PHP Arrays

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www.wa4e.com

http://www.wa4e.com/code/arrays
http://www.wa4e.com/code/arrays.zip

PHP Arrays Rock!

- Better than Python Dictionaries
- Better than Java Hash Maps
- PHP Arrays have all the benefits of Python Dictionaries but they can also maintain the order of the items in the array

http://en.wikipedia.org/wiki/Associative_array

Associative Arrays

Can be key => value or simply indexed by numbers

Ignore two-dimensional arrays for now...

http://en.wikipedia.org/wiki/Associative_array

Integer Indices

```
<?php
    $stuff = array("Hi", "There");
    echo $stuff[1], "\n";
?>
```

```
There
```

Key / Value

```
<?php
    $stuff = array("name" => "Chuck",
                   "course" => "WA4E");
    echo $stuff["course"], "\n";
?>
```

```
WA4E
```

Dumping an Array

The function print_r() shows PHP data - it is good for debugging.

```
<?php
    $stuff = array("name" => "Chuck",
                   "course" => "WA4E");
    echo("<pre>\n");
    print_r($stuff);
    echo("\n</pre>\n");
?>
```

```
Array(
    [name] => Chuck
    [course] => WA4E
)
```

var_dump vs. print_r

```
<?php
   $stuff = array("name" => "Chuck",
                   "course" => "SI664");
    var_dump($stuff);
?>
```

```
array(2) {
  ["name"]=>
  string(5) "Chuck"
  ["course"]=>
  string(5) "SI664"
}
```

var_dump() and false

```
<?php
    $thing = FALSE;
    echo("One\n");
    print_r($thing);
    echo("Two\n");
    var_dump($thing);
?>
```

```
One
Two
bool(false)
```

http://stackoverflow.com/questions/3406171/php-var-dump-vs-print-r

Building Up an Array

You can allocate a new item in the array and append a value at the same time using empty square braces [ ] on the right hand side of an assignment statement.

```
$va = array();
$va[] = "Hello";
$va[] = "World";
print_r($va);
```

```
Array(
    [0] => Hello
    [1] => World
)
```

Building Up an Array

You can also add new items in an array using a key.

```
$za = array();
$za["name"] = "Chuck";
$za["course"] = "WA4E";
print_r($za);
```

```
Array(
    [name] => Chuck
    [course] => WA4E
)
```

Looping Through an Array

```
<?php
    $stuff = array("name" => "Chuck",
                   "course" => "SI664");
    foreach($stuff as $k => $v ) {
       echo "Key=",$k," Val=",$v,"\n";
    }
?>
```

```
Key=name Val=Chuck
Key=course Val=SI664
```

Looping Through an Array

```php
<?php
    $stuff = array("Chuck","SI664");
    foreach($stuff as $k => $v ) {
       echo "Key=",$k," Val=",$v,"\n";
    }
?>
```

```
Key=0 Val=Chuck
Key=1 Val=SI664
```

Counted Loop Through an Array

```
<?php
    $stuff = array("Chuck","SI664");
    for($i=0; $i < count($stuff); $i++) {
       echo "I=",$i," Val=",$stuff[$i],"\n";
    }
?>
```

```
I=0 Val=Chuck
I=1 Val=SI664
```

Arrays of Arrays

The elements of an array can be many things other than a string or integer. You can even have objects or other arrays.

