Curs 3

2017/2018

Programarea aplicațiilor web

Introducere

PAW

- Programarea aplicațiilor web
  - An V RC
    - 2C/1L/1P

Nota

- An V
  - 33% E
  - **66**% Aplicatii
    - 33% L (0%)
    - 33% P (66%)

Documentatie

- http://rf-opto.etti.tuiasi.ro + www

CURS

I.	HTML si XHTML (recapitulare)	1 oră
II	CSS	2 ore
~~III~~	~~Baze de date, punct de vedere practic~~	~~1 oră~~
~~IV~~	~~Limbajul de interogare SQL~~	~~4 ore~~
V	PHP - HyperText Preprocessor	8 ore
VI	XML - Extended Mark-up Language si aplicatii	4 ore
VII	Conlucrare intre PHP/MySql, PHP/XML, Javascript/HTML	2 ore
VIII	Exemple de aplicatii	6 ore
	Total	28 ore

rf-opto.etti.tuiasi.ro

- http://rf-opto.etti.tuiasi.ro/master_it.php
- Laborator 2011-2012
  - Exercitii/Performanta MySql
  - optional

Web Design

Concepte generale

Concepte

- Steve Krug: "**Don't Make Me Think**"
- Utilizatorii scaneaza pagina, nu o citesc
- Informatia trebuie redusa la minimul necesar in majoritatea locurilor
- "Daca ceva e greu de utilizat, mai bine nu o utilizez"
- Utilizatorii au comportament de **rechin**
- Originalitatea **nu e** intotdeauna **recomandata**

Capitolul II

CSS

CSS Box Model

- Orientat in jurul conceptului de "cutie" – Box model

THE CSS BOX MODEL HIERARCHY

(content)

Here's some sample content, constrained by the padding thats been applied. Here's some sample content, constrained by the padding thats been applied.

border

padding*

background-image

background-color

margin*

* transparent elements
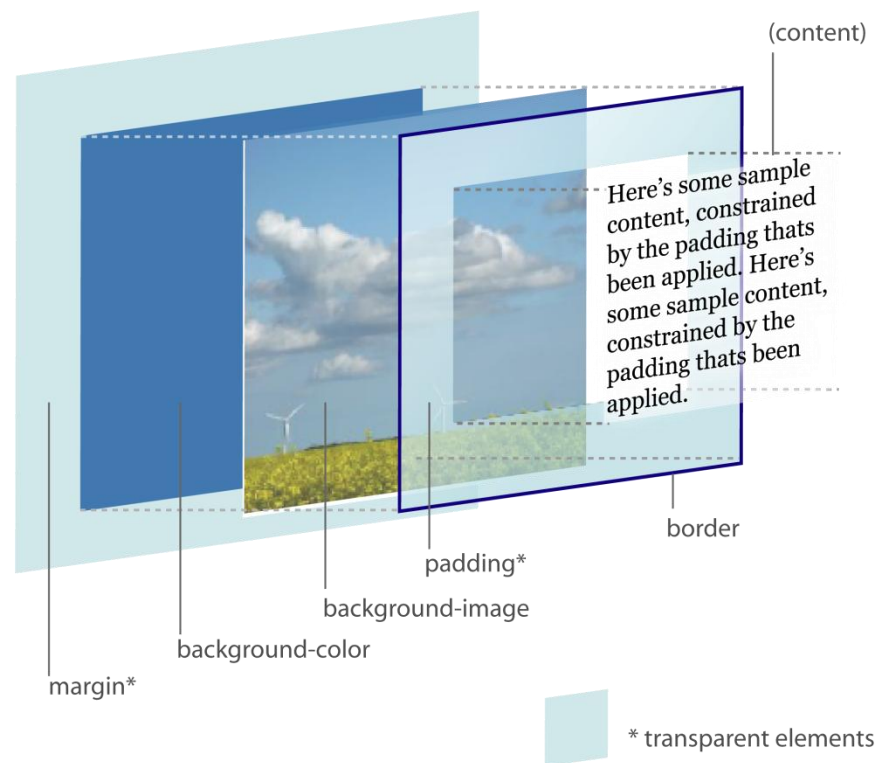
Pozitionare

- position:absolute | fixed | relative | static | inherit;
- top, right, bottom, left:auto | [valoare] | [%] | inherit;
- z-index:[valoare intreaga]; - mai mare = deasupra

DOM

- ## DOM – Document Object Model: structura de tip graf
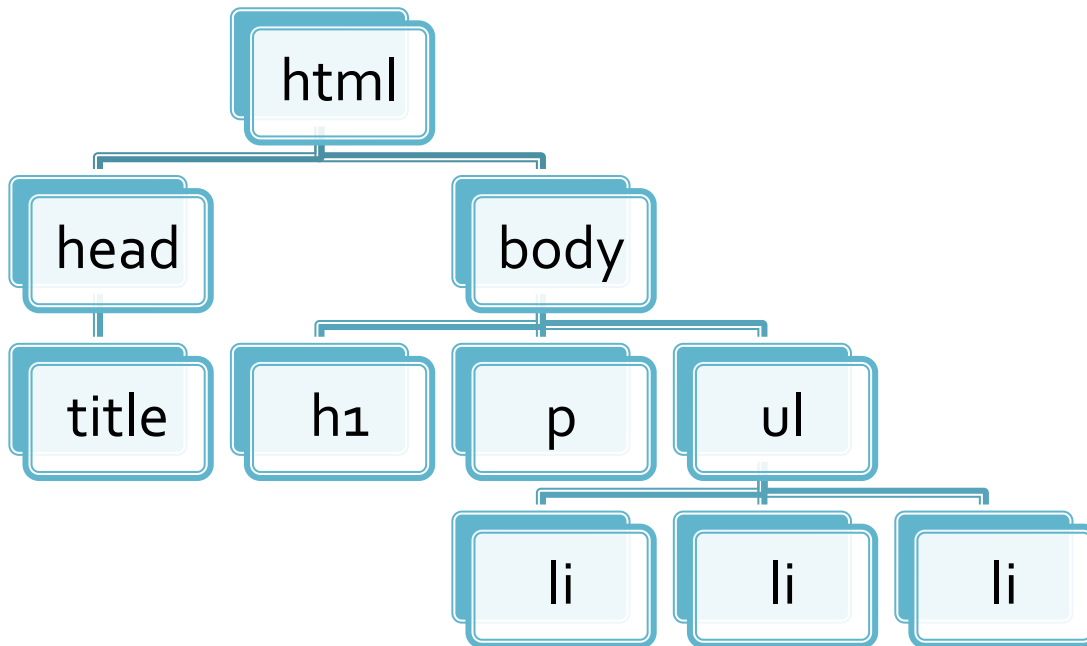
```
<html>
 <title>pagina mea</title>
 <body>
  <h1>Compozitori:</h1>
  <p>
  <ul>
   <li> elvis costello
   <li> johannes brahms
   <li> georges brassens
  </ul>
 </body>
</html>
```

Relatie cu Javascript in aplicatii

- Javascript poat accesa prin intermediul obiectului DOM atasat documentului HTML elementele din structura arbore DOM si modifica proprietatile corespunzatoare
- se deschide astfel calea spre aplicatii dinamice

CSS Zen Garden

- http://www.csszengarden.com/
- un fisier html comun
- schimbarea formei permisa numai prin intermediul CSS

CSS Zen Garden – HTML original

css Zen Garden

The Beauty of CSS Design

A demonstration of what can be accomplished visually through CSS-based design. Select any style sheet from th

Download the sample html file and css file

The Road to Enlightenment

Littering a dark and dreary road lay the past relics of browser-specific tags, incompatible DOMs, and broken CS

Today, we must clear the mind of past practices. Web enlightenment has been achieved thanks to the tireless ef

The css Zen Garden invites you to relax and meditate on the important lessons of the masters. Begin to see with Become one with the web.

So What is This About?

There is clearly a need for CSS to be taken seriously by graphic artists. The Zen Garden aims to excite, inspire, one will load the style sheet into this very page. The code remains the same, the only thing that has changed is th

CSS allows complete and total control over the style of a hypertext document. The only way this can be illustrate placed in the hands of those able to create beauty from structure. To date, most examples of neat tricks and hac

CSS Zen Garden

Laborator 2

HTML

- se creaza o pagina care sa arate ca in schita alaturata
- forma paginilor:
  - tabel
- Se experimenteaza diversele elemente de interactiune cu utilizatorul

culoare	**IMAGINE**	culoare
	Continut (cu alta culoare fundal)	

Suplimentar

- forma din schita alaturata
- forma paginilor:
  - tabel controlat prin CSS

culoare	IMAGINE	culoare
	Continut (cu alta culoare fundal)	
	Copyright (cu alta culoare fundal)	

Analiza critica

- design?
  - in aplicatiile web forma **este importanta**
  - nu trebuie sa fie inovativa ci familiara
  - "Don't make me think!"

Design 1

```
<html>
<head>
<title>Magazin online Firma X SRL </title>
</head>
<body>
<table width="100%" border="0"
bgcolor="#CCFFFF">
<tr><td rowspan="2" width="*"></td>
<td width="600"><img src="images/antet.gif"
width="600" height="100" /></td>
<td rowspan="2" width="*"></td></tr>
<tr><td height="600" valign="top"
bgcolor="#FFFFCC">
Continut
</td></tr>
</table>
</body>
</html>
```

| culoare | IMAGINE | culoare |
| | Continut (cu alta culoare fundal) | |

□ tabel

Design 1

Magazin   Firma X SRL

Continut

Design 2

```html
<html>
<head>
<title>Magazin online Firma X SRL</title>
</head>
<body bgcolor="#CCFFFF">
<table width="600" border="0" align="center">
<tr><td><img src="images/antet.gif" width="600"
height="100" /></td></tr>
<tr><td height="600" valign="top"
bgcolor="#FFFFCC">
Continut
</td></tr>
</table>
</body>
</html>
```

culoare

IMAGINE

culoare

Continut

(cu alta culoare

fundal)

tabel

Design 2

Design 3

index.html

```
<html>
<head>
<title>Magazin online Firma X SRL</title>
<link rel="stylesheet" href="stil.css"
type="text/css" />
</head>
<body>
<div class="antet"></div>
<div class="continut">
Continut
</div>
</body>
</html>
```

stil.css

```
body { background-color: #CCFFFF;}
.antet { background-image:url(images/antet.gif);
        background-repeat:no-repeat;
        height: 100px;
        width: 600px;
        margin-top: 0px;
        margin-right: auto;
        margin-left: auto;}
.continut{ background-color:#FFFFCC;
        height: 600px;
        width: 600px;
        margin-top: 5px;
        margin-right: auto;
        margin-left: auto;}
```

Design 3

Continuare

- capacitatea de extindere?
  - va aparea un meniu?
  - unde?
- design 1
  - tabel cu 3 coloane, numai cea centrala e folosita
  - avantaj: se creaza doua zone care ar putea primi date **daca** e nevoie
  - dezavantaj: forma (culori, dimensiuni) intercalata in continut

Continuare

- design 3
  - avantaj: forma (culori, dimensiuni) separata de continut
  - avantaj: adaugarea altor cutii (div) care sa primeasca date **daca** e nevoie si controlul formei lor se poate realiza
  - dezavantaj: alaturarea a 2 box/div mai complexa, generatoare de probleme la incepatori
    - Bibliografie: "am mai facut ceva asemanator" – dezavantajul dispare

Consideratii generale

Aplicatii

Aplicatii

Aplicatii

Exemple reale

WAMP

cerere HTTP, date

Web Server

Apache

- HTML
- Imagini
- documente

raspuns HTTP, HTML, CSS, Javascript

HTML, CSS, Javascript

Fisiere PHP

PHP

PHP Interpreter

SQL

Server MySql

Microsoft Windows

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LAMP

Web Server

Browser — cerere HTTP → Apache → • HTML • Imagini • documente

raspuns HTTP

Editor **Notepad ++**

Client FTP/SFTP **WinScp**

Client SSH **Putty**

Microsoft Windows

Fisiere PHP → PHP Interpreter

Server FTP

Server SSH

Linux CentOS 7.1

phpMyAdmin

Server MariaDB

Server Email

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Client/Server Scripting

Web Browser

cerere HTTP, date

→

HTML, CSS

←

JavaScript

raspuns HTTP, HTML, CSS, Javascript

JVM

Flash Player

Web Server

Apache

← • HTML
  • Imagini
  • documente

HTML, CSS, Javascript ↑

PHP Interpreter ← Fisiere PHP

PHP

SQL ↓

Server MySql

client side scripting

server side scripting

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Aplicatie Web

- presupune prelucrarea unor date si oferirea unui document personalizat (rezultat al datelor respective)
- datele pot fi obtinute:
  - de la utilizator
  - o sursa externa (baze de date)
  - **combinatie** utilizator/baze de date

