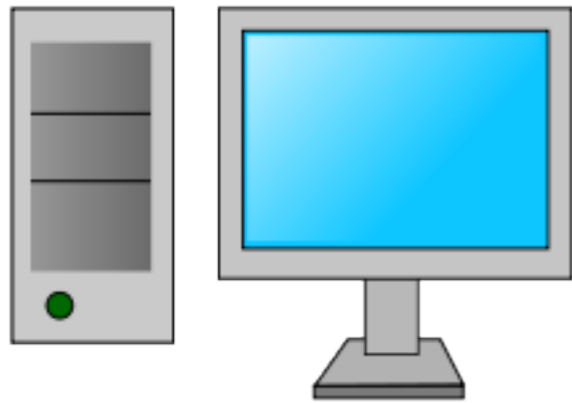


Server-side Scripting

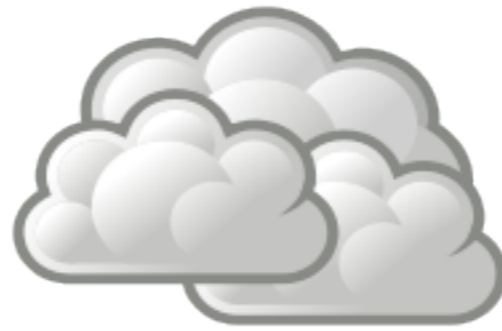
Software Languages Team
University of Koblenz-Landau
Ralf Lämmel and Andrei Varanovich

Local Computer

<http://www.example.com/login.php>



Internet



Web server

The web server is processing the request

PHP interpreter

HARD
DISK
MySQL db

page in html

[http://en.wikipedia.org/wiki/File:Scheme_dynamic_page_en.svg]

Server-side scripting is a technique used in website design which involves embedding scripts in an HTML source code which results in a user's (client's) request to the server website being handled by a script running server-side before the server responds to the client's request.

[http://en.wikipedia.org/wiki/Server-side_scripting]

What is scripting?

- Embed simple code in HTML pages.
- The HTML pages use the code to decide what elements and data to display.
- Existing APIs can be invoked to compute information for inclusion in the web page.

Key components of Server-side scripting

- **Web Server** -- makes available documents and handles requests.
- **Server-side processor** -- interprets scripts and generates HTML

Web server can refer to either the hardware (the computer) or the software (the computer application) that helps to deliver Web content that can be accessed through the Internet.

[\[http://en.wikipedia.org/wiki/Web_server\]](http://en.wikipedia.org/wiki/Web_server)

Apache web server

- Apache http server project
- <http://httpd.apache.org>
- Apache foundation started to support the web server project, but eventually extended to a multitude of other projects.

DEMO

Configuration of Apache to work with PHP

Configure directory ***DocumentRoot***

This is the directory from which the Web server will serve the documents (html, php, etc). That is, by default, requests are resolved to this directory.

Configuration entry:

`DocumentRoot "/Library/WebServer/Documents"`

What if we open a PHP file in the browser?

