```
function create_table($data){
 echo '';
 reset ($data); // Remember this is used to point to the beginning
                       Hypertext Preprocessor
 $value = current($data);
 while ($value) {
   echo "$value
   $value = next($data);
 echo '';
```

O6 PHP III

PHP III

- Functions
- Internal or Built-in Functions
- User-defined Functions
- Testing Variable Functions
- Workshop

Using Functions in PHP

- A function is a self-contained module of code that prescribes a calling interface, performs some task, and optionally returns a result.
 - To separate code that performs a single, well-defined task.
 - To makes the code easier to read and allows us to reuse the code each time we need to do the same task.

■ Calling Functions

- The following line is the simplest possible call to a function:
 - function_name();
 - » This calls a function named function_name that does not require parameters.
 - » This line of code ignores any value that might be returned by this function.
 - » For example: phpinfo();
- Most functions do require one or more parameters —information given to a function.
 - function name(7.993); function name(\$variable);

- Using Functions in PHP (cont.)
 - You can see how many parameters a function takes, what each represents, and what data type each needs to be from the function 's *prototype*.
 - This is the prototype for the function fopen():
 - int fopen(string filename, string mode, [int use_include_path]);
 - The prototype tells us a number of things, and it is important that you know how to correctly interpret these specifications.
 - In this case, the word int before the function name tells us that this function will return an integer.
 - The function parameters are inside the parentheses.
 - In the case of fopen(), three parameters are shown in the prototype.
 - » The parameter **filename** and **mode** are strings and the last parameter is an integer.
 - » The square brackets around use_include_path indicate that this parameter is optional.
 - » We can provide values for optional parameters or we can choose to ignore them, and the default value will be used.

```
$name = 'myfile.txt';
$openmode = 'r';
$fp = fopen($name, $openmode)
```

- Using Functions in PHP (cont.)
 - Case and Function Names
 - Calls to functions are **not** case sensitive, so calling function_name(), Function_Name(), or FUNCTION_NAME() are all valid and will all have the same result.
 - It is important to note that function names behave differently to variable names.
 - Variable names are case sensitive, so \$Name and \$name are two separate variables
 - Function names, Name() and name() are the same function.

- Why Should You Define Your Own Functions?
 - Declaring a function allows you to use your own code in the same way as the built-in functions.
 - You can call and reuse the same function many times throughout your script.
 - Save time to write the code
 - Easy to debug
 - Basic function structure
 - A function declaration creates or declares a new function.
 - The declaration begins with the keyword function provides the function name, the parameters required, and contains the code that will be executed each time this function is called.

```
function my_function() {
    echo 'My function was called';
}
```

Parameters

- A parameter allows you to pass data into a function.
- Most functions require one or more parameters.
 - For example: If we call our create_table() function as follows

```
$my_array = array('Line one.','Line two.','Line three.');
create_table($my_array);
```

```
File Edit Yiev

Back Forv

Address http://

Line one.

Line two.

Line three.
```

```
function create_table($data){
  echo '';
  reset($data); // Remember this is used to point to the beginning
  $value = current($data);
  while ($value){
    echo "$value\n";
    $value = next($data);
  }
  echo '';
}
```

Scope

- A variable 's scope controls where that variable is visible and useable.
 - Variables declared inside a function are in scope from the statement in which they are declared to the closing brace at the end of the function.
 This is called <u>function scope</u>. These variables are called <u>local variables</u>.
 - Variables declared **outside of functions** are in scope from the statement in which they are declared to the end of the file, but *not inside functions*. This is called *global scope*. These variables are called *global variables*.
 - Using require() and include() statements does not affect scope.
 - If the statement is used within a function, function scope applies.
 - If it is not inside a function, global scope applies.
 - The keyword **global** can be used to manually specify that a variable defined or used within a function will have global scope.
 - Variables can be manually deleted by calling unset(*variable_name*).
 - A variable is no longer in scope if it has been unset.