Forme in HTML

- necesare pentru ca utilizatorul sa poate trimite date server-ului
- <form>…</form>
- Atribute specifice:
  - action: adresa documentului care preia datele
    - <form action="<?php echo $_SERVER['PHP_SELF'];?>">
    - <form action="actiuni/fisier2.html">
  - method: modalitatea de transmitere a datelor: post sau get
    - <form method="post" action= … >

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Metode de transmitere

- **post** datele sunt transmise in bloc
- **get** datele sunt atasate adresei documentului de procesare : results.php?prob=81&an=2009
- **get** trebuie folosit numai cand datele sunt "idempotente",
  - nu cauzeaza efecte colaterale
  - nu modifica starea server-ului (baze date, etc)
- se poate simula realizarea unei forme (**get**) prin scrierea corespunzatoare a link-urilor

Elemente de interactiune cu utilizatorul

- in interiorul etichetei <form>...</form>
  - input
  - select/option
  - textarea
  - button
- **toate** elementele vor avea un nume
  - atribut: name=""
  - numele va fi intalnit in uri-ul generat prin get, sau in numele variabilei trimisa prin post
- trimiterea datelor se face prin intermediul unui buton cu tipul type="submit"

INPUT

- <input .../>
- Atribute:
  - type: text | password | checkbox | radio | submit | reset | file | hidden | image | button
  - name: numele variabilei
  - value: valoarea trimisa server-ului la selectie (valoarea initiala in anumite cazuri)
  - checked/src/size/maxlength in functie de tip

Exemple

```
<input name="textfield" type="text" value="ceva" />

<input name="Ok" type="submit" value="Trimite" />

<label><input name="check" type="checkbox" value="5" checked />check1</label>

<label><input name="RG1" type="radio" value="a" checked="checked" />but1</label>
<label><input name="RG1" type="radio" value="b" />but2</label>

<input name="hid" type="hidden" value="6" />
```

TEXTAREA/SELECT

```
<textarea name="textarea" cols="20" rows="5">Un text
initial</textarea><br /><br />

<select name="select." size="3">
 <option value="1" selected="selected">opt1</option>
 <option value="2">opt2</option>
 <option value="3">opt3</option>
</select><br /><br />

<select name="select...">
 <option value="1" selected="selected">opt1</option>
 <option value="2">opt2</option>
 <option value="3">opt3</option>
</select>
```

BUTTON

```
<button type="button" onClick="do ( );">Click Here</button>

<button type="submit" value="infoOnly">Request Info<img
src="arrowb.gif" /></button>

<button type="reset"><img src="arrowr.gif" />Clear</button>

<button type="submit" id="sender"
value="infoOnly">Request<br />Info<br /><img
src="arrowb.gif" /></button>

<button type="submit" id="sender"
value="infoOnly"><p>Request</p><p><b><i>Info</i></b></p>
<img src="arrowb.gif" /></button>
```

- introdus pentru a oferi posibilitatea introducerii de continut mai complex (text formatat,imagini) in interiorul butoanelor de pe forma

Exemplu – forma

- Mic magazin online
- Formular de comanda cu procesarea comenzii

Magazin online XXX SRL

Realizati comanda

Produs	Cantitate
Carti	1
Caiete	2
Penare	3

[Trimite]

```
<html>
<head>
<title>Magazin online XXX SRL</title>
</head>
<body>
<h1>Magazin online XXX SRL</h1>
<h2>Realizati comanda</h2>
<form action="rezultat.html" method="post">
<table border="0">
<tr bgcolor="#cccccc"><td width="150">Produs</td><td width="15">Cantitate</td></tr>
<tr><td>Carti</td><td align="center"><input type="text" name="carti_cant" size="3" maxlength="3" /></td></tr>
<tr><td>Caiete</td><td align="center"><input type="text" name="caiete_cant" size="3" maxlength="3" /></td></tr>
<tr><td>Penare</td><td align="center"><input type="text" name="penare_cant" size="3" maxlength="3" /></td></tr>
<tr><td colspan="2" align="center"><input type="submit" value="Trimite" /></td></tr>
</table>
</form>
</body>
</html>
```
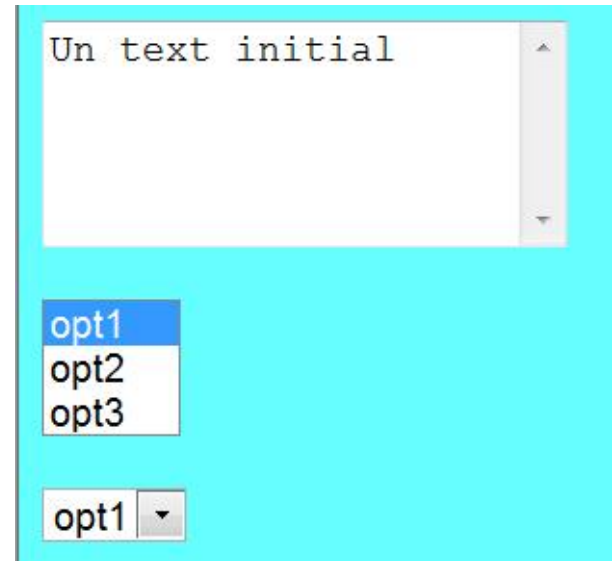
45

Exemplu – raspuns static

- fisier html
- fisierele HTML sunt doar "servite" de server
- in aparenta a existat o procesare, real **nu**

```
<html>
<head>
<title>Magazin online XXX SRL</title>
</head>
<body>
<h1>Magazin online XXX SRL</h1>
<h2>Rezultate comanda</h2>
<p>Comanda receptionata</p>
</body>
</html>
```

Magazin online XXX SRL

Rezultate comanda

Comanda receptionata

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CURS

I.	HTML si XHTML (recapitulare)	1 oră
II	CSS	2 ore
~~III~~	~~Baze de date, punct de vedere practic~~	~~1 oră~~
~~IV~~	~~Limbajul de interogare SQL~~	~~4 ore~~
V	PHP - HyperText Preprocessor	8 ore
VI	XML - Extended Mark-up Language si aplicatii	4 ore
VII	Conlucrare intre PHP/MySql, PHP/XML, Javascript/HTML	2 ore
VIII	Exemple de aplicatii	6 ore
	Total	28 ore

Hypertext PreProcessor

PHP

PHP

- Hypertext PreProcessor - acronim recursiv
  - initial – Personal Home Page / Form Interpreter
  - 1995 – 1.0
- versiune curenta: 5.6.34
  - 2018-03-01
- versiune curenta: 7.2.3
  - 2018-03-01
- limbaj de scripting de uz general,
- rulare pe server (server-side scripting)
- open source

Web server Technology

HTTP request

HTTP answer

Web Browser	Web Server
JavaScript	ASP Interpreter
JVM	PHP Interpreter
Flash Player	CGI

Files
- HTML
- Images
- documents

ASP Files

PHP Files

Compiled programs

Database Server
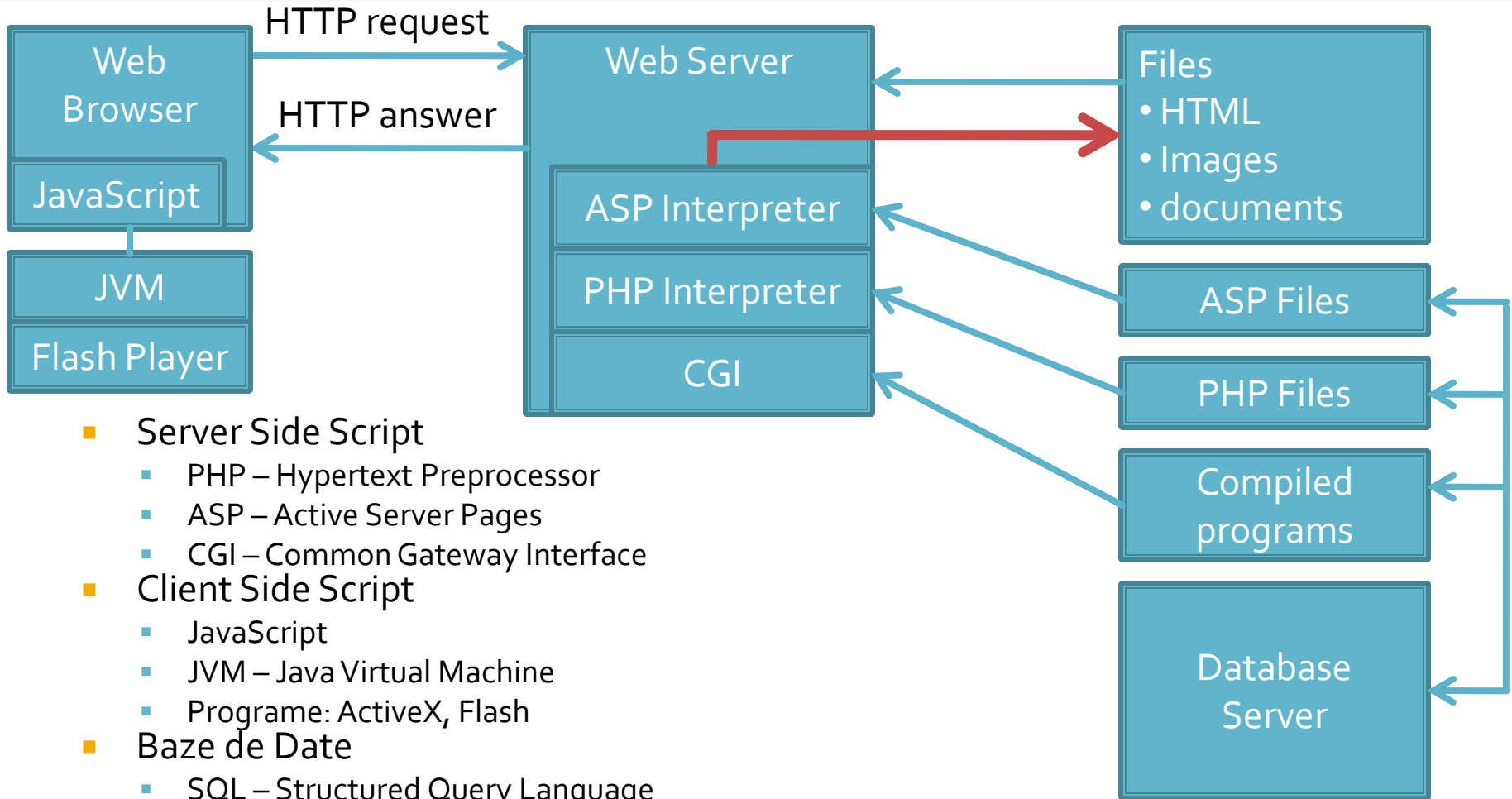
- Server Side Script
  - PHP – Hypertext Preprocessor
  - ASP – Active Server Pages
  - CGI – Common Gateway Interface
- Client Side Script
  - JavaScript
  - JVM – Java Virtual Machine
  - Programe: ActiveX, Flash
- Baze de Date
  - SQL – Structured Query Language
  - MySql – open Source
  - Microsoft SQL Server
  - Oracle

