



# IS311 Web Development

Week 01 - Lecture 02

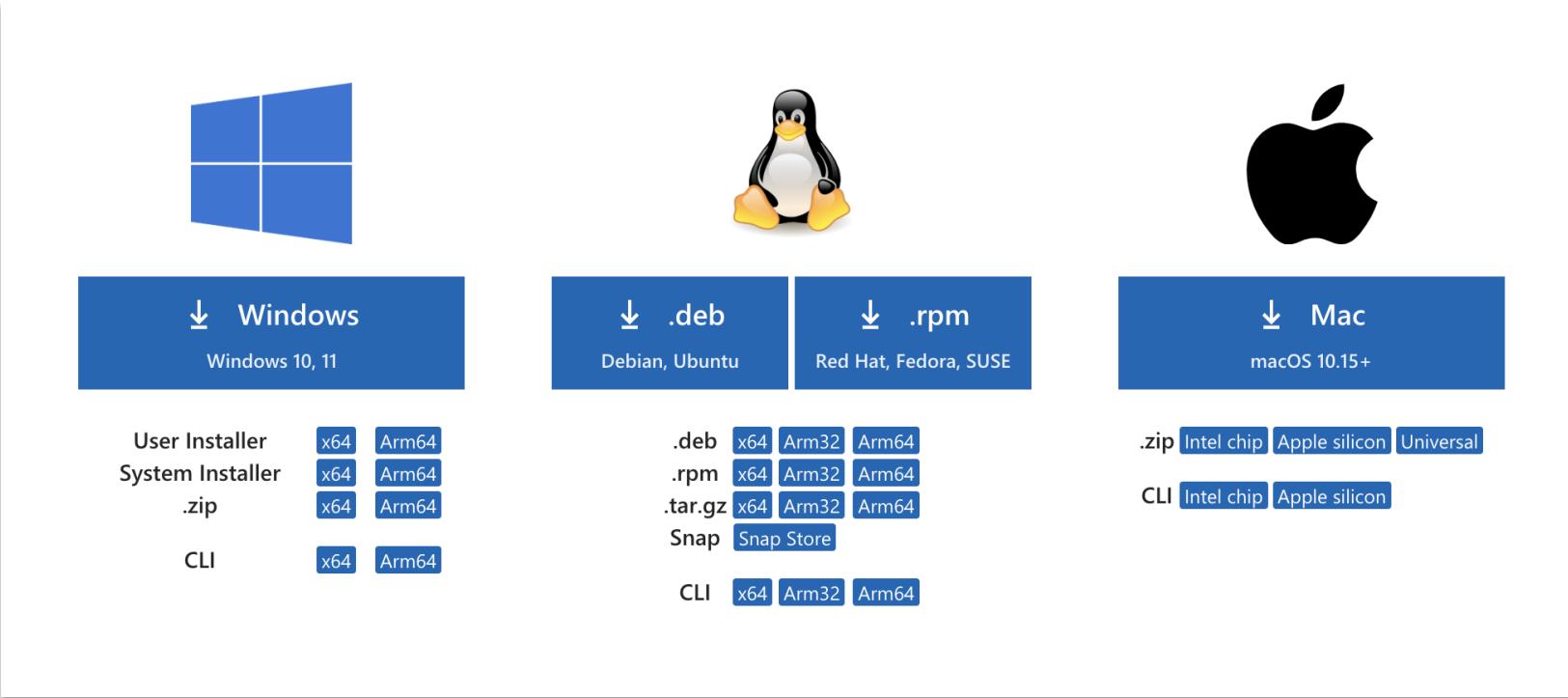
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# Setting up Development Environment

- Visual Studio Code
- Node JS
- Browser Sync
- XAMPP
- MySql driver for Node JS
- Postman
- Chrome
- GIT

# Visual Studio Code

- Download VS Code
  - <https://code.visualstudio.com/download>



The image shows the download section of the Visual Studio Code website. It features three main sections: Windows, Linux, and Mac. Each section has a large icon (Windows logo, Tux penguin, Apple logo), a download button, and a list of supported platforms or formats.

