



Pemrograman Web

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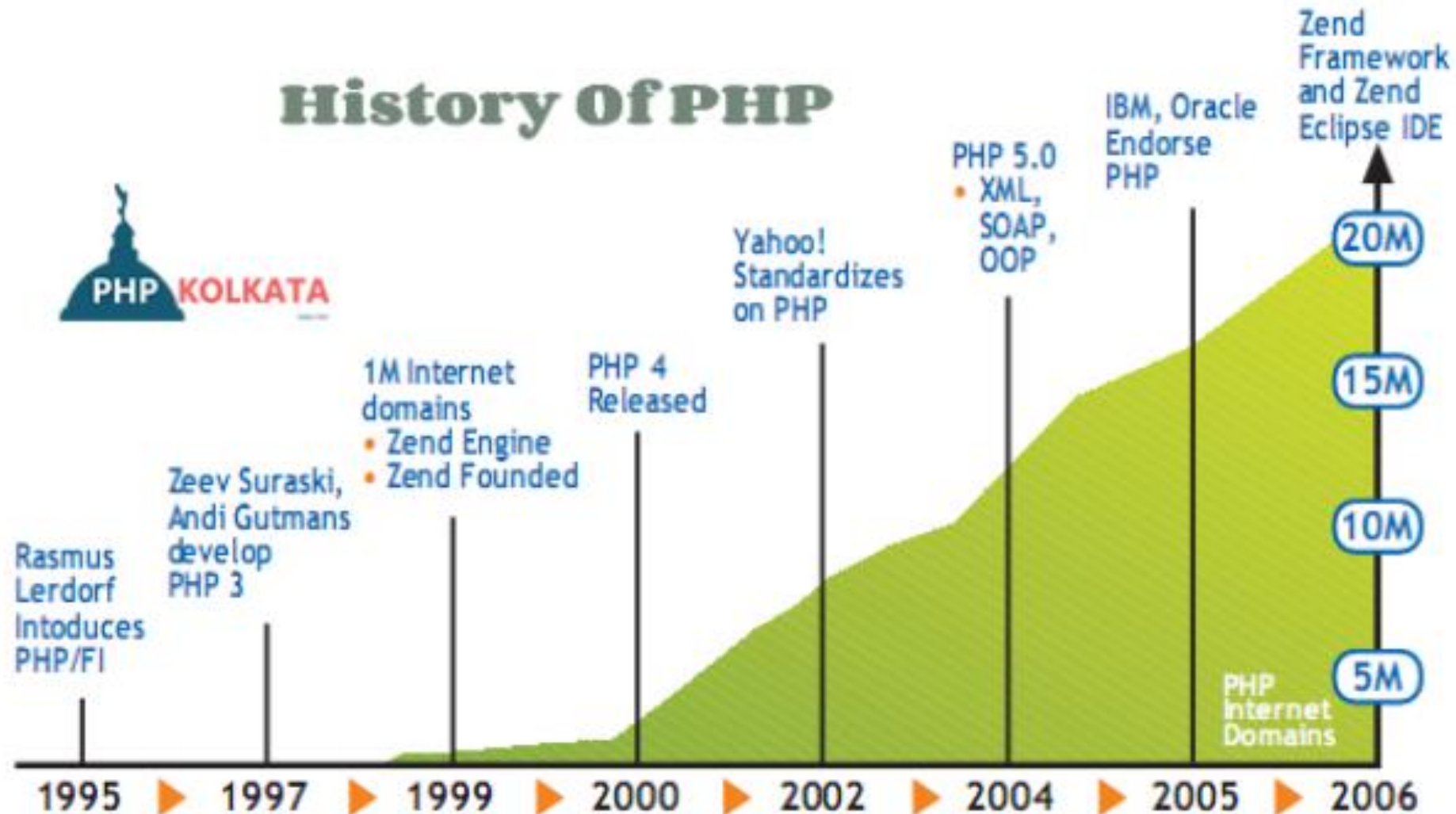
2. Server Side Programming - PHP

History PHP

- ❖ 1994: Created by Rasmus Lerdorf, software engineer (part of Apache Team)
- ❖ 1995: Called Personal Home Page Tool, then released as version 2 with name PHP/FI (Form Interpreter, to analyze SQL queries)
- ❖ Half 1997: used by 50,000 web sites
- ❖ October 1998: used by 100,000 websites
- ❖ End 1999: used by 1,000,000 websites
- ❖ Web : php.net



History PHP :: early version

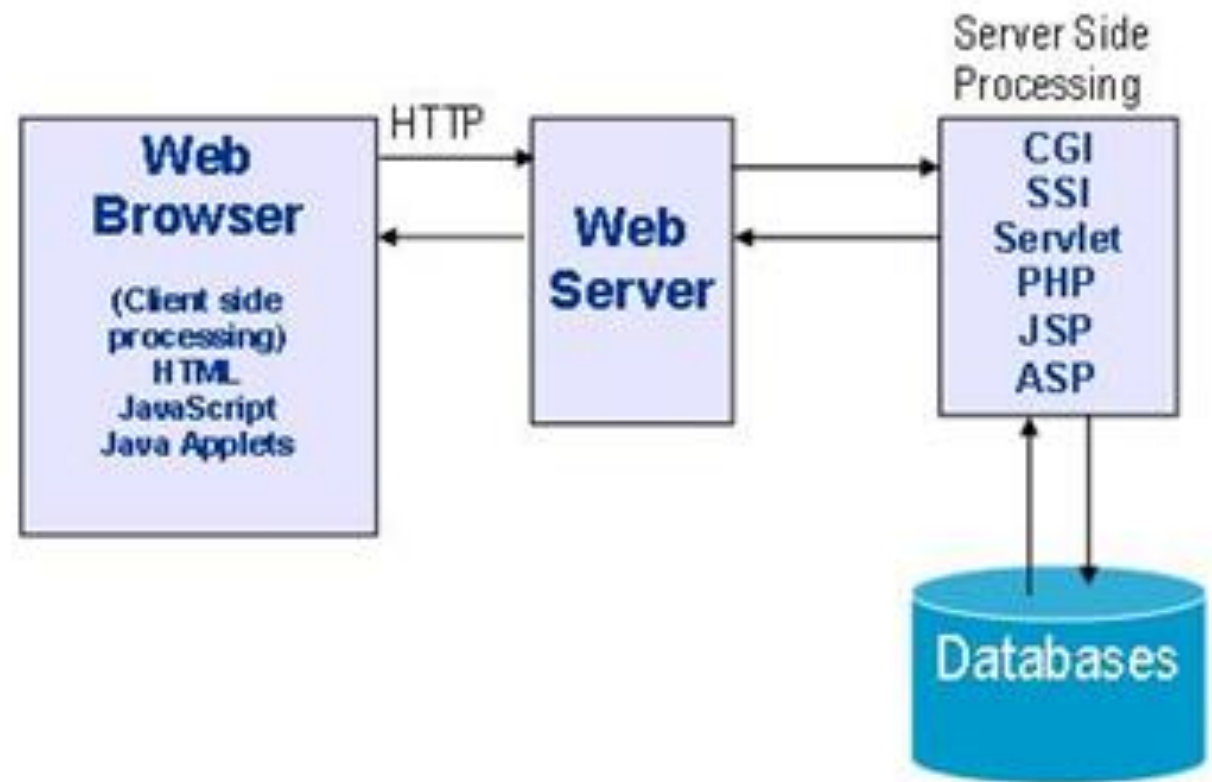


MVC PHP Framework:

