

PHP Programming (I)

Res. Asst. Sanem Sariel
sariel@itu.edu.tr

http://www3.itu.edu.tr/~sariel/course_notes/dbms2007/p1/slides.pdf
http://www3.itu.edu.tr/~sariel/course_notes/dbms2007/p1/codes/p1_codes.zip

2/22/2007

DBMS 2007, Sanem Sariel

1

PHP

- PHP : Hypertext Preprocessor
- PHP is suitable for general-purpose programming.
 - Not only for db querying over web!
- PHP is a CGI language.
- PHP is a script language, interpreted in HTML.

2/22/2007

DBMS 2007, Sanem Sariel

2

PHP: a CGI Language

- CGI – Common Gateway Interface
 - The technology that enables users to run programs over web servers
 - CGI/Perl
 - PHP
 - ASP
- are some of the script languages used for processing data over web servers.

2/22/2007

DBMS 2007, Sanem Sariel

3

PHP: embedded in HTML

- PHP codes are written between HTML tags.

```
<html>
  <?PHP echo("This is a piece of PHP code.") ?>
</html>
```

- The main purpose is to make what HTML can't.

2/22/2007

DBMS 2007, Sanem Sariel

4

Why not HTML?

- HTML CAN'T:
 - create a DB connection over Web.
 - read/write files on the hard disc of the local machine nor the web server.
 - Pass the user info to the web server.
- So?
- There should be a SERVER-SIDE application

2/22/2007

DBMS 2007, Sanem Sariel

5

PHP Code

- The PHP code which runs on the server is stored in files with .php extension.
- The files have both HTML and PHP codes.
 - PHP code is distinguished by special tags.
 - Örn:

```
<html>
  <?PHP echo("This is a piece of PHP code.")?>
</html>
```

2/22/2007

DBMS 2007, Sanem Sariel

6

PHP Data Processing

- The file with .php extension is not directly send to users, like HTML files.
- First, the interpreter processes the file. Then it sends the file to the browser.
- If the results are to be send to the user, then the results will be in HTML tags only.
- User won't see any PHP code.

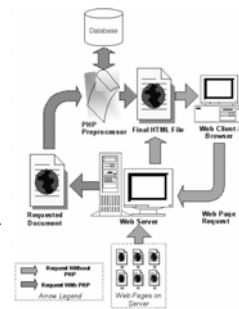
2/22/2007

DBMS 2007, Sanem Sariel

7

How does PHP work?

- User browser will create an HTTP request for the CGI file.
- Due to the server configuration, server checks the file extension and understands that the requested file is not a static one, there needs to be some code (PHP or another script) to be run.
- The module that will interpret the PHP code will be called.



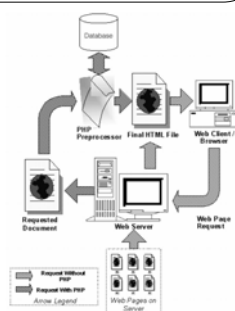
2/22/2007

DBMS 2007, Sanem Sariel

8

How does PHP work?

- PHP module interpretes the content of the file and the result is send to the browser.
- The result is sent in HTML tags, so that the browser won't require anything more to understand PHP code.



2/22/2007

DBMS 2007, Sanem Sariel

9

PHP's Capabilities

- Similar syntax to C/C++.
- Capable of any CGI function.
 - Getting form data
 - Creating dynamical content
 - Cookie support
- Makes things easier when creating database connected web pages.
- Some of the supported databases are:
 - Adabas D, InterBase, Solid, dBase, mSQL, Sybase, Empress, MySQL, Velocis, FilePro, Oracle, Unix dbm, Informix, PostgreSQL
- Some of the supported protocols are:
 - IMAP, SNMP, NNTP, POP3 and HTTP

2/22/2007

DBMS 2007, Sanem Sariel

10

Requirements for the Project

- Web Server + Database + PHP or



WAMP v5

- Apache 2.0.59 + PHP 5.2.0 + MySQL 5.0.27 + Phpmyadmin
- <http://www.wampserver.com/en/index.php>
- EasyPHP v1.8
- Apache, MySQL, PHP
- <http://www.easyphp.org/>



2/22/2007

DBMS 2007, Sanem Sariel

11

PHP Language (Intro)

2/22/2007

DBMS 2007, Sanem Sariel

12

Embedding PHP Code

- A simple PHP code in an HTML document:

```
<HTML>
<HEAD><TITLE>Date and
time</TITLE></HEAD>
<BODY> Date and time :
  <?php print(date("d/m/Y
H:i:s",time())); ?>
</BODY>
</HTML>
```

time.php

2/22/2007

DBMS 2007, Sanem Sariel

13

Embedding PHP Code

```
<?php
echo "test";
?>
```

```
<? echo "test " ?>
```

```
<SCRIPT LANGUAGE="PHP">
    echo "test";
</SCRIPT>
```