Platform	Download Type	Supported Versions/Formats
Windows	Windows	Windows 10, 11
Linux	.deb, .rpm, .tar.gz, Snap	Debian, Ubuntu, Red Hat, Fedora, SUSE
Mac	.zip, CLI	macOS 10.15+, Intel chip, Apple silicon, Universal

Below each main section, there is a detailed list of available installers and formats:

- Windows:** User Installer (x64, Arm64), System Installer (x64, Arm64), .zip (x64, Arm64), CLI (x64, Arm64).
- Linux:** .deb (x64, Arm32, Arm64), .rpm (x64, Arm32, Arm64), .tar.gz (x64, Arm32, Arm64), Snap (Snap Store).
- Mac:** .zip (Intel chip, Apple silicon, Universal), CLI (Intel chip, Apple silicon).

# Node JS

- Download
  - <https://nodejs.org/en/download>

**Downloads**

Latest LTS Version: 20.10.0 (includes npm 10.2.3)

Download the Node.js source code or a pre-built installer for your platform, and start developing today.

LTS	Current
Recommended For Most Users	Latest Features
 Windows Installer node-v20.10.0-x64.msi	 macOS Installer node-v20.10.0.pkg
 Source Code node-v20.10.0.tar.gz	

**Windows Installer (.msi)**

32-bit	64-bit	ARM64
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**Windows Binary (.zip)**

32-bit	64-bit	ARM64
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**macOS Installer (.pkg)**

64-bit / ARM64		
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**macOS Binary (.tar.gz)**

64-bit	ARM64
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**Linux Binaries (x64)**

64-bit		
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**Linux Binaries (ARM)**

ARMv7	ARMv8
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**Source Code**

node-v20.10.0.tar.gz		
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# Verify Node JS Installation

```
malik@DESKTOP-HVT445C MINGW64 /  
$ node --version  
v24.11.1
```

```
malik@DESKTOP-HVT445C MINGW64 /  
$ npm --version  
11.6.2
```

# Browser Sync

- <https://browsersync.io/>
- Auto reload the web page to make testing easier
- You can see the changes in your code live and confirm changes that you have made in the HTML code

# Installing Browser Sync

browser-sync --version

```
malik@DESKTOP-HVT445C MINGW64 /  
$ npm install -g browser-sync
```

added 146 packages in 7s

9 packages are looking for funding  
run `npm fund` for details

```
npm notice  
npm notice New minor version of npm available! 11.6.2 -> 11.7.0  
npm notice Changelog: https://github.com/npm/cli/releases/tag/v11.7.0  
npm notice To update run: npm install -g npm@11.7.0  
npm notice
```

```
malik@DESKTOP-HVT445C MINGW64 /  
$ |
```

# XAMPP

- <https://www.apachefriends.org/>

## XAMPP Apache + MariaDB + PHP + Perl

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### What is XAMPP?

XAMPP is the most popular PHP development environment

XAMPP is a completely free, easy to install Apache distribution containing MariaDB, PHP, and Perl. The XAMPP open source package has been set up to be incredibly easy to install and to use.



The XAMPP logo icon is a square with rounded corners. It features a stylized orange and white play button symbol in the center, surrounded by a circular pattern. Below the icon, the word "XAMPP" is written in a bold, black, sans-serif font.