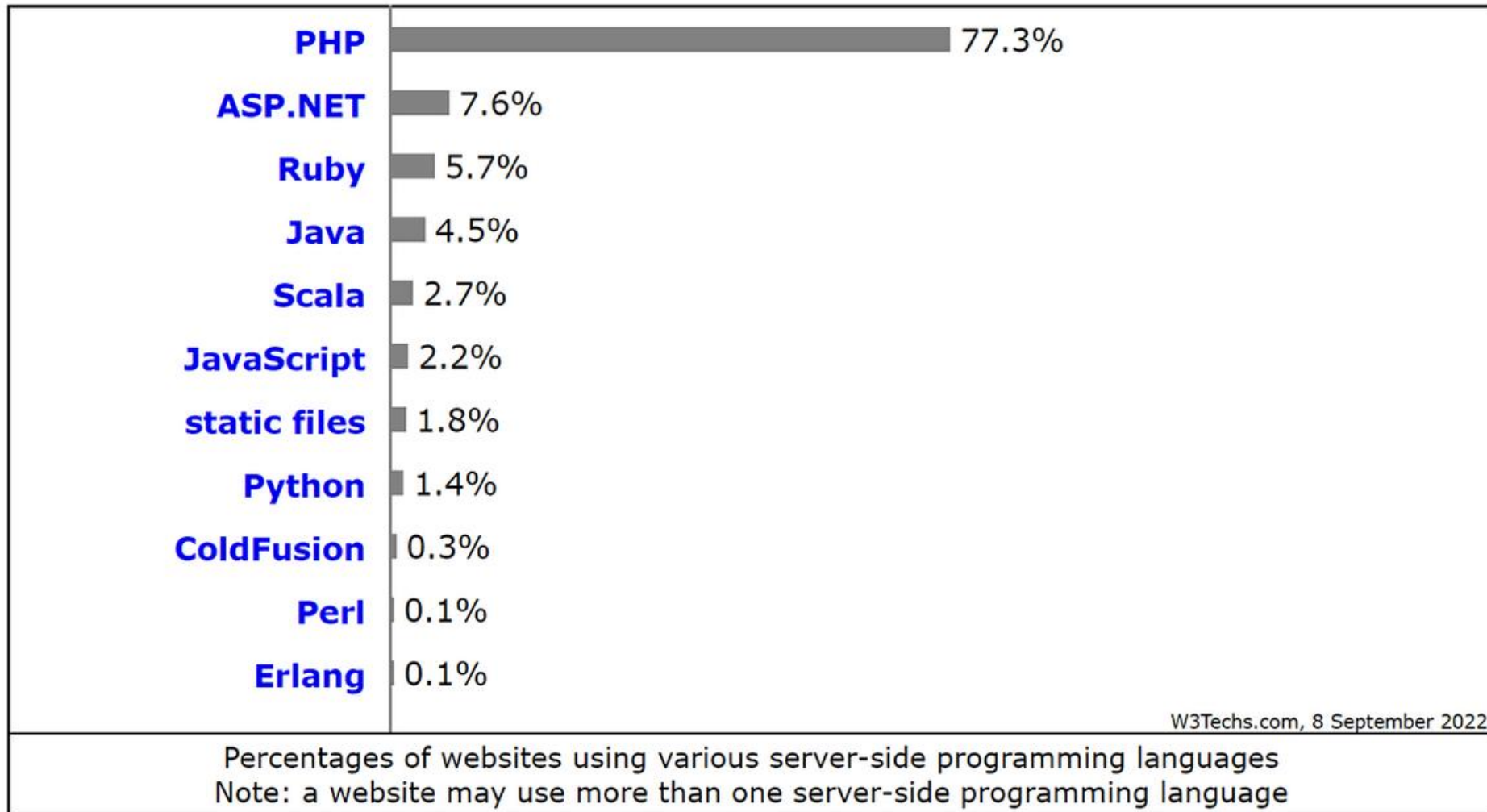
- Prado: 2004
- Symfony: 2005
- CodeIgniter: 2006
- Yii: 2010
- Laravel: 2011

Alternative PHP

- ✚ Practical extraction and Report Language (Perl)
- ✚ Active Server Pages (ASP)
- ✚ Java server pages (JSP)
- ✚ Ruby
- ✚ Python (Django)



Server Side Programming



PHP History Version



PHP HISTORY OVER TIME

PHP 1

June
1994

PHP 2

November
1997

PHP 3

June
1998

PHP 4

May
2000

PHP 5

July
2004

PHP 5.4

September
2010

PHP 7

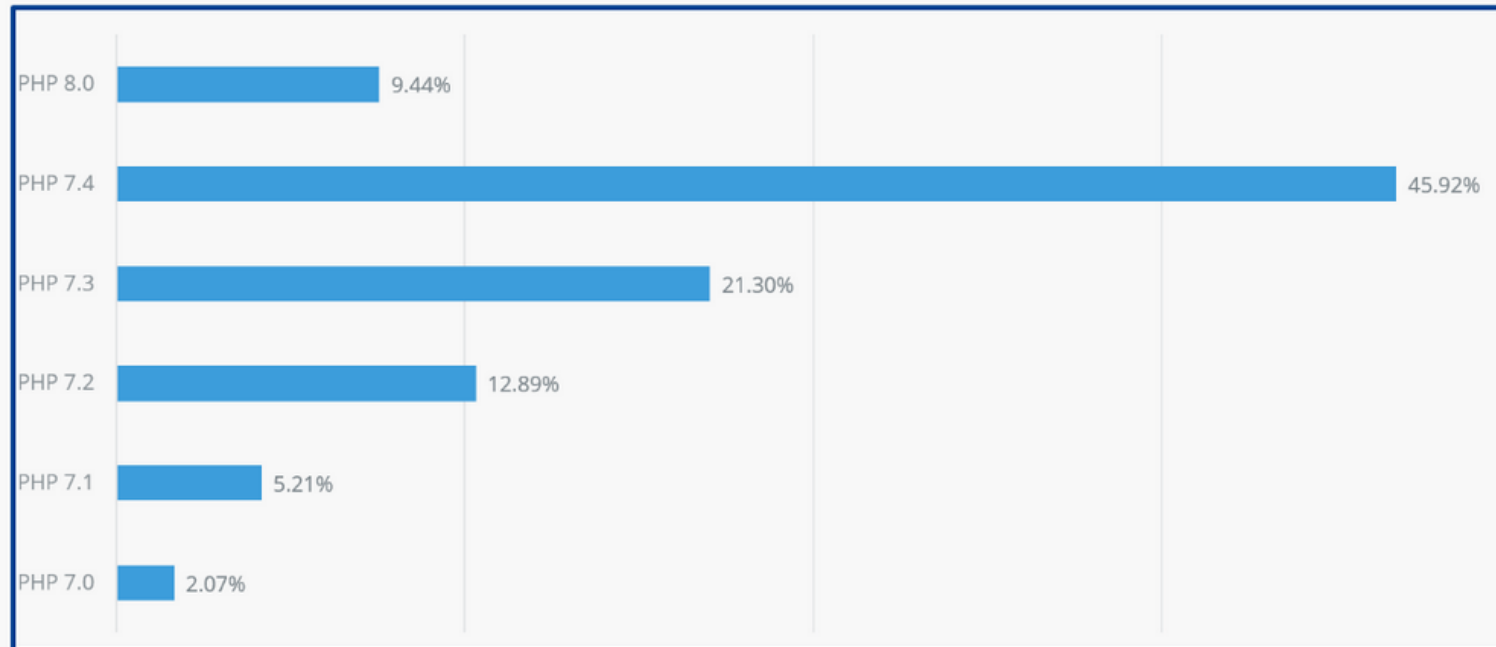
January
2019

PHP 8

November
2020

PHP Version

PHP Usage:



