

## Study Unit 2: MYSQL (My Structured Query Language)

### Outline

- MySQL database
- Top 5 web databases
- Domain and Hosting
- Xampp and Wamp Servers
- XAMPP – Installation
- MySQL – Phpmyadmin

### Learning Outcomes of Study Unit 2

Upon completion of this study unit, you should be able to

#### 1.1 Introduction to MySQL Database

- Definition

#### 1.2 Top 5 databases

- Oracle Database 12<sup>c</sup>
- MySQL
- SQL
- PostgreSQL
- MongoDB
- Maria DB

#### 1.3 Domain and Hosting

- What is Domain and Hosting?
- Top Hosting Companies
- Benefits of web-based database

#### 1.4 What is a Xampp and Wamp servers?

- Definition
- Xampp server Installation

#### 1.5 Development Tools

## 1.1 Introduction to MySQL Database

### What is MySQL Database?

MySQL is a fast, easy-to-use RDBMS being used for many small and big businesses. MySQL is developed, marketed and supported by MySQL AB, which is a Swedish company. MySQL is becoming so popular because of many good reasons –

- MySQL is released under an open-source license. So you have nothing to pay to use it.
- MySQL is a very powerful program in its own right. It handles a large subset of the functionality of the most expensive and powerful database packages.
- MySQL uses a standard form of the well-known SQL data language.
- MySQL works on many operating systems and with many languages including PHP, PERL, C, C++, JAVA, etc.
- MySQL works very quickly and works well even with large data sets.
- MySQL is very friendly to PHP, the most appreciated language for web development.
- MySQL supports large databases, up to 50 million rows or more in a table. The default file size limit for a table is 4GB, but you can increase this (if your operating system can handle it) to a theoretical limit of 8 million terabytes (TB).
- MySQL is customizable. The open-source GPL license allows programmers to modify the MySQL software to fit their own specific environments.

## 1.2 Top 5 Databases

Here are some popular types of databases.

### 1.2.1 Oracle Database

It's no surprise that Oracle is consistently at the top of lists of popular databases. The first version of this database management tool was created in the late 70s, and there are a number of editions of this tool available to meet your organization's needs.

The newest version of Oracle, 12c, is designed for the cloud and can be hosted on a single server or multiple servers, and it enables the management of databases holding billions of records. Some of the features of the latest version of Oracle include a grid framework and the use of both physical and logical structures.

This means that physical data management has no effect on access to logical structures. Additionally, security in this release is excellent because each transaction is isolated from others.

### **Pros**

You'll find the latest innovations and features coming from their products since Oracle tends to set the bar for other database management tools.

Oracle database management tools are also incredibly robust, and you can find one that can do just about anything you can possibly think of.

### **Cons**

The cost of Oracle can be prohibitive, especially for smaller organizations.

The system can require significant resources once installed, so hardware upgrades may be required to even implement Oracle.

Ideal for: Large organizations that handle enormous databases and need a variety of features.

## **1.2.2 MySQL Database**

MySQL is one of the most popular databases for web-based applications. It's freeware, but it is frequently updated with features and security improvements. There are also a variety of paid editions designed for commercial use. With the freeware version, there is a greater focus on speed and reliability instead of including a vast array of features, which can be good or bad depending on what you're attempting to do.

This database engine allows you to select from a variety of storage engines that enable you to change the functionality of the tool and handle data from different table types. It also has an easy to use interface, and batch commands let you process enormous amounts of data. The system is also incredibly reliable and doesn't tend to hog resources.

### **Pros**

It's available for free.

It offers a lot of functionality even for a free database engine.

There are a variety of user interfaces that can be implemented.

It can be made to work with other databases, including DB2 and Oracle.

### **Cons**

You may spend a lot of time and effort to get MySQL to do things that other systems do automatically, like create incremental backups.

There is no built-in support for XML or OLAP.

Support is available for the free version, but you'll need to pay for it.

Ideal for: Organizations that need a robust database management tool but are on a budget.

### 1.2.3 SQL

As with other popular databases, you can select from a number of editions of Microsoft SQL server. This database management engine works on cloud-based servers as well as local servers, and it can be set up to work on both at the same time. Not long after the release of Microsoft SQL Server 2016, Microsoft made it available on Linux as well as Windows-based platforms.