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**Download**

Click here for other versions

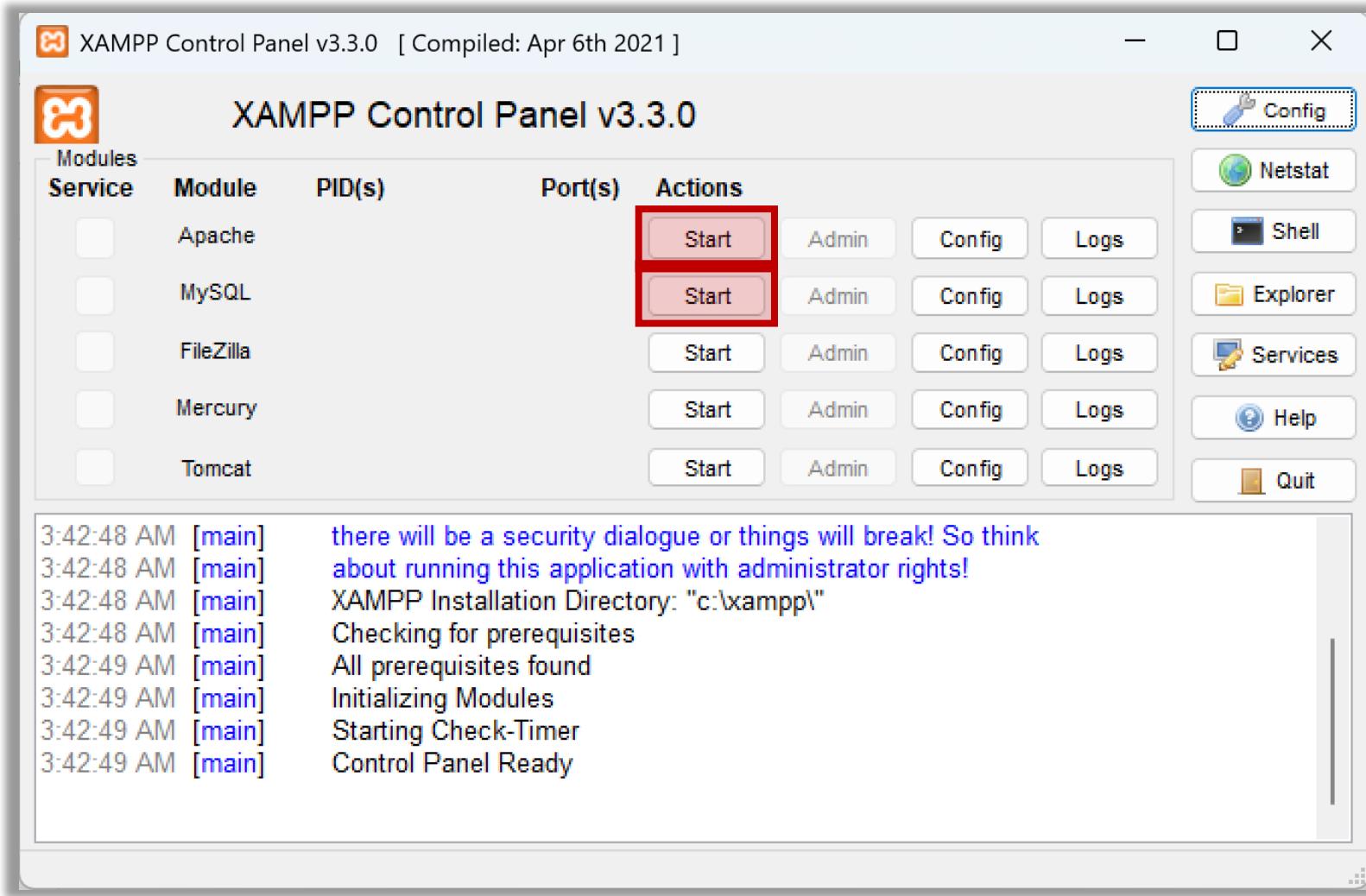


 XAMPP for Windows  
8.2.12 (PHP 8.2.12)