PHP Software :

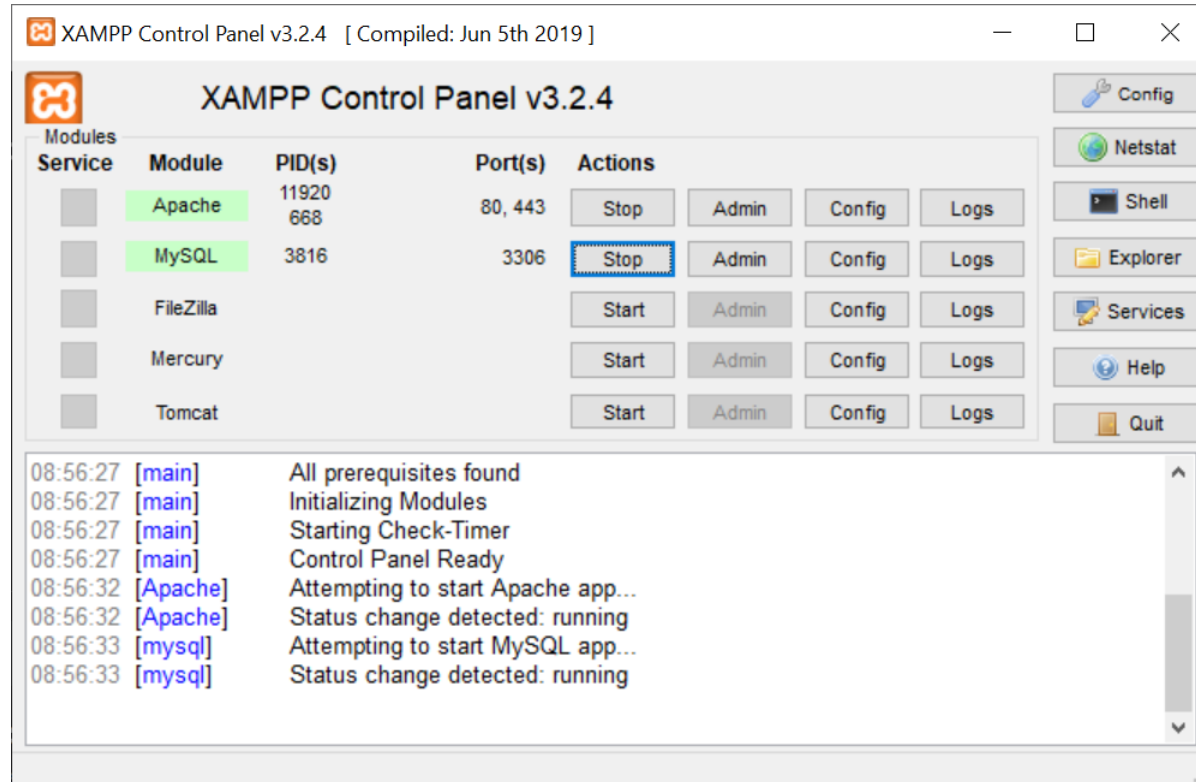
1. Linux Distribution (Apache Web Server + PHP Module)
2. Windows / Mac : XAMPP, WAMP , LARAGON

Paket Software Xampp/Laragon

- ❑ *Pada Sistem Operasi Linux telah menjadi satu paket dengan distribusi linux (distro)*
- ❑ *Pada Sistem Operasi Windows bisa didownload di:*
<https://dev.mysql.com/downloads/installer/>
- ❑ *Paket aplikasi LAMP / WAMP (Linux / Windows Apache MySQL PHP)*
 - ❑ *XAMPP (<https://www.apachefriends.org/index.html>)*
 - ❑ *Laragon (<https://laragon.org/download>)*
- ❑ *MariaDB, “kelanjutan MySQL” pada versi Open Source*

Control Panel Xampp/Laragon

Akses Browser : <http://localhost>

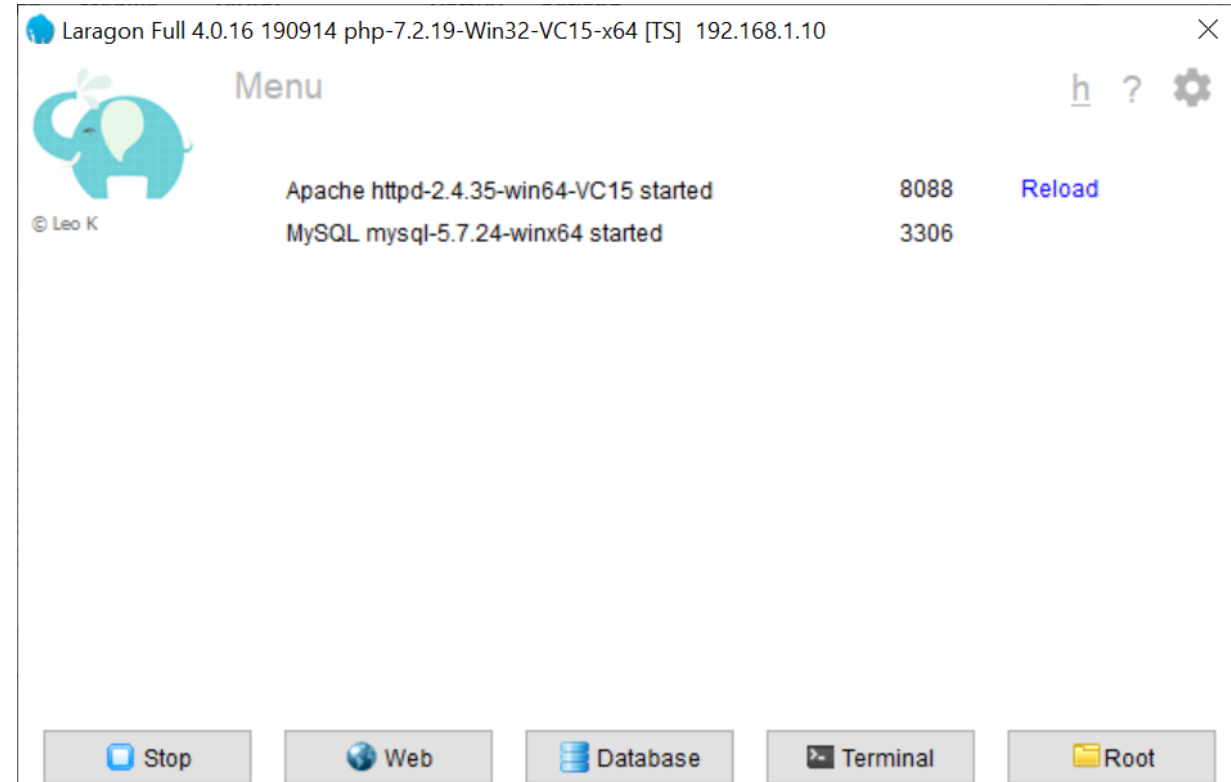


XAMPP Control Panel v3.2.4 [Compiled: Jun 5th 2019]

