

Using Date & Time in PHP

Lecture 7

March 21, 2007

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L#07: PHP Date & Time

Overview Date & Time Functions

<u>Function</u>	<u>Description</u>
checkdate()	Validates set of Gregorian year, month, and day values (for example, 2005, 3, 17).
date_sunrise()	Returns time of sunrise for a given day and location (new in PHP 5).
date_sunset()	Returns time of sunset for a given day and location (new in PHP 5).
date()	Formats a local date/time, given a Unix timestamp (for example, 1111035030000 from the introduction to this chapter) and a formatting string.
getdate()	Given a Unix timestamp, returns an associative array containing date and time information (defaults to current time).
gettimeofday()	Returns an associative array containing information about the current system time. In PHP 5.1, it is possible for this function to return a float as well.

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Overview Date & Time Fun cont.

<u>Function</u>	<u>Description</u>
gmdate()	Formats a GMT/UTC date/time. Uses the same formatting characters as the date() function.
gmmktime()	Converts a set of GMT date/time values into a Unix timestamp (analogous to mktime()).
gmstrftime()	Formats a GMT/UTC date/time according to locale settings (similar to strftime() except the time used is GMT/UTC).
idate()	Formats a local time/date value as an integer. Uses many of the same formatting characters as the date() function (those that produce numeric output). However, idate() accepts just <i>one</i> formatting character (new in PHP 5).
localtime()	Given a Unix timestamp, returns an array of date/time values. In PHP 5, this array can be returned as an associative array as well as an indexed array.

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Overview Date & Time Fun cont.

<u>Function</u>	<u>Description</u>
microtime()	Returns a string representation of the current Unix timestamp with microseconds. In PHP 5, this function can also return a float.
mktime()	Converts a set of local date/time values into a Unix timestamp.
strftime()	Given a timestamp and a formatting string, returns a representation of a local date/time according to locale settings.
strptime()	Given a date/time string generated with strftime() and the formatting string used to generate it, returns a Unix timestamp (new in PHP 5.1).
strtotime()	Converts an English textual date/time description into a Unix timestamp.
time()	Returns the current system date and time as a Unix timestamp

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Definitions

■ What is UNIX epoch:

- It is the number of seconds elapsed since midnight GMT on January 1, 1970

■ GMT:

- It is Greenwich Mean Time

■ UTC:

- It is Universal Time, Coordinated.

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Displaying Dates & Times

■ Getting Time as a Timestamp:

Used functions:

- `timestamp time()`
return the current local time.
- `timestamp mktime(hour, min, sec, mon, day, year)`

■ Getting a human-readable Dates :

Using

- `string date(string $format, timestamp $t)`
returns a formatted date

Building Formatting String

- It consists of special characters and other characters.
- If the character is one of the special ones, it will be replaced by its corresponding value.
- If the character is not one of the special character, it will be passed directly without any replacing.

Special Formatting Characters

Month

- F Full name of the month (January, February, and so on).
- M Three-letter abbreviation for the month (Jan, Feb, and so on).
- m Numeric representation for the month, with leading zero (two digits).
- n Numeric representation for the month (no leading zero).

Day

- d Day of the month, with leading zeros (two digits).
- j Day of the month (no leading zeros).
- S Ordinal suffix for the day of the month, two characters (st, nd, th); most commonly used in combination with j.
- l (lowercase L) Full name of the day of the week (Monday, Tuesday, and so on).
- D A textual representation of a day, three letters (Mon, Tue, and so on).
- w Numeric representation of the day of the week (0 = Sunday, 6 = Saturday).

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Special Formatting Characters cont.

Year

- y Two-digit year.
- Y Four-digit year.

Hour

- h Hour in 12-hour format, with leading zero (two digits).
- g Hour in 12-hour format (no leading zero).
- H Hour in 24-hour format, with leading zero (two digits).
- G Hour in 24-hour format (no leading zero).
- a am/pm (lowercase).
- A AM/PM (uppercase).
- O (uppercase o) String representation of the difference in hours between local time and GMT/UTC (for example, +1000, -0500).

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Special Formatting Characters cont.

Minute

i Minute, with leading zero (two digits).

Second

s Second, with leading zero (two digits).

Z Integer representation of the difference in seconds between local time and GMT/UTC (for example, 36000 for GMT+1000 and -18000 for GMT-0500).

Complete Date and Time

c ISO-8601 format (YYYY-MM-DDTHH:MM:SS±HHMM, for example, 2005-03-14T19:38:08+10:00).

r RFC-2822 format *WWW, DD MMM YYYY HH:MM:SS ±HHMM*, for example, Mon, 14 Mar 2005 19:38:08 +1000).

U Seconds since the Unix epoch. Calling date('U') with no timestamp argument produces the same output as the time() function.

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Examples

```
<?php
    $time = time();
    $formats = array( 'U',
                    'r',
                    'c',
                    'l, F jS, Y, g:i A',
                    'H:i:s D d M y',
                    'm/j/y g:i:s O'
                    );
    foreach($formats as $format)
        echo "<p><b>$format</b>: " .
            date($format, $time) . "</p>\n";
?>
```

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Example Solution

U: 1110643578
r: Sun, 13 Mar 2005 02:06:18 +0300
c: 2005-03-13T02:06:18+03:00

l, F jS, Y, g:i A:
Sunday, March 13th, 2005, 2:06 AM

H:i:s D d M y:
02:06:18 Sun 13 Mar 05

m/j/y g:i:s a O (T):
03/13/05 2:06:18 am +0300

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Displaying Dates & Times cont.