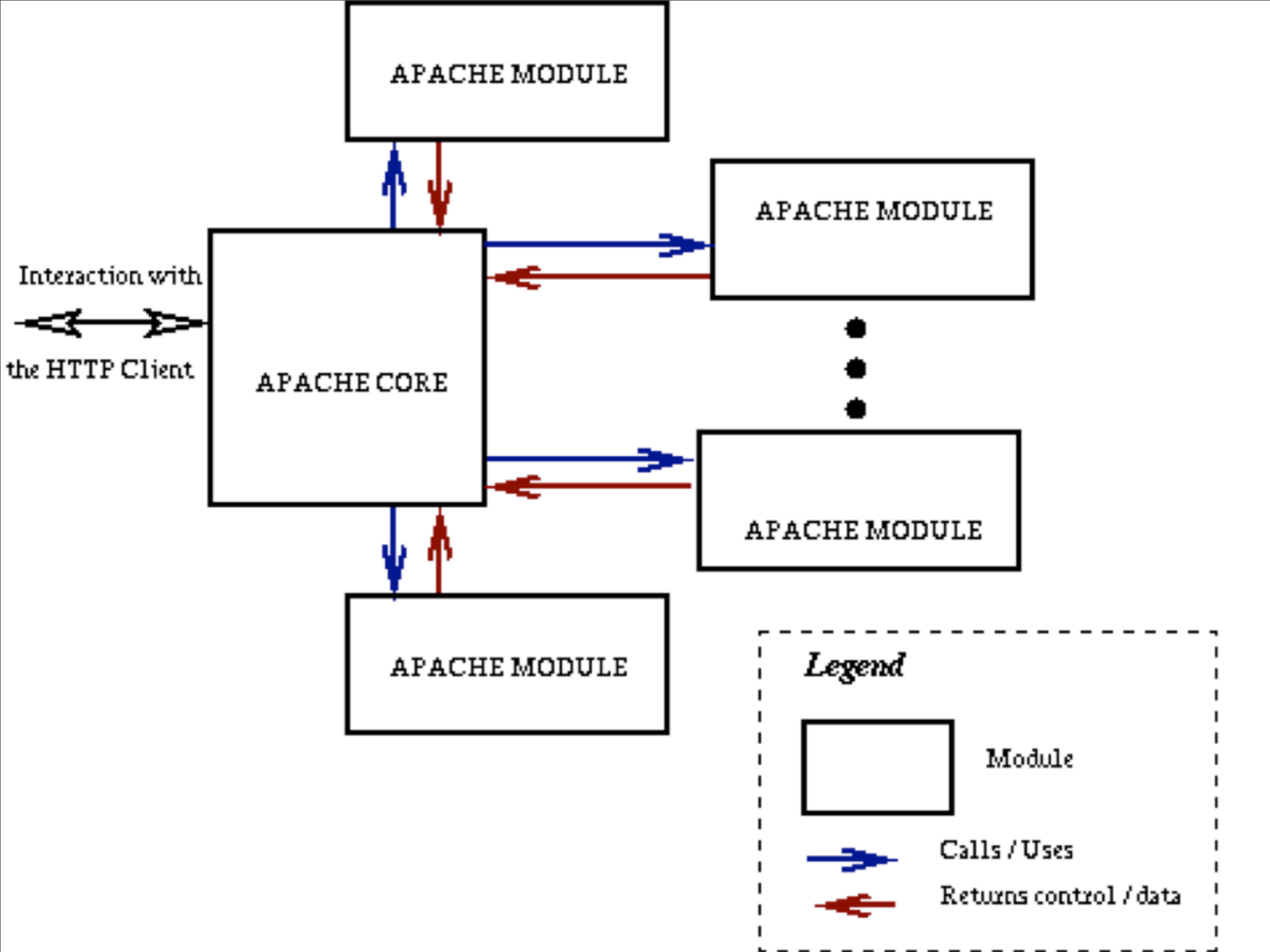


```
<?php
print "OK";
?>
```

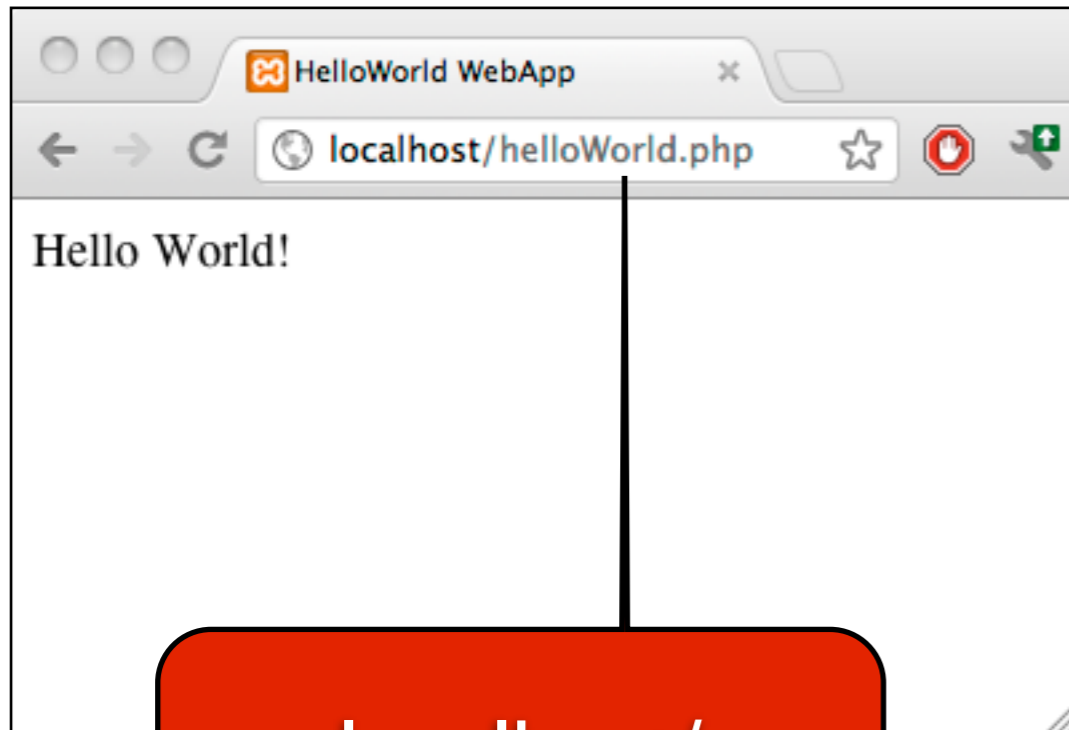
Non-processed HTML is shown unless PHP is enabled.