Modules

Service	Module	PID(s)	Port(s)	Actions
<input type="checkbox"/>	Apache	11920 668	80, 443	Stop Admin Config Logs
<input type="checkbox"/>	MySQL	3816	3306	Stop Admin Config Logs
<input type="checkbox"/>	FileZilla			Start Admin Config Logs
<input type="checkbox"/>	Mercury			Start Admin Config Logs
<input type="checkbox"/>	Tomcat			Start Admin Config Logs

08:56:27 [main] All prerequisites found
08:56:27 [main] Initializing Modules
08:56:27 [main] Starting Check-Timer
08:56:27 [main] Control Panel Ready
08:56:32 [Apache] Attempting to start Apache app...
08:56:32 [Apache] Status change detected: running
08:56:33 [mysql] Attempting to start MySQL app...
08:56:33 [mysql] Status change detected: running



Laragon Full 4.0.16 190914 php-7.2.19-Win32-VC15-x64 [TS] 192.168.1.10

Menu

Apache httpd-2.4.35-win64-VC15 started 8088 Reload
MySQL mysql-5.7.24-win64 started 3306

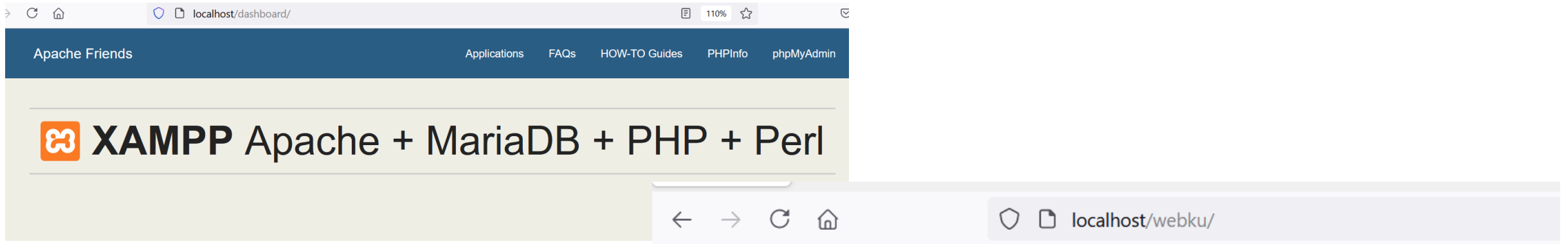
Stop Web Database Terminal Root

Lingkungan Kerja PHP

- Document Root: Direktori aplikasi web pada apache web server
- Sistem Linux : /var/www/html
- Sistem Windows XAMPP: C:\xampp\htdocs
- Buat folder web dalam document root, misal webku
- Pastikan service Apache berjalan
- Akses URL di browser: <http://localhost/webku>
- Buka Editor dan buka project web pertama anda dengan browse folder C:\xampp\htdocs\webku




Lingkungan Kerja PHP

- Akses URL di browser: <http://localhost/webku>



Welcome to XAMPP for Windows 7.4.15

Index of /webku

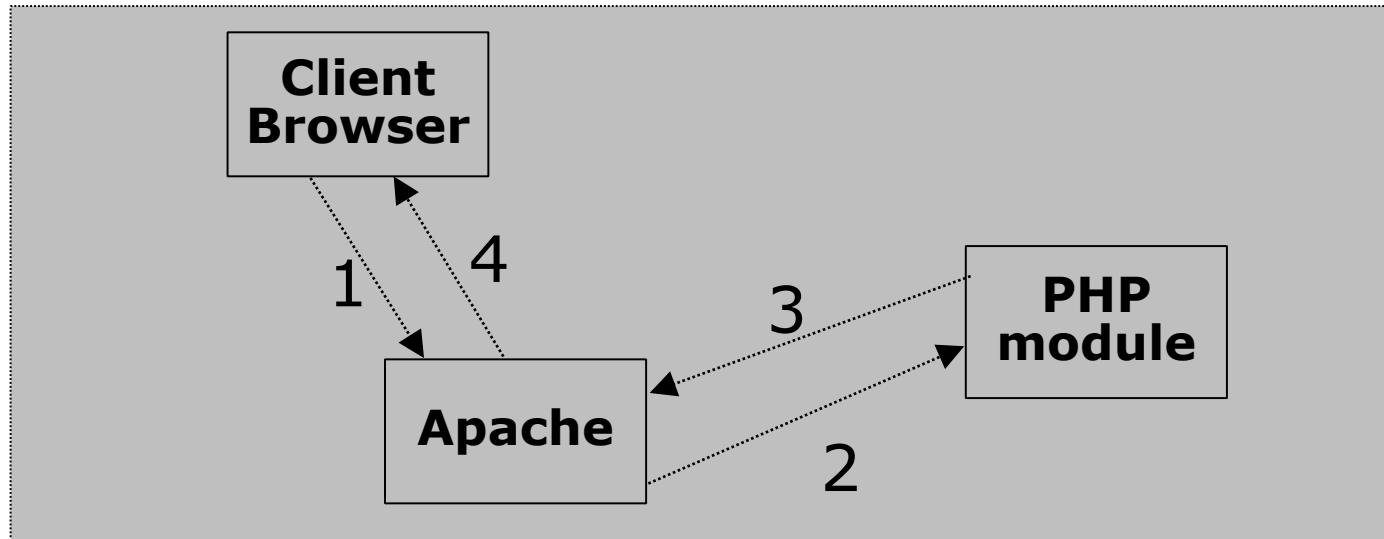
<u>Name</u>	<u>Last modified</u>	<u>Size</u>	<u>Description</u>
 Parent Directory		-	
 info.php	2021-06-11 10:34	17	
 welcome.php	2021-06-11 10:34	23	

Apache/2.4.46 (Win64) OpenSSL/1.1.1h PHP/7.4.15 Server at localhost Port 80

Why PHP Popular ?