- Scope (cont.)
 - For example:

```
function fn() {
    $var = 'contents';
}
echo $var;
```

```
function fn(){
  echo 'inside the function, $var = '.$var.'<br />';
  $var = 'contents2';
  echo 'inside the function, $var = '.$var.'<br />';
}
$var = 'contents 1';
fn();
echo 'outside the function, $var = '.$var.'<br />';
...
```

```
inside the function, $var =
inside the function, $var = contents 2
outside the function, $var = contents 1
```

Code Blocks

```
for($i=0; $i<3; $i++ )
  echo 'Line 1<br/>echo 'Line 2<br />';
  tine 1
  Line 1
  Line 1
  Line 2
```

```
for($i=0; $i<3; $i++ ) {
  echo 'Line 1<br/>
  echo 'Line 2<br/>
}
Line 1
Line 2
Line 1
Line 2
Line 1
Line 2
```

- Date and Time Functions
- Array Functions
- Character Type Functions
- Directory Functions
- String Functions
- Mathematical Functions
- Mail Functions
- Filesystem Functions

Date and Time Functions

```
<?php
  echo "Today is ".date("l \\t\h\e jS \o\\f F, Y.")."<br>";
  echo "Now, it is ".date("H:i:s A").".<br>";
  echo "December 5, 2007 is on ".date("l", mktime(0, 0, 0, 12, 5, 2007)).".<br/>?>
```

Today is Saturday the 5th of May, 2007. Now, it is 18:27:36 PM. December 5, 2007 is on Wednesday.

NOTE: \tistab and \f is formfeed, so that we need to escape them.

Array Functions

```
<?php
  a = array(1, 3, 5, 7, 9);
  echo 'Sum of all values in $a = '.array sum($a).'<br>';
  echo 'Array $a in original order: ';
  foreach($a as $val){
           echo "$val ";
  $a = array_reverse($a);
  echo '<br/>br>Array $a in reversed order: ';
  foreach($a as $val){
           echo "$val ";
  echo '<br/>br>Display shuffle numbers from 1 to 10: ';

    \text{$numbers} = range(1,10);

  shuffle($numbers);
  foreach ($num as $number) {
    echo "$num ";
?>
     Sum of all values in $a = 25
     Array $a in original order: 1 3 5 7 9
     Array $a in reversed order: 9 7 5 3 1
     Display shuffle numbers from 1 to 10: 7 3 2 8 9 6 4 5 1 10
```

Character Type Functions

```
<?php
  $str = array("SUT Korat 2007", "Yahoo1999DotCom");
  foreach ($str as $s){
      echo "The string \"$s\" ";
    if(ctype_alnum($s)) {
      echo "consists of all letters or digits.<br>";
  }else{
      echo "does not consist of all letters or digits.<br>";
  }
  }
}
```

The string "SUT Korat 2007" does not consist of all letters or digits. The string "Yahoo1999DotCom" consists of all letters or digits.

ctype_alnum -- Check for alphanumeric character(s), either a letter or a digit

Directory Functions

```
<?php
  echo getcwd().'<br>';
  $dir = 'D:\AppServ\www\php_book';
  $files = scandir($dir);
  foreach($files as $value){
    echo "$value<br>";
  }
  echo getcwd().'<br>';
  chdir('..\cp4');
  echo getcwd().'<br>';
?>
```

```
D:\AppServ\www\php_book\cp5
.
.cp3
cp4
cp5
D:\AppServ\www\php_book\cp5
D:\AppServ\www\php_book\cp5
```

String Functions

```
<?php
    $data2 = "This is a sample of using string functions.";
    echo "$data2<br>";
    $data2_out1 = ucwords($data2);
    echo "$data2_out1<br>";
    $data2_out2 = str_replace("a sample of","the",$data2);
    echo "$data2_out2<br>";
    $ans = strcmp("somsak", "sombat");
    echo "The comparison between \"somsak\" and \"sombat\" is $ans.<br>";
?>
```

```
This is a sample of using string functions.

This Is A Sample Of Using String Functions.

This is the using string functions.

The comparison between "somsak" and "sombat" is 1.
```