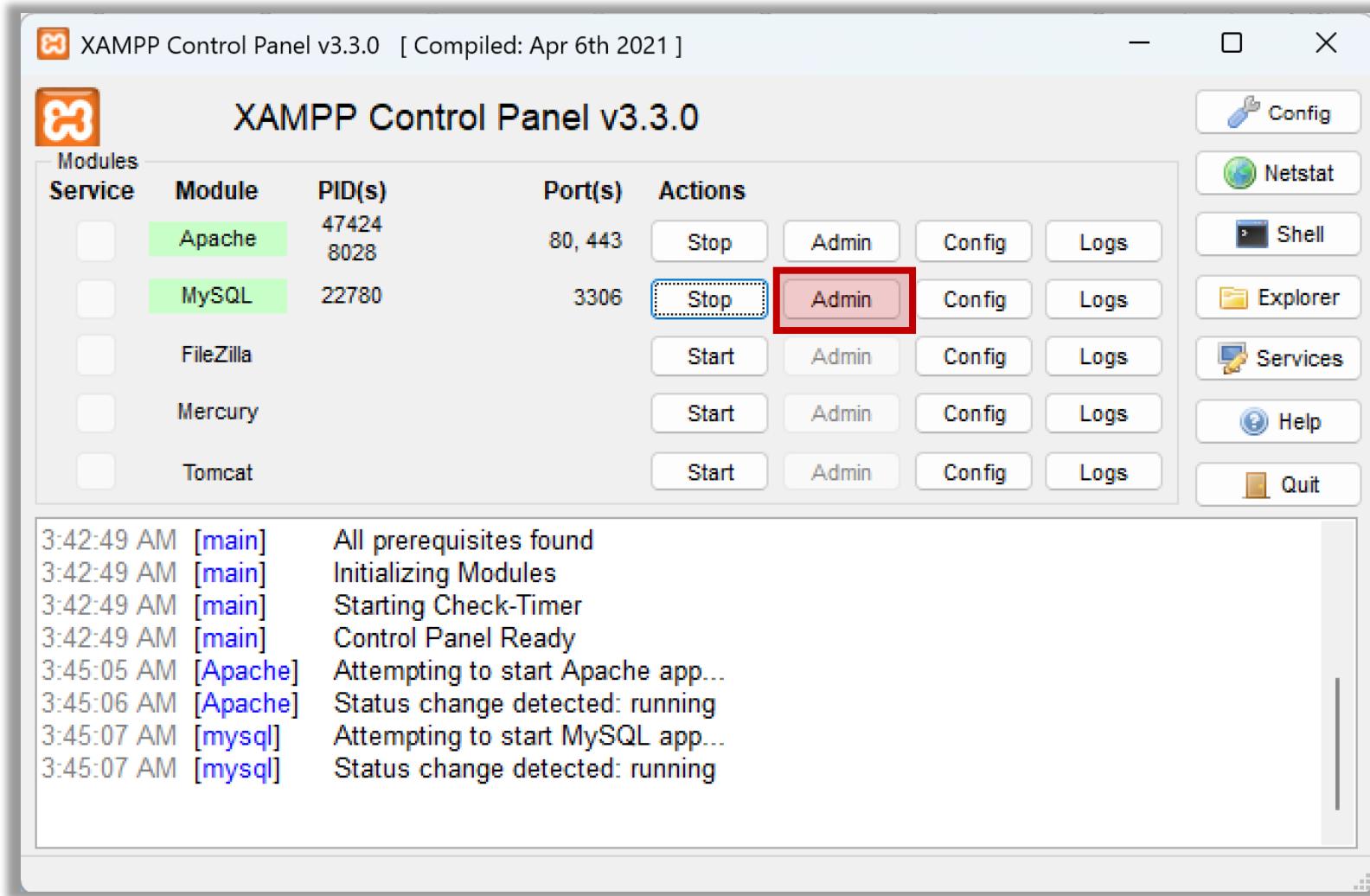
 XAMPP for Linux  
8.2.12 (PHP 8.2.12)

 XAMPP for OS X  
8.2.4 (PHP 8.2.4)