- ✚ Open-source & Free
- ✚ Easy to use (C-like and Perl-like syntax)
- ✚ Stable and fast
- ✚ Multiplatform
- ✚ Many databases support & common built-in libraries
- ✚ Pre-installed in Linux distributions
- ✚ *PHP5* – better object-oriented and XML language support
- ✚ *PHP7* – More Fast
- ✚ *PHP8* – New Features and Optimizations

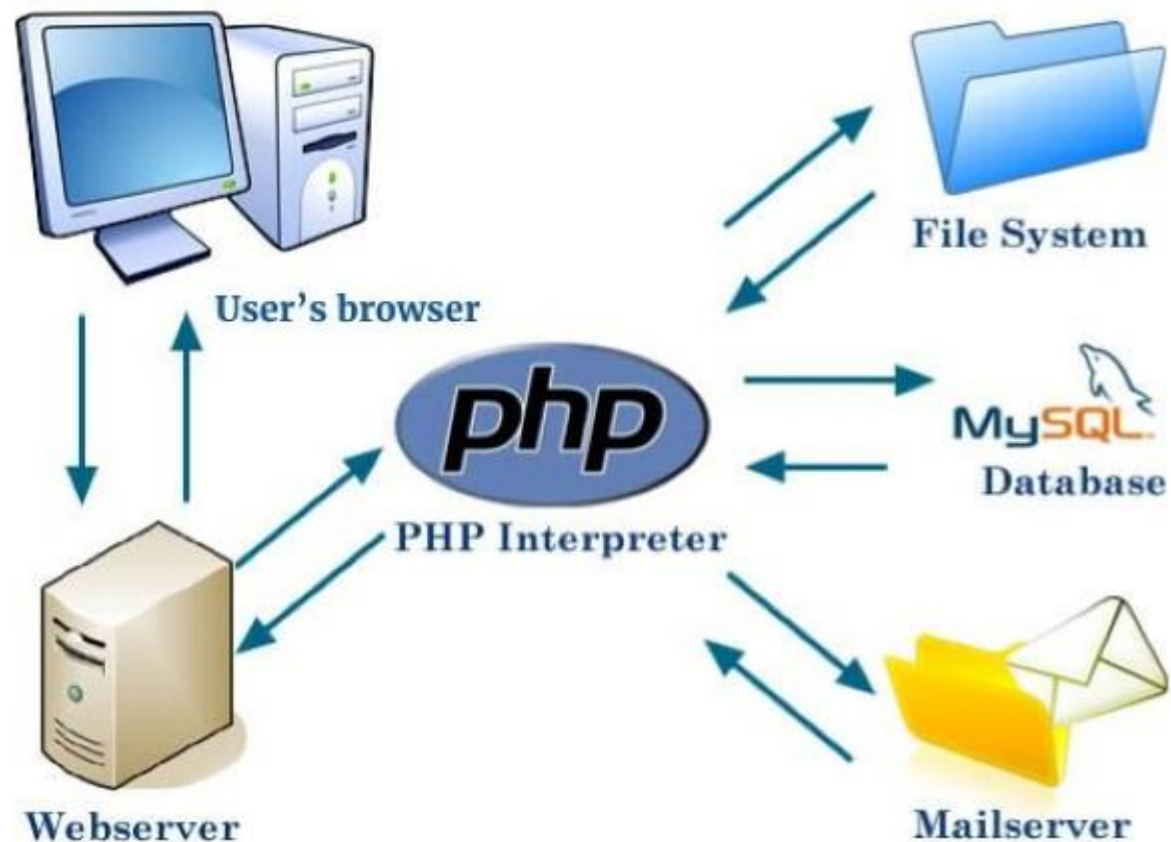
How PHP Work ?



- 1: Client akses melalui browser mengirim request HTTP (POST/GET variables)
- 2: Web Server Apache mendeteksi PHP script yang diminta oleh request browser dan mengirimkan request ke PHP module
- 3: PHP interpreter eksekusi PHP script, skrip output dikumpulkan dan dikirim kembali
- 4: Web Server Apache membalas client menggunakan skrip output PHP sebagai output HTML

PHP Interpreter

- PHP adalah interpreted language
 - Scripts PHP diinterpretasikan oleh PHP's Zend parsing engine
 - Output berupa HTML



PHP Configuration

- Konfigurasi ada pada file php.ini
 - Linux Ubuntu 16.04 : /etc/php/7.0/apache/php.ini
- Development Environment
 - display_errors = ON
 - error_reporting = E_ALL & ~E_NOTICE & ~E_STRICT & ~E_DEPRECATED & ~E_WARNING

PHP Basic Syntax

```
<?php
```

```
// Your script is here
```

```
?>
```

- 📌 File PHP berekstensi .php

- 📌 Setiap statement (pernyataan program) diakhiri ; (titik koma)

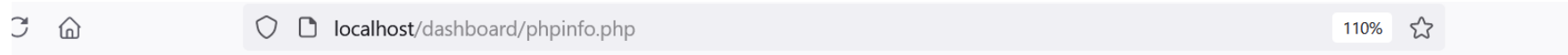
PHP Info


- Script php info memberikan informasi lingkungan kerja PHP yaitu berupa:
 - Variabel Global Server
 - Dukungan Pustaka Program
 - Dukungan Vendor Database

Buat file PHP : info.php

```
<?php  
    phpinfo();  
?>
```

PHP Info



PHP Version 7.4.15		
System	Windows NT THINKBOOK-ROJUL 10.0 build 19041 (Windows 10) AMD64	
Build Date	Feb 2 2021 20:41:04	
Compiler	Visual C++ 2017	
Architecture	x64	
Configure Command	cscript /nologo /e:jscript configure.js "--enable-snapshot-build" "--enable-debug-pack" "--with-pdo-oci=c:\php-snap-build\deps_aux\oracle\x64\instantclient_12_1\sdk,shared" "--with-oci8-12c=c:\php-snap-build\deps_aux\oracle\x64\instantclient_12_1\sdk,shared" "--enable-object-out-dir=../obj/" "--enable-com-dotnet=shared" "--without-analyzer" "--with-pgo"	
Server API	Apache 2.0 Handler	
Virtual Directory Support	enabled	
Configuration File (php.ini) Path	no value	
Loaded Configuration File	D:\xampp\php\php.ini	
Scan this dir for additional .ini files	(none)	
Additional .ini files parsed	(none)	
PHP API	20190902	
PHP Extension	20190902	
Zend Extension	320190902	
Zend Extension Build	API320190902,TS,VC15	
PHP Extension Build	API20190902,TS,VC15	
Debug Build	no	