Mathematical Functions

```
<?php
  echo 'abs(-25) = '.abs(-25).'<br>';
  echo 'max(8,9,3,4,1,2,7) = '.max(8,9,3,4,1,2,7).'<br>';
  echo 'min(8,9,3,4,1,2,7) = '.min(8,9,3,4,1,2,7).'<br>';
  echo 'decoct(9) = '.decoct(9).'<br>';
  echo 'decbin(9) = '.decbin(9).'<br>';
  echo 'bindec(1001) = '.bindec(1001).'<br>';
  echo 'bindec(1001) = '.bindec(1001).'<br>';
  echo 'ceil(3.25) = '.ceil(3.25). '<br>';
  echo 'floor(5.95) = '.floor(5.95).'<br>';
  echo 'sqrt(9) = '.sqrt(9).'<br>';
  echo 'deg2rad(45) = '.deg2rad(45).'<br>';
  echo 'pow(2,4) = '.pow(2,4).'<br>';
  echo 'rand(1,30) = '.rand(1,30).'<br>';
  echo 'rand(1,30) = '.rand(1,30).'<br>';
```

```
abs(-25) = 25

max(8,9,3,4,1,2,7) = 9

min(8,9,3,4,1,2,7) = 1

decoct(9) = 11

decbin(9) = 1001

bindec(1001) = 9

ceil(3.25) = 4

floor(5.95) = 5

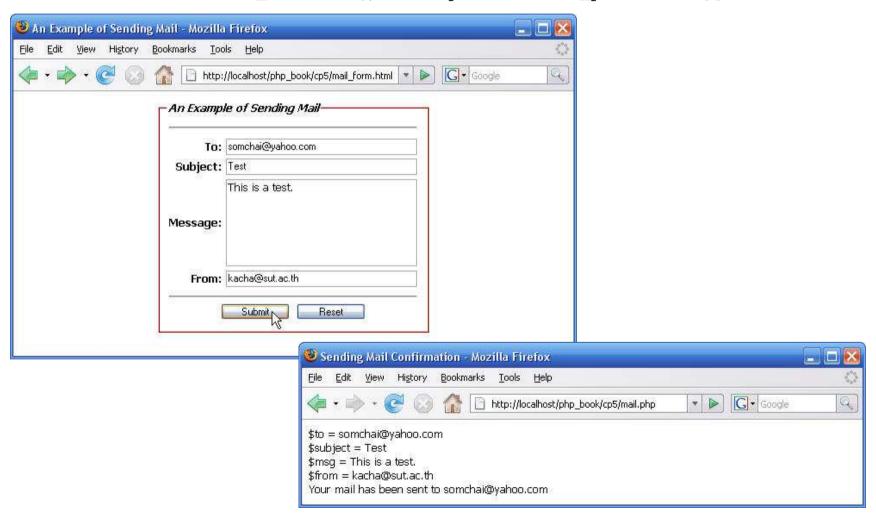
sqrt(9) = 3

deg2rad(45) = 0.785398163397

pow(2,4) = 16

rand(1, 30) = 5
```

Mail Functions



Filesystem Functions

```
<?php
 $dir = "D:";
 echo $dir.'<br>';
 $c_file = 0;
 c = 0;
 echo "Drive $dir has total space = ".disk_total_space($dir)." Bytes<br>";
 echo "Drive $dir has space available = ".disk_free_space($dir)." Bytes<br>";
 echo "The following information are files and directory in drive $dir<br/>;
 if($dh = opendir($dir)){
    while(($name = readdir($dh)) !== false){
      $type = filetype($dir.$name);
      echo "      NAME: $name --- TYPE: ".$type." <br>";
      if($tvpe=="dir")
        $c_dir++;
      else
        $c_file++;
    closedir($dh);
 echo "Total File = $c_file<br>Total Directory = $c_dir<br>";
?>
```

