

Getting Set Up with PHP

Setup tutorial and all materials at:

[https://github.com/sketchings/
beginning-php-training](https://github.com/sketchings/beginning-php-training)

Starting Point

What elements do we need, to start?

Think about building a fire.
Without these three elements
there's no fire!

- Oxygen
- Heat
- Fuel



Three Things Power a PHP Website

- ▷ PHP
- ▷ Database (MySQL)
- ▷ Web server (Apache/nginx)

Like the three elements needed to start a fire - you need all three or there's no fire!

- Oxygen
- Heat
- Fuel



Why Do We Care About Elements?

- ▷ Many possible setups
- ▷ Many possible environments
- ▷ But you always need the three elements

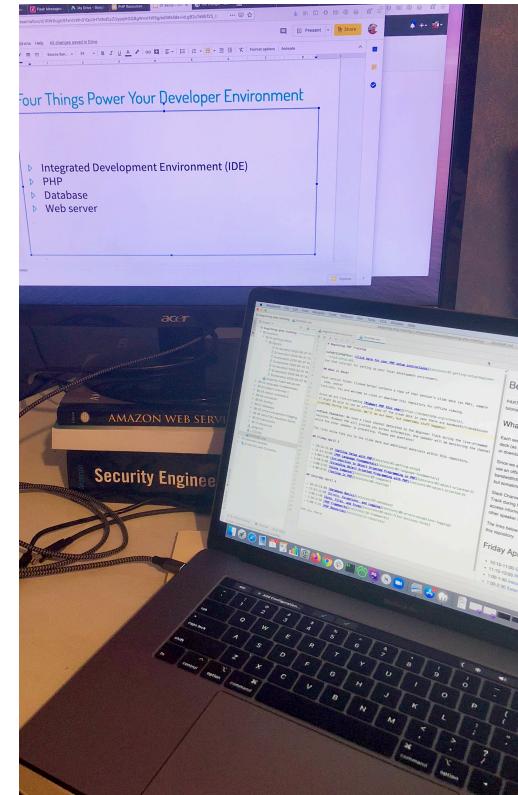
Your mission, should you choose to accept it, is to get **(PHP, Database, Server)** working in whatever environment you have available



Four Things Power Your Developer Environment

- ▷ Integrated Development Environment (IDE)
- ▷ PHP
- ▷ Database
- ▷ Web server

No matter your setup, you need these four things



Install

Easy Start - Have You Done These Steps?

<https://github.com/sketchings/beginning-php-training>

- ▷ IDE - Visual Studio (free) or PhpStorm (30-day trial)
- ▷ MAMP (free) for integrated PHP, MySQL, Apache, nginx

Above options available Windows or Mac

Visual Studio

<https://visualstudio.microsoft.com/>

The screenshot shows the Microsoft Visual Studio landing page. At the top, there's a navigation bar with the Microsoft logo, "Visual Studio", and links for "Products", "Downloads", "Buy", "Support", and "Subscriber Access". A prominent "Free Visual Studio" button is located on the right side of the navigation bar. A large blue arrow points from the URL in the top right corner down towards this button.

Visual Studio
Best-in-class tools for any developer

Visual Studio
Full-featured IDE to code, debug, test, and deploy to any platform
[Download Visual Studio](#)

Visual Studio Code
Editing and debugging on any OS
(By using Visual Studio Code you agree to its [license](#) and [privacy statement](#))
[Download Visual Studio Code](#)

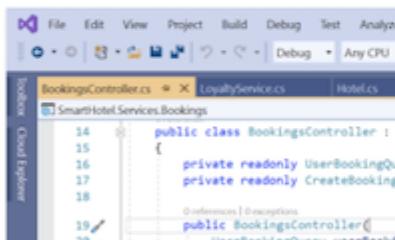
Visual Studio for Mac
Develop apps and games for iOS, Android, and web using .NET
[Read more about activating your license](#)
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https://visualstudio.microsoft.com/free-developer-offers/

Microsoft | Visual Studio Products Downloads Buy Support Subscriber Access Free Visual Studio All Microsoft

Everything you need to create great apps. Free.

