compile and save form or user data for local storage