Personal Home Page

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Motivations

- Server-Side Script
  - <?php *script* ?>
  - syntaxe du langage semblable au C et typage à la Perl
  - Versions 3,4,5
- Plateformes et HTTPD
  - Unix, WinNT et FastCGI, ISAPI, NSAPI
    - module mod_php pour Apache
  - Sa force : de nombreuses fonctions natives
    - IMAP, SMTP, ODBC, Accès natifs SGBD, LDAP, Génération d ’images à partir de tables BD, XMLDOM/XSLT, …
  - débuggeur rudimentaire

Histoire

- PHP/FI (Personal Home Page / Forms Interpreter)
  - crée en 1995 par Rasmus Lerdorf
- Succès populaire
  - centaines de milliers de développeurs
  - 20% des noms de domaines sur Internet
  - Utilisé chez 19/20 grandes entreprises françaises
    - 63% en 2003 et 95% en 2004

Types

- Types de données

```
$decimal=16;
$hex=0x10;
$octal=020;
$float=0.017;
$float=17.0E-3
$str="World";
echo "Hello\t$str\n"; // avec substitution des variables
echo 'Hello\t$str\n'; // sans substitution des variables
```

- Conversion (cast) de type

```
$var = (int) "123abc";
$a=(array) $var; //Cast to an array
$o=(object) $float; //Cast to an object
```

- Test de typage

gettype( ), is_long( ), is_double( ), is_string( ), is_array( ), is_object( ).

Variables

- Déclaration implicite, typage polymorphe

  $i

  $counter

  $_TMP

- Exemples

```
$var = "hello";
$$var = "World";
echo $hello;
echo "Hello ${$var}";
```

Tableaux

- Tableaux dynamiques

```
$var[0]="Hello";
$var[1]="World";
$var[] ="Test"; // ajoute un élément à la fin
```

- Tableaux associatifs

```
$tab = array("ghi"=>1742,"ijk"=>1562);
$tab["abc"] = "Hello";
$tab["def"] = "World";
while(list($index,$value) = each($tab)) {
        $$index = $value;
}
```

Tableaux

- Fonctions de Tri
  - Tableaux
    - sort(), rsort() *décroissant*
  - Tableaux associatifs
    - asort(), arsort() sur la valeur
    - ksort() sur la clé
- Parcours avec each() et next()

```
$tab = array("D","I","D","I","E","R");
 asort($tab);
 echo "<BR>Parcours avec next() : " ;
 for(reset($tab); $key = key($tab); next($tab)) {
    echo "tab[$key]=".$tab[$key]."\n"; }
 echo "<BR>Parcours avec each() : " ;
 reset($tab);
 while(list($key,$value) = each($tab))  { echo "tab[$key]=".$tab[$key]."\n";  }
```

Objets

- Déclaration de classe

```
class Person {
  var $name, $address;
  function Person($name, $address, $age) {
    $this->name = $name;
    $this->address = $address;
  }
  function print(){ print $this->name; }
}
```

- Instanciation

```
$p = new Person("Didier","Grenoble");
```

- Référenciation

```
print $p->name;
$p->print();
```

Objet

Héritage

```
class Employee extends Person {
  var $position, $salary;
  function Employee($name, $address, $position, $salary) {
    $this->Person($name, $address, $age);
    $this->position = $position;
    $this->salary = $salary;
  }
  function print(){
        print $this->Person::print();
        print $this->salary;
  }
}
```

Opérateurs

- !, ~, ++, --, @, (the casting operators), *, /, %, +, -., <<, >>, <, <=, >=, >, ==, !=, &, ^, |, =&&, ||, ? : (conditional operator), =, +=, -=, *=, /=, %=, ^=, .=, &=, |=, And, Xor, Or

Structure de contrôle (i)

- Test

```
if(expr) {
statements
} elseif(expr) {
statements
} else {
statements
}

if(expr):
statements
elseif(expr):
statements
else:
statements
endif;
```

