

IS311 Web Development

Week 01 - Lecture 02

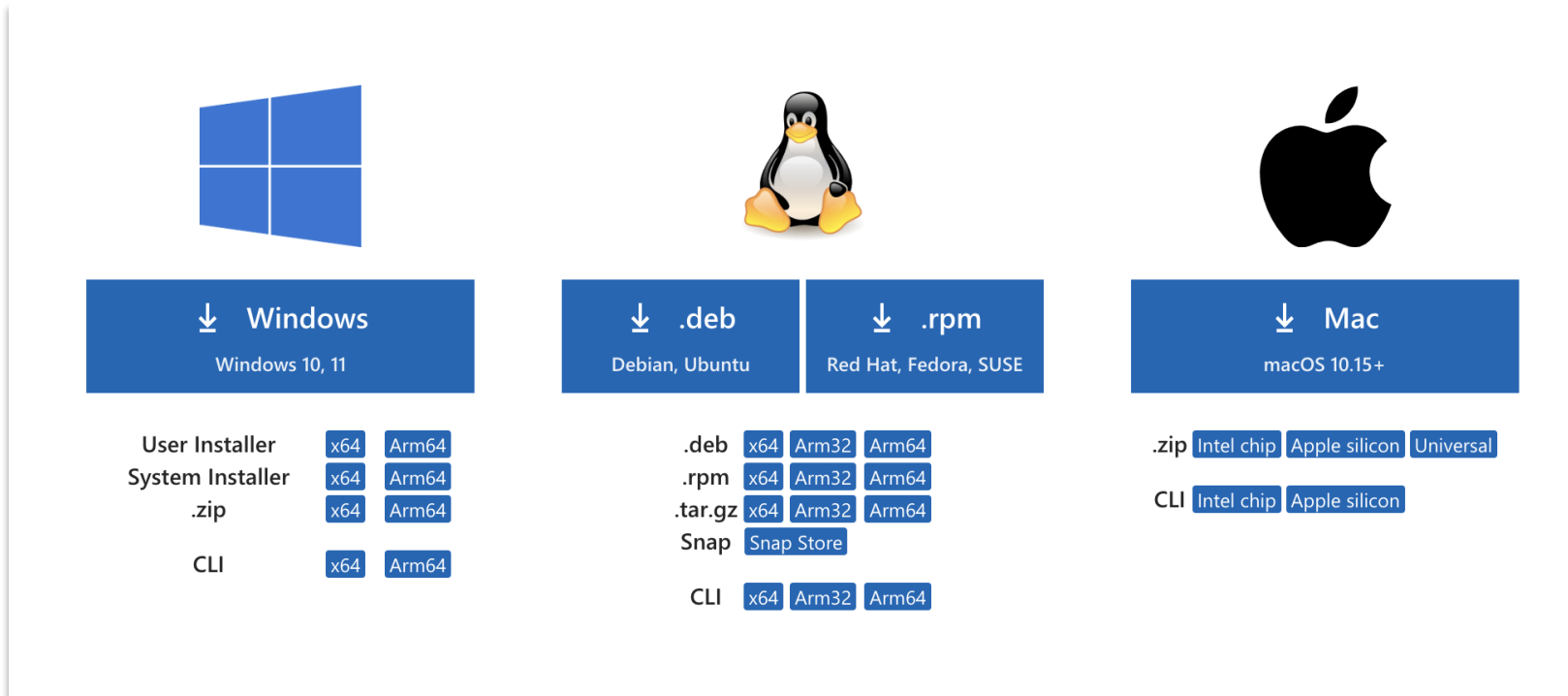
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Setting up Development Environment

- 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 screenshot displays the Visual Studio Code download page with three main sections: Windows, Linux, and Mac. Each section provides download links for various operating systems and architectures.