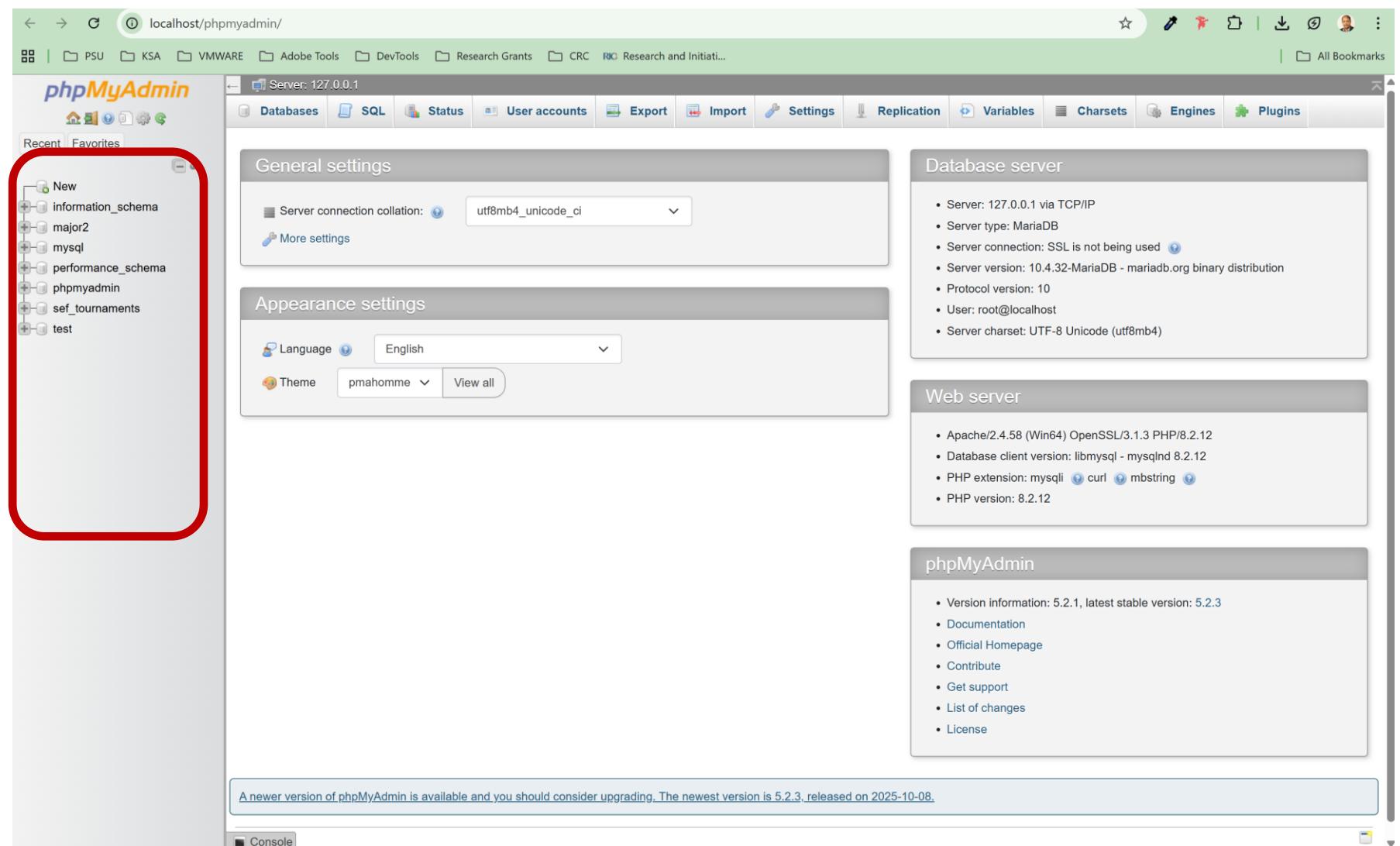
# XAMPP



# XAMPP



# XAMPP



The screenshot shows the phpMyAdmin interface running on a local server (localhost). The left sidebar displays a tree view of databases: New, information\_schema, major2, mysql, performance\_schema, phpmyadmin, sef\_tournaments, and test. The 'information\_schema' database is highlighted with a red box. The main content area contains several configuration sections:

- General settings:** Server connection collation is set to utf8mb4\_unicode\_ci.
- Appearance settings:** Language is set to English, and the theme is pmahomme.
- Database server:** Lists the server details: 127.0.0.1 via TCP/IP, MariaDB, SSL not being used, version 10.4.32-MariaDB, protocol 10, user root@localhost, and server charset UTF-8 Unicode (utf8mb4).
- Web server:** Lists Apache/2.4.58 (Win64) OpenSSL/3.1.3 PHP/8.2.12, database client libmysql - mysqlnd 8.2.12, PHP extensions mysqli, curl, mbstring, and PHP version 8.2.12.
- phpMyAdmin:** Version information: 5.2.1, latest stable version: 5.2.3. Links to Documentation, Official Homepage, Contribute, Get support, List of changes, and License.

A message at the bottom indicates a newer version (5.2.3) is available.