PHP Embed HTML

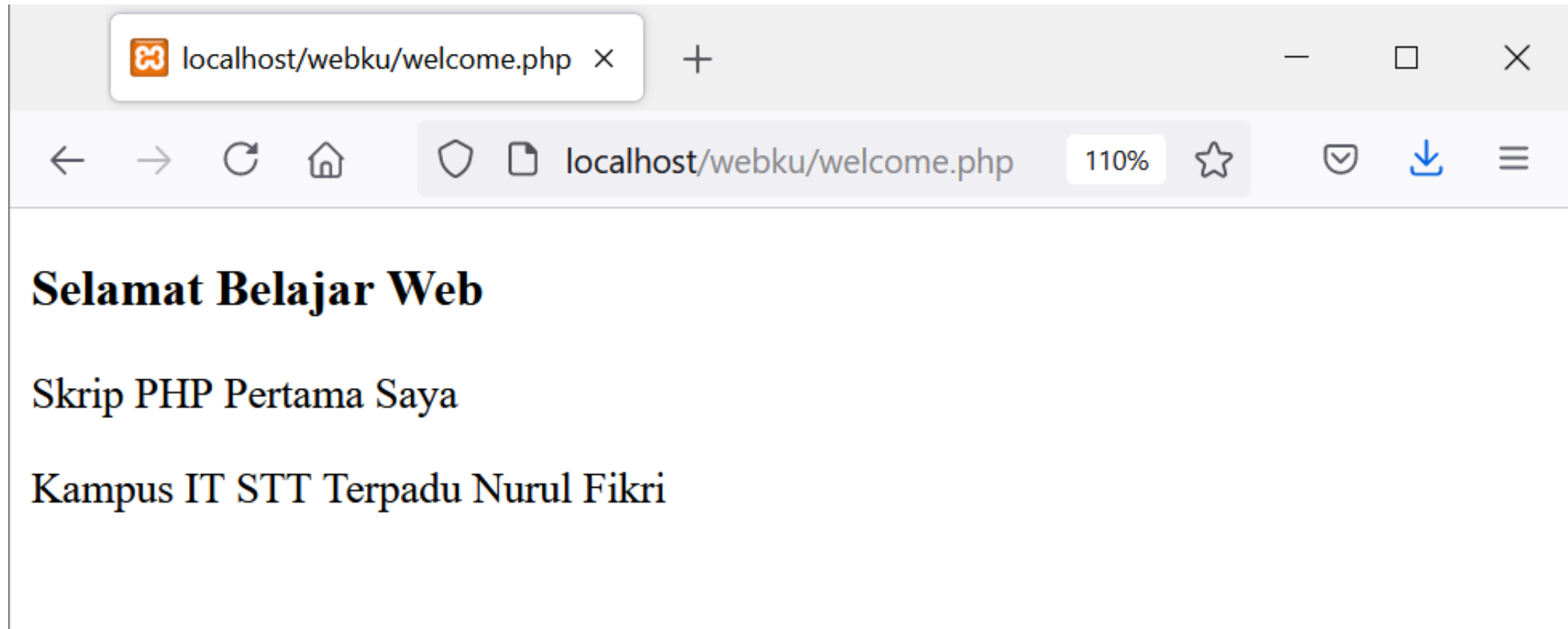
- Skrip PHP menyatu dengan TAG HTML

```
<!DOCTYPE html>
<html>
<body>
<h3>Selamat Belajar Web</h3>
<?php
echo "<p>Skrip PHP Pertama Saya</p>";
?>
<p>Kampus IT STT Terpadu Nurul Fikri</p>

</body>
</html>
```

PHP Embed HTML

- Skrip PHP menyatu dengan TAG HTML



2. Variabel dan Tipe Data

PHP – Struktur dan Sintaks

- Sintaks PHP mirip Bahasa C
- Setiap skrip program diawal <?php dan diakhiri ?>
- Line separator: ; (titik koma)
- Blok Kode: { // kurung kurawal } (kode program)
- Mengabaikan spasi
- Komentar program:
 - // single comment
 - /* multi comment */

PHP – Multiple Code Block

```
<html>
  <head>
    <title><?php echo "Welcome to my site!";?></title>
  </head>
  <body>
    <?php
      $date = "May 18, 2003";
    ?>
    <h3>Today's date is <?=$date;?></h3>
  </body>
</html>
```


PHP Basic Syntax - Comment

```
<?php
    // satu baris komentar
    # ini juga satu baris komentar, tapi jarang digunakan
    /*
        banyak baris komentar
    */
    // komentar php juga bisa diantara baris kode
    $x = 5 /* +15 */ + 5 ;
    echo $x;
?>
```

PHP Basic Syntax - Variables

- Variabel : Tempat menyimpan nilai selama program berjalan
- Variable diawali dengan tanda \$ setelah nama variable, contoh *\$var_name*
- Valid variable names
 - Diawali dengan huruf atau garis bawah (\$nama, \$_alamat)
 - Dapat mengandung huruf, angka atau garis bawah
 - Tidak boleh menggunakan kata kunci (keyword) PHP (contoh: "class")
 - Tidak boleh menggunakan spasi, tanda ("." , "," , "[", "]")

PHP Basic Syntax - Variables

- Memberi nilai variable :
 - By Value:: \$myVar = 25;
 - By Reference:: \$myRef = &\$myVar;
 - Invalid:: \$myRef = &(7 * 52) //Expression is unnamed
- Variable tidak perlu dideklarasikan terlebih dahulu
- PHP variable adalah CASE-SENSITIVE

```
<?php
// dua variabel yang berbeda
$_nama    = "dewi";
$_NAMA    = "agus";

?>
```

PHP Cetak Standard Output

- Gunakan echo fungsi untuk cetak ke output
- atau scriplet tag <?= \$var ?>

```
1  <?php
2  |   echo "Selamat Belajar PHP";
3  ?>
4  <?="Selamat Belajar PHP"?>
5  <hr/>
6  <?php
7  |   $_nama = "Ahmad Budiman";
8  |   echo $_nama;// cetak ke output
9  ?>
10 <br/>
11 Nama Lengkap : <?=$_nama?>
12 |
```

Rectangular Snip

PHP Basic Syntax – print vs echo

- Echo dan print adalah memiliki fungsi yang sama, mencetak output data ke layar display user
- Perbedaannya:
 - Echo tidak mengembalikan suatu nilai, sedang print mengembalikan nilai 1 karenanya bisa digunakan sebagai ekspresi program
 - Echo dapat menerima banyak parameter , print hanya 1 parameter
 - Echo lebih cepat dibanding print

```
<?php
    $nama = 'Putri Ramadhani' ;
    $_umur = 8;
    echo 'Nama Siswa : ' . $nama . ' umurnya ' . $_umur . ' tahun ' ;
?>
<br/>
<?php print($nama) ; ? >
```

PHP print()

print()

boolean print (*argument*)

```
<?php
    print("<p>I love the summertime.</p>");
?>
```

```
<?php
    $season = "summertime";
    print "<p>I love the $season.</p>";
?>
```

```
<?php
    print "<p>I love
    summertime.</p>";
?>
```

I love the summertime.

```
<?php
    $season = "summertime";
    print "<p>I love the ".$season."</p>";
?>
```

PHP echo()

echo()

`void echo (string argument1 [, ...string argumentN])`

```
1 <?php
2     $_nama="Faiz Fikri";
3     $_umur= 8;
4     echo $_nama . " umurnya " . $_umur . " Tahun";
5 ?>
```

PHP Data Type

Type	Description
int, integer	Whole numbers (i.e., numbers without a decimal point).
float, double, real	Real numbers (i.e., numbers containing a decimal point).
string	Text enclosed in either single (' ') or double (" ") quotes. [Note: Using double quotes allows PHP to recognize more escape sequences.]
bool, boolean	True or false.
array	Group of elements.
object	Group of associated data and methods.
resource	An external source—usually information from a database.
NULL	No value.