php5_module should be enabled to handle *.php

LoadModule php5_module libexec/apache2/libphp5.so



Remember -- Code embedded into HTML



localhost/
helloWorld.php

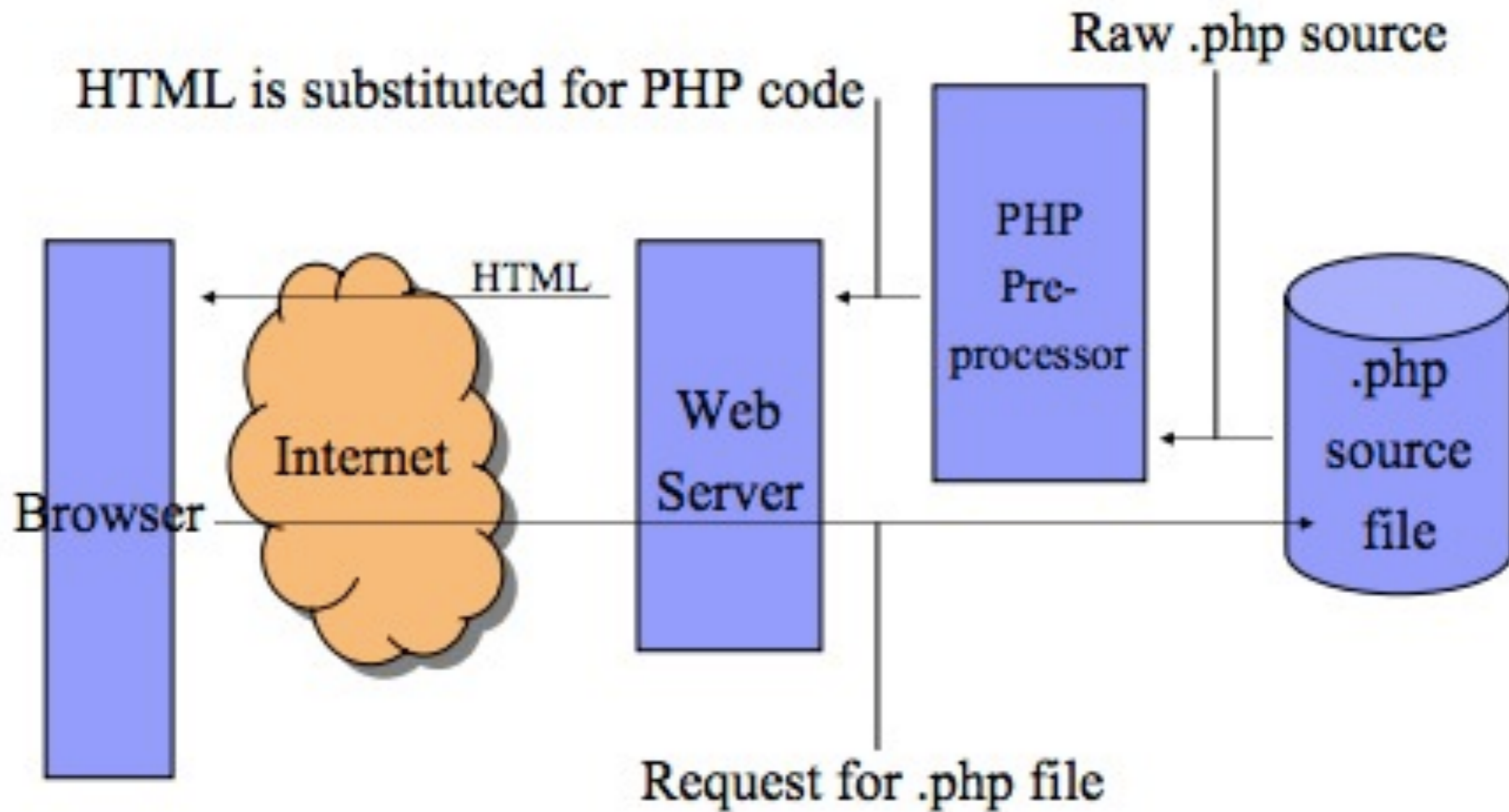
```
<html>
<head>
  <title>HelloWorld WebApp</title>
</head>
<body>
  <?php echo '<p>Hello World!</p>'; ?>
</body>
</html>
```

HTML with PHP

PHP is a general-purpose server-side scripting language originally designed for Web development to produce dynamic Web pages. It is one of the first developed server-side scripting languages to be embedded into an HTML source document rather than calling an external file to process data. The code is interpreted by a Web server with a PHP processor module which generates the resulting Web page.

