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How to Use JSON Data with PHP or JavaScript

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January 22nd, 2017 / Share / Edit 

data javascript json php
```

JSON is used to transmit data between a server and a browser. Here is a basic example of what might be in a .json string.

```
{
  "name": "Tania",
  "title": "Web Developer",
  "website": ""
}
```

As you can see, it's a human readable format of data that might traditionally be stored in a table. Some companies might have public <code>.json</code> files located that you can access and extract data from (an API you can connect to). You might also save a <code>.json</code> file somewhere in your project that you want to extract data from.

Goals

JSON data can be accessed and utilized with many programming languages. In this tutorial, we'll learn how to access JSON with PHP and

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Prerequisites

- You must either have a local server set up, or a host that runs PHP and some basic PHP knowledge.
- Basic knowledge of programming concepts (arrays and variables) and using JavaScript.

What is JSON?

JSON stands for **J**ava**S**cript **O**bject **N**otation. It is data saved in a .json file, and consists of a series of **key/value pairs**.

```
{ "key": "value" }
```

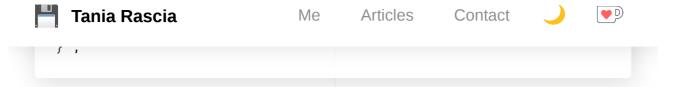
The **value** of any JSON key can be a string, Boolean, number, null, array, or object. Comments are not allowed in JSON.

Although JSON resembles an object or an array, **JSON is a string**. A serialized string, which means it can later be parsed and decoded into data types.

Using data from JSON with PHP

First, to drill in that JSON is simply a string, we're going to write JSON into a PHP string and apply it to a variable called \$data.

```
$data = '{
```



Then we'll use the <code>json_decode()</code> function to convert the JSON string into a PHP object.

```
$character = json_decode($data);
```

Now we can access it as a PHP object.

```
echo $character->name;
```

Here's the whole file.

```
<?php

$data = '{
    "name": "Aragorn",
    "race": "Human"
}';

$character = json_decode($data);
echo $character->name;
```

Here is the output.

```
• • • Aragorn
```

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From here out, we'll put all JSON data into its own .json tile. I his way, we can retrieve the contents of the file instead of keeping it as a PHP string.

Here's what data.json will look like.

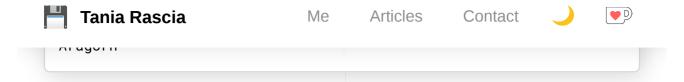
```
[{
    "name": "Aragorn",
    "race": "Human"
}, {
    "name": "Legolas",
    "race": "Elf"
}, {
    "name": "Gimli",
    "race": "Dwarf"
}]
```

And here's how we'll extract that data in PHP.

```
$url = 'data.json'; // path to your JSON file
$data = file_get_contents($url); // put the contents of the file
into a variable
$characters = json_decode($data); // decode the JSON feed
```

In order to get one entry, we'll have to access the appropriate array number. Remember, counting begins with 0 in programming.

```
echo $characters[0]->name;
```

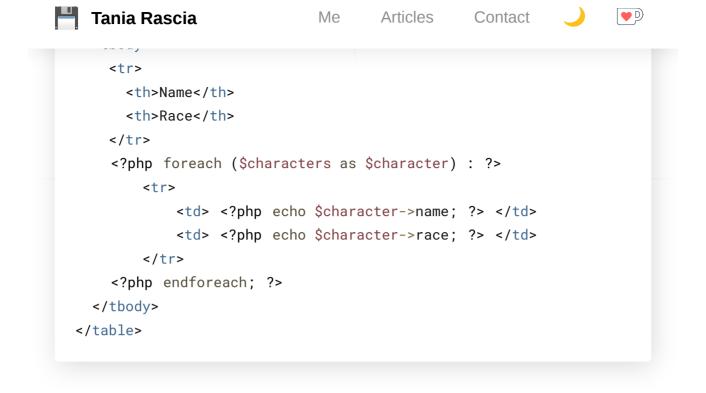


```
I can access all the data in the array with a foreach loop.
  foreach ($characters as $character) {
    echo $character->name . '<br>';
  }
 Aragorn
 Legolas
 Gimli
```

Here is the full PHP file.