Filesystem Functions

```
D:
Drive D: has total space = 50009669632 Bytes
Drive D: has space available = 46083821568 Bytes
The following information are files and directory in drive D:
    NAME: AppServ --- TYPE: dir
    NAME: background2.jpeg --- TYPE: file
    NAME: bq1.psd --- TYPE: file
    NAME: Documents and Settings --- TYPE: dir
    NAME: fixedtableheads.css --- TYPE: file
    NAME: gd --- TYPE: dir
    NAME: MSOCache --- TYPE: dir
    NAME: Patch --- TYPE: dir
    NAME: patipan2 --- TYPE: dir
    NAME: patipan2.tar.gz --- TYPE: file
    NAME: RECYCLER --- TYPE: dir
    NAME: scroll_column --- TYPE: dir
    NAME: sutmots_April_11_06.06 --- TYPE: dir
    NAME: System Volume Information --- TYPE: dir
    NAME: Winning Eleven 8I --- TYPE: dir
Total File = 4
Total Directory = 11
```

Function Arguments

■ Pass by value

```
function function_name(argument) {
         statement;
}
function_name(variable);
```

Function Arguments

■ Pass by reference

```
function function_name(argument) {
         statement;
}
function_name(&variable);
```

```
<!php
  function new_value(&$num){
    $num = $num * $num;
}
  $n1 = 20;
  echo 'Before calling the function: $n1 = '.$n1.'<br>';
  new_value($n1);
  echo 'After calling the function: $n1 = '.$n1.'<br>';
?>

Before calling the function: $n1 = 20
  After calling the function: $n1 = 400
```

- Function Arguments
 - Default argument values

I like to eat noodle.
I like to eat steak.

Variable Functions

■ if a variable name has parentheses appended to it, PHP will look for a function with the same name as whatever the variable evaluates to, and will attempt to execute it.

```
<?php
  function abc() {
    echo "This is in function abc() < br > ";
}
  function message($year = "2004") {
    echo "Function message(): $year < br > ";
}
  $f = "abc";
  $f();
  $f = "message";
  $f();
  $f();
  $f(2007);
}
```

This is in function abc()
Function message(): 2004
Function message(): 2007

Testing Variable Functions

- Testing and Setting Variable Types
 - gettype()
 - Prototype: string gettype(mixed var);
 - we pass it a variable. It will determine the type and return a string containing the type name, or "unknown type" if it is not one of the standard types; that is, integer, double, string, array, or object.
 - settype()
 - Prototype: bool settype (mixed var, string type);
 - we pass it a variable that we would like to change the type of, and a string containing the new type for that variable from the previous list.

```
$a = 56;
echo gettype($a).'<br />';
settype($a, 'double');
echo gettype($a).'<br />';
```



Testing Variable Functions

- Testing and Setting Variable Types (cont.)
 - PHP also provides some specific type testing functions. Each of these takes a variable as argument and returns either true or false. The functions are
 - is_array()
 - is_double(), is_float(), is_real() (All the same function)
 - is_long(), is_int(), is_integer() (All the same function)
 - is_string()
 - is_object()

Testing Variable Functions

Testing Variable Status

- PHP has several ways to test the status of a variable.
 - The first of these is isset(), which has the following prototype: bool isset(mixed var);
 - This function takes a variable name as argument and returns true if it exists and false otherwise.
 - You can wipe a variable out of existence by using its companion construct, unset(), which has the following prototype: void unset(mixed var);
 - This gets rid of the variable it is passed and returns true.
 - Finally there is empty().

 This checks to see if a variable exists and has a non-empty, non-zero value. It has the following prototype:

 boolean empty(mixed var);

```
"" (an empty string)
0 (0 as an integer)
0.0 (0 as a float)
"0" (0 as a string)
NULL
FALSE
array() (an empty array)
var $var; (a variable declared, but without a value in a class)
```

The following things are considered to be empty

- Formatting Strings
- Joining and Splitting Strings w/ String Functions
- Comparing Strings
- Matching and Replacing Substring w/ String Functions

Formatting Strings

- Trimming strings: chop(), ltrim(), and trim()
 - The **trim()** function strips whitespace from the start and end of a string, and returns the resulting string.
 - The characters it strips by default are newlines and carriage returns (\n and \r , horizontal and vertical tabs (\t and \v), end of string characters (\0), and spaces.
 - The Itrim() function removes whitespace from the start (or left) only.
 - The **chop()** function removes whitespace from the end (or right) only.
- Formatting strings for presentation
 - The nl2br() function takes a string as parameter and replaces all the newlines in it with the XHTML

 tag (or the HTML

 tag in versions prior to 4.0.5).