2/22/2007

DBMS 2007, Sanem Sariel

14

PHP Code

- <?PHPinfo()?> shows the version and the properties of the PHP that runs on the server.

info.php

- Comments
 - /* Multiple rows*/
 - // One row
 - # One row

2/22/2007

DBMS 2007, Sanem Sariel

15

PHP Variables

- Supported data types:

- Floating-point numbers
- Integers
- Strings
- Arrays
- Objects

2/22/2007

DBMS 2007, Sanem Sariel

16

PHP Variables



- PHP variables are not predefined. PHP is a **loosely typed** language.
- any given variable can be an integer, floating-point number, string, object, or an array.
- gettype() gets the type of the variable.
- isset() checks whether the variable is set.
- is_string, is_integer, is_double checks the type of the variable.

type.php

is_var_set.php

2/22/2007

DBMS 2007, Sanem Sariel

17

PHP Variables / Integer+Double

- Integer
 - \$a = 1234; # decimal
 - \$a = -123; # negatif decimal
 - \$a = 0123; # octal (decimal: 83)
 - \$a = 0x12; # hexadecimal (decimal: 18)
- Floating point number
 - \$a = 1.234;
 - \$a = 1.2e3;

2/22/2007

DBMS 2007, Sanem Sariel

18

PHP Variables / String

- String assignment:
 - `$str = "assigned characters $variable"`, value of the variable;
 - `$str = 'assigned characters $variable'`, name of the variable;
- string concatenation:
 - `$str = $str . "attached string"`;
 - `$str .= "attached string"`
- Character in a string
 - `$str[i]`

string.php

2/22/2007

DBMS 2007, Sanem Sariel

19

PHP Variables / Array

- One-dimensional arrays
 - Assignment by array pointer
 - `$a[0] = "firstElement"`;
 - `$a[1] = "secondElement"`;
 - Assignment by concatenation
 - `$b[] = "firstElement " ; // $b[0] == "firstElement "`
 - `$b[] = "secondElement " ; // $b[1] == "secondElement "`
- Multi-dimensional arrays
 - `$c[] = "12"`; is both string array and character array;
`$c[0][0] = 1` and also `$c[0]=12` dir.
 - `$d="12"`; `$d[0]=12`

array.php

2/22/2007

DBMS 2007, Sanem Sariel

20

PHP Variables / Associative Array

- index values are not limited to simple integer values but can also be strings
- ```
<?php
 $myarray_1 = array("dbms"=>"1305");
 $myarray_2["data_structures"] = "5202";
?>
```
- `in_array` : is it an element of the array?
  - `count()`

assoc\_array.php

2/22/2007

DBMS 2007, Sanem Sariel

21

## PHP Variables / Object

```
<html>
<?
class newAnimal {
 function initialize () {
 echo "I'm the new animal initialized.";
 }
}

$cat = new newAnimal;
$cat->initialize();
?>
</html>
```

Output: I'm the new animal initialized.

object.php

2/22/2007

DBMS 2007, Sanem Sariel

22

## PHP Variables

- Case sensitive.
- Assignment by value
- Assignment by reference

variables.php

2/22/2007

DBMS 2007, Sanem Sariel

23

## PHP Variables

- Variable Scope

```
$a = 1; $b = 2;
function Sum () {
 $b = $a + $b;
}
Sum ();
echo $b;
```

global \$a, \$b;

- To use the global variables in a function, the variables should be defined globally.
- `$GLOBALS` array

variableScope.php

2/22/2007

DBMS 2007, Sanem Sariel

24

## PHP Variables

- Static variables
  - Saves their values, although defined in local functions.
  - May be used in recursive functions.

```
Function RecIncrement() {
 $count = 0;
 $count++;
 echo $count;
 if ($count < 10) {RecIncrement();}
}
RecIncrement();
```

Should be defined static

recIncrement.php

2/22/2007

DBMS 2007, Sanem Sariel

25

## PHP Variables

- Defining constants:
  - `define("<constantName>",<constantValue>);`
    - `define("pi",3.14);`

2/22/2007

DBMS 2007, Sanem Sariel

26

## Type Casting

- C based type casting
  - (int), (integer) – to integer
  - (real), (double), (float) – to double
  - (string) – to string
  - (array) – to array
  - (object) – to object

cast.php

2/22/2007

DBMS 2007, Sanem Sariel

27

## Resources

- An Introduction to PHP, J. Coggeshall
- <http://www.php.net/>

2/22/2007

DBMS 2007, Sanem Sariel

28