Some of the standout features for the 2016 edition include temporal data support, which makes it possible to track changes made to data over time. The latest version of Microsoft SQL Server also allows for dynamic data masking, which ensures that only authorized individuals will see sensitive data.

#### **Pros**

It is very fast and stable.

The engine offers the ability to adjust and track performance levels, which can reduce resource use.

You are able to access visualizations on mobile devices.

It works very well with other Microsoft products.

#### **Cons**

Enterprise pricing may be beyond what many organizations can afford.

Even with performance tuning, Microsoft SQL Server can gobble resources.

Many individuals have issues using the SQL Server Integration Services to import files.

Ideal for: Large organizations that use a number of Microsoft products.

### 1.2.4 PostgreSQL

PostgreSQL is one of several free popular databases, and it is frequently used for web databases. It was one of the first database management systems to be developed, and it allows users to manage both structured and unstructured data. It can also be used on most major platforms, including Linux-based ones, and it's fairly simple to import information from other database types using the tool.

This database management engine can be hosted in a number of environments, including virtual, physical and cloud-based environments. The latest version, PostgreSQL 9.5, offers larger data volumes and an increase in the number of concurrent users. Security has also been improved thanks to support for both DBMS\_SESSION and expanded password profiles.

#### **Pros**

This database management engine is scalable and can handle terabytes of data.

It supports JSON.

There are a variety of predefined functions.

A number of interfaces are available.

### **Cons**

Documentation can be spotty, so you may find yourself searching online in an effort to figure out how to do something.

Configuration can be confusing.

Speed may suffer during large bulk operations or read queries.

Ideal for: Organizations with a limited budget that want the ability to select their interface and use JSON

### **1.2.5 MongoDB**

Another free database that also has a commercial version, MongoDB is designed for applications that use both structured and unstructured data. The database engine is very versatile, and it works by connecting databases to applications via MongoDB database drivers. There is a comprehensive selection of drivers available, so it's easy to find a driver that will work with the programming language being used.

Since MongoDB wasn't designed to handle relational data models, even though it can, performance issues are likely to crop up if you attempt to use it this way. However, the database engine is designed to handle variable data that isn't relational, and it can often work well where other database engines struggle or fail.

MongoDB 3.2 is the latest version, and it features new pluggable storage engines. Documents can also now be validated during updates and inserts, and the text search functions have been improved. A new partial index capability also may allow for improved performance by shrinking the size of indexes.

### **Pros**

It's fast and easy to use.

The engine supports JSON and other NoSQL documents.

Data of any structure can be stored and accessed quickly and easily.

Schema can be written without downtime.

### **Cons**

SQL is not used as a query language.

Tools to translate SQL to MongoDB queries are available, but they add an extra step to using the engine.

Setup can be a lengthy process.

Default settings are not secure.

### **1.2.6 MariaDB**

This database management system is free, and like many other free offerings, MariaDB also offers paid versions. There are a variety of plugins available for it, and it's the fastest growing open source database available.

The database engine allows you to choose from a variety of storage engines, and it makes great use of resources via an optimizer that increases query performance and processing. It's also highly compatible with MySQL, and it is a drop in replacement with exact matching of commands and APIs because many of the developers of MySQL were involved in its development.

### **Pros**

The system is fast and stable.

Progress bars let you know how a query is progressing.

Extensible architecture and plugins allow you to customize the tool to match your needs.

Encryption is available at network, server and application levels.

## **Cons**

The engine is still fairly new, so there is no guarantee further updates and versions will be forthcoming.

As with many other free database engines, you have to pay for support.

Ideal for: Organizations looking for an affordable MySQL alternative

## **1.3 Domain and Hosting**

### **1.3.1 What is Domain name?**

A domain name is a unique name for a web site, like w3schools.com.

Domain names must be registered. When domain names are registered they are added to a large domain name register, and information about your

Computers on the Internet about your domain name and your site address.

#### **Registering a Domain**

Domains can be registered from domain name registration companies such as <https://www.onlydomains.com/>

These companies provide interfaces to search for available domain names and they offer a variety of domain name extensions that can be registered at the same time.