- Branchement multiple

```
switch(expr) {
  case expr:statements break:
  default: statements
}

switch(expr)
  case expr: statements break:
  default: statements break;
endswitch;
```

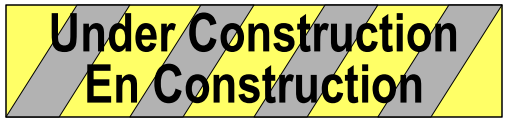
Structures de contrôle (ii)

- Boucles

```
while(expr) {statements }

while(expr):
  statements
endwhile;

do { statements } while(expr);

for(start_expr; cond_expr; iter_expr) { statements }

for(start_expr; cond_expr; iter_expr): statements endfor;
```

Structures de contrôle (iii)

- Expressions booléennes
  - TODO



Fonctions

- Déclaration

```
function soundcheck($a, $b, $c)
   { return "Testing, $a, $b, $c"; }
function soundcheckWithInit($a=1, $b=2, $c=3)
   { return "Testing, $a, $b, $c"; }
```

- Appel

```
echo soundcheck(4, 5, 6); echo soundcheckWithInit(7);
```

- Passage d'arguments

```
function triple($x) { $x=$x*3; return $x; }
```

  - Par valeur

```
$var=10; $triplevar=triple($var); // $var vaut 10
```

  - Par référence

```
$varref=10; triple(&$varref); // $varref vaut 30
```

Portée des variables

- Globale

```
function test1(  ) { global $var; echo $var; }
$var="Hello World";
test1(  );
function test2(  ) { echo $GLOBALS["var"]; }
$var="Hello World";
test2(  );
```

- Statique

```
function hitcount(  ) {
 static $count = 0;
 if ($count == 0) {  print "This is the first time this page has been accessed ";}
 else { print "This page has been accessed $count times"; }
 $count++;
}
```

Misc

- Inclusion
  - include "header.inc"
- Commentaires
  - /* C style comments */
  - // C++ style comments
  - # Bourne shell style comments

Variables liées au Web

- $HTTP_GET_DATA
- $HTTP_POST_DATA
- $HTTP_COOKIE_DATA

- Exemple
  - echo $HTTP_POST_VARS["var"];

Variables liées au Web

- _ENV[]
- _SERVER[]

Variables liées au Web

- DOCUMENT_ROOT
- HTTP_ACCEPT
- HTTP_ACCEPT_ENCODING
- HTTP_ACCEPT_LANGUAGE
- HTTP_CONNECTION
- HTTP_HOST
- HTTP_REFERER
- HTTP_USER_AGENT
- PATH
- REMOTE_ADDR
- REMOTE_PORT
- SCRIPT_FILENAME
- SERVER_ADDR
- SERVER_ADMIN
- SERVER_NAME
- SERVER_PORT
- SERVER_SIGNATURE
- SERVER_SOFTWARE
- GATEWAY_INTERFACE
- SERVER_PROTOCOL
- REQUEST_METHOD
- QUERY_STRING
- REQUEST_URI
- SCRIPT_NAME

Exemple PHP

Création d 'une image GIF à la volée

```
<?php
   Header("Content-type: image/gif");
   $string=implode($argv," ");
   $im = imagecreatefromgif("images/button1.gif");
   $orange = ImageColorAllocate($im, 220, 210, 60);
   $px = (imagesx($im)-7.5*strlen($string))/2;
   ImageString($im,3,$px,9,$string,$orange);
   ImageGif($im);
   ImageDestroy($im);
?>
```

- Appel de script dans une page HTML

```
<img src="button.php?Bonjour%20Didier">
```

Exemple PHP

Accès à une BD (Interface Native Informix)

- **Example 1. Show all rows of the "orders" table as a html table**

```
ifx_textasvarchar(1);      // use "text mode" for blobs
$res_id = ifx_query("select * from orders", $conn_id);
if (! $res_id) {
    printf("Can't select orders : %s\n<br>%s<br>\n",
        ifx_error();
        ifx_errormsg();
  die;
}
ifx_htmltbl_result($res_id, "border=\"1\");
ifx_free_result($res_id);
```