- Formatting Strings (cont.)
 - Formatting a String for Printing
 - PHP also supports a **print()** construct, which does the same thing as **echo**.
 - You can apply some more sophisticated formatting using the functions printf() and sprintf().
 - The printf() prints a formatted string to the browser.
 - The sprintf() returns a formatted string.
 - For example:

```
echo "Total amount of order is $total.";

printf ("Total amount of order is %s.", $total);
```

- The %s in the format string is called a conversion specification.
- The advantage of printf() is that we can use a more useful conversion specification to specify that \$total is actually a floating point number, and that it should have two decimal places after the decimal point, as follows:
 - » printf ("Total amount of order is %.2f", \$total);

- Formatting Strings (cont.)
 - Conversion Specification Type Codes

Туре	Meaning			
b	Interpret as an integer and print as a binary number.			
С	Interpret as an integer and print as a character.			
d	Interpret as an integer and print as a decimal number.			
f	Interpret as a double and print as a floating point number.			
0	Interpret as an integer and print as an octal number.			
S	Interpret as a string and print as a string.			
Х	Interpret as an integer and print as a hexadecimal number			
	with lowercase letters for the digits a-f.			
X	Interpret as an integer and print as a hexadecimal number			
	with uppercase letters for the digits A-F.			

Changing the Case of String

Function	Description	Use	Value
		\$subject	Feedback from web site
strtoupper()	Turns string to uppercase	strtoupper(\$subject)	FEEDBACK FROM WEB SITE
strtolower()	Turns string to lowercase	strtolower(\$subject)	feedback from web site
ucfirst()	Capitalizes first character of string if it 's alphabetic	ucfirst(\$subject)	Feedback from web site
ucwords()	Capitalizes first character of each word in the string that begins with an alphabetic character	ucwords(\$subject)	Feedback From Web Site

- Joining and Splitting Strings w/ String Functions
 - Using explode(), implode(), and join()
 - Prototype of function explode()
 - array explode(string separator, string input[, int limit]);
 - This function takes a string *input* and splits it into pieces on a specified *separator* string. The pieces are returned in an array.
 - Prototype of implode()
 - string implode (string glue, array pieces)
 - This function returns a string containing a string representation of all the array elements in the same order, with the glue string between each element.
 - Function join()
 - This function is an alias of implode().

```
$text = "This is a book.";
$part = explode(" ", $text);
echo $part[0]; // This
echo $part[1]; // is

$a = array('lastname', 'email', 'phone');
$comma = implode(",", $a);
echo $comma; // lastname, email, phone
```

- Joining and Splitting Strings w/ String Functions (cont.)
 - Using strtok()
 - The function **strtok()** gets pieces (called tokens) from a string one at a time.
 - Function **strtok()** is a useful alternative to using explode() for processing words from a string one at a time.
 - The prototype for strtok()
 - string strtok(string input, string separator);

■ Using substr()

- The substr() function enables you to access a substring between given start and end points of a string.
- The substr() function has the following prototype:
 - string **substr**(string *string*, int *start*[, int *length*]);

Comparing Strings

- String Ordering: strcmp(), strcasecmp(), and strnatcmp()
 - The prototype for strcmp() is
 - int **strcmp**(string *str1*, string *str2*);
 - » If they are equal, it will return 0.
 - » If str1 comes after (or is greater than) str2 in lexicographic order, strcmp() will return a number greater than zero.
 - » If str1 is less than str2 strcmp() will return a number less than zero.
 - » This function is case sensitive.
 - The function **strcasecmp()** is identical except that it is not case sensitive.
 - The function **strnatcmp()** compares strings according to a "natural ordering," which is more the way human would do it.
 - For example, strcmp() would order the string "2" as greater than the string "12" because it is lexicographically greater, but strnatcmp() would do it the other way round.
- Testing String Length with strlen()
 - The function strlen() checks the length of the string and returns its length.
 - For example strlen('hello') returns 5