Domain Name Registration provides registration services for .com .net .org .biz .info .us .nu .ws .cc and .tv domains.

Newer domain extensions such as .biz .info and .us have more choices available as many of the popular domains have yet to be taken. While .com and .net domains are well established and recognized, most popular domains with these extensions are already registered.

### **1.3.2 What is Web Hosting?**

Web hosting is a service that allows organizations and individuals to post a website or web page onto the Internet. A web host, or web hosting service provider, is a business that provides the technologies and services needed for the website or webpage to be viewed in the Internet. Websites are hosted, or stored, on special computers called servers. When Internet users want to view your website, all they need to do is type your website address or domain into their browser. Their computer will then connect to your server and your webpages will be delivered to them through the browser

Most hosting companies require that you own your domain in order to host with them. If you do not have a domain, the hosting companies will help you purchase one.



### Here are some features you should be expecting from your hosting provider:

**Email Accounts** As mentioned earlier, most hosting providers require users to have their own domain name. With a domain name (e.g. [www.yourwebsite.com](http://www.yourwebsite.com)) and email account features provided by your hosting company, you can create domain email accounts (e.g. [yourname@yourwebsite.com](mailto:yourname@yourwebsite.com)).

**FTP Access** The use of FTP lets you upload files from your local computer to your web server. If you build your website using your own HTML files, you can transfer the files from your computer to the web server through FTP, allowing your website to be accessed through the internet.

**WordPress Support** WordPress is an online website creation tool. It is a powerful blogging and website content management system, which is a convenient way to create and manage website. WordPress powers over 25% of websites on the internet. Most hosting providers will tell you right away if their plans are WordPress-compatible or not. The simple requirements for hosting your WordPress



websites include: PHP version 7 or greater; MySQL version 5.6 or greater.

### **What is the World Wide Web?**

The Web is a network of computers all over the world.

All the computers in the Web can communicate with each other.

All the computers use a communication standard called HTTP.

### **How does the WWW work?**

Web information is stored in documents called web pages.

Web pages are files stored on computers called web servers.

Computers reading the web pages are called web clients.

Web clients view the pages with a program called a web browser.

Popular browsers are Internet Explorer and Mozilla Firefox.

### **How does a Browser Fetch a Web Page?**

A browser fetches a page from a web server by a request.

A request is a standard HTTP request containing a page address.

An address may look like this: <http://www.someone.com/page.htm>.

### **How does a Browser Display a Web Page?**

All web pages contain instructions for display

The browser displays the page by reading these instructions.

The most common display instructions are called HTML tags.

HTML tags look like this `<p>This is a Paragraph</p>`.

If you want to learn more about HTML, please visit our HTML tutorial.

### **What is a Web Server?**

The collection of all your web pages is called your web site.

To let others view your work, you must publish your web site.

To publish your work, you must copy your site to a web server.

Your own PC can act as a web server if it is connected to a network.

Most common is to use an Internet Service Provider (ISP).

### **What is an Internet Service Provider?**

ISP stands for Internet Service Provider.

An ISP provides Internet services.

A common Internet service is web hosting.

Web hosting means storing your web site on a public server.

Web hosting normally includes email services.

Web hosting often includes domain name registration.

### Summary

If you want other people to view your web site, you must copy your site to a public server. Even if you can use your own PC as a web server, it is more common to let an Internet Service Provider (ISP) host your site.

Included in a Web hosting solution you can expect to find domain name registration and standard email services.

You can read more about domain name registration, email and other services in the next chapters of this tutorial.

### 1.3.3 Web Hosting Concepts

Web hosting deals with putting the contents of your website on a Web server. Hosting your website on your own server could be an option. But this will become very much expensive unless you are hosting a site like yahoo.com or google.com. So this tutorial does not cover how to set up your own hosting server.

Buying a server space or renting a complete server from an Internet Service Provider (ISP) is the most widely used option. This section guides you to choose a hosting type and makes you aware of other related concepts.

### Hosting Platforms

You can go for any of the following two most widely used hosting platforms –

**Windows Hosting Servers** – If you are a Windows lover then you will find many hosting servers running different flavors of Windows and you can buy space from these servers. Normally Windows hosting servers are more expensive because of lot of software licensing costs are involved with these servers.