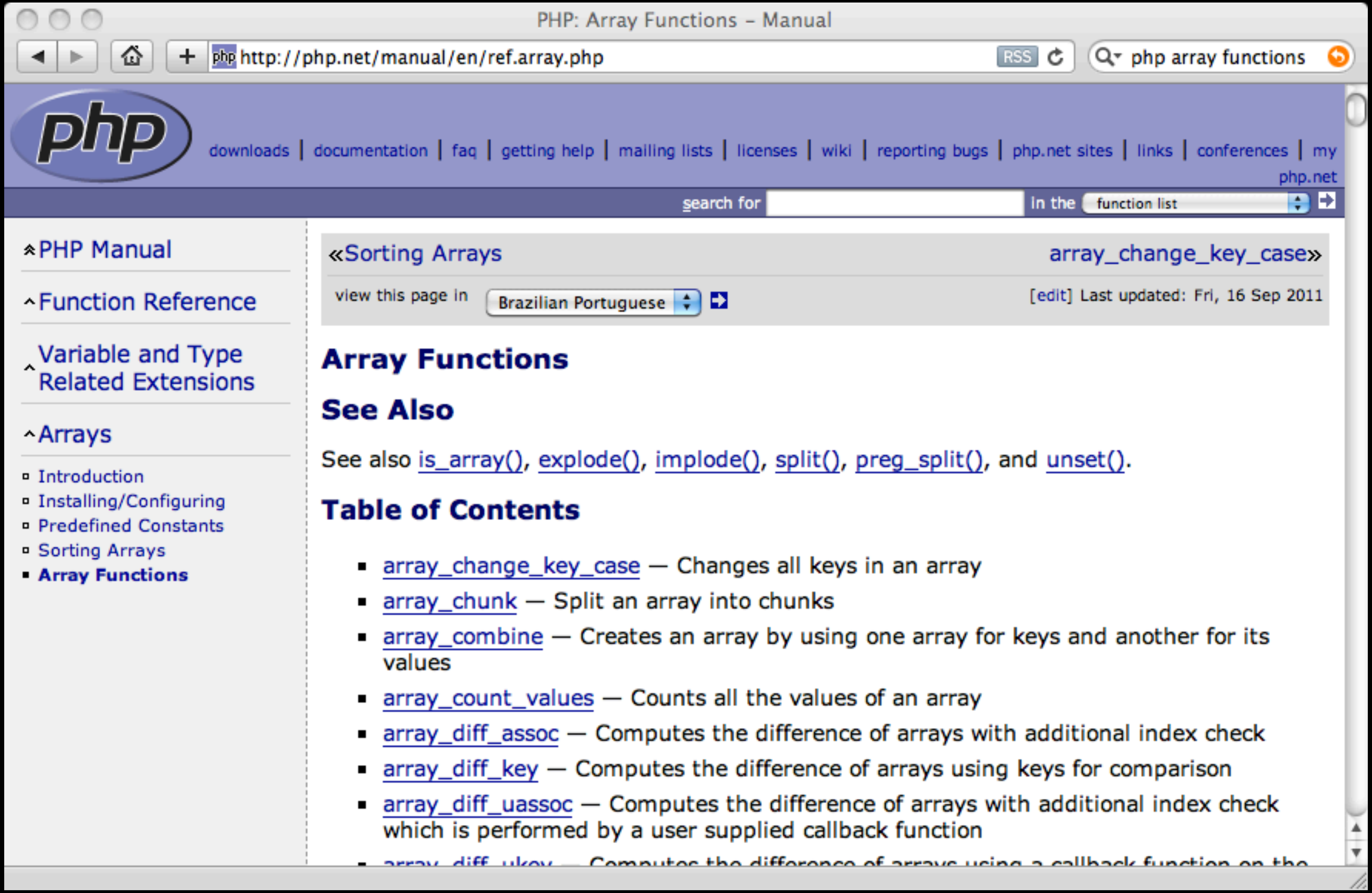
```
$products = array(
    'paper' => array(
        'copier' => "Copier & Multipurpose",
        'inkjet' => "Inkjet Printer",
        'laser' => "Laser Printer",
        'photo' => "Photographic Paper"),
    'pens' => array(
        'ball' => "Ball Point",
        'hilite' => "Highlighters",
        'marker' => "Markers"),
    'misc' => array(
        'tape' => "Sticky Tape",
        'glue' => "Adhesives",
        'clips' => "Paperclips")
);
```

```
echo $products["pens"]["marker"];

Markers
```

Array Functions

PHP Arrays


PHP: Array Functions – Manual
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[edit] Last updated: Fri, 16 Sep 2011

Array Functions

See Also

See also is_array(), explode(), implode(), split(), preg_split(), and unset().