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Client/Server Scripting

Web Browser

HTML, CSS

JavaScript

JVM

Flash Player

cerere HTTP, date

raspuns HTTP, HTML, CSS, Javascript

Web Server

Apache

- HTML
- Imagini
- documente

HTML, CSS, Javascript

PHP Interpreter

Fisiere PHP

PHP

SQL

Server MySql

client
side
scripting

server
side
scripting

51
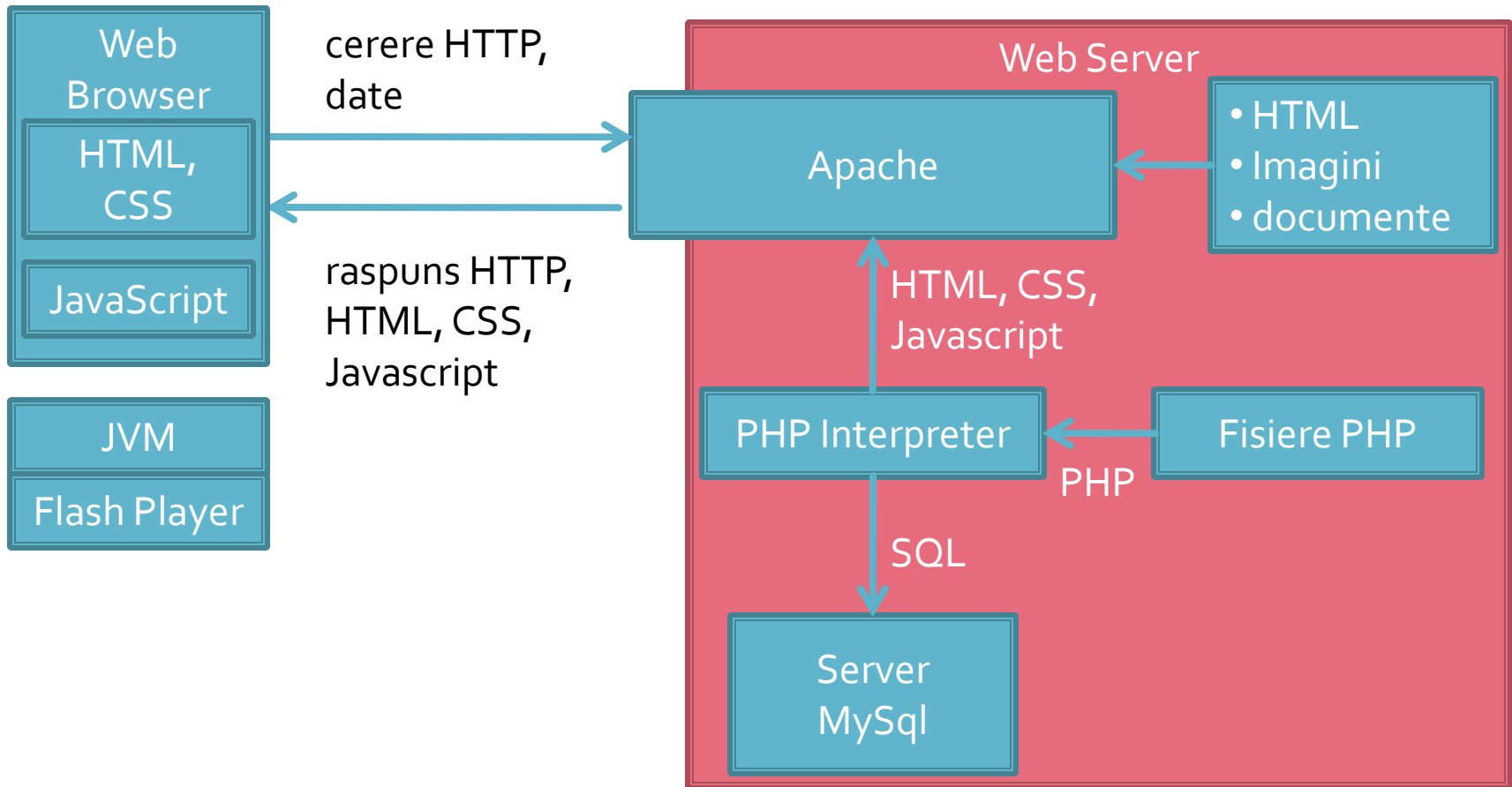
Tehnologia server-elor Web

- PHP – Hypertext Preprocessor
  - initially – Personal Home Page
  - open source
  - C++
  - Apache
- ASP – Active Server Pages
  - Microsoft
  - VBasic
  - IIS
- Java/JavaScript
  - Sun
  - Java Virtual Machine

Usage share of web servers

52
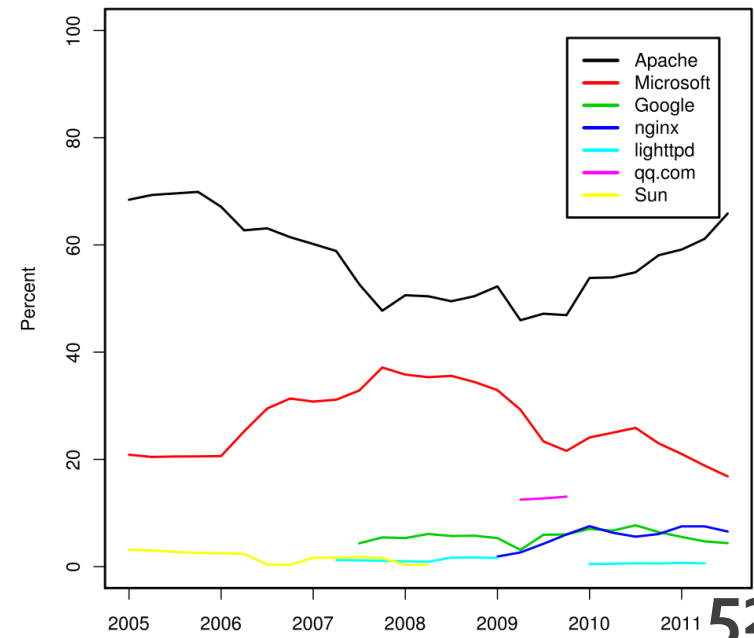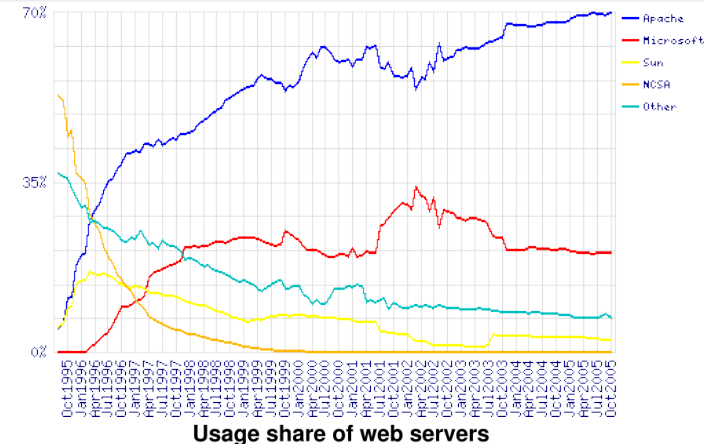
TIOBE Programming Community Index for February 2018

Position Feb 2018	Position Feb 2017	Delta in Position	Programming Language	Ratings Feb 2018	Delta Feb 2017
1	1	=	Java	14.99%	-1.69%
2	2	=	C	11.86%	3.41%
3	3	=	C++	5.73%	0.30%
4	5	↑	Python	5.17%	1.12%
5	4	↓	C#	4.45%	-0.45%
6	8	↑	Visual Basic .NET	4.07%	1.25%
7	6	↓	PHP	3.42%	0.35%
8	7	↓	JavaScript	3.17%	0.29%
9	9	=	Delphi/Object Pascal	2.59%	0.11%
10	11	↑	Ruby	2.53%	0.38%

TIOBE Programming Community Index for March 2010

Position Mar 2010	Position Mar 2009	Delta in Position	Programming Language	Ratings Mar 2010	Delta Mar 2009	Status
1	1	=	Java	17.509%	-2.29%	A
2	2	=	C	17.279%	+1.42%	A
3	4	⬆	PHP	9.908%	+0.42%	A
4	3	⬇	C++	9.610%	-0.75%	A
5	5	=	(Visual) Basic	6.574%	-1.71%	A
6	7	⬆	C#	4.264%	-0.06%	A
7	6	⬇	Python	4.230%	-0.95%	A
8	9	⬆	Perl	3.821%	+0.40%	A
9	10	⬆	Delphi	2.684%	-0.03%	A
10	8	⬇⬇	JavaScript	2.651%	-0.96%	A

Evolutie PHP

TIOBE Index for PHP

Source: www.tiobe.com
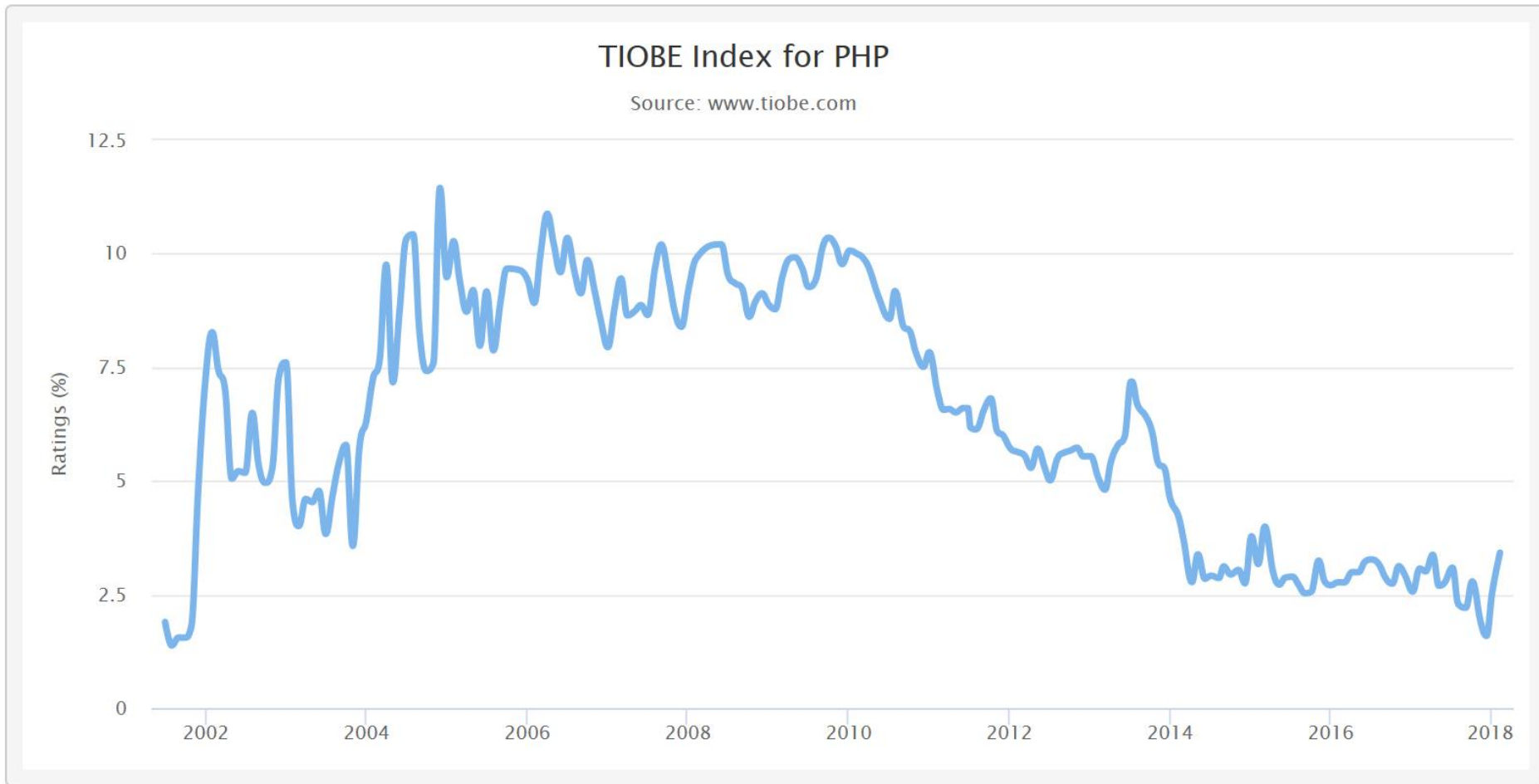
Avantaje PHP

- Performanta ridicata
- Interfata cu multe sisteme de baze de date
- Costuri reduse
- Biblioteci incluse pentru majoritatea operatiunilor uzuale in aplicatii web
- Usurinta in invatare (C)
- Portabilitate
  - Disponibilitate a codului sursa
- Exemple disponibile in comunitate
- Suport disponibil

