02. JSON Syntax.

The JSON syntax is a subset of the JavaScript syntax.

2.1. JSON Syntax Rules

JSON syntax is derived from JavaScript object notation syntax:

- Data is in name/value pairs
- Data is separated by commas
- Curly braces hold objects
- Square brackets hold arrays

2.2. JSON Data - A Name and a Value

JSON data is written as name/value pairs.

A name/value pair consists of a field name (in double quotes), followed by a colon, followed by a value:

Example:

```
"name":"John"
```

JSON names require double quotes. JavaScript names don't.

2.3. JSON - Evaluates to JavaScript Objects

The JSON format is almost identical to JavaScript objects.

In JSON, keys must be strings, written with double quotes:

Example: JSON

```
{ "name":"John" }
```

In JavaScript, keys can be strings, numbers, or identifier names:

Example: JavaScript

```
{ name:"John" }
```

2.4. JSON Values

In JSON, values must be one of the following data types:

- a string
- a number
- an object (JSON object)
- an array
- a boolean
- null

In JavaScript values can be all of the above, plus any other valid JavaScript expression, including:

- a function
- a date
- undefined

In JSON, string values must be written with double quotes:

Example: JSON

```
{ "name":"John" }
```

In JavaScript, you can write string values with double or single quotes:

Example: JavaScript

```
{ name:'John' }
```

2.5. JSON Uses JavaScript Syntax

Because JSON syntax is derived from JavaScript object notation, very little extra software is needed to work with JSON within JavaScript.

With JavaScript you can create an object and assign data to it, like this:

Example:

```
var person = { "name":"John", "age":31, "city":"New York" };
```

You can access a JavaScript object like this:

Example:

```
// returns John
person.name;
```

It can also be accessed like this:

Example:

```
// returns John
person["name"];
```

Data can be modified like this:

Example:

```
person.name = "Gilbert";
```

It can also be modified like this:

Example:

```
person["name"] = "Gilbert";
```

You will learn how to convert JavaScript objects into JSON later in this tutorial.

2.6. JavaScript Arrays as JSON

The same way JavaScript objects can be used as JSON, JavaScript arrays can also be used as JSON. You will learn more about arrays as JSON later in this tutorial.

2.7. JSON Files

The file type for JSON files is ".json"

The MIME type for JSON text is "application/json"