**Linux Hosting Servers** – If you want to go for Linux then opportunities are unlimited and they will have to pay less than what you will pay for Windows Hosting Server. There are many ISP who provides Hosting Servers with different flavors of Unix.

### Hosting Types

There are many options available and you can select any hosting type based on your requirement and budget. Following are most widely used hosting types –

### **Free Hosting**

Yes, this is true there are many service providers who will give you free space on their web server with a condition that you will allow them to run their advertisement at your web pages. So if you are OK with this option, then you have nothing to pay for a space. There are some websites like geocities.com, lycos.com, myspace.com, etc. that give you space to build your web pages.

### **Shared Hosting**

With shared hosting, your website is hosted on a powerful server along with other websites. On a shared host, you will have your own user ID and password to login to the shared host and you will be allowed to work in your work area. You would not be able to touch any file or directory belonging to other host partner. Even you would not know how many sites are hosted on your shared host. This type of hosting is very cost effective and good for small websites where your space and speed are not very important. Here traffic on one site will affect the speed of all other hosted sites.

### **Virtual Dedicated Hosting**

This type of hosting is better for medium size business. With virtual dedicated hosting, you will have a dedicated bandwidth and dedicated RAM for your site. You will be given a root ID and password to maintain your Web server. You will be the complete owner of your virtual dedicated server and will be able to install or de-install any software. This type of hosting is created on a single server, but it is managed in such a way that every user will have dedicated speed and bandwidth. This is bit more expensive but really good one for medium size business.

### **Dedicated Hosting**

This type of hosting is very similar to virtual dedicated hosting, but here, a complete machine will be allotted for you. They are more expensive than virtual dedicated hosting and should be considered when you have a very high traffic requirement.

### **Collocated Hosting**

It is very difficult to set dedicated resources such as high-security against fire and vandalism, regulated backup power, dedicated Internet connections and more. Collocation is the option which allows you to put your machine in a service provider's premises to avail all the available facilities. This is also a very expensive option and should be opted when you have very high traffic requirement.

## Hosting Components

When you buy a Web server space, then you should be clear about the follows. You should do a price comparison between different service providers based on the following components –

### Disc Space

A small or medium website will require between 10 and 100MB of disk space. If you plan to keep a lot of audio and video on your website, then you need plan to buy more space. Before buying server space, you should check the options available to expand your disc space if you need it in future.

### Monthly Traffic

A small or medium website will need between 1GB and 10GB of data transfer on a monthly basis. If you plan to keep a lot of audio and video on your website, then you need a plan with more data transfer capacity. Check different options based on your requirements. What are the other options available in case you cross the given data transfer limit. Your site should not be stopped in case you exceed given limit.

### Processing Speed

If you are buying space on a shared machine, then you cannot guess how much speed will be given to you. In that case, only way is to see other hosted sites with the same service provider to know about their hosting quality. But if you are buying virtual dedicated server or dedicated server, then you should consider how much RAM is being allocated to you. Your pricing will depend on the given processing power to you.

### Connection Speed

Nowadays, most service providers allow very fast connection speed. So choose a service provider who is giving better connection speed in terms of bits per second. You can have a connection speed ranging from 64Kb per second to 2.488Gb per second.

### Email Accounts

Make sure you are going to get sufficient number of e-mail accounts. There are many other options available which come along with your e-mail account. Like, will you get IMAP, POP and E-mail Forwarding options available along with your e-mail facilities.

### Emailing Support

Apart from having email accounts, it is also very important that your web server should have a facility to send emails from back-end. In case your site visitors want to contact to you using a form, then you will be able to use that emailing facility to send

emails to your designated account. In simple terms, you should make sure that the SMTP Server is setup and working on your Web server.

### **Latest Technologies**

You should make sure that your web server is equipped with all the latest technologies. It should have the latest version support for PHP, PERL, ASP and JAVA, etc.