```
<?php
$url = 'data.json'; // path to your JSON file
$data = file_get_contents($url); // put the contents of the file
into a variable
$characters = json_decode($data); // decode the JSON feed
echo $characters[0]->name;
foreach ($characters as $character) {
  echo $character->name . '<br>';
}
```

We can display the data in a table, for an example.



Aragorn Human

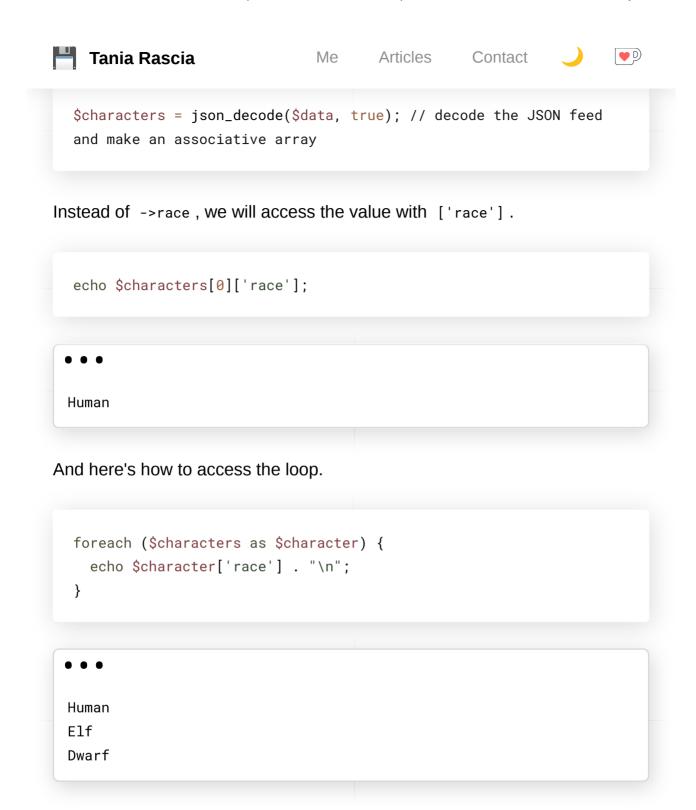
Gimli Dwarf

Legolas Elf

In this example, I'm using the alternate syntax for foreach, which looks like foreach(): /* loop */ endforeach; instead of foreach() { /* loop */ }. This is often preferable when outputting HTML.

Using associative arrays

There's another way we can access the data in PHP. If you pass true as the argument in <code>json_decode()</code>, the data becomes an associative array instead of an object. This means we'll be using square bracket notation []



Getting data from nested arrays

So far, we've only used JSON feeds with key/value pairs, but it's common to encounter nesting. Here's another nerdy example, which we can save in a new file called **wizards.json**.

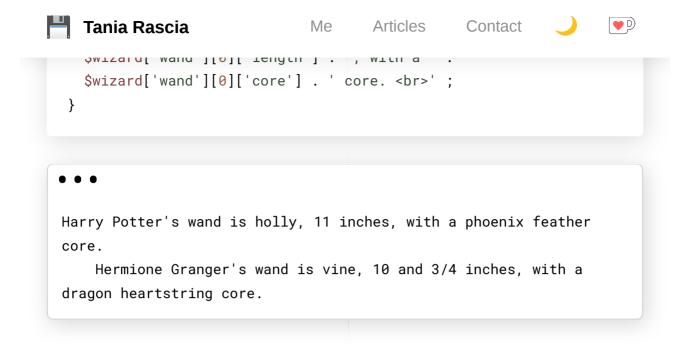


Decoding the feed.

```
$url = 'wizards.json';
$data = file_get_contents($url);
$wizards = json_decode($data, true);
```

We'll be able to access the nested array using <code>\$wizard['key'][0]['key']</code> in a loop, or whatever number corresponds correctly if you only want to print one.

```
foreach ($wizards as $wizard) {
```



Converting a PHP object or array into JSON

Just as you use <code>json_decode()</code> to turn JSON into PHP, you can turn PHP into JSON with json_encode().

```
$data = [
 'name' => 'Aragorn',
 'race' => 'Human'
1:
echo json_encode($data);
```

We made a PHP array and encoded it. Here's the output:

```
{"name": "Aragorn", "race": "Human"}
```

Using data from JSON with JavaScript



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```
var data = '[ { "name": "Aragorn", "race": "Human" }, { "name":
"Gimli", "race": "Dwarf" } ]'
```

Now we'll use JavaScript built in JSON.parse() function to decode the string.

```
data = JSON.parse(data);
```

From here we can access the data like a regular JavaScript object.

```
console.log(data[1].name)
Gimli
```

And we can loop through each iteration with a for loop.

```
for (var i = 0; i < data.length; i++) {
  console.log(data[i].name + ' is a ' + data[i].race + '.')
}
```

```
Aragorn is a Human.
    Gimli is a Dwarf.
```

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Let's just take the above JSON string and put it in data.json.

```
;[
    name: 'Aragorn',
    race: 'Human',
  },
    name: 'Gimli',
    race: 'Dwarf',
 },
1
```

Now we'll make an XMLHttpRequest().

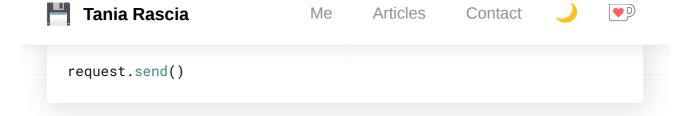
```
var request = new XMLHttpRequest()
```

We'll open the file (data.json) via GET (URL) request.

```
request.open('GET', 'data.json', true)
```

From here, we'll parse and work with all our JSON data within the onload function.

```
request.onload = function() {
  // begin accessing JSON data here
}
```



Here's the final code.

```
var request = new XMLHttpRequest()

request.open('GET', 'data.json', true)

request.onload = function() {
   // begin accessing JSON data here
   var data = JSON.parse(this.response)

for (var i = 0; i < data.length; i++) {
   console.log(data[i].name + ' is a ' + data[i].race + '.')
   }
}

request.send()</pre>
```

And the output.

```
● ● ●

Aragorn is a Human.

Gimli is a Dwarf.
```

Using Fetch

Now you can also use the Fetch API to do the same thing. Read <u>How to use</u> the JavaScript Fetch API to Get JSON Data for an easier method to get this data.



Using jQuery

As you can see, it's not too difficult to retrieve a JSON feed with plain JavaScript. However, it's even easier with jQuery, using the <code>getJSON()</code> function. If you don't know how jQuery works, you'll need to load the jQuery JavaScript library before any of this custom code.

```
$(document).ready(function() {
    $.getJSON('data.json', function(data) {
        // begin accessing JSON data here
        console.log(data[0].name)
    })
})
```

You might also see jQuery access JSON via an AJAX request, which is a little more verbose.

```
$(document).ready(function() {
  var data
```



Both will have the same output.

```
• • •
Aragorn
```

Conclusion

Hopefully this article has taught you a bit about what JSON is and does, and how to access JSON data with PHP, JavaScript, or jQuery.

No comments?

There are intentionally no comments on this site. Enjoy! If you found any errors in this article, please feel free to **edit on GitHub**.

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