Visual Studio Community

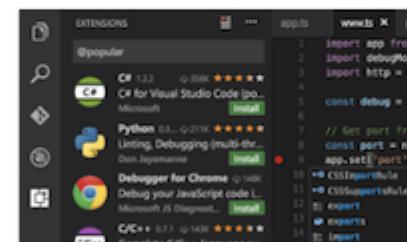


Full-featured IDE to code, debug, test, and deploy to any platform

Free download

[Learn more >](#)

Visual Studio Code



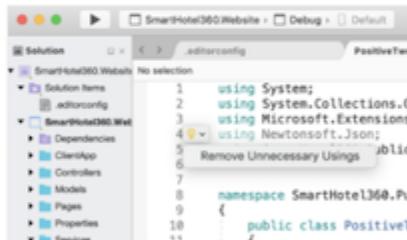
Editing and debugging on any OS

(By using Visual Studio Code you agree to its
[license and privacy statement](#))

Free download

[Learn more >](#)

Visual Studio Community for Mac



Develop apps and games for iOS, Android, and web using .NET

[Read more about activating your license](#)

Free download

[Learn more >](#)

<https://laracasts.com/series/visual-studio-code-for-php-developers>

Visual Studio Code for PHP Developers



Out of the blue, Microsoft jumps into the editor wars with an incredible offering that gives Sublime Text an overwhelming run for its money. In fact, it just might surpass it! So come along, as I demonstrate the ins, the outs, the tips, the techniques. Say hello to your new best friend: **Visual Studio Code**.

BEGIN WATCH LATER SUBSCRIBE

LATEST EPISODE IN THIS SERIES
Added 2 years ago

18

Type Checking JavaScript Files

What if we could add a single commented line to the top of any vanilla JavaScript file...
[WATCH](#)

Intermediate 18 episodes 1:20:20 hrs Tooling

[F](#) [P](#) [T](#)

YOUR TEACHER | JEFFREY WAY



Hi, I'm Jeffrey. I'm the creator of Laracasts and spend most of my days building the site and thinking of new ways to teach confusing concepts. I live in Orlando, Florida with my wife and two kids.



VISIT WEBSITE

You May Also Enjoy...

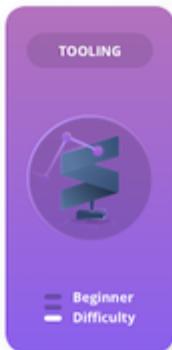
Here are some additional series that may be up your alley.



Be Awesome in PHPStorm

Think about how many hours each week you spend within your editor. Doesn't it make sense to unlock every inch of its capabilities? I certainly subscri...

27 Lessons



Sublime Text Mastery

If you intend to dedicate a career to web development, shouldn't you, in the process, harness every ounce of your code editor? In this series, I'll sh...

11 Lessons



Vim Mastery

There's a reason why, after decades, countless developers still prefer Vim as their code editor of choice. That many people can't be wrong, right? In...

22 Lessons

<https://symfonycasts.com/screencast/phpstorm>

The screenshot shows a web browser displaying the SymfonyCasts website at <https://symfonycasts.com/screencast/phpstorm>. The page title is "Lean and Mean Dev with PhpStorm (for Symfony)". The main content area features a large image of the PhpStorm logo (a stylized "PS" inside a dark rectangle) set against a background of overlapping pink and purple geometric shapes. To the left of the image, a teal button displays the number "48:53". To the right, a call-to-action button says "Login or register to track your progress!". Below this, a list of five video lessons is shown, each with a play button and a duration indicator:

Lesson Title	Duration
01. Setup	5:12
02. Annotations	2:47
03. Twig	5:01
04. Namespaces	4:05
05. Doctrine	5:00

What you'll be learning
Tip: This course is built on Symfony 2, but the important concepts of

<https://www.jetbrains.com/phpstorm/>

PhpStorm

Coming in 2020.1 What's New Features Learn Blog & Social Buy

Download

Getting Started



Debugging	Step Into Debugging with PhpStorm	58:32
Development Environment	Deployment and Remote Hosts in PhpStorm - PhpStorm Video Tutorial	5:26
Getting Started	Introduction to PhpStorm Basic PhpStorm Editor Actions and Navigation - PhpStorm	6:18 2:28