PHP Data Type

- PHP supports the following:
 - Boolean: `$isActive = TRUE;`
 - Integer:: `$zip = 15213;`
 - Float:: `$myBalance = 567.89;`
 - String:: `$isActive = 'TRUE';`
 - Arrays:: `$myInfo = array("name" => "Bob","age"=>8);`
 - Objects:: `$myBook = new Book();`
 - Resources :: `$a=fopen('tes.txt');`
 - NULL :: `null`
 - Constants:: `define("PHI", 3.14);`

PHP – Tipe Data Boolean

- The Boolean datatype is named after George Boole (1815–1864)
- supporting only two values: TRUE or FALSE (case insensitive)

```
$alive = false;      # $alive is false.  
$alive = 1;          # $alive is true.  
$alive = -1;         # $alive is true.  
$alive = 5;          # $alive is true.  
$alive = 0;          # $alive is false.
```

PHP – Tipe Data Integer

- Tipe data numerik bilangan bulat
- An integer is quite simply a whole number, or one that does not contain fractional parts. Decimal (base 10), octal (base 8), and hexadecimal (base 16) numbers all fall under this category. Several examples follow:

```
42          # decimal
-678900     # decimal
0755        # octal
0xC4E       # hexadecimal
```

```
<?php
$val = 45678945939390393678976;
echo $val + 5;
?>
```

PHP has the following functions to check if the type of a variable is integer:

- `is_int()`
- `is_integer()` - alias of `is_int()`
- `is_long()` - alias of `is_int()`

PHP – Tipe Data Floating Point

- Tipe data numerik bilangan pecahan atau real number
- Floating-point numbers, also referred to as floats, doubles, or real numbers

4.5678

4.0

8.7e4

1.23E+11

PHP has the following functions to check if the type of a variable is float:

- `is_float()`
- `is_double()` - alias of `is_float()`

PHP – is_numeric()

- Cek apakah variabel adalah tipe data numeric

```
<?php
```

```
$x = 5985;
```

```
var_dump(is_numeric($x));
```

bool(true)

```
$x = "5985";
```

```
var_dump(is_numeric($x));
```

bool(true)

```
$x = "59.85" + 100;
```

```
var_dump(is_numeric($x));
```

bool(true)

bool(false)

```
$x = "Hello";
```

```
var_dump(is_numeric($x));
```

```
?>
```

PHP – Tipe Data String

- Single-quoted strings
 - Ex.: `$quote = 'I\'ll be back';`
 - Gunakan `\` untuk single quote character.
 - Tidak menambahkan baris baru atau variabel.
- Double-quote strings
 - Menambah baris baru dan variabel.
 - Gunakan `\` untuk escape characters.
 - *Example*:: `$q = "Arnold said, 'quote'\n";`
 - *Result*:: Arnold said, 'I'll be back' (followed by a linefeed.)
 - Double-quote Use in SQL Statement :
`$sql="SELECT * FROM mahasiswa WHERE nim='011011'";`
- Use `.` to concatenate strings
 - Example `$q = 'Arnold said,' . $quote;`

PHP Keyword

PHP keywords				
abstract	die	exit	interface	require
and	do	extends	isset	require_once
array	echo	__FILE__	__LINE__	return
as	else	file	line	static
break	elseif	final	list	switch
case	empty	for	__METHOD__	throw
catch	enddeclare	foreach	method	try
__CLASS__	endfor	__FUNCTION__	new	unset
class	endforeach	function	or	use
clone	endif	global	php_user_filter	var
const	endswitch	if	print	while
continue	endwhile	implements	private	xor
declare	eval	include	protected	
default	exception	include_once	public	

Fig. 23.5 | PHP keywords.

Tipe Variable

- ✚ Define By User (programmer)

```
$_nama = 'Naurah Husna';
```

```
$_ipk = 3.87;
```

- ✚ Define By System (PHP Global Variable)

- ▣ Environment Variable

- ▣ PHP Variable

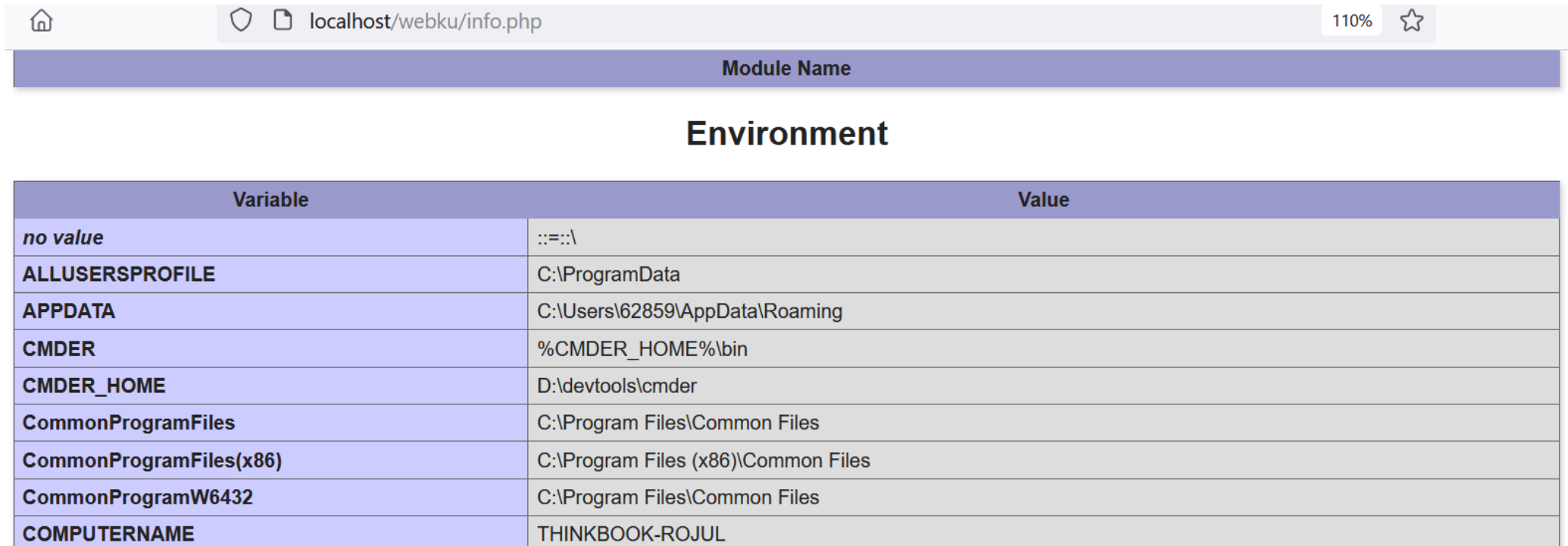
```
$_SERVER['DOCUMENT_ROOT'];
```

```
$_SERVER['PHP_SELF'];
```