### **Databases**

There are many databases available MySQL, Oracle, SQL Server, etc. You should choose your server based on your database requirement. If you are buying space on a shared server, then you need to verify how much space will be allocated for your database. Many ISPs do not give more than a limited space for databases. If your site needs a lot of database size, then you should go for a virtual dedicated server.

### **Server Uptime**

It is important that you buy a web server from a reliable and reputed ISP. You should make sure your ISP is giving you 99.99% server uptime. If the server is down, then there are many service providers who give you compensation in case your site goes down more than a limited number of times.

### **Backup & FTP**

Make sure your Service Provider is giving you more ways of taking regular backup of your website. If your site is changing everyday, then it becomes very important that you should take regular backup of your website. Many service providers do it on your behalf by charging a small cost for this service.

### **Control Panel**

Just make sure what type of facilities you will get to maintain your hosting account. Check if your service provider is providing you an easy-to-use Control Panel or some other similar tool. Using a Control Panel, you should be able to maintain basic operations related to your website such as logging your service request, your reboot request, or any other problem.

### **Customer Support**

Before finalizing a deal with your service provider, you should make sure they provide you the required support. You can get this information using Internet forums or from your friends. There are many service providers who give you 24x7 support for any technical or non-technical problem.

## Web Hosting Companies

Following are the several companies offering web hosting service:

S.N.	Hosting Company
1.	Blue Host
2.	Go Daddy
3.	Host Gator
4.	just Host
5.	Laughing Squid
6.	Hivelocity
7.	liquid Web
8.	Media TempleServInt
9.	Wired Tree
10.	Wild West Domains
11.	Wix
12.	WIPL
13.	Big Rock

### 1.3.5 The Advantages of Web-Based Databases

When running a business, investing in database software makes it possible to keep track of valuable information for your company and helps your employees maintain access to this

important data. Using an online database involves accessing a website to store your information and provides several advantages over other methods of preserving data.

### **Save Money**

One of the advantages of online database software is that it can save your business money. When you don't need to buy a software program for your business, this could result in a major savings overall. In most cases, businesses pay for a software program and then pay for a licensing fee for each computer that uses it. Using an online database may prove cheaper, depending on the number of computers you use. You also don't need to invest in servers to store the data at your business.

### **Flexible Use**

Another benefit of using an online database program is that it allows your business to be flexible. You only pay for the amount of storage that you use. You need not worry about purchasing servers as you go or eliminating them when they are no longer needed. If your business grows or shrinks, you do not need to be concerned about the costs of database management software or servers.

### **Technical Support**

Another advantage of using a Web-based database program is that you can shift the technical support burden to someone else. Paying a company for access to an online database includes technical support. If the database has problems, you simply contact the company and the staff handles it. You don't need to pay for an information technology professional for this purpose. If you already have an IT department, your employees can focus on other things.

### **Access**

Having access to the database at all times from multiple locations is another major advantage of this type of database. With an online database, you could theoretically access the information in the database from any computer. The information is also available 24 hours a day, seven days a week. This means that all employees have access to the same information and can collaborate with one another on projects -- regardless of location. This advantage can increase productivity and improve efficiency.

## **1.4 XAMPP AND WAMP**

### **1.4.1 Difference of Xampp and Wamp**

**WAMP** stands for *windows*, *apache*, *MySQL*, *php*.

- **XAMPP** stands for *x-os*, *apache*, *MySQL*, *php*, *Perl*.

(x-os means it can be used for any operating system.)

- **xampp** is *easy to use* than **wamp**.
- The **best** advantage of using **wamp** is that it is *easy to setup configuration* in wamp.
- **xampp** *cpanel* is very nice and good for beginner.
- **Xampp** *start, pause* and *stop* button *work very* nicely by functionality.
- You can *add other services* to **xampp** also
- **XAMPP** is more powerful and *resource consuming* than **WAMP**.
- **WAMP** provides support for **MySQL** and **PHP**.
- **XAMPP** provides support for **MYSQL**, **PHP** and **PERL**.
- **XAMPP** also has *SSL feature* while **WAMP** doesn't.
- **WAMP** provides support for **MySQL** and **PHP**.
- **XAMPP** provides support for **MYSQL**, **PHP** and **PERL**.
- If your applications need to deal with *native web apps* only, Go for **WAMP**.
- If you need *advanced features* as stated above, go for **XAMPP**.
- As of *priority*, you *cant run both together* with default installation as **XAMPP gets a higher priority** and it takes up ports.
- So **WAMP** cant be run in parallel with **XAMPP**.