Resources

[PhpStorm Tutorials](#)

[PhpStorm Quick Start Guide](#)

[PhpStorm Plugin Repository](#)

[PhpStorm Online Help](#)

[PhpStorm Leaflet \(1.9 Mb\)](#)

[Keyboard Reference \(277 Kb\)](#)

[Video Tutorials](#)

[Webinars](#)

[Ultimate Debugging Guide](#)

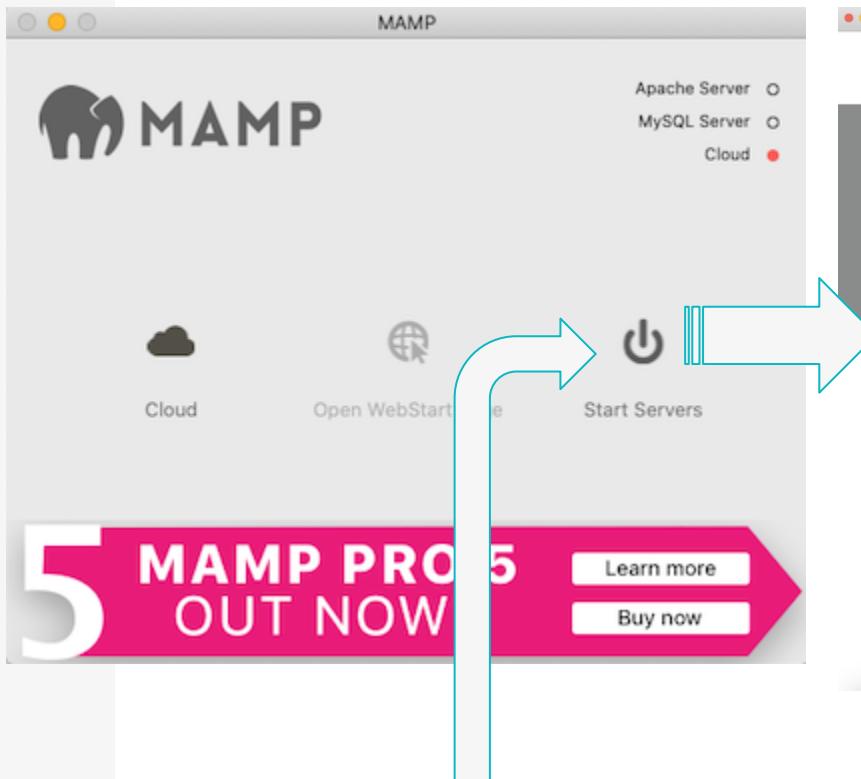
Create a Project in Your Editor / IDE

The screenshot shows the PhpStorm IDE interface. The title bar reads "mamp-setup [~/PhpstormProjects/mamp-setup] - .../hello-world.php". The left sidebar displays the project structure under "1: Project": "mamp-setup" (selected), "External Libraries", and "Scratches and Consoles". The main editor window shows the file "hello-world.php" with the following content:

```
<?php
declare(strict_types=1);
echo '<p>Hello World!</p>' . PHP_EOL;
```

The code editor has syntax highlighting for PHP. The status bar at the bottom shows "Event Log" with one entry, "Terminal", "6: TODO", "5:1 LF UTF-8 4 spaces", and some icons.

Install MAMP - Start Servers - localhost:8888



The image shows the "Welcome to MAMP" page from the MAMP website. The header includes a navigation bar with "START", "MY WEBSITE", "TOOLS", "MAMP WEBSITE", and a "BUY MAMP PRO" button. The main content area says "Welcome to MAMP" and "Your version is 5.7 and up to date." It features sections for "BUY MAMP PRO", "GET MAMP CLOUD", and "MAMP NEWS". The "BUY MAMP PRO" section has a "MAMP PRO" button. The "GET MAMP CLOUD" section has a "MAMP Cloud" button. The "MAMP NEWS" section has a "MAMP News" button. A "Tweets by @mamp_en" feed is also present.

START MY WEBSITE TOOLS MAMP WEBSITE BUY MAMP PRO

Welcome to MAMP

Your version is 5.7 and up to date.

BUY MAMP PRO

Be more productive: unlimited hosts, unlimited possibilities.