Windows

Windows 10, 11

User Installer	x64	Arm64
System Installer	x64	Arm64
.zip	x64	Arm64
CLI	x64	Arm64

Linux

Debian, Ubuntu (deb) | Red Hat, Fedora, SUSE (rpm)

.deb	x64	Arm32	Arm64
.rpm	x64	Arm32	Arm64
.tar.gz	x64	Arm32	Arm64
Snap	Snap Store		
CLI	x64	Arm32	Arm64

Mac

macOS 10.15+




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

Windows Installer (.msi)	32-bit	64-bit	ARM64
Windows Binary (.zip)	32-bit	64-bit	ARM64
macOS Installer (.pkg)	64-bit / ARM64		
macOS Binary (.tar.gz)	64-bit	ARM64	
Linux Binaries (x64)	64-bit		
Linux Binaries (ARM)	ARMv7	ARMv8	
Source Code	node-v20.10.0.tar.gz		

Veify 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


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.



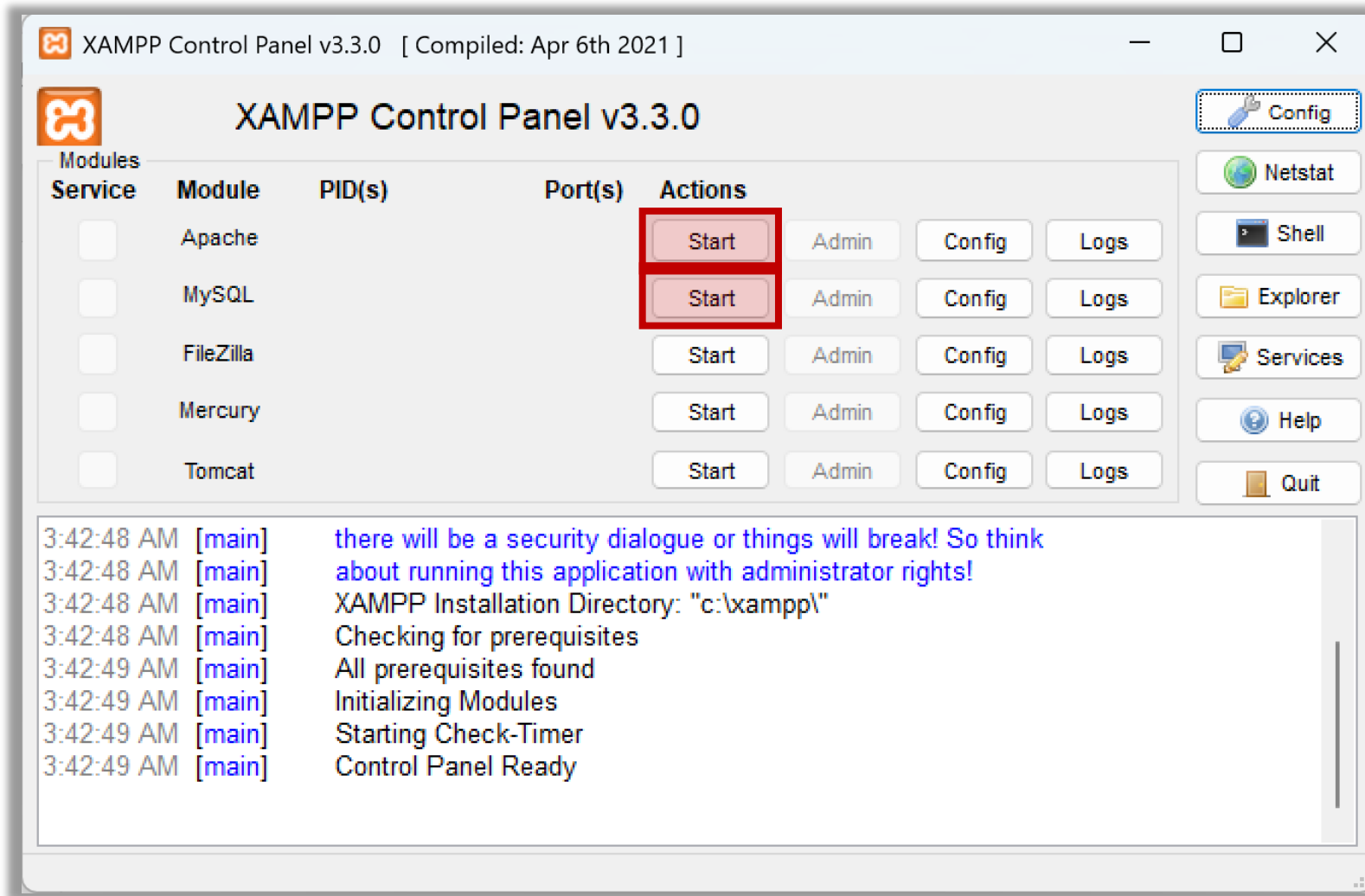
Download
Click here for other versions


XAMPP for Windows
 8.2.12 (PHP 8.2.12)