### 1.4.2 How to Install XAMPP on Windows?

**XAMPP** is the most popular software package which is used to set up a PHP development environment for web services by providing all the required software components. During the process of software deployment, most of the web servers use almost similar components, so use of **XAMPP** provides easy transition from local server to live server.

**XAMPP** is a **AMP** stack which stands for Cross platform, **A**pache, **M**ySQL, **P**HP, **p**erl with some additional administrative software tools such as PHPMyAdmin (for database access), FileZilla FTP server, Mercury mail server and JSP Tomcat server. Other commonly known software packages like XAMPP are WAMP, LAMP, and others.

The XAMPP server is used to test PHP pages. It works as local server. It contains a MySQL database to manage or save data on a local server.

#### **Advantages of XAMPP:**

- It is free and easy to use and easily available for Windows, Linux and Mac OS .
- It is a beginners friendly solution package for full stack web development.
- It is a **open source** software package which gives a easy installation experience.
- It is very simple and **lightweight** to create set up for development, testing and deployment.
- It is a time-saver and provides several ways for managing configuration changes.
- It handles many administrative tasks like checking the status and security

### 1.4.3 Software Components of XAMPP

**Apache** plays the role of processing the HTTP request. It is the actual default web server application. It is the most popular web servers maintained by Apache Software Foundation.

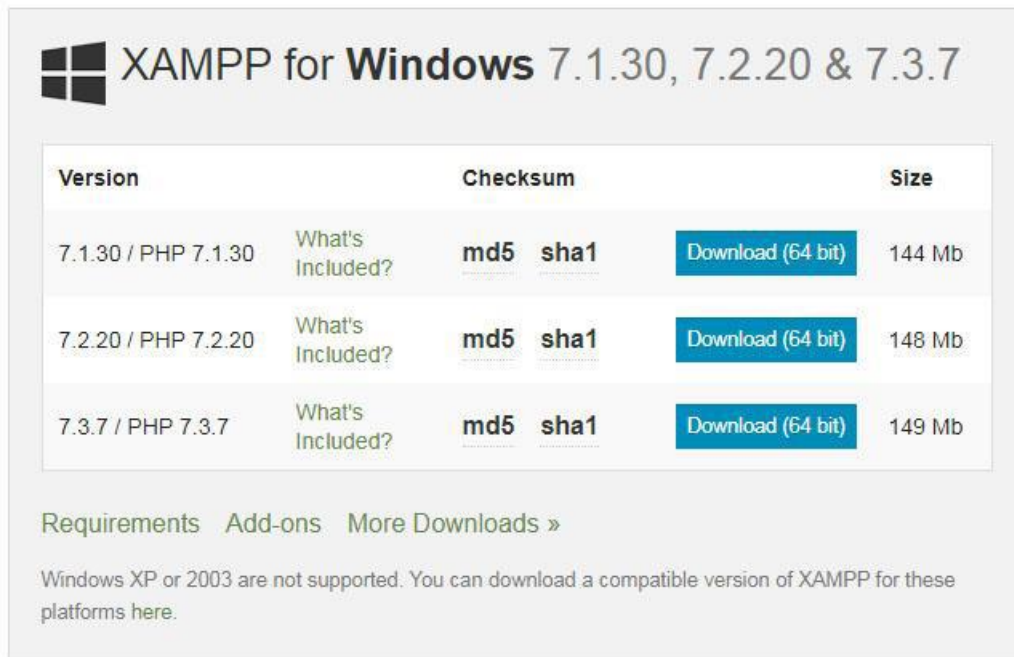
**MySQL** The role of database management system in XAMPP is played by MySQL. It helps to store and manage collected data very efficiently. It is an open-source and most popular.

**PHP** is the server-side scripting language which stand for Hypertext Preprocessor. It is embedded with HTML code which interacts with the webserver. It is an open-source and work well with MySQL and has become a common choice for web developers.