Table of Contents

- array_change_key_case — Changes all keys in an array
- array_chunk — Split an array into chunks
- array_combine — Creates an array by using one array for keys and another for its values
- array_count_values — Counts all the values of an array
- array_diff_assoc — Computes the difference of arrays with additional index check
- array_diff_key — Computes the difference of arrays using keys for comparison
- array_diff_uassoc — Computes the difference of arrays with additional index check which is performed by a user supplied callback function
- array_diff_ukey — Computes the difference of arrays using a callback function on the

Array Functions

array_key_exists($key, $ar) - Returns TRUE if key is set in the array

isset($ar['key']) - Returns TRUE if key is set in the array

count($ar) - How many elements in an array

is_array($ar) - Returns TRUE if a variable is an array

sort($ar) - Sorts the array values (loses key)

ksort($ar) - Sorts the array by key

asort($ar) - Sorts array by value, keeping key association

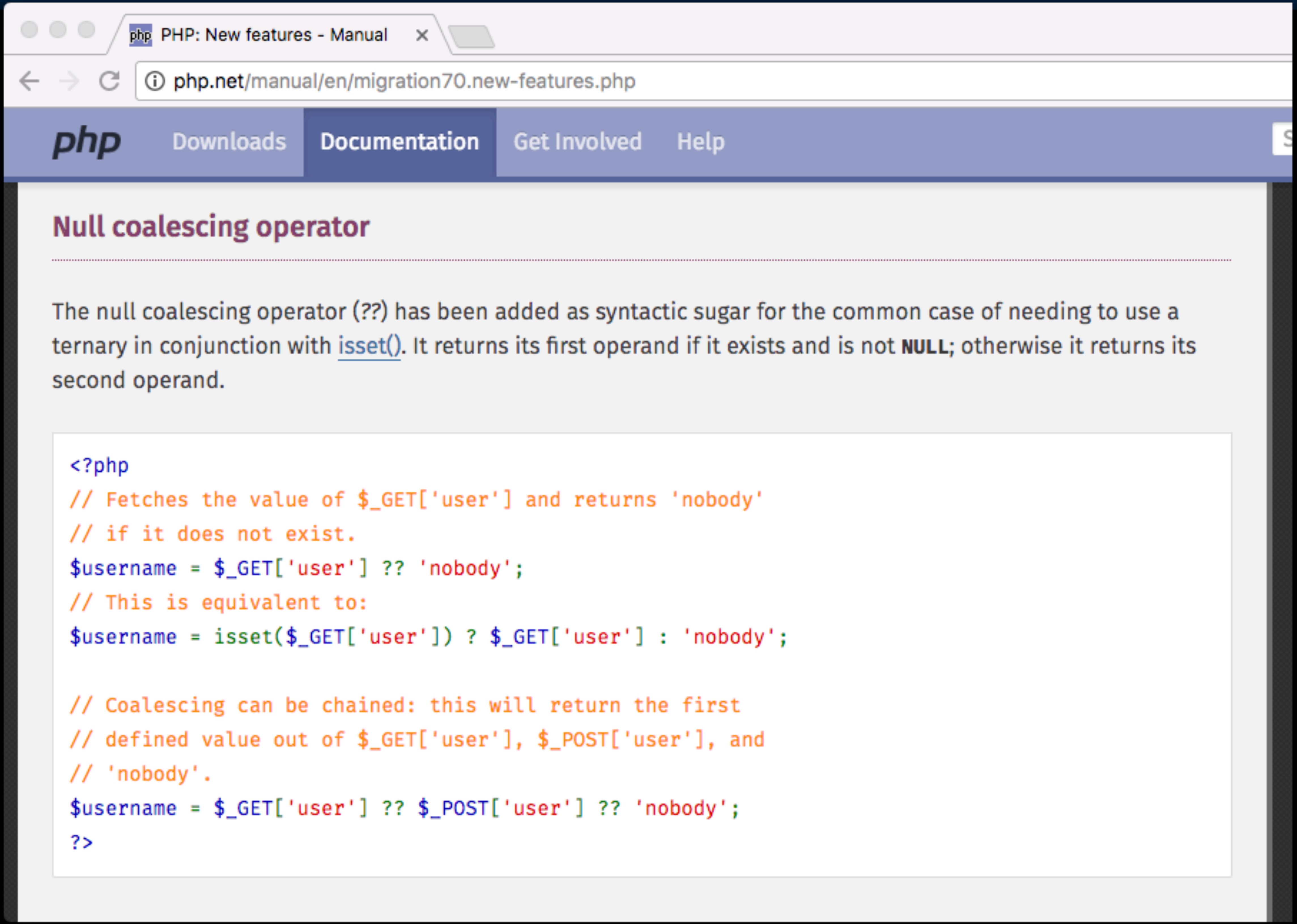
shuffle($ar) - Shuffles the array into random order

```
Course exists
name is set
addr is not set
```

```php
$za = array();
$za["name"] = "Chuck";
$za["course"] = "WA4E";

if (array_key_exists('course',$za) ) {
   echo("Course exists\n");
} else {
   echo("Course does not exist\n");
}

echo isset($za['name']) ? "name is set\n" : "name is not set\n";
echo isset($za['addr']) ? "addr is set\n" : "addr is not set\n";
```