MAMP PRO

With MAMP PRO you can create a separate host for each of your web projects. Install WordPress with only one click and after completion of your page, publish it directly from MAMP PRO on your live server. [Learn more](#)

PHP

phpinfo shows the current configuration of PHP.

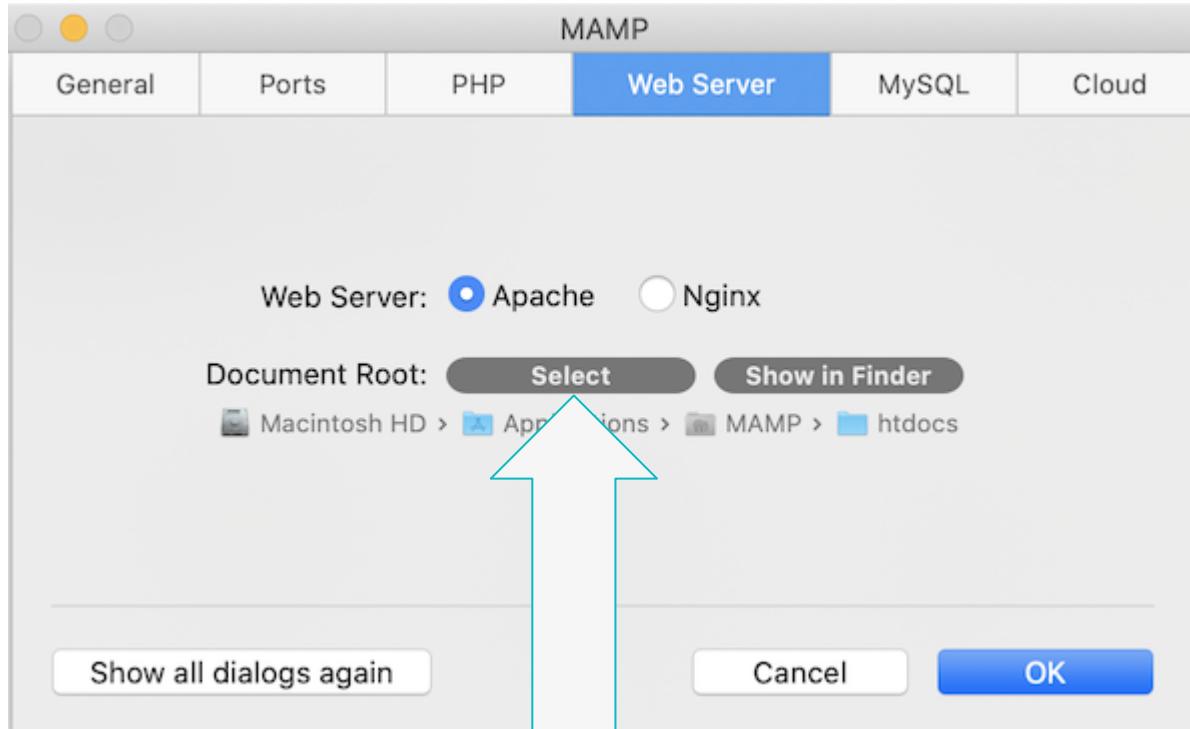
MySQL

MySQL can be administered with phpMyAdmin.

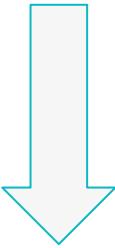
Tweets by @mamp_en

MAMP
@mamp_en
There is a new, nice font designed for developers: JetBrains Mono. [JetBrains Mono](#).

Preferences - Document Root



“My Website”



INDEX OF /

Index of /

- [idea/](#)
- [hello-world.php](#)



Hello World!

Welcome to MAMP
Your version is 5.7 and up to date.

BUY MAMP PRO
Be more productive: unlimited hosts, unlimited possibilities.

MAMP PRO

With MAMP PRO you can create a separate host for each of your web projects. Install WordPress with only one click and edit the content of your page, publish it directly from MAMP PRO on your live server. Learn more

PHP
phpinfo shows the current configuration of PHP.

GET MAMP CLOUD
Save your hosts' data and database to Dropbox.