**Perl** is the high-level programming language designed for text editing which serves purpose like web development and network programming.

### Steps to install XAMPP on Windows:

In the web browser, visit Apache Friends and download XAMPP installer.



Version	Checksum	Size
7.1.30 / PHP 7.1.30	What's Included? <a href="#">md5</a> <a href="#">sha1</a> <a href="#">Download (64 bit)</a>	144 Mb
7.2.20 / PHP 7.2.20	What's Included? <a href="#">md5</a> <a href="#">sha1</a> <a href="#">Download (64 bit)</a>	148 Mb
7.3.7 / PHP 7.3.7	What's Included? <a href="#">md5</a> <a href="#">sha1</a> <a href="#">Download (64 bit)</a>	149 Mb

[Requirements](#) [Add-ons](#) [More Downloads »](#)

Windows XP or 2003 are not supported. You can download a compatible version of XAMPP for these platforms [here](#).

During the installation process, select the required components like MySQL, FileZilla ftp server, PHP, phpMyAdmin or leave the default options and click the **Next** button.



Uncheck the **Learn more about bitnami** option and click **Next** button.

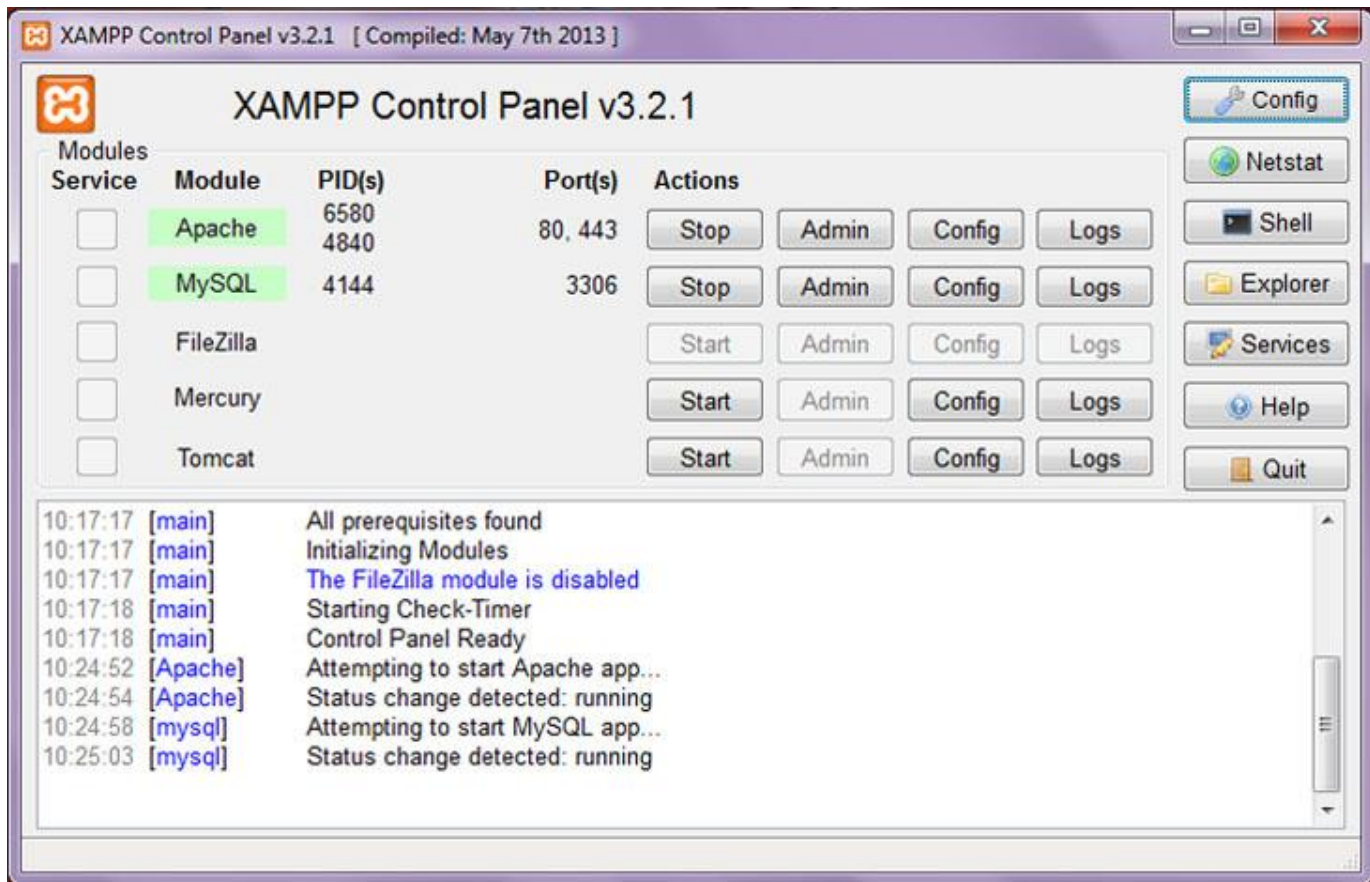
Choose the root directory path to set up the *htdocs* folder for our applications. For example '*C:\xampp*'.