PHP: New features - Manual
php.net/manual/en/migration70.new-features.php
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Null coalescing operator

The null coalescing operator (??) has been added as syntactic sugar for the common case of needing to use a ternary in conjunction with isset(). It returns its first operand if it exists and is not **NULL**; otherwise it returns its second operand.

```php
<?php
// Fetches the value of $_GET['user'] and returns 'nobody'
// if it does not exist.
$username = $_GET['user'] ?? 'nobody';
// This is equivalent to:
$username = isset($_GET['user']) ? $_GET['user'] : 'nobody';

// Coalescing can be chained: this will return the first
// defined value out of $_GET['user'], $_POST['user'], and
// 'nobody'.
$username = $_GET['user'] ?? $_POST['user'] ?? 'nobody';
?>
```

Null Coalesce

```
<?php
$za = array();
$za["name"] = "Chuck";
$za["course"] = "WA4E";

// PHP >= 7.0.0 only
$name = $za['name'] ?? 'not found';
$addr = $za['addr'] ?? 'not found';

echo("Name=$name\n");
echo("Addr=$addr\n");

// PHP < 7.0.0 equivalent
$name = isset($za['name']) ? $za['name'] : 'not found';
```

```
Name=Chuck
Addr=not found
```

PHP Arrays

```
$za = array();
$za["name"] = "Chuck";
$za["course"] = "WA4E";
print "Count: " . count($za) . "\n";
if (  is_array($za) ) {
    echo '$za Is an array' . "\n";
} else {
    echo '$za Is not an array' . "\n";
}
```

```
Count: 2
$za Is an array
```

PHP Arrays

```
$za = array();
$za["name"] = "Chuck";
$za["course"] = "WA4E";
$za["topic"] = "PHP";
print_r($za);
sort($za);
print_r($za);
```

```
Array(
    [name] => Chuck
    [course] => WA4E
    [topic] => PHP
)
Array(
    [0] => Chuck
    [1] => PHP
    [2] => WA4E
)
```

PHP Arrays

```
$za = array();
$za["name"] = "Chuck";
$za["course"] = "WA4E";
$za["topic"] = "PHP";
print_r($za);
ksort($za);
print_r($za);
asort($za);
print_r($za);
```