[<http://en.wikipedia.org/wiki/PHP>]

PHP Flow

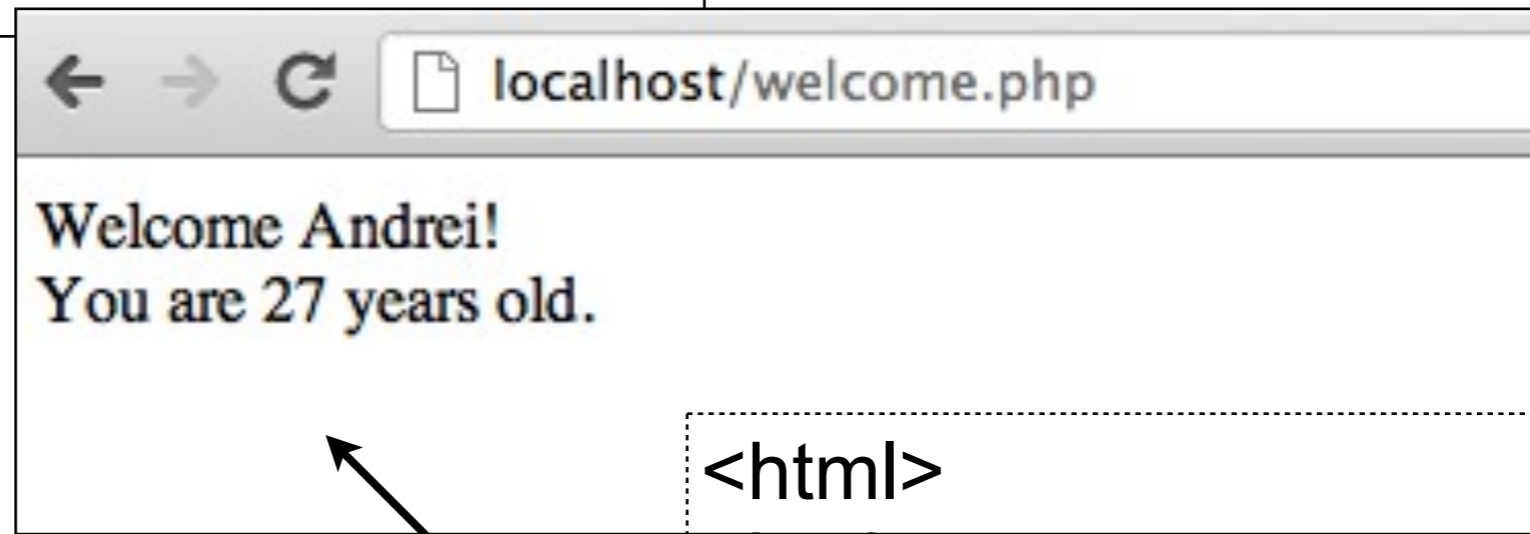


Adding interaction



localhost/intro.html

Name: Age:



localhost/welcome.php

Welcome Andrei!
You are 27 years old.

```
<html>  
<body>
```

```
Welcome Andrei!<br/>  
You are 27 years old.
```

```
</body>  
</html>
```

Underlying source

intro.html

```
<html>
<body>

<form action="welcome.php" method="post">
Name: <input type="text" name="fname" />
Age: <input type="text" name="age" />
<input type="submit" />
</form>

</body>
</html>
```

welcome.php

```
<html>
<body>

Welcome <?php echo $_POST["fname"]; ?>!<br />
You are <?php echo $_POST["age"]; ?> years old.

</body>
</html>
```


Scripting example: Compute HTML table from CSV file

```
<?php
$lines = preg_split('~\s*[\r\n]+\s*~', file_get_contents('prod.txt'));

foreach($lines as $i => $line) {
    $pairs = explode(':', $line);
    foreach($pairs as $pair) {
        list($column, $value) = explode('=', $pair, 2);
        $columns[$column] = true;
        $rows[$i][$column] = $value;
    }
}
$columns = array_keys($columns);
echo '<table><thead><tr>';

foreach($columns as $column) {
    echo '<th>'.$column.'</th>';
}
echo '</tr></thead><tbody>';

foreach($rows as $row) {
    echo '<tr>';
    foreach($columns as $column) {
        echo '<td>'.$row[$column].</td>';
    }
    echo '</tr>';
}
echo '</tbody></table>';
?>
```

difficult to read
and
difficult to maintain

DEMO

IOI implementation:php

- Show the implementation in action.
- Explain the architecture of the implementation.
- Show details of server-side scripting.
- Cover accidental complexity such as DB access.

Summary

You learned about ...

- the principles behind server-side scripting,
- the role of a Web server in Web applications,
- Apache Web server basic configuration,
- the generation of dynamic web pages with PHP,
- and, in fact, web programming with PHP.

Resources

- <http://www.w3schools.com/php/default.asp>
- <http://www.php.net>