Exemple PHP

Accès à une BD (Interface Native Informix)

Example 2. Insert some values into the "catalog" table

```
                    // create blob id's for a byte and text column
$textid = ifx_create_blob(0, 0, "Text column in memory");
$byteid = ifx_create_blob(1, 0, "Byte column in memory");
                    // store blob id's in a blobid array
$blobidarray[] = $textid;
$blobidarray[] = $byteid;
                    // launch query
$query = "insert into catalog (stock_num, manu_code, " .
        "cat_descr,cat_picture) values(1,'HRO',?,?)";
$res_id = ifx_query($query, $conn_id, $blobidarray);
if (! $res_id) {
  ... error ...
}
                    // free result id
ifx_free_result($res_id);
```

Exemple PHP

Accès à une BD (Interface Native MySQL)

```
<?   if($vote && !$already_visited) SetCookie("already_visited","1"); ?>
    <HTML><HEAD><TITLE>Products</TITLE>
    </HEAD><H1>Our Products</H1>
<?
     mysql_pconnect("localhost","","");
     $db = "catalog";      $table = "products";
     $result=mysql_db_query($db,
      "select designation,price from $table order by votes DESC");
     echo "<TABLE BORDER=0><TR><TH>Designation</TH><TH>Unit Price</TH>";
     echo "</TR>\n";
     while($row=mysql_fetch_row($result)) {
      echo "<TR><TD ALIGN=center>";
      echo $row[0]."</TD><TD ALIGN=right>";
      echo $row[1]."</TD><TD>";
      if($sum && (int)$row[1]) {
       $per = (int)(100 * $row[1]/$sum); echo "WIDTH=$per> $per %</TD>";
      }
      echo "</TR>\n";
     }
     echo "</TABLE>\n";
```

