PHP: Starting 2D Arrays

*Thanks to Greg Durkin for some code below.*

In PHP, we can set up a 2D array this way:

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|  $student[0][0] = "John"; $student[0][1] = "10"; $student[0][2] = "Programming"; $student[1][0] = "Mary"; $student[1][1] = "10"; $student[1][2] = "Programming"; $student[2][0] = "Tonia"; $student[2][1] = "11"; $student[2][2] = "ITA"; $student[3][0] = "Anna"; $student[3][1] = "12"; $student[3][2] = "ITA"; |

And here is a code snippet to output data from this 2D array:

echo "$student[1][0]"; //displays Mary

While a simply array in one dimension will have its numbering done by PHP, somebody needs to decide how the data is divided into rows and columns.

The crucial questions are

How many rows?

How many columns?

Answer: 4 rows since there are 4 students and 3 columns (name, year level, subject)

**In PHP, you can use two counted loops to output the data from the array.**

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| echo "Here's a nice 2D list of students and their classes. <br /><br />\n";for($row = 0; $row <= 3; $row++){ for ($col = 0; $col <= 2; $col++) { echo $student[$row][$col]; echo ", "; } echo "<br />\n";} |

Now that was the hard way. Here is an easier way. Think of a 2D array as an array of 1D arrays.

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| $product = array( array ('shoes', 'ladies', '$140.00'), array ('watch', 'mens', '$50.00'), array ('shirt', 'mens', '$75.00'), array ('pen', 'unisex', '$14.25') );//same counted loops to output the data from the 2D arrayfor($row = 0; $row <= 3; $row++){ for ($col = 0; $col <= 2; $col++) { echo $product[$row][$col]; echo ", "; } echo "<br />\n";} |

How many rows? Answer: 4

How many columns? Answer:

Let’s write this array as an associative array and use the foreach loops to output the data.

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| $product = array( 'shoes' => array('department' => 'ladies', 'cost' => '$140.00'), 'watch' => array('department' => 'mens', 'cost' =>'$50.00'), 'shirt' => array('department' => 'mens', 'cost' =>'$75.00'), 'pen' => array('department' => 'unisex', 'cost' =>'$14.25') );foreach($product as $item => $data){ echo "$item<br />"; foreach($data as $key => $value)  { echo "$key - $value<br />";  }} |

Assignment: Output information about continents, countries and cities. We have collected data about these three entities as shown below.

To get started, write the data in a set of cells with rows and columns. Then you can work out how to build the array.

View the table below.

|  |  |  |
| --- | --- | --- |
| North America | USA | Washington DC |
| South America | Peru | Cuzco |
| Asia | Thailand | Bangkok |
| Africa | Egypt | Cairo |

How many rows?

How many columns?

Assignment: Build a 2D array and use foreach loops to output the data. The array has been declared. Your job is to write the loops.

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| <?php/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*file: cities.php2D array\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/$cities = array('North America' =>array('country'=>'USA', 'capital'=> 'Washington DC'),'South America' =>array('country'=>'Peru', 'capital'=> 'Cuzco'),'Asia' =>array('country'=>'Thailand', 'capital'=> 'Bangkok'),'Africa' =>array('country'=>'Egypt', 'capital'=> 'Cairo'));//print\_r($cities);//output the data using nested foreach loopsforeach($cities as $continent => $data){ echo "In $continent <br />"; foreach($data as $key => $value) { echo "$key - $value<br />";  } // end second foreach loop} //end first foreach loop?> |

**Assignment: Build a 2D array and output the data**

Here is the data about eating places in Australia and their rankings.

|  |  |  |  |
| --- | --- | --- | --- |
| **City** | **1st** | **2nd** | **3rd** |
| Melbourne | Pellegrini | Red Mango | Sweet LA |
| Sydney | Calombaris | Sun Ah | Food Inn |
| Adelaide | Nacho City | Muffins Only Muffins | Taj Tandoori |
| Perth | Blue Corn | Shakshuka | Laffa |

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| <?php/\*\*\*\*\*\*\*\*\*file: eateryandrank.php2D array\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*///first declare and fill the 2D array$rankeatery = array( 'Melbourne' => array('1st' => 'Pellegrini', '2nd' => 'Red Mango', '3rd' => 'Sweet LA'), 'Sydney' => array('1st' => 'Calombaris', '2nd' => 'Sun Ah', '3rd' => 'Food Inn'), 'Adelaide' => array('1st' => 'Nacho City', '2nd' => 'Muffins Only Muffins', '3rd' => 'Taj Tandoori'), 'Perth' => array('1st' => 'Blue Corn', '2nd' => 'Shakshuka', '3rd' => 'Laffa'));echo "This will show the data about the searched city: ";foreach($rankeatery as $city => $data){ echo "$city<br />"; foreach($data as $rank => $place) {  echo "For $rank place the restaurant is $place<br />";   } //end inner foreach  } //end outer foreach?> |