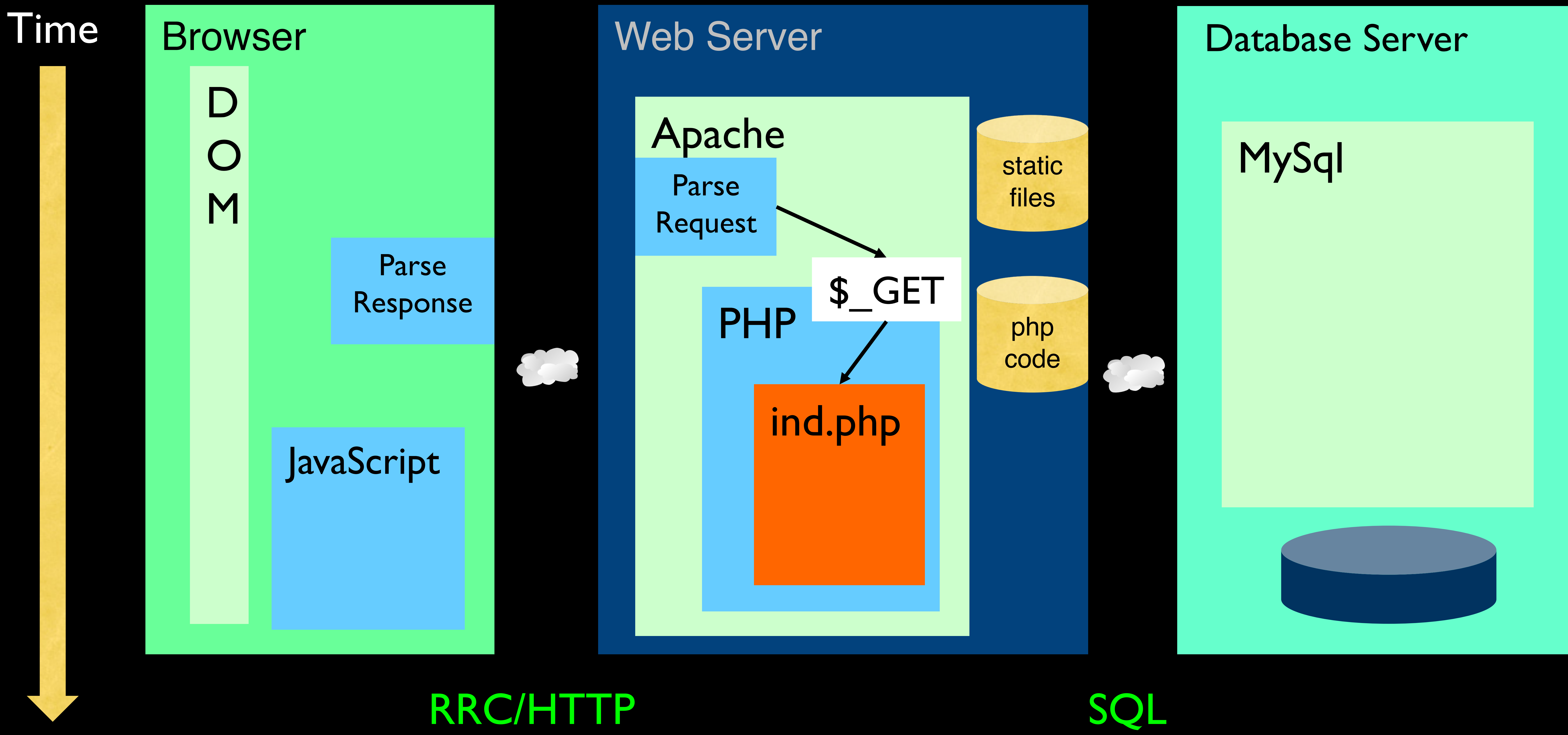
```
Array(
    [name] => Chuck
    [course] => WA4E
    [topic] => PHP
)

Array(
    [course] => WA4E
    [name] => Chuck
    [topic] => PHP
)

Array(
    [name] => Chuck
    [topic] => PHP
    [course] => WA4E
)
```

Exploding Arrays

```
$inp = "This is a sentence with seven words";
$temp = explode(' ', $inp);
print_r($temp);
```

```
Array(
    [0] => This
    [1] => is
    [2] => a
    [3] => sentence
    [4] => with
    [5] => seven
    [6] => words
)
```