PHP et XML

- SAX
- DOM

PHP et Web Services

PHP et AJAX

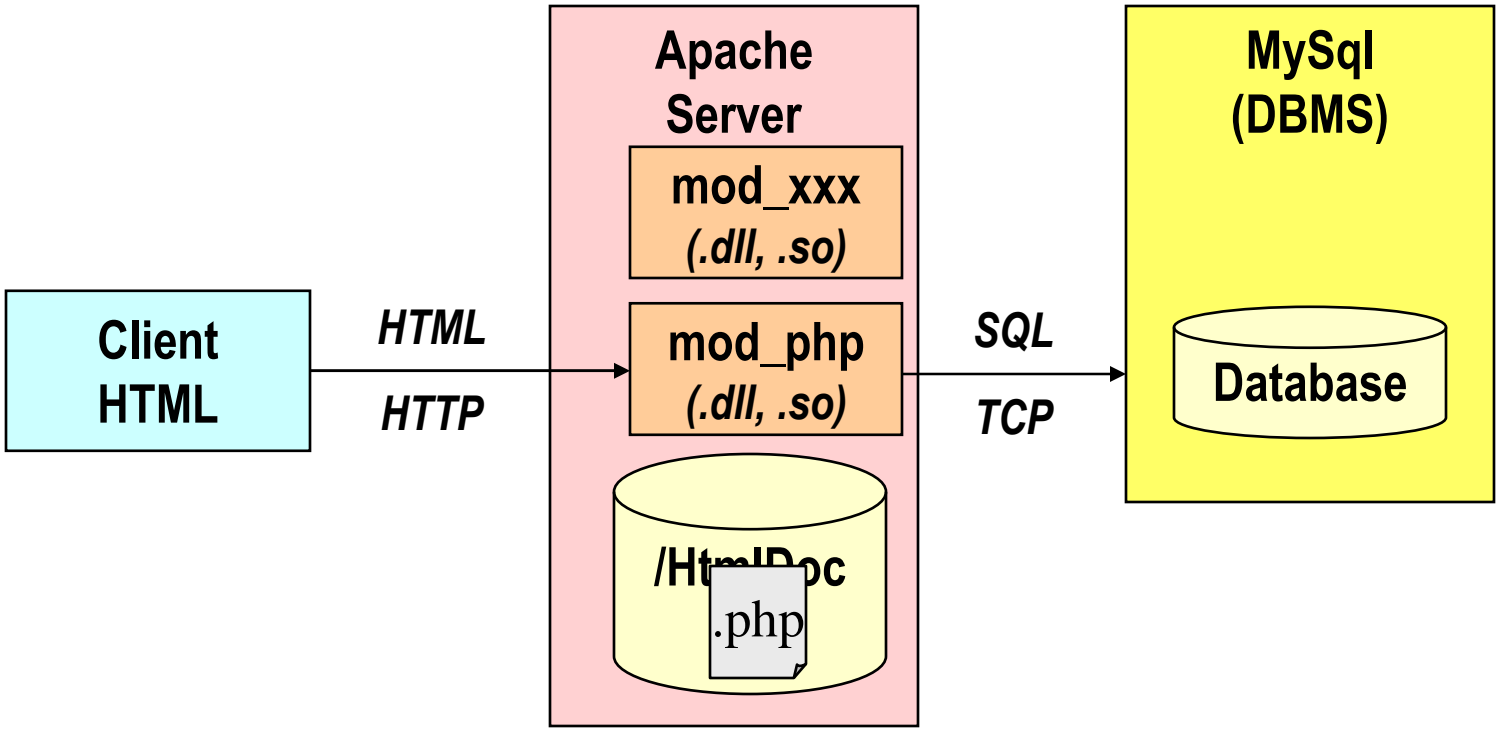
- REST
- JSON

Usage de PHP

- Génération dynamique
  - À la volée
  - Le serveur Web (Apache) redirige les requêtes vers la DLL (.so) PHP
- Génération statique
  - Offline (par exemple pour une Distribution sur CD ou site statique)
  - Ligne de commande
- Depuis un autre langage
  - Java
  - .NET

PHP avec Apache et MySql

- Configuration courante



PHP en ligne de commande

```
Usage: php [options] [-f] <file> [args...]
       php [options] -r <code> [args...]
       php [options] [-- args...]
  -a               Run interactively
  -c <path>|<file> Look for php.ini file in this directory
  -n               No php.ini file will be used
  -d foo[=bar]     Define INI entry foo with value 'bar'
  -e               Generate extended information for debugger/profiler
  -f <file>        Parse <file>.
  -h               This help
  -i               PHP information
  -l               Syntax check only (lint)
  -m               Show compiled in modules
  -r <code>        Run PHP <code> without using script tags <?..?>
  -s               Display colour syntax highlighted source.
  -v               Version number
  -w               Display source with stripped comments and whitespace.
  -z <file>        Load Zend extension <file>.

  args...          Arguments passed to script. Use -- args when first argument
                   starts with - or script is read from stdin
```

PHP et Java (TODO)

- PHP vers Java
  - Motivation : Enterprise Intergration
- Java vers PHP (JSR223)
  - Motivation : Legacy integration

PHP et .NET

Outils

- Distributions
  - La distribution officielle
    - http://www.php.net
  - Le bundle tout en un
    - http://www.easyphp.org/
- Editeurs
  - Nombreux plugins dont le Webtools d'Eclipse
  - Spécialisés : Komodo, …

Exemple de sites PHP/MySql

- osCommerce
  - http://www.oscommerce.com
  - osCommerce is an online shop e-commerce solution under on going development by the open source community. Its feature packed out-of-the-box installation allows store owners to setup, run, and maintain their online stores with minimum effort and with absolutely no costs or license fees involved.
- Open Conference Systems (OCS)
  - http://www.pkp.ubc.ca/ocs/
  - OCS is a free Web publishing tool that will create a complete Web presence for your scholarly conference.

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