# MySQL Driver for Node

`sudo npm install -g mysql`

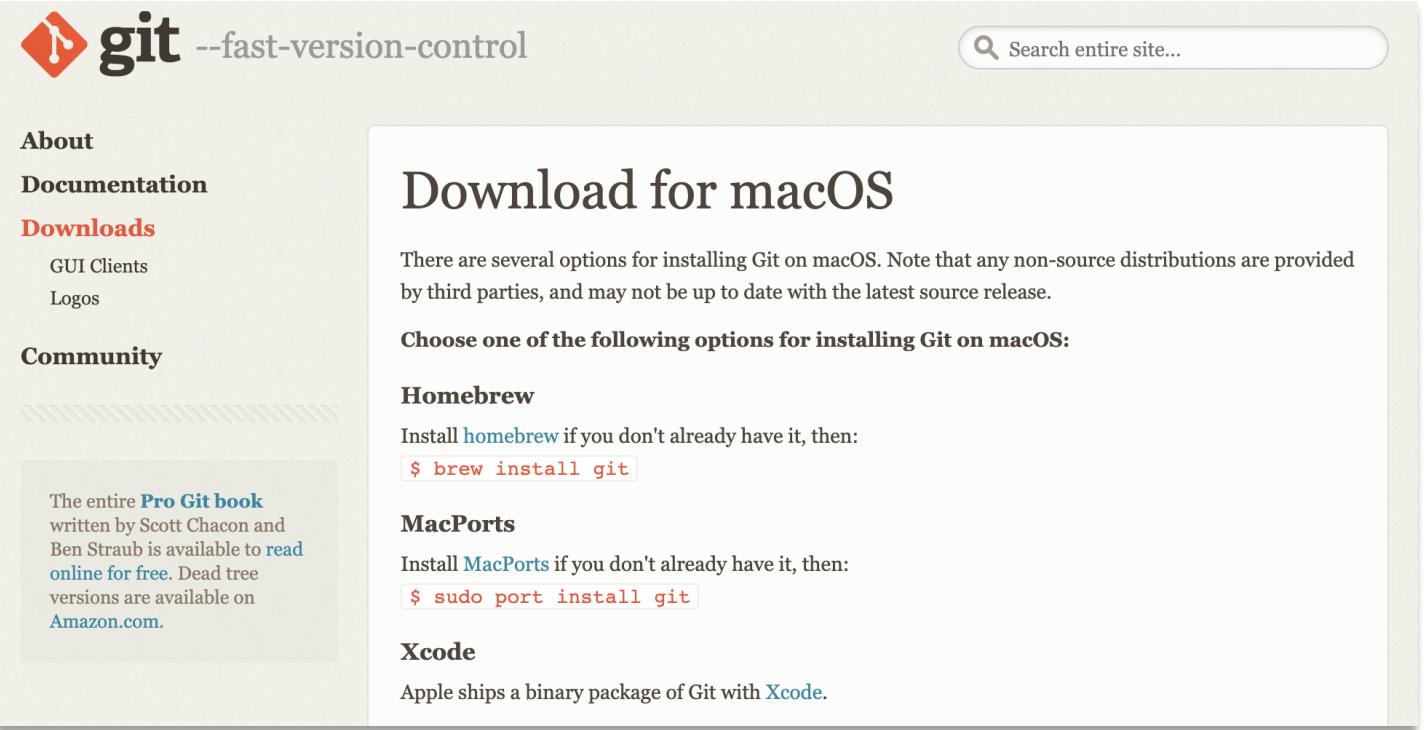
```
[m.g.abbasmalik@Ms-MacBook-Pro ~ % sudo npm install -g mysql
[Password:

added 11 packages in 3s
npm notice
npm notice New minor version of npm available! 10.2.4 -> 10.3.0
npm notice Changelog: https://github.com/npm/cli/releases/tag/v10.3.0
npm notice Run npm install -g npm@10.3.0 to update!
npm notice

m.g.abbasmalik@Ms-MacBook-Pro ~ %
```

# GIT

- <https://git-scm.com/download/mac>
- [https://brew.sh/ \(if needed\)](https://brew.sh/)