Performanta
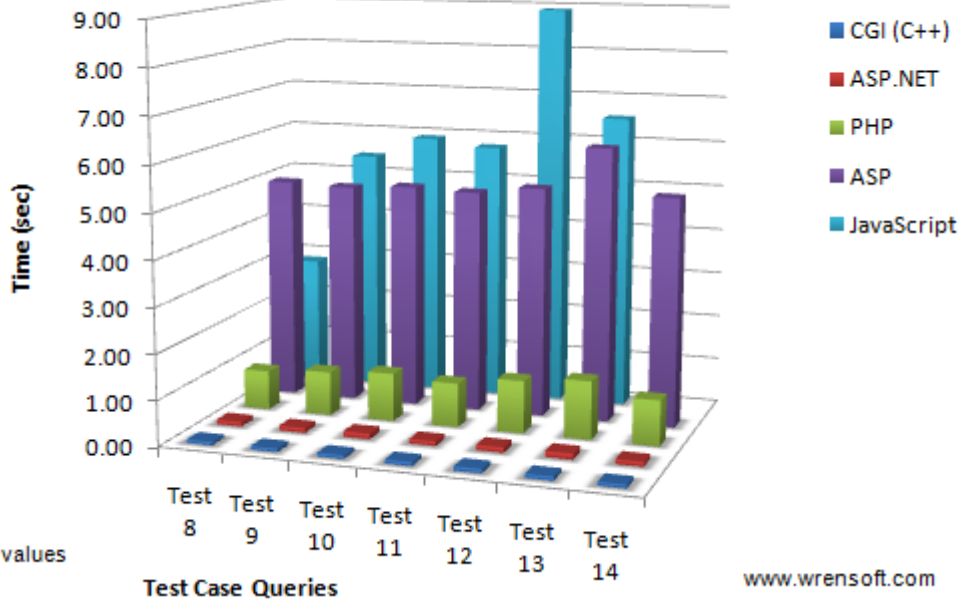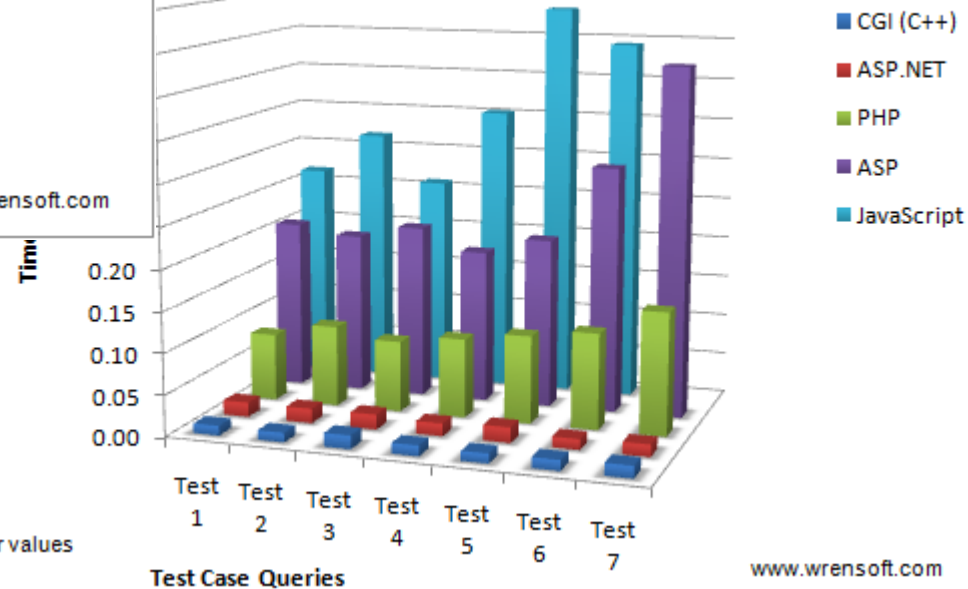
Raspandire

PHP Usage for Jul 2007

Raspandire

PHP Trend (Logarithmic Scale)

Legend: Hostnames, Active Sites, IP Addresses, Computers

Percentages of websites using various server-side programming languages

PHP	81.9%
ASP.NET	15.8%
Java	3.1%
static files	1.5%
ColdFusion	0.7%
Ruby	0.6%
Perl	0.5%
JavaScript	0.2%
Python	0.2%
Erlang	0.1%
Miva Script	0.1%

W3Techs.com, 29 February 2016

Overall	81.9%
top 1,000,000	79.1%
top 100,000	70.6%
top 10,000	62.9%
top 1,000	54.8%
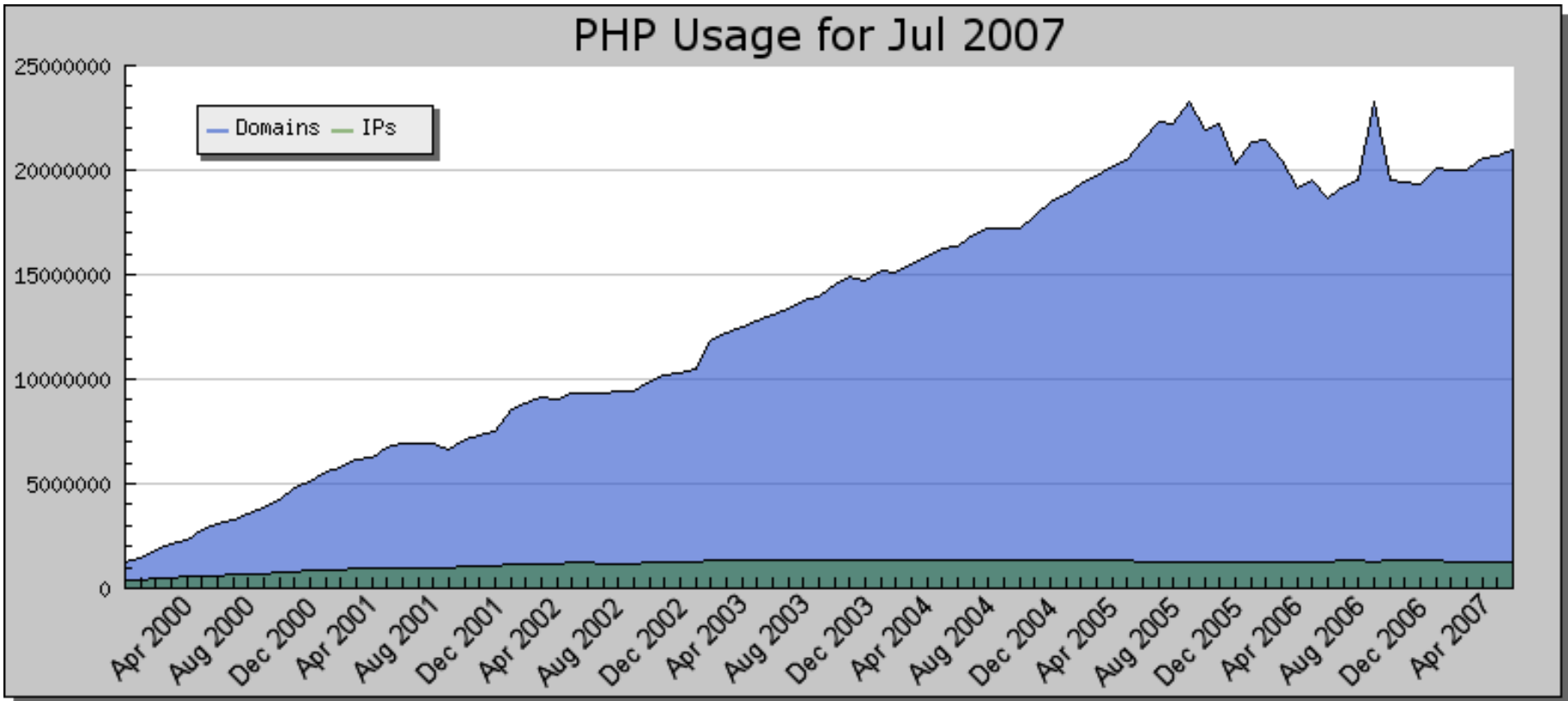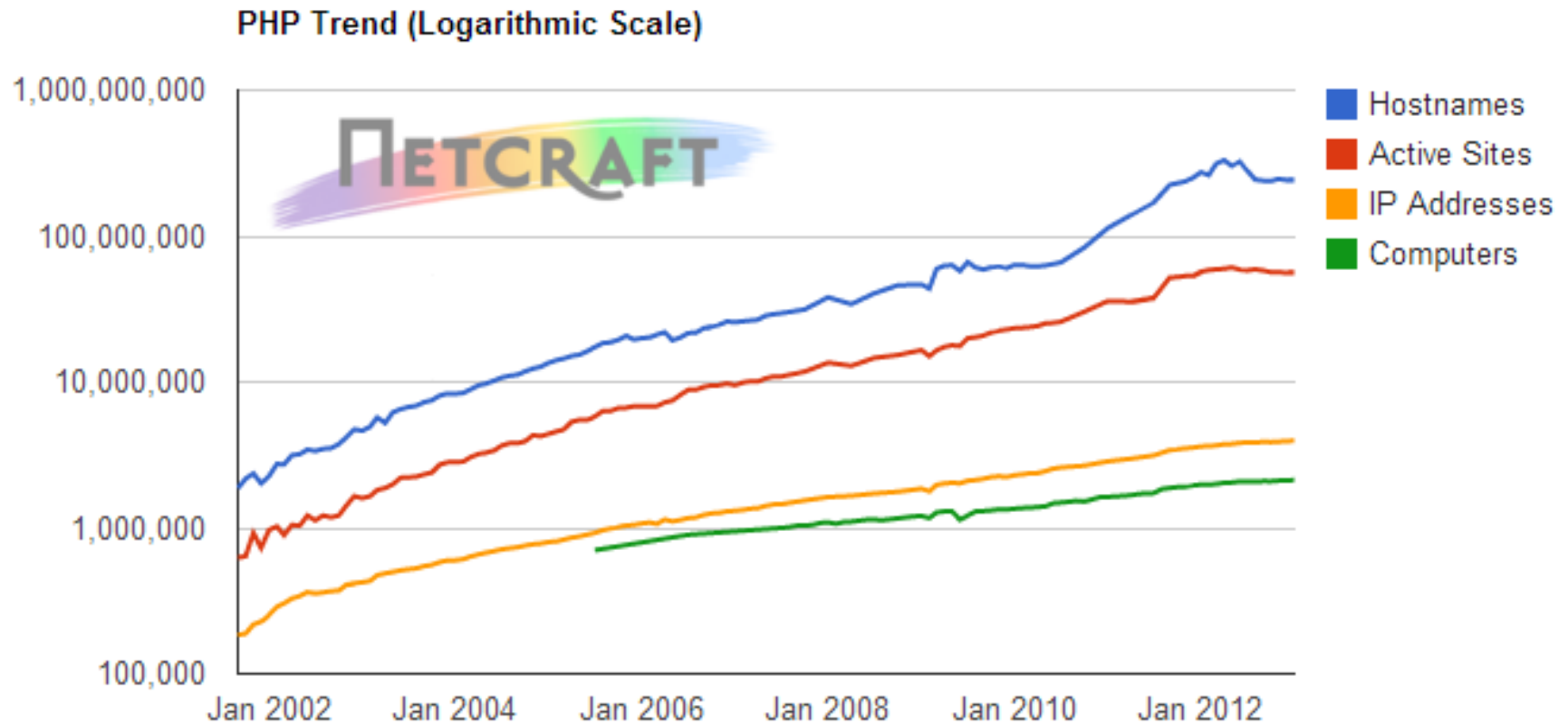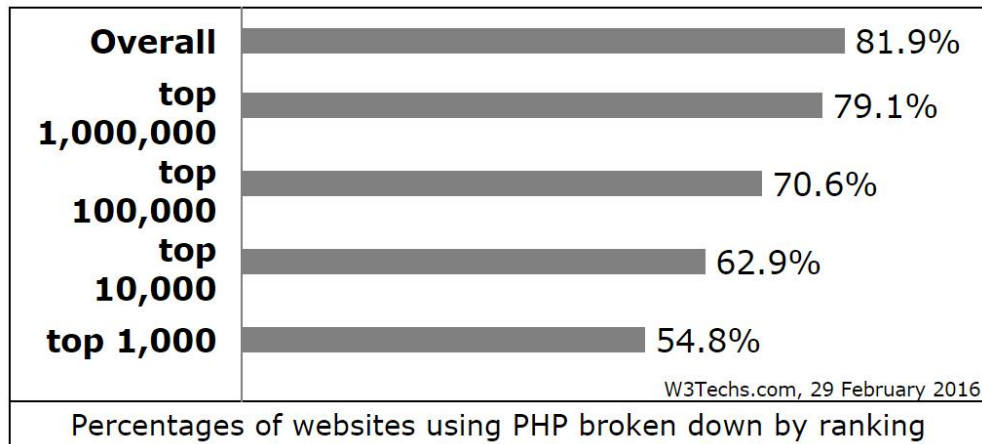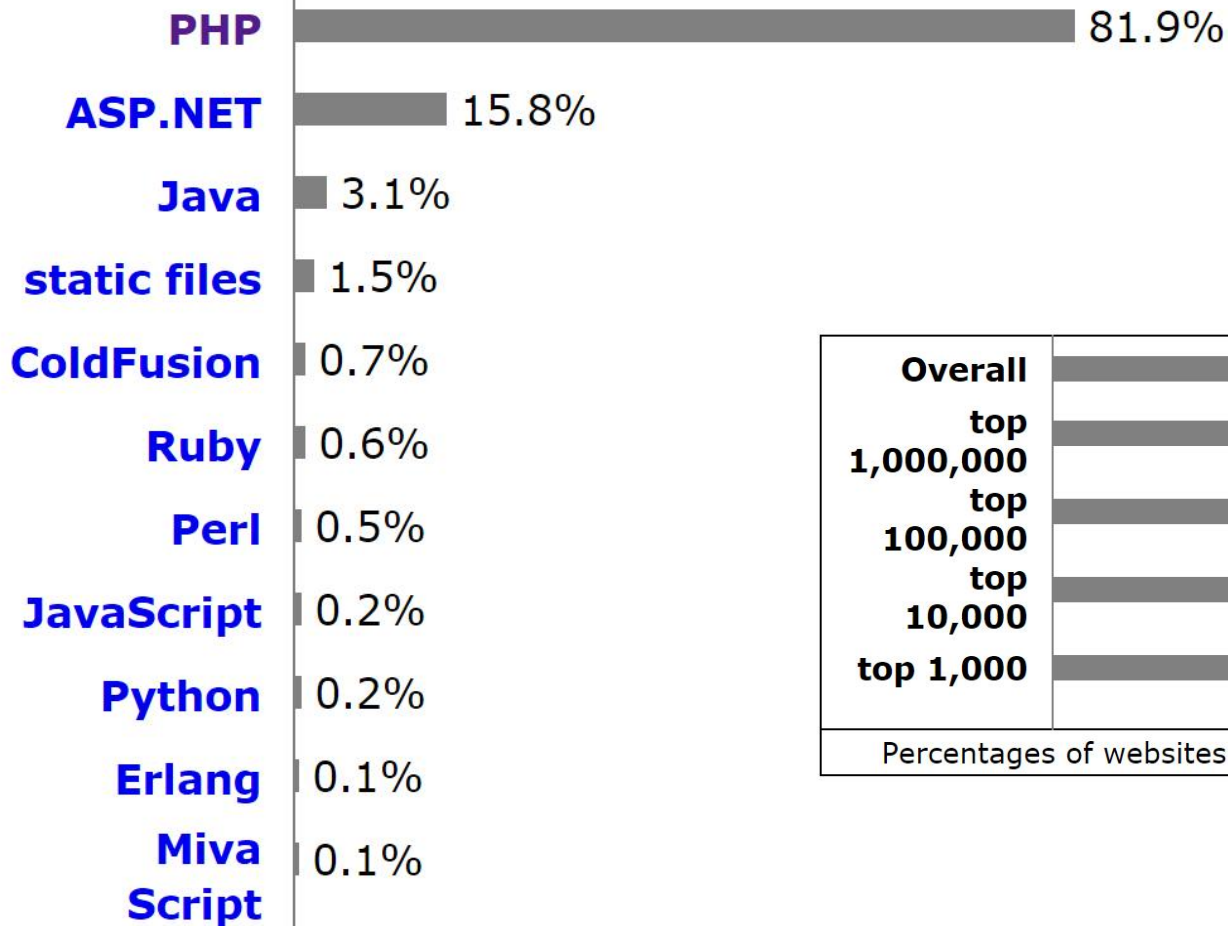
W3Techs.com, 29 February 2016