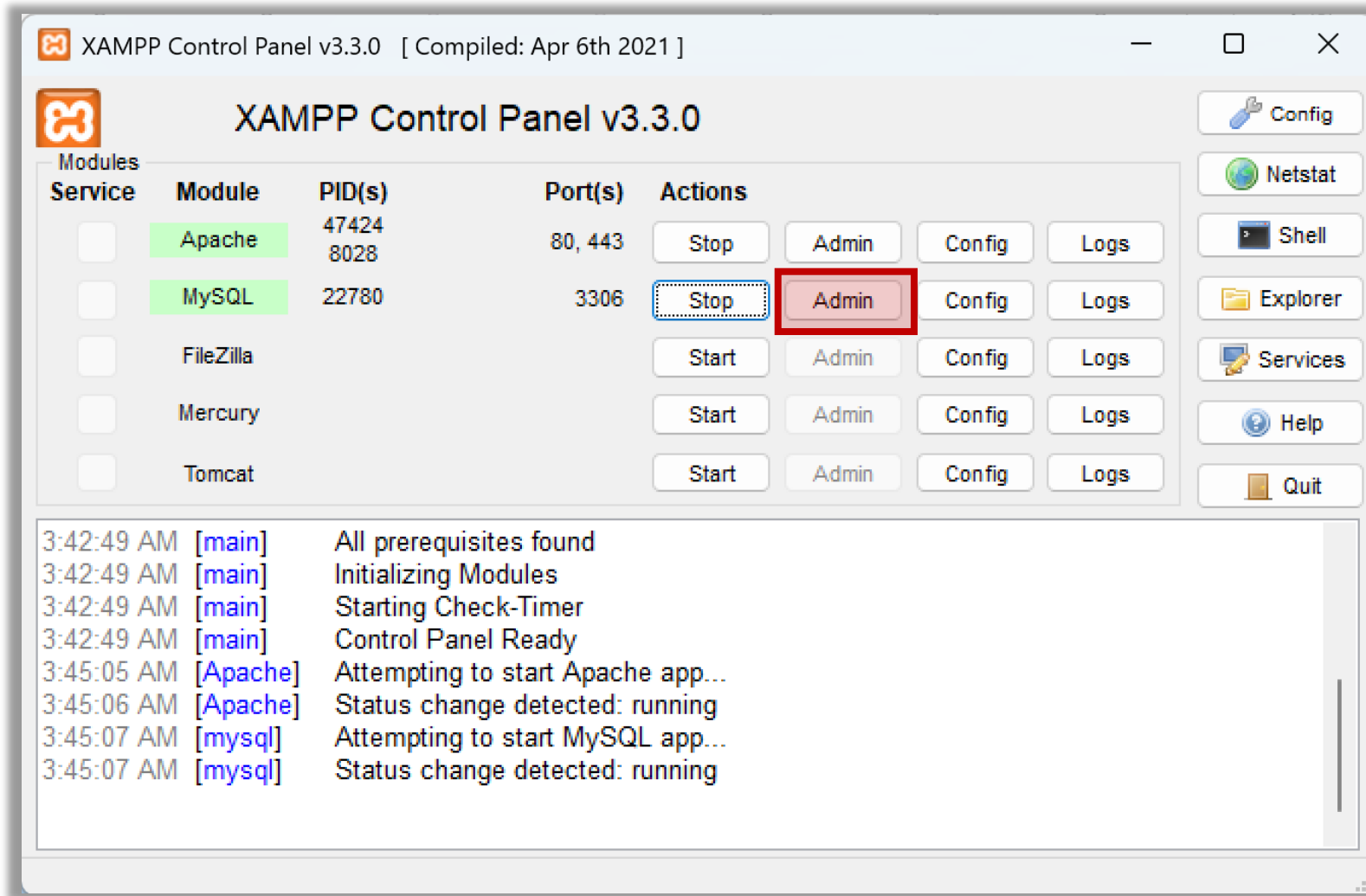

XAMPP for Linux
 8.2.12 (PHP 8.2.12)


XAMPP for OS X
 8.2.4 (PHP 8.2.4)

XAMPP



XAMPP



XAMPP

The screenshot shows the phpMyAdmin web interface in a browser window. The address bar indicates the URL is localhost/phpmyadmin/. The interface includes a top navigation bar with tabs for Databases, SQL, Status, User accounts, Export, Import, Settings, Replication, Variables, Charsets, Engines, and Plugins. The main content area is divided into several panels:

- General settings:** Displays 'Server connection collation' set to 'utf8mb4_unicode_ci' with a 'More settings' link.
- Appearance settings:** Shows 'Language' set to 'English' and 'Theme' set to 'pmahomme' with a 'View all' button.
- Database server:** Lists server details:
 - Server: 127.0.0.1 via TCP/IP
 - Server type: MariaDB
 - Server connection: SSL is not being used
 - Server version: 10.4.32-MariaDB - mariadb.org binary distribution
 - Protocol version: 10
 - User: root@localhost
 - Server charset: UTF-8 Unicode (utf8mb4)
- Web server:** Lists web server details:
 - Apache/2.4.58 (Win64) OpenSSL/3.1.3 PHP/8.2.12
 - Database client version: libmysql - mysqlnd 8.2.12
 - PHP extension: mysqli, curl, mbstring
 - PHP version: 8.2.12
- phpMyAdmin:** Provides version information (5.2.1, latest stable version: 5.2.3) and links to documentation, official homepage, contribute, get support, list of changes, and license.

On the left sidebar, a list of databases is shown, including 'New', 'information_schema', 'major2', 'mysql', 'performance_schema', 'phpmyadmin', 'sef_tournaments', and 'test'. This list is highlighted with a red rounded rectangle.

A notification at the bottom states: 'A newer version of phpMyAdmin is available and you should consider upgrading. The newest version is 5.2.3, released on 2025-10-08.'