MAMP Cloud

You can easily save your host and database data in the cloud and later retrieve it on another Mac, without backing up data before making changes on your host. Learn more

MySQL
MySQL can be administered with phpMyAdmin.

MAMP NEWS
Follow us on Twitter for the latest news and updates.

MAMP News

Tweets by @mamp_de

MAMP
There is a new, nice font designed for developers: JetBrain's Mono Petrucci.com/p/mono/

localhost:8888/hello-world.php

MySQL

The screenshot shows the MAMP welcome page. At the top, it says "Welcome to MAMP" and "Your version is 5.7 and up to date." Below this, there are sections for "BUY MAMP PRO", "GET MAMP CLOUD", and "MAMP NEWS". The "MAMP NEWS" section includes a Twitter feed from @mamp_en. At the bottom, there's a "PHP" section with a "phpinfo" link.



Host localhost
Port 8889
User root
Password root
Socket /Applications/MAMP/tmp/mysql/mysql.sock

Examples:

[PHP >= 5.6.x](#) [PHP <= 5.5.x](#) [Python](#) [Perl](#)

Connect via network:

```
$user = 'root';
$password = 'root';
$db = 'inventory';
$host = 'localhost';
$port = 8889;

$link = mysqli_init();
$success = mysqli_real_connect(
    $link,
    $host,
    $user,
```

phpMyAdmin

The screenshot shows the phpMyAdmin 4.9.3 interface running on a Mac OS X system. The title bar indicates the URL is `localhost:8888/phpMyAdmin/?lang=en`. The left sidebar lists databases: `information_schema`, `mysql`, `performance_schema`, and `sys`. A large blue arrow points from the bottom-left towards the 'Console' button at the bottom of the sidebar.

General settings

- Server connection collation: utf8mb4_unicode_ci

Appearance settings

- Language: English
- Theme: Original
- Font size: 82%

Database server

- Server: Localhost via UNIX socket
- Server type: MySQL
- Server connection: SSL is not being used
- Server version: 5.7.26 - MySQL Community Server (GPL)
- Protocol version: 10
- User: root@localhost
- Server charset: UTF-8 Unicode (utf8)

Web server

- Apache/2.2.34 (Unix) mod_wsgi/3.5 Python/2.7.13 PHP/7.4.2 mod_ssl/2.2.34 OpenSSL/1.0.2o DAV/2 mod_fastcgi/mod_fastcgi-SNAP-0910052141 mod_perl/2.0.11 Perl/v5.24.0
- Database client version: libmysql - mysqlnd 7.4.2
- PHP extension: mysqli curl mbstring
- PHP version: 7.4.2

phpMyAdmin

- Version information: 4.9.3

Success!

- ▷ Editor / IDE
- ▷ PHP
- ▷ Database
- ▷ Web server

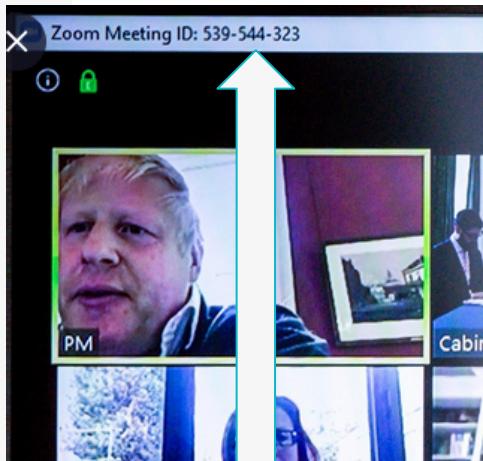


Development Environment

Policy

- ▷ Remember your laptop could be stolen
 - ▶ What constitutes a reportable data breach?
 - ▶ Can you keep sensitive passwords/keys OFF of your laptop?
 - ▶ Don't allow sensitive production data onto your laptop copy of the database (PII, HIPAA, GDPR)

Don't Be Like the Prime Minister



Zoom Meeting ID:
539-544-323

Boris Johnson #StayHomeSaveLives

@BorisJohnson

This morning I chaired the first ever digital Cabinet.