Percentages of websites using PHP broken down by ranking

Usage of server-side programming languages for websites, 11 Mar 2014, W3Techs.com

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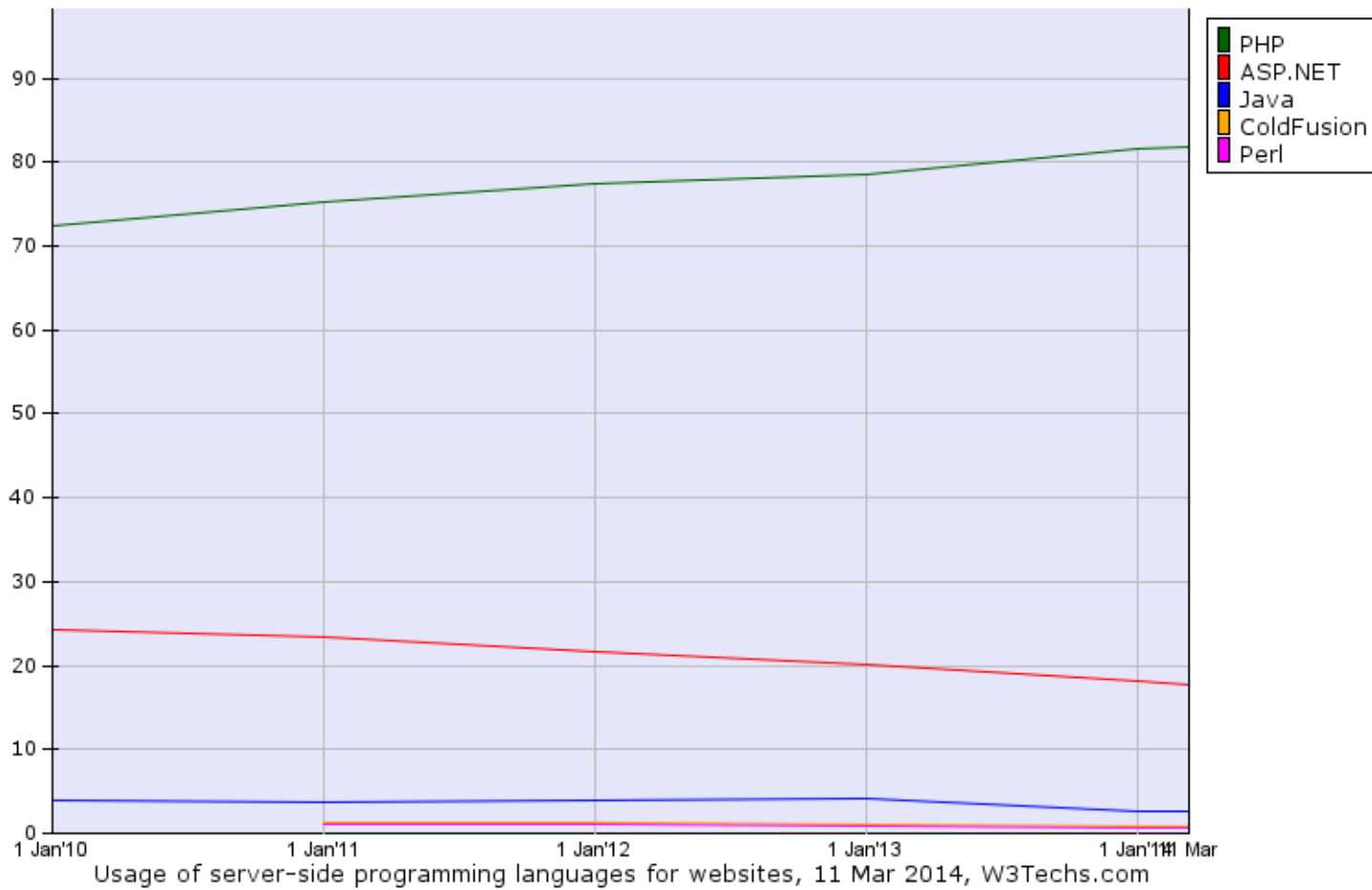
Server Side Scripting

	2010 1 Jan	2011 1 Jan	2012 1 Jan	2013 1 Jan	2014 1 Jan	2014 11 Mar
PHP	72.5%	75.3%	77.3%	78.7%	81.6%	81.9%
ASP.NET	24.4%	23.4%	21.7%	20.2%	18.2%	17.8%
Java	4.0%	3.8%	4.0%	4.1%	2.7%	2.7%
ColdFusion		1.3%	1.2%	1.1%	0.8%	0.8%
Perl		1.1%	1.0%	0.8%	0.6%	0.6%
Ruby	0.5%	0.5%	0.6%	0.5%	0.4%	0.5%
Python	0.3%	0.3%	0.2%	0.2%	0.2%	0.2%
JavaScript			<0.1%	<0.1%	0.1%	0.1%

Server Side Scripting

	2015 1 Feb	2015 1 Jul	2016 1 Jan	2016 15 Feb
PHP	82.0%	81.8%	81.7%	81.8%
ASP.NET	17.0%	16.9%	16.0%	15.9%
Java	2.8%	3.0%	3.0%	3.0%
static files			1.6%	1.6%
ColdFusion	0.7%	0.7%	0.7%	0.7%
Ruby	0.6%	0.6%	0.6%	0.6%
Perl	0.5%	0.5%	0.5%	0.5%
Python	0.2%	0.2%	0.2%	0.2%

Sites

- Facebook.com
- Wikipedia.org
- [Qq.com](Qq.com)
- Taobao.com
- Sina.com.cn
- Wordpress.com
- [Vk.com](Vk.com)
- Weibo.com
- Babylon.com
- Mail.ru

Angajare
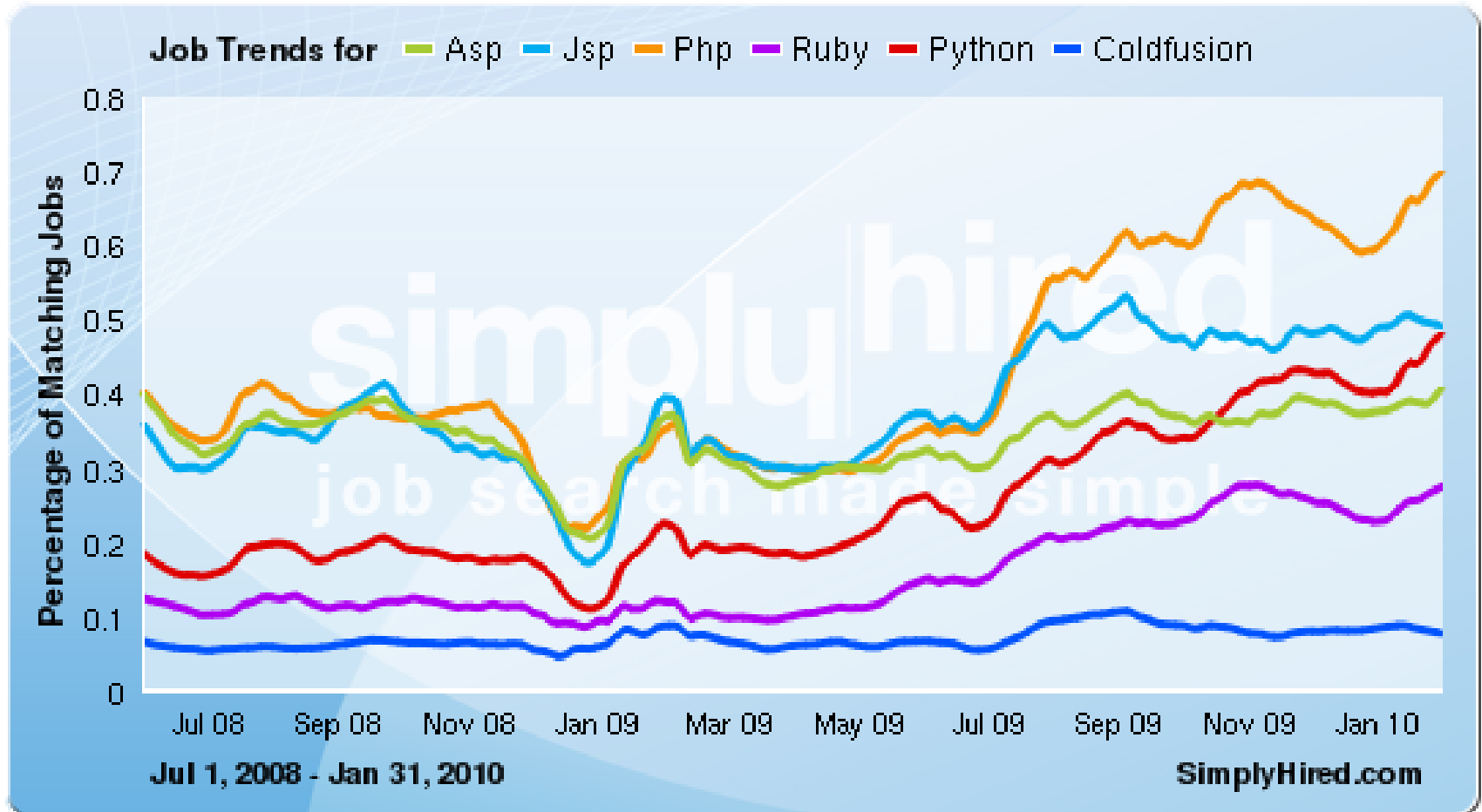
Job Trends for ▬ Asp ▬ Jsp ▬ Php ▬ Ruby ▬ Python ▬ Coldfusion