- Matching and Replacing Substring w/ String Functions
 - Finding Strings in Strings: strstr(), strchr(), strrchr(), and stristr()
 - The function strstr() is used to find a string or character match within a longer string. In PHP, function strchr() is exactly the same as strstr().
 - Prototype of **strstr()**:
 - string strstr(string haystack, string needle);
 - » You pass the function a *haystack* to be searched and a *needle* to be found.
 - » If an exact match of the *needle* is found, the function returns the *haystack* from the *needle* onward, otherwise it returns false.
 - » If the *needle* occurs more than once, the returned string will start from the first occurrence of *needle*.

```
<?php
    $email = 'user@example.com';
    $domain = strstr($email, '@');
    echo $domain;
?>
```

- The function stristr(), which is nearly identical, but is not case sensitive.
- The function **strrchr()**, which is again nearly identical ,but will return the *haystack* from the <u>last occurrence</u> of the *needle* onward

- Matching and Replacing Substring w/ String Functions
 - Finding the Position of a Substring: strpos() and strrpos()
 - The functions strpos() and strrpos() operate in a similar fashion to strstr(), except, instead of returning a substring, they return the numerical position of a *needle* within a *haystack*.
 - The strpos() function has the following prototype:
 - int strpos(string haystack, string needle, int [offset]);
 - For example, the following code will echo the value 4 to the browser:
 - » \$test = 'Hello world':
 - » echo strpos(\$test, 'o');
 - In this case, we have only passed in a single character as the needle, but it can be a string of any length.
 - The optional offset parameter is used to specify a point within the haystack to start searching.
 - For example, the following code will echo the value 7 to the browser:
 - » echo strpos(\$test, 'o', 5);
 - The strrpos() function is almost identical, but will return the position of the last occurrence of the *needle* in the *haystack*.
 - it only works with a single character needle

- Matching and Replacing Substring w/ String Functions
 - Replacing Substrings: str_replace()
 - The function **str_replace()** has the following prototype:
 - mixed str_replace(mixed search, mixed replace, mixed subject [, int &count])
 This function will replace all the instances of search in subject with replace and return the new version of the subject.

```
<?php
  $str = "I hate PHP script.";
  $new_str = str_replace("hate","LOVE",$str);
  echo $new_str;
?>
```

```
<?php
$vowels = array("a", "e", "i", "o", "u");
$onlyconsonants = str_replace($vowels, "", "Hello World of PHP");
echo $onlyconstants;
?>
HILL Wrld f PHP
```

- Matching and Replacing Substring w/ String Functions
 - Replacing Substrings: substr_replace()
 - The function **substr_replace()** is used to find and replace a particular substring of string based on its position. It has the following prototype:
 - string substr_replace(string string, string replacement, int start, int [length]);
 - This function will replace part of the string string with the string replacement
 - » if start is positive, the replacing will begin at the start th offset into string.
 - » If start is negative, the replacing will begin at the start the character from the end of string.
 - » If *length* is given and is positive, it represents the length of the portion of *string* which is to be replaced.
 - » If it is negative, it represents the number of characters from the end of *string* at which to stop replacing.
 - » If it is not given, then it will default to strlen (string)

```
<?php
    $var = 'ABCDEFGH:/MNOPQR/';
    echo "Original: $var"."<br/>
    echo substr_replace($var, 'xyz', 3)."<br/>
    echo substr_replace($var, 'xyz', -5)."<br/>
    echo substr_replace($var, 'xyz', 0,2)."<br/>
    echo substr_replace($var, 'xyz', 3,-2)."<br/>
    echo substr_replace($var, 'xyz', 3,-2)."<br/>
    ?>

Original: ABCDEFGH:/MNOPQR/

ABCxyz

ABCxyz

ABCxyzR/

ABCxyzR/
```

Workshop

PHP III: Writing Form and Display Information

■ Page 147 (1-3)



