**JSON stands for Javascript**[**Object**](http://103.146.24.66/moodle/mod/page/view.php?id=9081)**Notation**. JSON is a text-based data format that is used to store and transfer data. For example,

// JSON syntax

{

    "name": "John",

    "age": 22,

    "gender": "male",

}

In JSON, the data are in **key/value** pairs separated by a comma ,.

JSON was derived from JavaScript. So, the JSON syntax resembles JavaScript [object](http://103.146.24.66/moodle/mod/page/view.php?id=9081) literal syntax. However, the JSON format can be accessed and be created by other programming languages too.

JSON data consists of **key/value** pairs similar to JavaScript [object](http://103.146.24.66/moodle/mod/page/view.php?id=9081) properties. The key and values are written in double quotes separated by a colon :. For example,

// JSON data

"name": "John"

The JSON [object](http://103.146.24.66/moodle/mod/page/view.php?id=9081) is written inside curly braces { }. JSON objects can contain multiple **key/value** pairs. For example,

// JSON [object](http://103.146.24.66/moodle/mod/page/view.php?id=9081)

{ "name": "John", "age": 22 }

JSON array is written inside square brackets [ ].

**For example,**

// JSON array

[ "apple", "mango", "banana"]

// JSON array containing objects

[

    { "name": "John", "age": 22 },

    { "name": "Peter", "age": 20 }.

    { "name": "Mark", "age": 23 }

]

You can access JSON data using the dot notation.

**For example,**

// JSON [object](http://103.146.24.66/moodle/mod/page/view.php?id=9081)

const data = {

    "name": "John",

    "age": 22,

    "hobby": {

            "reading" : true,

            "gaming" : false,

            "sport" : "football"

    },

    "class" : ["JavaScript", "HTML", "CSS"]

}

// accessing JSON [object](http://103.146.24.66/moodle/mod/page/view.php?id=9081)

console.log(data.name); // John

console.log(data.hobby); // { gaming: false, reading: true, sport: "football"}

console.log(data.hobby.sport); // football

console.log(data.class[1]); // HTML

We use the . notation to access JSON data. Its syntax is: variableName.key

You can also use square bracket syntax [] to access JSON data. For example,

// JSON [object](http://103.146.24.66/moodle/mod/page/view.php?id=9081)

const data = {

    "name": "John",

    "age": 22

}

// accessing JSON [object](http://103.146.24.66/moodle/mod/page/view.php?id=9081)

console.log(data["name"]); // John

**Though the syntax of JSON is similar to the JavaScript**[**object**](http://103.146.24.66/moodle/mod/page/view.php?id=9081)**, JSON is different from JavaScript objects.**

|  |  |
| --- | --- |
| **JSON** | **JavaScript**[**Object**](http://103.146.24.66/moodle/mod/page/view.php?id=9081) |
| The key in key/value pair should be in double quotes. | The key in key/value pair can be without double quotes. |
| JSON cannot contain functions. | JavaScript objects can contain functions. |
| JSON can be created and used by other programming languages. | JavaScript objects can only be used in JavaScript. |

You can convert JSON data to a JavaScript [object](http://103.146.24.66/moodle/mod/page/view.php?id=9081) using the built-in JSON.parse() function. For example,

// json [object](http://103.146.24.66/moodle/mod/page/view.php?id=9081)

const jsonData = '{ "name": "John", "age": 22 }';

 // converting to JavaScript [object](http://103.146.24.66/moodle/mod/page/view.php?id=9081)

const obj = JSON.parse(jsonData);

 // accessing the data

console.log(obj.name); // John

You can also convert JavaScript objects to JSON format using the JavaScript built-in JSON.stringify() function. For example,

// JavaScript [object](http://103.146.24.66/moodle/mod/page/view.php?id=9081)

const jsonData = { "name": "John", "age": 22 };

 // converting to JSON

const obj = JSON.stringify(jsonData);

 // accessing the data

console.log(obj); // "{"name":"John","age":22}"

**Uses of JSON**

JSON is the most commonly used format for transmitting data (data interchange) from a server to a client and vice-versa. JSON data are very easy to parse and use. It is fast to access and manipulate JSON data as they only contain texts.

JSON is language independent. You can create and use JSON in other programming languages too.