Our message to the public is: stay at home, protect the NHS, save lives. **#StayHomeSaveLives**

A screenshot of a Zoom meeting interface showing a grid of 25 participants. The participants include various members of the UK Cabinet and other officials. On the right side of the screen, there is a sidebar titled "Participants (25)" with a list of names and profile pictures. The names listed include: Cabinet Room (host, me), PM, Cabinet Room, Jacob Rees-Mogg, Home Secretary, Dominic Raab, Penny Mordaunt, Robert Jenrick, Michael Gove, Anna Soubry, Robert Jenrick, Michael Gove, Anne-Marie Trevelyan, Chancellor of the Exchequer, Theresa May, Ben Gummer, Brandon Lewis (DeGNA), Cabinet Secretariat (Emily Carder), Chancellor of the Exchequer, Chris Whitty, Gavin Williamson, Ed Lister, Grant Shapps, Home Secretary, Amanda Milling, Lord Oakeshott, and others. The bottom of the screen shows the Zoom control bar with options like "Mute", "Stop Video", "Invite", "Manage Participants", "Share Screen", "Chat", and "Reactions".

Remember - Web Images Contain Meta Data

- ▶ Meta data can reveal more than you intended
- ▶ Photos that include computer screens or sticky notes can prove embarrassing
- ▶ Well-intentioned screen shots... well... don't be like the Prime Minister
- ▶ Not a PHP problem? Still is YOUR problem!



Ways to Build that “Fire” (dev environment)

- ▶ Integrated environments
MAMP, WAMP, XAMPP:
 - ▶ Install and configure PHP, database, web server
 - ▶ Might not duplicate production env closely enough



Containerized - Vagrant, Docker

- ▷ Rapid setup for new members of a team
- ▷ Specific environment(s) pre-built
- ▷ “Spin up” multiple experimental environments

Virtual Machine

- ▷ Virtual Box (free) or VMWare
- ▷ Complete operating system and filesystem
- ▷ Can run
 - ▶ Windows on Mac
 - ▶ Linux on Windows
 - ▶ Et cetera

Build Your Own

- ▷ Many ways to install PHP, including building from source
- ▷ Can be necessary for specific language extensions, specific versions, database drivers, etc.
- ▷ The XDebug extension is important - and is included in most packaged environments such as MAMP
- ▷ HomeBrew for the Mac

Case-Sensitive Filesystem

- ▷ Linux servers tend to have case-sensitive file system
- ▷ Mac tends to NOT have case-sensitive file system
- ▷ Windows... reports vary

This disparity will become a problem when...

PHP Does Not Care... Or Does It?

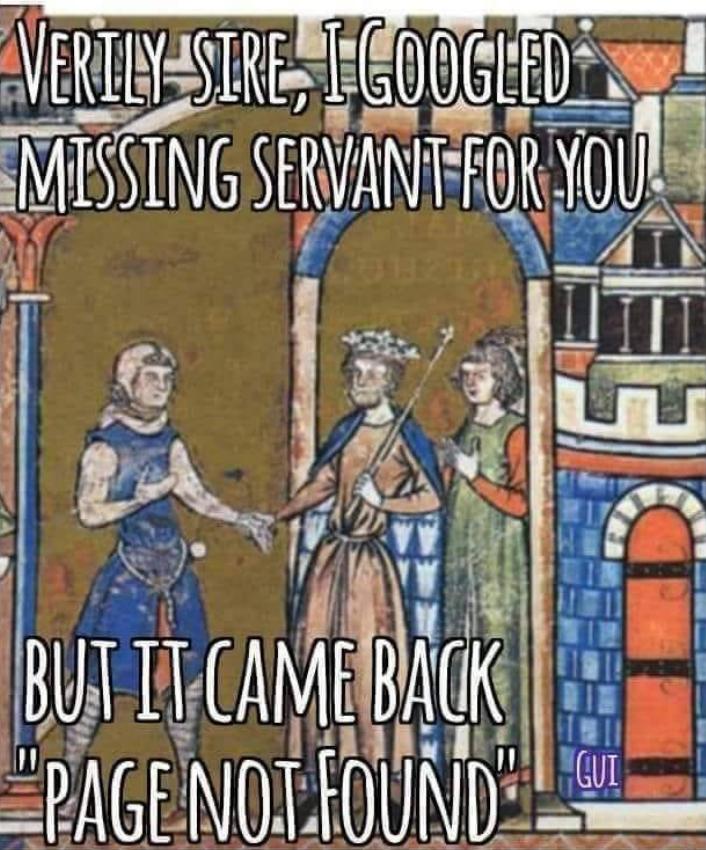
- ▶ PHP class names are NOT case sensitive
 - ▶ **Class FireBuilder** and **class firebuilder** are the same
- ▶ The linux filesystem DOES care
 - ▶ **FireBuilder.php** and **firebuilder.php** are NOT the same file
- ▶ The Mac filesystem DOES NOT care
 - ▶ **FireBuilder.php** and **firebuilder.php** ARE the same file