Jul 1, 2008 - Jan 31, 2010

SimplyHired.com

Angajare

66
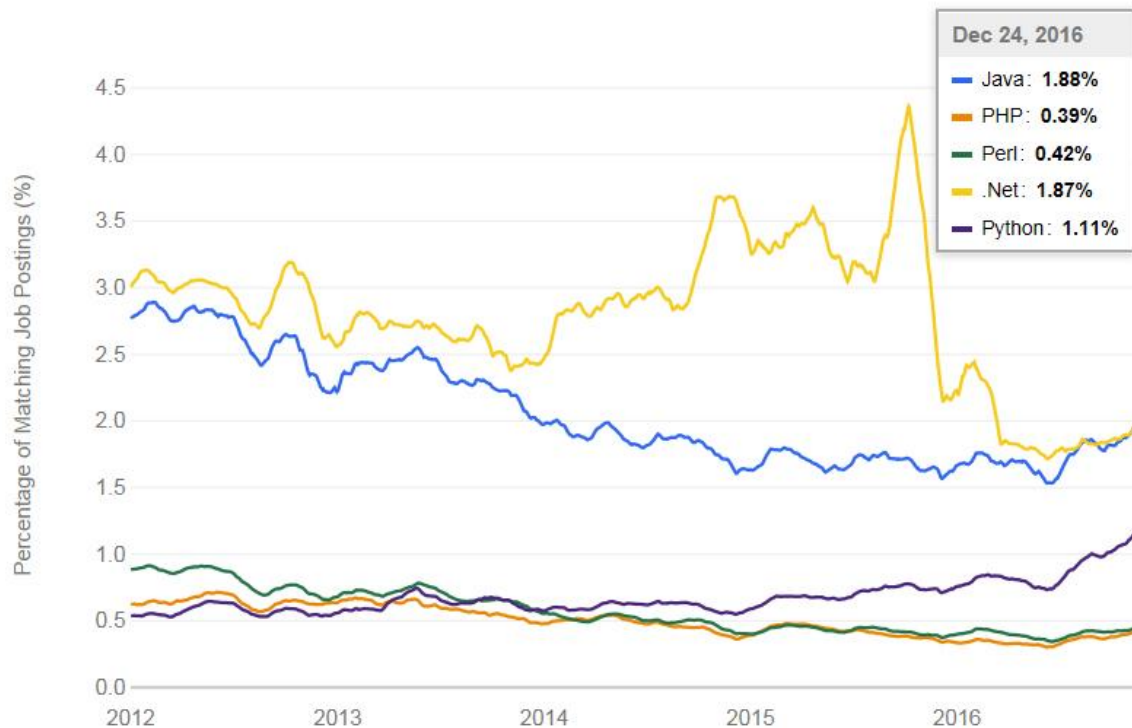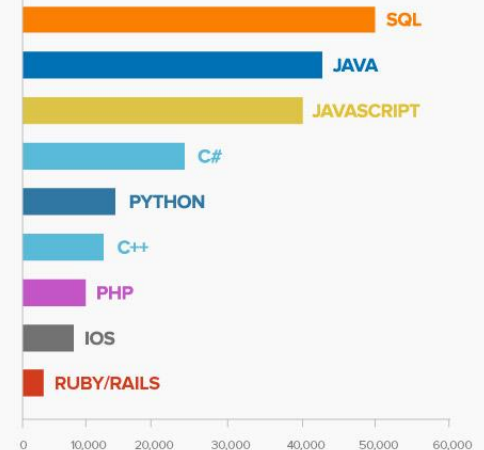
PHP 7, Sisteme

PHP Versions Grouped 2016-05

- PHP 5.6
- PHP 7.0
- PHP 5.5
- PHP 5.4
- PHP 5.3
- PHP 7.1

39.7%
20.2%
29.6%
7.6%
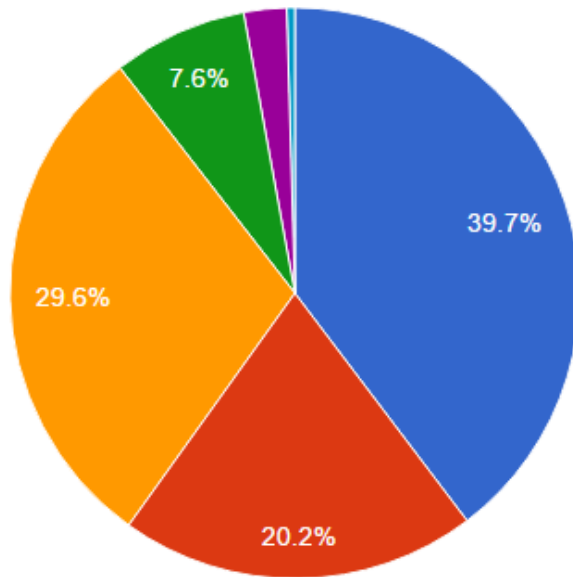
PHP Versions Grouped 2016-11
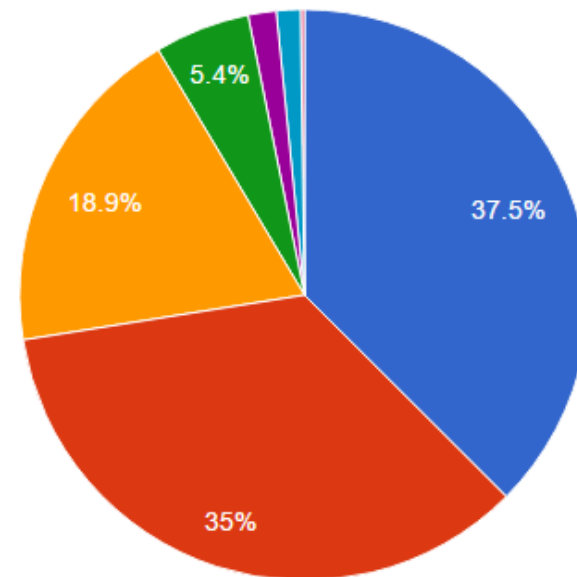
- PHP 5.6
- PHP 7.0
- PHP 5.5
- PHP 5.4
- PHP 5.3
- PHP 7.1
- PHP 7.2

37.5%
35%
18.9%
5.4%

PHP 7, Aplicatii

PHP versions in commercial projects on Semaphore, 2016

5.3
4%

5.4
22%

7.0
19%

5.5
15%

5.6
40%
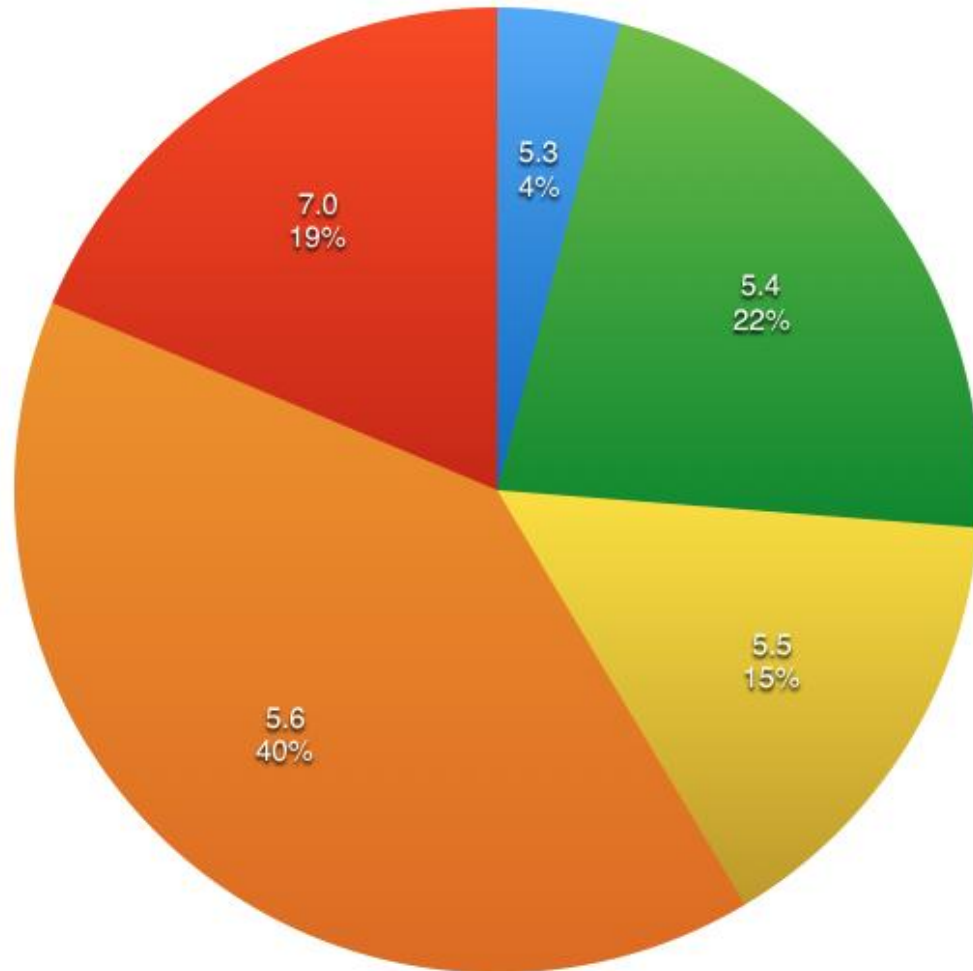
Ex. Server

Server Information

Server Information

Item	Detail
Hosting Package	5G
Server Name	server72
cPanel Version	62.0 (build 8)
Apache Version	2.4.25
PHP Version	5.6.30
MySQL Version	10.0.27-MariaDB-cll-lve
Architecture	x86_64
Operating System	linux
Shared IP Address	188.212.252.74
Path to Sendmail	/usr/sbin/sendmail
Path to Perl	/usr/bin/perl
Perl Version	5.16.3
Kernel Version	3.10.0-427.18.2.lve1.4.27.el7.x86_64

Server Information

Item	Detail
Hosting Package	personal
Server Name	server11
cPanel Version	60.0 (build 37)
Apache Version	2.2.27
PHP Version	5.4.28
MySQL Version	5.5.52-cll
Architecture	x86_64
Operating System	linux
Shared IP Address	88.198.167.40
Path to Sendmail	/usr/sbin/sendmail
Path to Perl	/usr/bin/perl
Perl Version	5.10.1
Kernel Version	2.6.32-458.23.2.lve1.2.48.el6.x86_64

Ex. Server

System Information

System Item	Details	Status
Server Load	12.708984 (32 CPUs)	✓
Memory Used	60.9% (160,698,628 of 263,854,760)	✓
Swap Used	10.47% (7,028,300 of 67,108,860)	✓

Disk Information

Device	Mount Point	Usage	
/home	/home	79% (867,228,844 of 1,152,542,444)	✓
/	/	41% (153,355,872 of 393,757,580)	✓
/tmp	/tmp	1% (52,332 of 3,997,376)	✓
/var/tmp	/var/tmp	1% (52,332 of 3,997,376)	✓
/boot	/boot	61% (277,346 of 487,634)	✓

Server Information

Processor Information

Total processors: 32

Processor #1

Vendor
GenuineIntel

Name
Intel(R) Xeon(R) CPU E5-2630 v3 @ 2.40GHz

Speed
2600.343 MHz

Cache
20480 KB

Processor #2

Vendor
GenuineIntel

Name
Intel(R) Xeon(R) CPU E5-2630 v3 @ 2.40GHz

Speed
2599.968 MHz

Cache
20480 KB

Processor #3

70

PHP 7, performanta
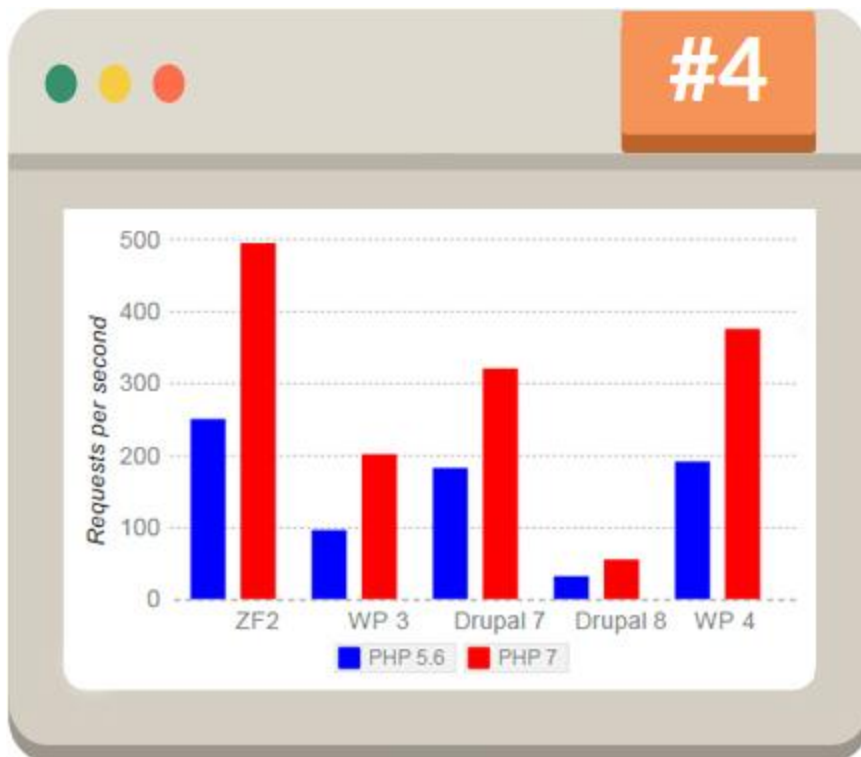
PHP - Concepte

- limbaj interpretat – compilat "on the fly" de interpretorul PHP de pe server
- script-urile PHP contin sursele
  - exista posibilitatea pre-compilarii surselor pentru spor de viteza
  - Hip-Hop for PHP / Facebook
  - HipHop Virtual Machine / Facebook
- orientat spre aplicatii web dinamice (biblioteci)
- poate fi integrat in HTML – utilizarea tipica

