



Week 9: Arrays

CIS 086 • PHP and MySQL • Mission College

+ Tonight's Topics



- Accessing array elements
- Declaring arrays using the `array()` function
- Declaring arrays using square bracket syntax `[]`
- Associative Arrays
- Iterating through an array
- Array functions: search, extract, sort, combine, compare
- Multidimensional Arrays
- Using arrays in web forms

+ Why Arrays?



- Arrays are part of the top two computer programming concepts:
 1. Decisions
 2. Data
- Arrays get us naturally thinking about storing data in a database.
- When we retrieve information from a database, it frequently comes back to us in an array format.
- PHP's MySQL interface can be set up to return information from the MySQL database in the form of an associative array.

+ What is an array?

- Think of an indexed one-dimensional array like a numbered list in Microsoft Word.
- Think of a multidimensional array like a spreadsheet, such as Microsoft Excel.



+ Types of arrays



■ Indexed array

- The elements are accessed by an index that (usually) starts at 0 and increases.
- Example: `$student[7]`, `$student[8]`, `$student [9]`

■ Associative array

- The elements are accessed by keys that can have numerical or string values.
 - `$course['PHP_and_MySQL']`
 - `$course['JavaScript']`
 - `$course['Data_Structures']`

+ Declaring arrays

- `array ()`
- `[]`
 - AKA “square bracket syntax”
 - Stolen from JavaScript
 - Only in PHP 5.4 and above



+ Array Functions



- `array_shift ()` removes one element from the beginning of an array
- `array_unshift ()` adds one or more elements to the beginning of an array
- `array_pop ()` removes the last element from the end of an array
- `array_push ()` adds one or more elements to the end of an array



Array functions



- `array_splice ()` adds or removes array elements from any place in the array (not just beginning or end)
- `array_unique ()` removes duplicate elements from an array
- `array_values ()` creates an indexed array of the values in the array, which is useful for associative arrays
- `array_keys ()` creates an indexed array of the keys in an associative array

+ Iterating array functions

- The array keeps track of the iterator location internally.
- These are an alternative to foreach and used only for special purposes.

Function	Description
current (a)	The current array element
each (a)	Returns the key and value of the current array elements and move the internal pointer to the next element.
end (a)	Moves the pointer to the last element.
key (a)	Returns the current element key
next (a)	Moves the pointer to the next element
prev (a)	Movse the pointer to the previous element
reset (a)	Moves the pointer to the first element

+ Array search functions

- `in_array ()` returns a boolean value (TRUE or FALSE) indicating whether a given *value* is in the array.
- `array_search ()` returns the index or key of the first matching *value*, if one exists, or FALSE if the value does not exist.
- `array_key_exists ()` determines whether a given *index* or *key* is in the array.

+ Array functions



- `array_slice ()` returns a portion of the array
- `sort ()` sorts an indexed array
- `rsort ()` sorts an indexed array in reverse order
- `krsort ()` sorts an associative array by keys
- `ksort ()` sorts an associative array in reverse order by keys
- `asort ()` sorts an associative array by values
- `arsort ()` sorts an associative array in reverse order by values

+ Combining arrays



- These work best with associative arrays (see the video for more information)
 - +
 - +=
- `array_merge ()`

+ Comparing arrays



- `array_diff()`
- `array_intersect()`

+ Multidimensional arrays



■ Two ways to create:

1. Create individual arrays then combine them.
 1. Create each row of the array as a regular array.
 2. Then create an array where each of the arrays from step 1 is an element
 3. This is more useful for larger arrays.
2. Use nested array() functions or square bracket syntax to declare the whole thing at once.
 1. This is more useful for smaller arrays.

■ Example: Pennies – Nickels – Dimes – Quarters – Dollars

+ Arrays in Web Forms



- This is not used frequently.
- Use square brackets [] with the name attribute. Don't enter any key name or index value in the square brackets.
- You can also use associative arrays for this purpose. Omit the quotation marks around the key name.