The screenshot shows the official Git website (<https://git-scm.com>) with a focus on the "Downloads" section for macOS. The page features a navigation bar with links for "About", "Documentation", "Downloads", and "Community". A sidebar on the left provides information about the "Pro Git book" by Scott Chacon and Ben Straub. The main content area is titled "Download for macOS" and explains that there are several options for installing Git on macOS, noting that non-source distributions are provided by third parties. It then lists four installation methods: "Homebrew", "MacPorts", "Xcode", and "Apple ships a binary package of Git with Xcode". Each method includes a command-line install instruction.

git --fast-version-control

About Documentation Downloads Community

The entire [Pro Git book](#) written by Scott Chacon and Ben Straub is available to [read online for free](#). Dead tree versions are available on [Amazon.com](#).

## Download for macOS

There are several options for installing Git on macOS. Note that any non-source distributions are provided by third parties, and may not be up to date with the latest source release.

**Choose one of the following options for installing Git on macOS:**

**Homebrew**

Install [homebrew](#) if you don't already have it, then:

```
$ brew install git
```

**MacPorts**

Install [MacPorts](#) if you don't already have it, then:

```
$ sudo port install git
```

**Xcode**

Apple ships a binary package of Git with [Xcode](#).

# GIT

- Version control system that will help us to manage code while we are working in this course and different projects
- Also helps to share and work as a team on the project.

<https://www.w3schools.com/git/> - A tutorial to learn how to work with GIT

# Postman

- <https://www.postman.com/>
- Download and Install
- Create a free account
- We will test HTTP request using this software

# How to use browser sync

1. Create a new folder where you want to save the test code for this course.
2. Create a simple HTML file **index.html**
3. Open the director in the terminal or command prompt and run the following command.

```
browser-sync start --server --directory --files "*.*"
```

# How to use browser sync

- Command will start a web server and run the index.html file in this folder.
- If you make any change in the index.html file, the server will monitor it and update the view in the browser automatically.

# All set to work in this course

Best of luck

**Let us familiarize with these softwares in the LAB Computers**

# HTML

# HTML - Hyper Text Markup Language

- Standard markup language for creating Web pages
- Describes the structure of a Web page
- A series of elements
- Tells the browser how to display page

# Basic Structure

Declares a HTML 5 document

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>IS311 - Web Development</title>
  </head>
  <body>
    <h1>IS311 Web Development</h1>
    <p>This is a paragraph. It also demos the auto update using browser sync.</p>
  </body>
</html>
```

Header part

Body part

# Basic Structure - Header

```
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>IS311 - Web Development</title>
</head>
```

- Header information about the web page
- Not displayed on the web page
- Title is displayed in the title bar or page's tab in the browser

**Search Engine Optimizations (SEO)**

# Basic Structure - Body

```
<body>
    <h1>IS311 Web Development</h1>
    <p>This is a paragraph. It also demos the auto update using browser sync.</p>
</body>
```

- The main contents that are displayed on the web page

# HTML Elements

- A start tag, some content, and an end tag

`<tagname> Content goes here... </tagname>`

`<body>`

.....

`</body>`

`<h1>IS311 Web Development</h1>`

`<p>This is a paragraph. It also demos the auto update using browser sync.</p>`

# HTML Elements

- Self closing elements

<br >

<img >

- HTML5: the slash is optional
- XHTML: the slash is required

Learn more about XHTML:

[https://www.w3schools.com/html/html\\_xhtml.asp](https://www.w3schools.com/html/html_xhtml.asp)

<area />  
<base />  
<br />  
<col />  
<embed />  
<hr />  
<img />  
<input />  
<link />  
<meta />  
<param />  
<source />  
<track />  
<wbr />

# W3C Vs

# WHATWG

- World wide web consortium
- Manages HTML standard
- Incorporates the new features of WHATWG into the standard on slower pace

- Working group of Apple, Google, Mozilla and Microsoft
- Continuously update HTML and update their browsers
- Test new features

# References

- [https://www.w3schools.com/html/html\\_intro.asp](https://www.w3schools.com/html/html_intro.asp)
- [http://xahlee.info/js/html5\\_non-closing\\_tag.html](http://xahlee.info/js/html5_non-closing_tag.html)