HTTP & PHP Arrays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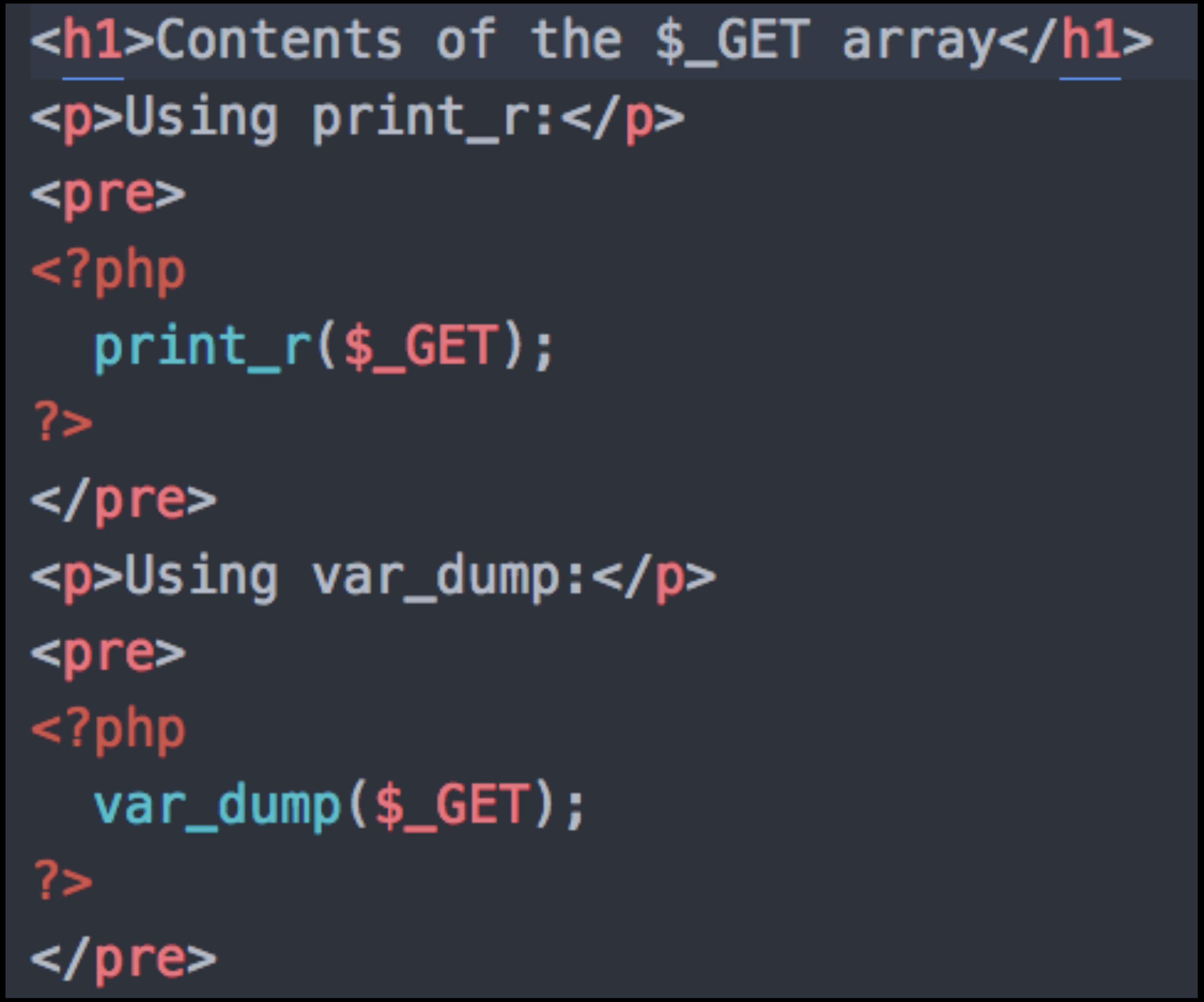
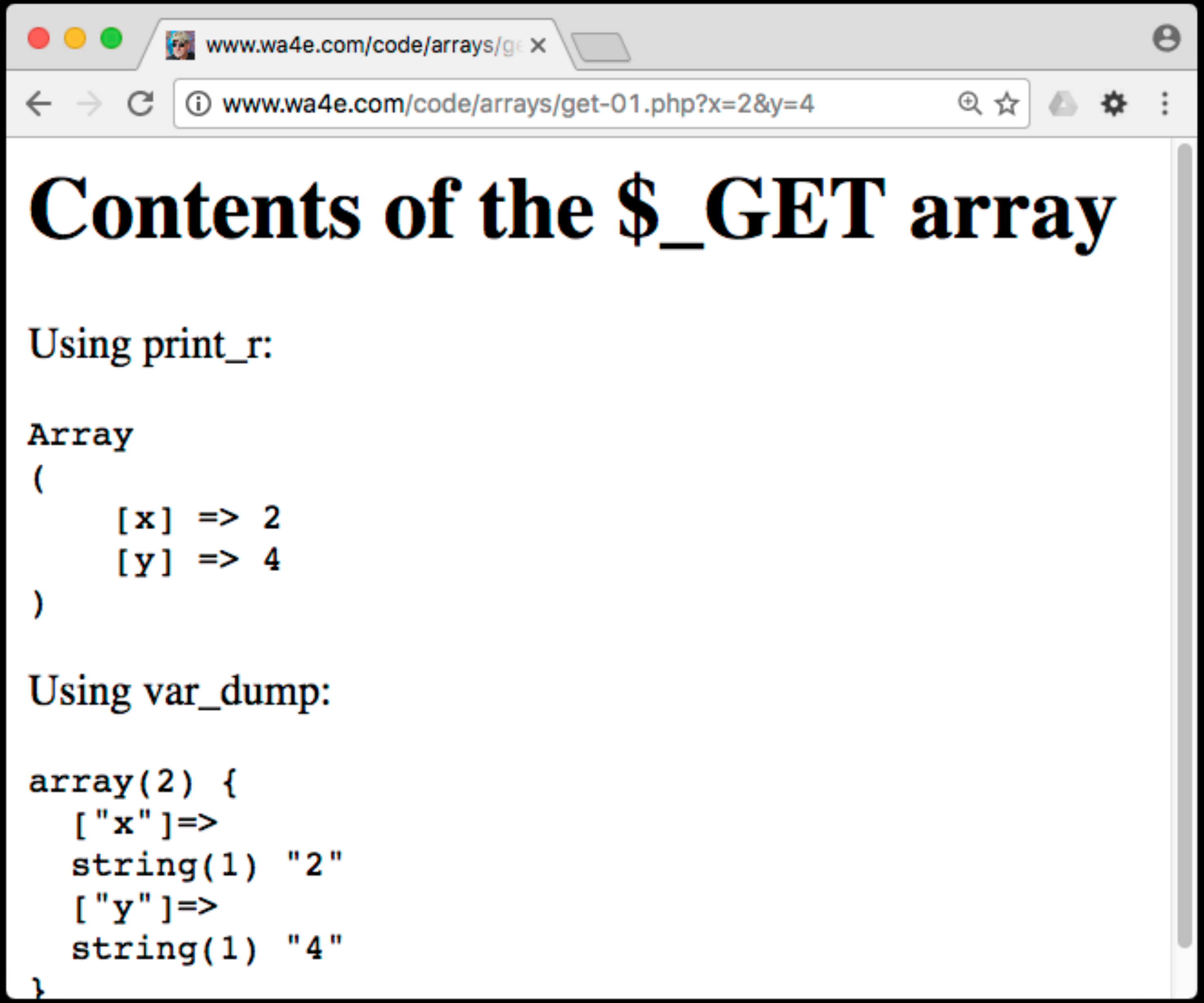
D
O
M
Parse
Response
JavaScript
Web Server
Apache
Parse
Request
$_GET
PHP
ind.php
static
files
php
code
Database Server
MySql
RRC/HTTP
SQL

PHP Arrays



```
<h1>Contents of the $_GET array</h1>
<p>Using print_r:</p>
<pre>
<?php
  print_r($_GET);
?>
</pre>
<p>Using var_dump:</p>
<pre>
<?php
  var_dump($_GET);
?>
</pre>
```



www.wa4e.com/code/arrays/g
www.wa4e.com/code/arrays/get-01.php?x=2&y=4

Contents of the $_GET array

Using print_r:

```
Array
(
    [x] => 2
    [y] => 4
)
```

Using var_dump:

```
array(2) {
  ["x"]=>
  string(1) "2"
  ["y"]=>
  string(1) "4"
}
```

http://www.wa4e.com/code/arrays/get-01.php?x=2&y=4

Summary

This is a sprint through some of the unique language features of PHP Arrays.

Acknowledgements / Contributions

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