What Happens?

1. Suppose real class **FireBuilder** declared in `FireBuilder.php`
2. Other code invokes `$fire = new Firebuilder();`
3. Works fine in dev environment
4. Push to production... **class Firebuilder** not found
 - a. Mac autoloader finds `Firebuilder.php` when looking for `FireBuilder.php`
 - b. Linux autoloader cannot find `Firebuilder.php` because only `FireBuilder.php` exists
5. “Works for me”

Blank Page

- ▷ “500” error in dev environment
- ▷ Often blank white page in production
- ▷ Find and check error logs
 - ▶ Coding error
 - ▶ Failed database connection
 - ▶ Unsuccessful deployment
- ▷ Recent code change most likely



Remember Your Mission

- ▷ Get the four elements installed and playing-well with each other:
 - ▶ Code editor / IDE
 - ▶ PHP
 - ▶ Web server
 - ▶ Database
- ▷ Web pages are plain text (html and css) - you can edit them with your code editor / IDE

About PHP

Why PHP?

- ▷ It's the easiest and cheapest to deploy
- ▷ Low barrier to entry
- ▷ Duck typing (If it walks/talks/quacks like a duck...)
- ▷ Built for the web - current versions are *fast*
 - ▷ Built-in HTML templates
 - ▷ Easy access to server environment, cookies, sessions, form input
- ▷ Familiar C-like syntax (Perl, Java, C++, JavaScript)

Why Not PHP?

- ▷ Evolved, not designed
 - ▷ Like English, lots of exceptions to rules and inconsistencies
 - ▷ No benevolent dictator
- ▷ PHP projects, over time, often show same tendency
 - ▷ Leave cleanup / technical debt for next iteration
 - ▷ Scrum backlog substitutes for design/architecture

Why Not PHP?

- ▷ Built for the web, not for anything else
- ▷ Low barrier to entry
- ▷ Conveniences like duck typing create opportunities for insecure code and unexpected behavior that trips up the inexperienced

Don't Worry...

- ▷ That's why we're here.

Life of a PHP Script

1. Browser requests something from web server
2. Web server hands request to PHP
3. PHP interpreter does stuff (next slide)
4. Web server sends response to browser

PHP Interpreter Handles Web Request

1. Web server fires up PHP interpreter
 1. Parse PHP script(s)
 2. Execute code
 3. Hand response to web server
 4. Shut completely down
2. Web server sends response to browser

Life in the PHP Interpreter

- ▷ Web server passes request to PHP when it encounters a file with a PHP file extension (almost always `.php`).
- ▷ PHP treats everything as HTML until it encounters a PHP open tag:
 - ▷ `<?php` “open tag” starts it processing as PHP
 - ▷ `?>` “close tag” means stop parsing as PHP
 - ▷ Only use close tag if you have more HTML

Easiest Exercise Ever

1. Create a file called `hello.php`
2. Inside it, type `Hello World!`
3. Save the file to your project directory for your local web server.
4. Navigate to the page on your local website.
5. Easiest. Hello. World. Ever.

Hello World with PHP Code

- ▶ In hello.php, instead of `Hello World!` , write this and then reload the web page on your localhost:

```
<?php  
Echo 'Hello World!';
```

Thank You

Build that fire!

- ▷ Code Editor / IDE
- ▷ PHP (7.2 or newer)
- ▷ Database (MySQL)
- ▷ Web server (Apache or nginx)

Easy route:

- ▷ Visual Studio / PhpStorm
- ▷ MAMP