PHP Global Variabel Environment

✚ Define By System (PHP Global Variable) – phpinfo

✚ Informasi Lingkungan Kerja Server

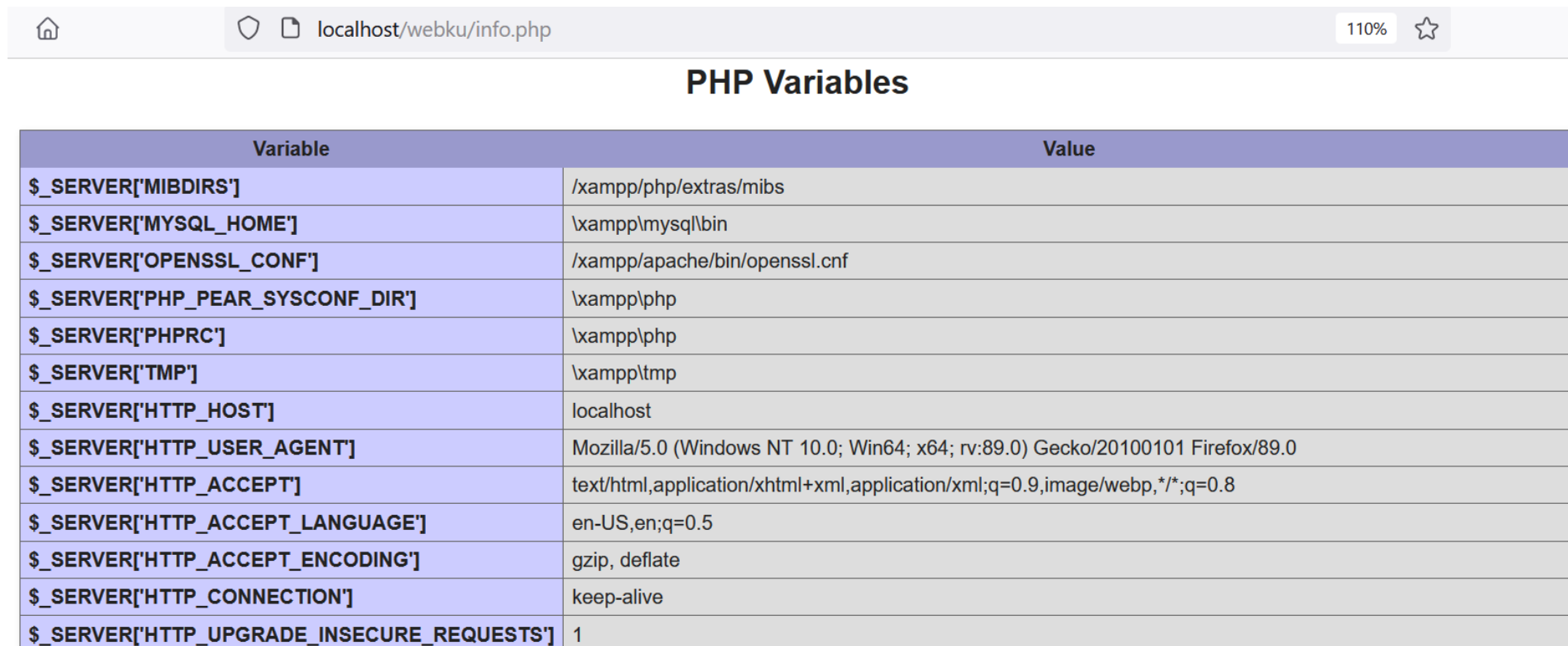


Module Name	
Environment	
Variable	Value
<i>no value</i>	::=:\
ALLUSERSPROFILE	C:\ProgramData
APPDATA	C:\Users\62859\AppData\Roaming
CMDER	%CMDER_HOME%\bin
CMDER_HOME	D:\devtools\cmdr
CommonProgramFiles	C:\Program Files\Common Files
CommonProgramFiles(x86)	C:\Program Files (x86)\Common Files
CommonProgramW6432	C:\Program Files\Common Files
COMPUTERNAME	THINKBOOK-ROJUL

PHP Global Variabel Environment

✚ Define By System (PHP Global Variable) – phpinfo

✚ PHP Variabel



Variable	Value
\$_SERVER['MIBDIRS']	/xampp/php/extras/mibs
\$_SERVER['MYSQL_HOME']	\xampp\mysql\bin
\$_SERVER['OPENSSL_CONF']	/xampp/apache/bin/openssl.cnf
\$_SERVER['PHP_PEAR_SYSCONF_DIR']	\xampp\php
\$_SERVER['PHPRC']	\xampp\php
\$_SERVER['TMP']	\xampp\tmp
\$_SERVER['HTTP_HOST']	localhost
\$_SERVER['HTTP_USER_AGENT']	Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:89.0) Gecko/20100101 Firefox/89.0
\$_SERVER['HTTP_ACCEPT']	text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,*/*;q=0.8
\$_SERVER['HTTP_ACCEPT_LANGUAGE']	en-US,en;q=0.5
\$_SERVER['HTTP_ACCEPT_ENCODING']	gzip, deflate
\$_SERVER['HTTP_CONNECTION']	keep-alive
\$_SERVER['HTTP_UPGRADE_INSECURE_REQUESTS']	1

Operator Aritmatika

- Operator digunakan untuk operasi matematika

Example	Label	Outcome
$\$a + \b	Addition	Sum of $\$a$ and $\$b$
$\$a - \b	Subtraction	Difference of $\$a$ and $\$b$
$\$a * \b	Multiplication	Product of $\$a$ and $\$b$
$\$a / \b	Division	Quotient of $\$a$ and $\$b$
$\$a \% \b	Modulus	Remainder of $\$a$ divided by $\$b$

Operator Assignment

- Operator untuk memberi nilai variabel

Example	Label	Outcome
<code>\$a = 5</code>	Assignment	\$a equals 5
<code>\$a += 5</code>	Addition-assignment	\$a equals \$a plus 5
<code>\$a *= 5</code>	Multiplication-assignment	\$a equals \$a multiplied by 5
<code>\$a /= 5</code>	Division-assignment	\$a equals \$a divided by 5
<code>\$a .= 5</code>	Concatenation-assignment	\$a equals \$a concatenated with 5

String Operator

- Operator digunakan untuk operasi tipe data string
- Gunakan titik (.) untuk operasi string

Example	Label	Outcome
<code>\$a = "abc"."def";</code>	Concatenation	<code>\$a</code> is assigned the string “abcdef”
<code>\$a .= "ghijkl";</code>	Concatenation-assignment	<code>\$a</code> equals its current value concatenated with “ghijkl”

```
// $a contains the string value "Spaghetti & Meatballs";  
$a = "Spaghetti" . "& Meatballs";
```

```
$a .= " are delicious";  
// $a contains the value "Spaghetti & Meatballs are delicious."
```

Operator Incremental/Decremental

- Operator untuk menambah data secara incremental atau decremental

Example	Label	Outcome
++\$a, \$a++	Increment	Increment \$a by 1
--\$a, \$a--	Decrement	Decrement \$a by 1

```
$inv = 15;          /* Assign integer value 15 to $inv. */  
$oldInv = $inv--;  /* Assign $oldInv the value of $inv, then decrement $inv.*/  
$origInv = ++$inv; /*Increment $inv, then assign the new $inv value to $origInv.*/
```

Operator Logika

- Operator digunakan untuk logika perbandingan

Example	Label	Outcome
\$a && \$b	And	True if both \$a and \$b are true
\$a AND \$b	And	True if both \$a and \$b are true
\$a \$b	Or	True if either \$a or \$b is true
\$a OR \$b	Or	True if either \$a or \$b is true
!\$a	Not	True if \$a is not true
NOT \$a	Not	True if \$a is not true
\$a XOR \$b	Exclusive Or	True if only \$a or only \$b is true

Operator Equality

- Operator digunakan untuk mengecek kesamaan nilai

Example	Label	Outcome
<code>\$a == \$b</code>	Is equal to	True if \$a and \$b are equivalent
<code>\$a != \$b</code>	Is not equal to	True if \$a is not equal to \$b
<code>\$a === \$b</code>	Is identical to	True if \$a and \$b are equivalent, and \$a and \$b have the same type

Operator Equality

- Operator digunakan perbandingan nilai

Example	Label	Outcome
<code>\$a < \$b</code>	Less than	True if \$a is less than \$b
<code>\$a > \$b</code>	Greater than	True if \$a is greater than \$b
<code>\$a <= \$b</code>	Less than or equal to	True if \$a is less than or equal to \$b
<code>\$a >= \$b</code>	Greater than or equal to	True if \$a is greater than or equal to \$b
<code>(\$a == 12) ? 5 : -1</code>	Ternary	If \$a equals 12, return value is 5; otherwise, return value is -1