Integrare

```php
539        <td><?php echo  $row['Documente'];?> </td>
540        <td><?php echo $row['user_creat'];?> </td>
541        <td class="smaller"><a href="control_lot.php?id=-<?php echo $row['ID_LOT'];?>">dezactiveaza</a><br /><a href=
"control_lot.php?id=<?php echo $row['ID_LOT'];?>">modifica</a></td>
542    </tr>
543  <?php $index++;
544    } while ( $row = mysql_fetch_assoc($result));?>
545 </table><?php
546 }
547 else
548    {
549    echo "<p>Nu exista loturi active</p>";
550    }
551 ?>
552
553 <p class="title">Loturi inactive</p>
554 <?php
555 $query = "SELECT l.*, c.`nume_user` AS `user_creat`
556        FROM `lot` AS l
557        LEFT JOIN `users` AS c ON (l.`User`=c.`id_user`)
558        WHERE l.`Activ` = 0 ORDER BY l.`ID_LOT` DESC";
559 $result = mysql_query($query);
560 $total=0;
561 if ($result && (mysql_num_rows($result) > 0))
562    {
563    $total=mysql_num_rows($result);
564    $row = mysql_fetch_assoc($result);
565    }
566 if ($total>0)
567 {?>
568 <table align="center">
569  <tr class="lista_titlu">
```

Separare cod PHP

- un fisier sursa PHP este un fisier HTML (in general) cu sectiuni de cod PHP
- interpretorul PHP cauta sectiunile pe care trebuie sa le interpreteze si interiorul lor proceseaza instructiuni ca fiind PHP
- ce se gaseste in **exteriorul** acestor sectiuni este trimis spre server-ul web **nemodificat**

Separare cod PHP

- **<?php … ?>**
  - stil XML – impicit, disponibil intotdeauna, recomandat
- <? … ?>

  - scurt, este de obicei dezactivat

  - lipsa in PHP 7
- <script language="php"> … </script>

  - stil script, disponibil
- <% … %>

  - stil ASP, de obicei dezactivat

  - lipsa in PHP 7

Variante de integrare

- echo …. afiseaza un text la "iesire" (echivalent cu printf() din C)
- poate realiza procesarea datelor
- in exemplu se trimite spre iesire un sir static (echivalent cu puts() din C)
- "iesire" in marea majoritate a cazurilor reprezinta datele trimise clientului de server-ul web
- "iesire" poate fi considerata de obicei:
  - documentul curent
  - pozitia curenta

Variante de integrare

- Toate variantele ofera aceeasi sursa HTML pentru browser
- E **recomandata** cea care lasa structura HTML nemodificata si doar datele dinamice sunt rezultatul procesarii
- Codul HTML + PHP e interpretat mult mai elegant in editoarele WYSIWYG

```
<h2>Rezultate comanda</h2>
<?php echo '<p>Comanda receptionata</p>';?>
```

```
<h2>Rezultate comanda</h2>
<p><?php echo 'Comanda receptionata';?></p>
```

```
<?php echo '<h1>Magazin online XXX SRL</h1>';?>
<?php echo '<h2>Rezultate comanda</h2>';?>
<?php echo '<p>Comanda receptionata</p>';?>
```

```
<?php
echo '<h1>Magazin online XXX SRL</h1>';
echo '<h2>Rezultate comanda</h2>';
echo '<p>Comanda receptionata</p>';
?>
```

PHP – instructiuni

- instructiunile PHP trebuie sa se termine cu **;**
    - exceptie: se poate omite ; la sfarsitul blocului de cod php: **... echo 'ceva' ?>**
- instructiunile pot sa fie scrise pe acelasi rand (fara trecerea la linia noua)
    - **echo 'ceva1'; echo 'ceva2'; ...**
    - nu este in general recomandat

PHP – comentarii

- comentariile in PHP respecta regulile C si Pearl
- la sfarsit de linie:
  - // echo ceva; //comentariu
  - # echo ceva; #comentariu
- comentariu bloc

  - /* ... */

  - /* un comentariu
    pe mai multe
    linii */

PHP – constante

- Ca orice limbaj de programare PHP se bazeaza pe utilizarea
  - constante
  - variabile
  - functii
- Definirea constantelor:
  - define('PRETCARTE', 100);
  - "case sensitive"
  - prin conventie, numai cu litere mari
  - echo PRETCARTE; // 100

PHP – variabile

- variabila – semnul **$** urmat de un nume
- numele e "case sensitive"
- o greseala frecventa e uitarea semnului **$**
  - PHP Notice: Use of undefined constant an – assumed $an (sau 'an') in D:\\Server\\
- Tipuri de date
  - scalar
  - compus
  - special

PHP – tipuri de date

- scalar
  - boolean
  - integer
  - float (double)
  - string
- compus
  - array
  - object
- special
  - resource
  - NULL

PHP – tipuri de date

- tipul de date nu e decis de programator prin declaratia variabilei
- e decis de interpretor in functie de tipul de date stocat in variabila respectiva
- declaratia variabilelor nu e necesara decat cand se declara un domeniu de definitie (variabile globale)
  - global $a, $b;
    $c=$a+$b;
- eliberarea memoriei nu este necesara, se face automat la terminarea executiei

PHP – tipuri de date

- tipul de date este in totalitate dependent de ceea ce se stocheaza
- PHP reactualizeaza tipul pentru a putea primi ceea ce se stocheaza

```php
<?php
echo $variabila ;  // tip Null, neinitializat – valoare NULL (doar)
$variabila = "0";  // $variabila  tip  string (ASCII 48)
$variabila  += 2;  // $variabila  tip  integer (2)
$variabila  = $variabila  + 1.3;  // $variabila  tip  float (3.3)
$variabila  = 5 + "10 obiecte"; // $variabila  tip  integer (15)
$var2=5; // $var2  tip  integer (5)
$variabila=$var2."10 obiecte";   // $variabila  tip  string "510 obiecte"
?>
```

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PHP – operatori

- In general similari celor din C/C++
- Opertori
  - Aritmetici
  - Atribuire
  - Bit
  - Comparare
  - Incrementare/Decrementare
  - Logici
  - Sir

PHP – operatori

- Aritmetici
  - -$a – Negare
  - $a + $b – Adunare
  - $a - $b – Scadere
  - $a * $b – Inmultire
  - $a / $b Impartire
  - $a % $b Modulo (rest)
- Sir
  - $a.$b – Concatenare sir a si sir b

PHP – operatori

- Atribuire
  - $a=$b
  - $a+=$b (a=a+b)
  - $a-=$b (a=a-b)
  - $a/=$b (a=a/b)
  - $a*=$b (a=a*b)
  - $a%=$b (a=a%b)
  - $a.=$b (a=a concatenat b - siruri)

PHP – operatori

- Operatori la nivel de bit
  - similari celor din C
  - ~ , & , | , ^ , << , >>
- Operatori logici
  - ofera rezultat boolean true/false
  - similari celor din C
  - && , || , !
  - suplimentar
    - and , or , xor – echivalenti dar de prioritate mai mica
    - $a=55/0 or die('impartire prin 0');

PHP – operatori

- Operatori de comparare
  - ofera rezultat boolean true/false
  - similari celor din C
  - == , != , > , < , <> , >= , <=
  - suplimentar
    - === identic, valoare egala **SI** de acelasi tip
    - !== "neidentic", valoare diferita **SAU** de tipuri diferite

Precedenta operatorilor

non-associative	clone new	clone and new
left	[	array()
non-associative	++ --	increment/decrement
right	~ - (int) (float) (string) (array) (object) (bool) @	types
non-associative	instanceof	types
right	!	logical
left	* / %	arithmetic
left	+ - .	arithmetic and string
left	<< >>	bitwise
non-associative	< <= > >= <>	comparison
non-associative	== != === !==	comparison
left	&	bitwise and references
left	^	bitwise
left	|	bitwise
left	&&	logical
left	||	logical
left	? :	ternary
right	= += -= *= /= .= %= &= |= ^= <<= >>=	assignment
left	and	logical
left	xor	logical
left	or	logical
left	,	many uses

Precedenta operatorilor PHP7

non-associative	clone new	clone and new
left	[	array()
non-associative	++ --	increment/decrement
right	~ - (int) (float) (string) (array) (object) (bool) @	types
non-associative	instanceof	types
right	!	logical
left	* / %	arithmetic
left	+ - .	arithmetic and string
left	<< >>	bitwise
non-associative	< <= > >= <>	comparison
non-associative	== != === !== <=>	comparison
left	&	bitwise and references
left	^	bitwise
left	|	bitwise
left	&&	logical
left	||	logical
right	??	comparison
left	? :	ternary
right	= += -= *= /= .= %= &= |= ^= <<= >>=	assignment
left	and	logical
left	xor	logical
left	or	logical
left	,	many uses

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Exemplu de separare cod php Raspuns dinamic

- <form action="rezultat.php" method="post">

```
<html>
<head>
<title>Magazin online XXX SRL</title>
</head>
<body>
<h1>Magazin online XXX SRL</h1>
<h2>Rezultate comanda</h2>
<p><?php echo 'Comanda receptionata';?></p>
</body>
</html>
```

Magazin online XXX SRL

Rezultate comanda

Comanda receptionata

```
<
<
<
</head>
<body>
<h1>Magazin online XXX SRL</h1>
<h2>Rezultate comanda</h2>
<p>Comanda receptionata</p>
</body>
</html>
```

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PHP – Functii

- conceptual similare celor din C/C++
- functiile nu trebuie declarate inainte de a fi folosite
- numele functiilor este "case-insensitive"
- un mare numar de functii cu utilitate directa in aplicatiile web exista in bibliotecile PHP
- unele biblioteci trebuie activate in momentul configurarii PHP

  - extension=php_gd2.dll (linia 639) // pentru functii de procesare grafica de exemplu

  - extension=php_mysql.dll (linia 651) // pentru functii de acces la baze de date MySql

  - extension=php_mysqli.dll (linia 652) // pentru functii de acces la baze de date MySql (**obligatoriu** de la PHP 5.6)

Utilizarea functiilor PHP

- <form action="rezultat.php" method="post">

<p>Comanda receptionata la data:
<?php echo date('d/m/Y')." ora ".date('H:i');?></p>

Magazin online XXX SRL

Rezultate comanda

Comanda receptionata la data: 10/03/2010 ora 13:36

```
<body>
<h1>Magazin online XXX SRL</h1>
<h2>Rezultate comanda</h2>
<p>Comanda receptionata la data:
10/03/2010 ora 13:36</p>
</body>
```

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Elemente de control

- majoritatea notiunilor si sintaxei sunt similare celor din C/C++
- instructiune compusa: separata de acolade {...}
- if / else / elseif – executie conditionata

```php
<?php
if ($a > $b) {
    echo "a mai mare ca b";
} elseif ($a == $b) {
    echo "a egal cu b";
} else {
    echo "a  mai mic ca  b";
}
?>
```

Elemente de control

- while
- do-while
- for
- switch
- return
- break
- goto

- Similare cu echivalentele C/C++

```
$i = 1;
while ($i <= 10) {
    echo $i++;
}
```

```
$i = 10;
do {
    echo $i--;
} while ($i > 0);
```

```
for ($i = 1; $i <= 10; $i++) {
    echo $i;
}
```

```
switch ($i) {
    case 0:
        echo "i este 0";
        break;
    case 1:
        echo "i este 1";
        break;
    default:
        echo "i nici 1 nici 0";
        break;
}
```

Elemente de control

- include()
- require()
- include_once()
- require_once()