MySQL Driver for Node

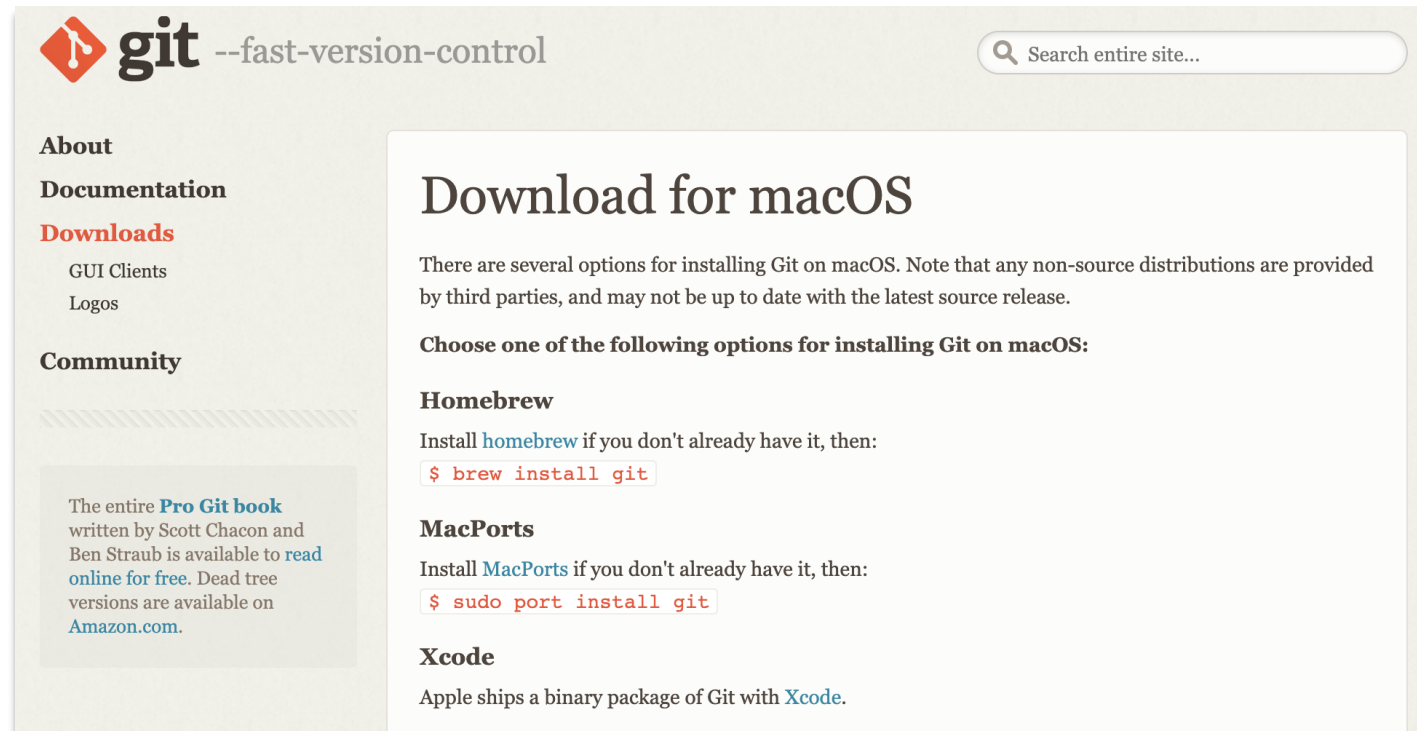
`sudo npm install -g mysql`

```
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)



The screenshot shows the Git website's macOS download page. The header includes the Git logo and the tagline "--fast-version-control". A search bar is located in the top right corner. The left sidebar contains links for "About", "Documentation", "Downloads" (highlighted in red), "GUI Clients", "Logos", and "Community". The main content area is titled "Download for macOS" and contains the following text:

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](#).

At the bottom of the sidebar, there is a note: "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](#)."

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 "*.html"
```

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 Strcutre

Declares a HTML 5 document

```
<!DOCTYPE html>
```

```
<html lang="en">
```

Header part

```
<head>
```

```
<meta charset="UTF-8">
```

```
<meta name="viewport" content="width=device-width, initial-scale=1.0">
```

```
<title>IS311 - Web Development</title>
```

```
</head>
```

```
<body>
```

Body part

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

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

```
</body>
```

```
</html>
```

Basic Strcutre - 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 Strcutre - 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

`
`

``

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

Learn more about XHTML:

https://www.w3schools.com/html/html_xhtml.asp

`<area />`
`<base />`
`
`
`<col />`
`<embed />`
`<hr />`
``
`<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
- http://xahlee.info/js/html5_non-closing_tag.html