■ Converting Readable format to Timestamp

```
timestamp strtotime(string $stringDate)
```

- You can use many (English-speaking!) ordinary words relating to dates and times, such as *now*, *last*, *today*, *yesterday*, *ago*, and so on.
- You can use units such as *hour*, *day*, *week*, *fortnight*, *month*, *year*, and so on, and the symbols + and - (the + is optional) along with numerals to indicate future and past.

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Example

```
<table><?php
    $mydatestrings = array(
        "now", "today", "tomorrow",
        "yesterday", "Thursday", "this Thursday",
        "last Thursday", "+2 hours", "-1 month",
        "+10 minutes", "30 seconds",
        "+2 years -1 month", "next week",
        "last month", "last year", "2 weeks ago");
    // remember: strtotime() returns a timestamp
    foreach($mydates as $mydate)
        echo "<tr><td>$mydate:</td><td>" .
            date('r', strtotime($mydate)) .
            "</td></tr>\n";
?></table>
```

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Example Solution

```
now:           Wed, 21 Mar 2007 06:37:48 +0300
today:         Wed, 21 Mar 2007 00:00:00 +0300
tomorrow:      Thu, 22 Mar 2007 00:00:00 +0300
yesterday:     Tue, 20 Mar 2007 00:00:00 +0300
Thursday:      Thu, 22 Mar 2007 00:00:00 +0300
thisThursday:  Thu, 22 Mar 2007 00:00:00 +0300
last Thursday: Thu, 15 Mar 2007 00:00:00 +0300
+2 hours:      Wed, 21 Mar 2007 08:37:48 +0300
-1 month:      Wed, 21 Feb 2007 06:37:48 +0300
```

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L#07: PHP Date & Time

Example Solution cont.

+10 minutes:	Wed, 21 Mar 2007 06:47:48 +0300
30 seconds:	Wed, 21 Mar 2007 06:38:18 +0300
+2 years -1 month:	Sat, 21 Feb 2009 06:37:48 +0300
next week:	Wed, 28 Mar 2007 06:37:48 +0400
last month:	Wed, 21 Feb 2007 06:37:48 +0300
last year:	Tue, 21 Mar 2006 06:37:48 +0300
2 weeks ago:	Wed, 07 Mar 2007 06:37:48 +0300

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Displaying Dates & Times cont.

- To get the current file last modification:
`timestamp getlastmod()`
 - Use it with `date()` to get the readable version.
- To get last access, last modification, creating dates, use:
`timestamp stat(string $filePath)`
return an array with the keys: `atime`, `mtime`, `ctime`.

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Example

```
<?php
    $file = '../st2/index.html';
    $data = stat($file);
    $accessed = $data['atime'];
    $modified = $data['mtime'];
    $created = $data['ctime'];
    echo "The file <b>$file</b> was...<br />\n".
        'last accessed ' .
        date('l d F Y, \a\t H:i:s', $accessed) .
        ',<br />\n'. 'last modified ' .
        date('l d F Y, \a\t H:i:s', $modified) .
        ',<br />\n'. 'and created ' .
        date('l d F Y, \a\t H:i:s', $created).'\n';
?>
```

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Example solution

The file **../st2/index.html** was...
last accessed Wednesday 21 March 2007, at 06:26:17,
\nlast modified Saturday 10 March 2007, at 15:28:48,
\nand created Saturday 03 March 2007, at 17:21:43.

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Displaying Dates and Times cont.

■ Display Dates in other Languages:

- First, use:

```
string setlocal(category, string $lang)
```

It will return the language string.

Category could be `LC_ALL` or `LC_TIME`

- Then use:

```
string strftime(string $f, timestamp $t);
```

It works as `date()`... and it has its own formatting characters.

Formatting Characters

Day

<code>%A</code>	Full weekday name.
<code>%a</code>	Abbreviated weekday name.
<code>%u</code>	Weekday number (1 = Monday, 7 = Saturday).
<code>%d</code>	Day of the month, with leading zero.
<code>%e</code>	Day of the month, with leading space.
<code>%j</code>	Day of the year (001–366). Note that numbering begins with 1 and not 0.

Week

<code>%U</code>	Number of the week of the year, with Sunday as the first day of the week.
<code>%V</code>	ISO-8601 number of the week of the year, with Monday as the first day of the week (01–53). <code>%W</code> Number of the week of the year, with Monday as the first day of the week (decimal number)

L#07: PHP Date & Time

Formatting Characters cont.

Month

%B Full name of the month.
%b or %h Abbreviated name of the month
%m Number of the month, with leading zero.

Year

%g Two-digit year for ISO-8601 week of the year.
%G Four-digit year for ISO-8601 week of the year.
%y Two-digit year. %Y Four-digit year.

Hour

%H Hour (00–23).
%I Hour (01–12)

Minute

%M Minute.

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Formatting Characters cont.

Second

%S Second.

Full Date and/or Time

%c Preferred date and time representation for the current locale.
%D Current date; equivalent to %m/%d/%y. %p a.m./p.m. indicator.
%R Time in 24-hour notation.
%r Time in 12-hour (am/pm) notation.
%T Current time; equivalent to %H:%M:%S.
%x Preferred date representation.
%X Preferred time representation.
%z or %Z Time zone

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Formatting Characters cont.

Formatting Characters

`%n` New line.
`%t` Tab.
`%%` The percent character.

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