- pentru inserarea **SI** evaluarea fisierului folosit ca parametru
- folosite pentru a nu multiplica sectiunile de cod comune
- require opreste executia script-ului curent daca fisierul parametru nu este gasit
- ..._once() verifica daca respectivul fisier a mai fost introdus si **nu** il mai introduce inca o data

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Variabile globale

- ## Variabilele globale (predefinite)
  - accesibile script-urilor PHP prin conlucrarea cu server-ul
  - Exemple:
    - `$_SERVER` — Server and execution environment information
    - `$_GET` — HTTP GET variables
    - `$_POST` — HTTP POST variables
    - `$_FILES` — HTTP File Upload variables
    - `$_REQUEST` — HTTP Request variables
    - `$_SESSION` — Session variables
    - `$_ENV` — Environment variables
    - `$_COOKIE` — HTTP Cookies

Interactiunea cu utilizatorul

- Datele introduse de utilizator in forme se regasesc (in functie de metoda aleasa pentru forma) in una din variabilele:
  - `$_POST` – method="post"
  - `$_GET` – method="get"
  - `$_REQUEST` – ambele metode
- variabilele sunt **matrici** cu **cheia** data de atributul **name** din forma HTML
  - `<input type="text" name="carti_cant" size="3" maxlength="3" />`
  - `$_POST['carti_cant']` contine valoarea introdusa

Laborator 3

Laborator L3

- Sa se creeze un magazin simplu virtual care:
  - sa prezinte utilizatorului o lista de produse si preturi (constanta – maxim 5 produse)
  - sa preia de la acesta numarul de produse dorit
  - sa calculeze suma totala
  - sa adauge TVA 19%
  - sa prezinte un raport care sa contina:
    - total de plata
    - ora comenzii

Laborator L3 - continuare

- se creaza macar 3 pagini:
  - lista produse
  - formular comanda
  - rezultat
- forma paginilor:
  - tabel/CSS
- metoda
  - post
  - get

culoare	IMAGINE	culoare
	Continut (cu alta culoare fundal)	

Laborator – L3 - rezultat

Magazin online Firma X SRL

Lista Produse

Nr.	Produs	Pret
1	Carti	100
2	Caiete	50
3	Penare	150
4	Stilouri	125
5	Creioane	25
	Comanda	

Magazin online Firma X SRL

Realizati comanda

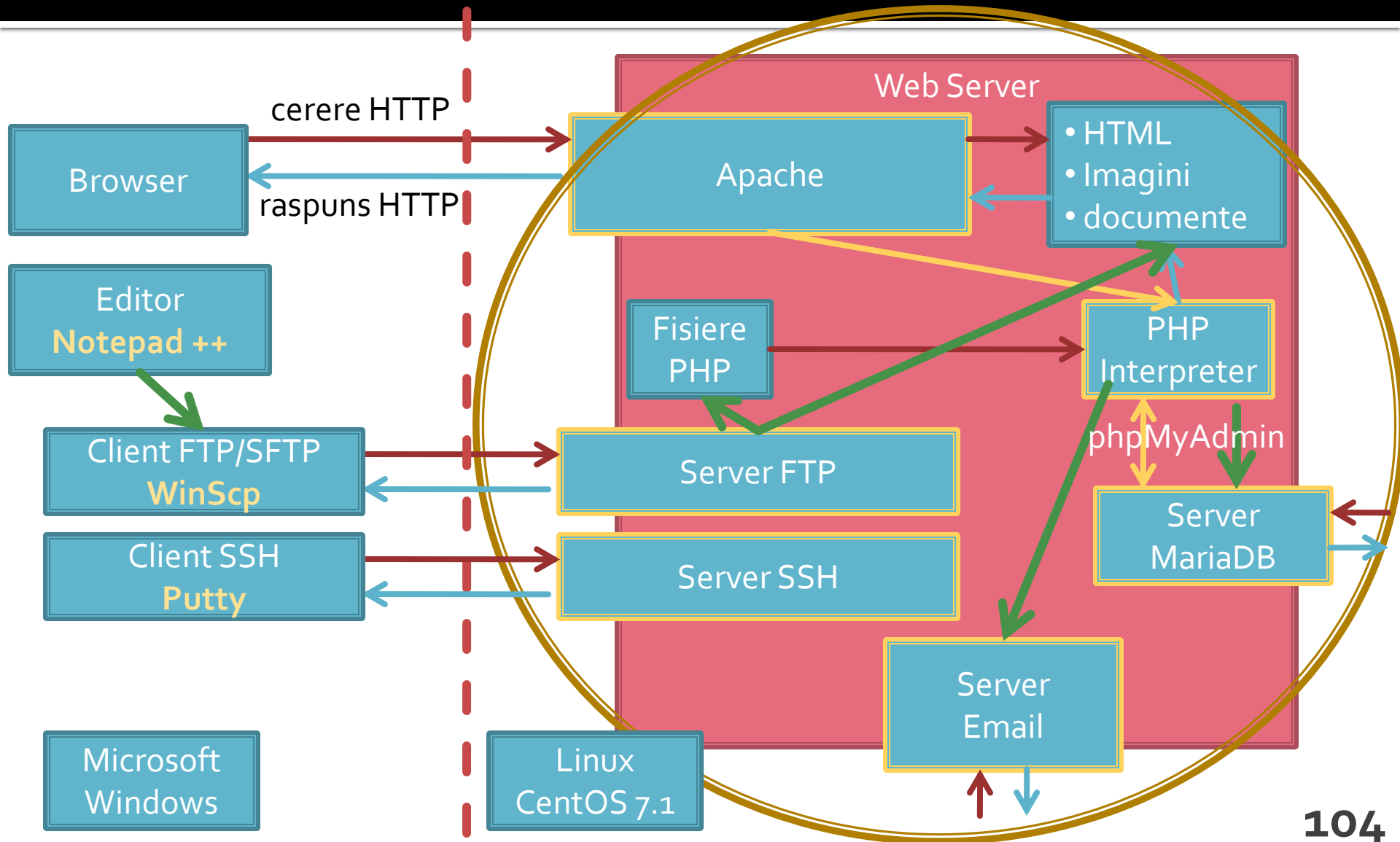| Nr.	Produs	Pret	Cantitate
1	Carti	100	1
2	Caiete	50	2
3	Penare	150	1
4	Stilouri	125	0
5	Creioane	25	0

Trimite

Magazin online Firma X SRL

Rezultate comanda

Pret total (fara TVA): 350

Pret total (cu TVA): 416.5

Comanda receptionata la data: 17/03/2010 ora 08:24

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Utilizare LAMP

Web Server

Browser

cerere HTTP

raspuns HTTP

Apache

- HTML
- Imagini
- documente

Editor
Notepad ++

Client FTP/SFTP
WinScp

Client SSH
Putty

Microsoft
Windows

Fisiere
PHP

PHP
Interpreter

phpMyAdmin

Server FTP

Server SSH

Server
MariaDB

Server
Email

Linux
CentOS 7.1

Utilizare LAMP

Magazin online Firma X SRL

Lista Produse

Nr.	Produs	Pret
1	Carti	100
2	Caiete	50
3	Penare	150
4	Stilouri	125
5	Creioane	25
	Comanda	

Magazin online Firma X SRL

Realizati comanda

Nr.	Produs	Pret	Cantitate
1	Carti	100	1
2	Caiete	50	2
3	Penare	150	1
4	Stilouri	125	0
5	Creioane	25	0
	Trimite		

Magazin online Firma X SRL

Rezultate comanda

Pret total (fara TVA): 350

Pret total (cu TVA): 416.5

Comanda receptionata la data: 17/03/2010 ora 08:24

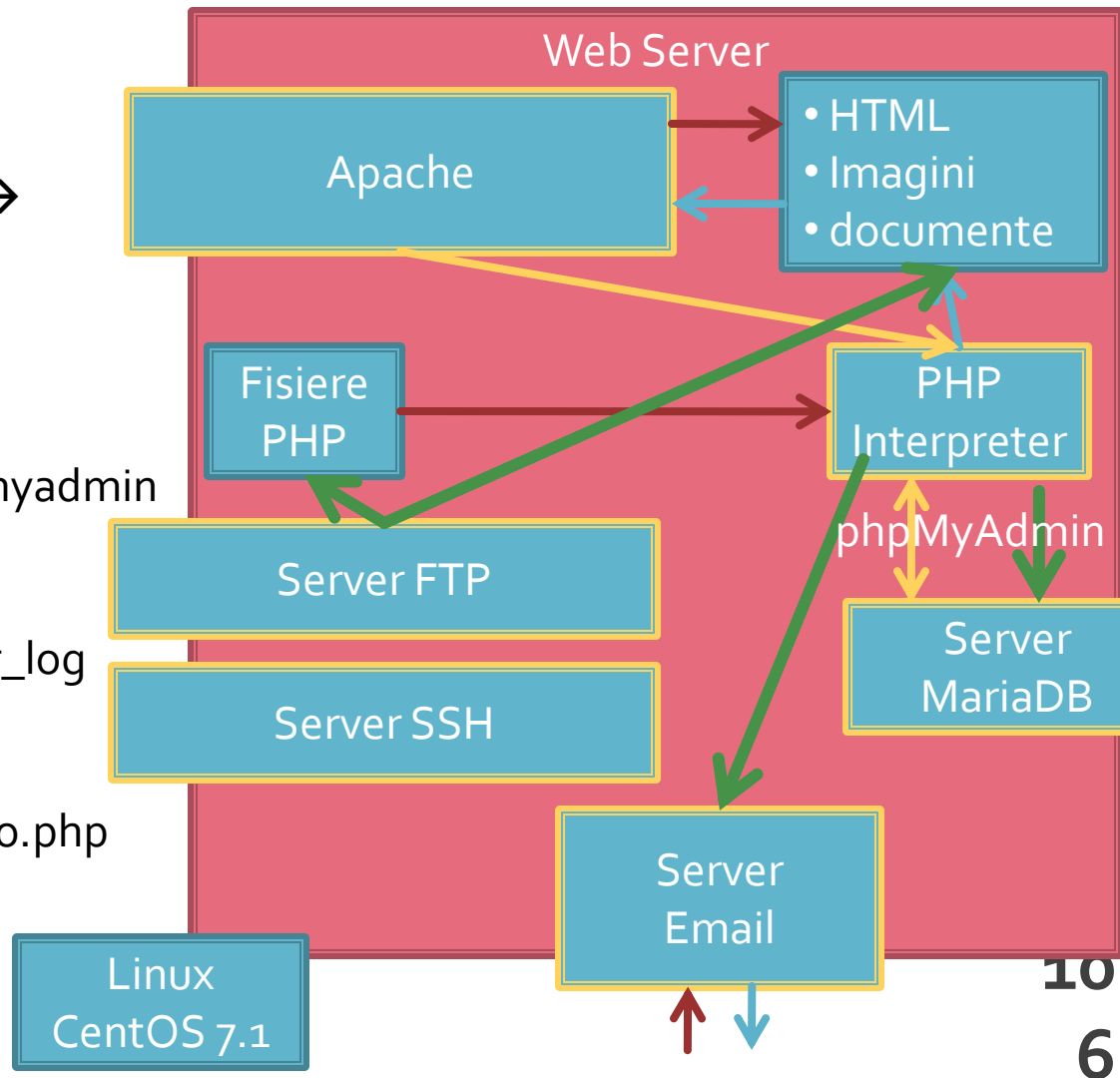<input name="x" ..

$_POST['x ']

$_GET['x ']

Web Server

Apache

Server FTP

Server SSH

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Utilizare LAMP

1. login → root:masterrc
2. ifconfig → 192.168.30.5
3. putty.exe → 192.168.30.5 → SSH → root:masterrc (remote login)
4. [alte comenzi linux dorite]
5. FTP → Winscp → SFTP → student:masterrc@192.168.30.5
6. MySql → http://192.168.30.5/phpmyadmin → root:masterrc
7. Apache Error Log →
7a. putty → nano /var/log/httpd/error_log
7b. http://192.168.30.5/logfile.php (nonstandard)
8. PHP info → http://192.168.30.5/info.php

Web Server

Apache

- HTML
- Imagini
- documente

Fisiere PHP

PHP Interpreter

Server FTP

phpMyAdmin

Server SSH

Server MariaDB

Server Email

Linux CentOS 7.1

Client / Server

<input name="nume" ....>

echo $_POST['nume']; //ceva
echo $_GET['nume']; //ceva
echo $_REQUEST['nume']; //ceva

ceva   Trimite

Interpretor PHP primeste
$_POST
$_GET
$_REQUEST

get
post

Depanare

```
echo "<pre>";
print_r ($_POST);
echo "</pre>";
```

```
<p>temp <?php echo
"a=";echo $a; ?> </p>
```

Contact

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- rdamian@etti.tuiasi.ro