Click the **Allow access** button to allow the XAMPP modules from the Windows firewall.

After the installation process, click the **Finish** button of the XAMPP Setup wizard.

Now the XAMPP icon is clearly visible on the right side of start menu. Show or Hide can be set by using the control panel by clicking on the icon.

To start Apache and MySQL, just click on the **Start** button on the control panel.



**Note:** Suppose Apache is not starting, it means some other service is running at port **80**. In this case, stop the other service temporarily and restart it.

**Making server request:** Open your web browser and check whether the XAMPP service has properly installed or not. Type in the URL: **http://localhost**. If you are able to see the default page for XAMPP, you have successfully installed your XAMPP Server.

**To Check if PHP is Working:** All the website related files are organized in a folder called *htdocs* and then run index.php file by using **http://localhost/index.php** or **http://localhost**.

**Note:** For every new website or application, its always better to create a different folder inside *htdocs*, to keep it organized and avoid confusion.

For example, if we create a folder *kiu* and then create a file nameed as '*helloWorld.php*'. All the contents related to it are put inside the folder '*kiu*'. So the root 'URL' of the website will be '**http://localhost/kiu/**'. So any home page is accessed by typing the root URL in the browser. To see the output, just type '**http://localhost/kiu/helloWorld.php**'.

Generally web servers look for index file (landing page) namely **index.html** or **index.php** in the root of the website folder. Go to **/xampp/htdocs/** folder and create a file with **.php** extension (*test.php*) and type or copy the below code and save it.

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

Now open your browser and go to “<http://localhost/test.php>” if you see the page same as below then PHP has successfully installed.



PHP Version 5.6.3	
System	Windows NT RAKESH-PC 6.1 build 7601 (Windows 7 Home Premium Edition Service Pack 1) i586
Build Date	Nov 12 2014 17:12:19
Compiler	MSVC11 (Visual C++ 2012)
Architecture	x86
Configure Command	cmdscript /nologo configure.js "--enable-snapshot-build" "--disable-isapi" "--enable-debug-pack" "--without-mssql" "--without-pdo-mssql" "--without-pdoweb" "--with-pdo-oci=c:\php-sdk\oracle\x86\instantclient_12_1\sdk\shared" "--with-oci8-12c=c:\php-sdk\oracle\x86\instantclient_12_1\sdk\shared" "--enable-object-out-dir=.\obj/" "--enable-com-dotnet=shared" "--with-mcrypt=static" "--without-analyzer" "--with-pgo"
Server API	Apache 2.0 Handler
Virtual Directory Support	enabled
Configuration File (php.ini) Path	C:\Windows
Loaded Configuration File	C:\xampp\php\php.ini
Scan this dir for additional .ini files	(none)
Additional .ini files parsed	(none)
PHP API	20131106
PHP Extension	20131226
Zend Extension	220131226
Zend Extension Build	API220131226,TS,VC11
PHP Extension Build	API20131226,TS,VC11
Debug Build	no
Thread Safety	enabled

**Note:** In XAMPP, the configuration files of Apache, MySQL, PHP are located in **C:\Program Files\xampp**. For any configuration file changes, you need to restart Apache and MySQL.

## 1.5 Development Tools

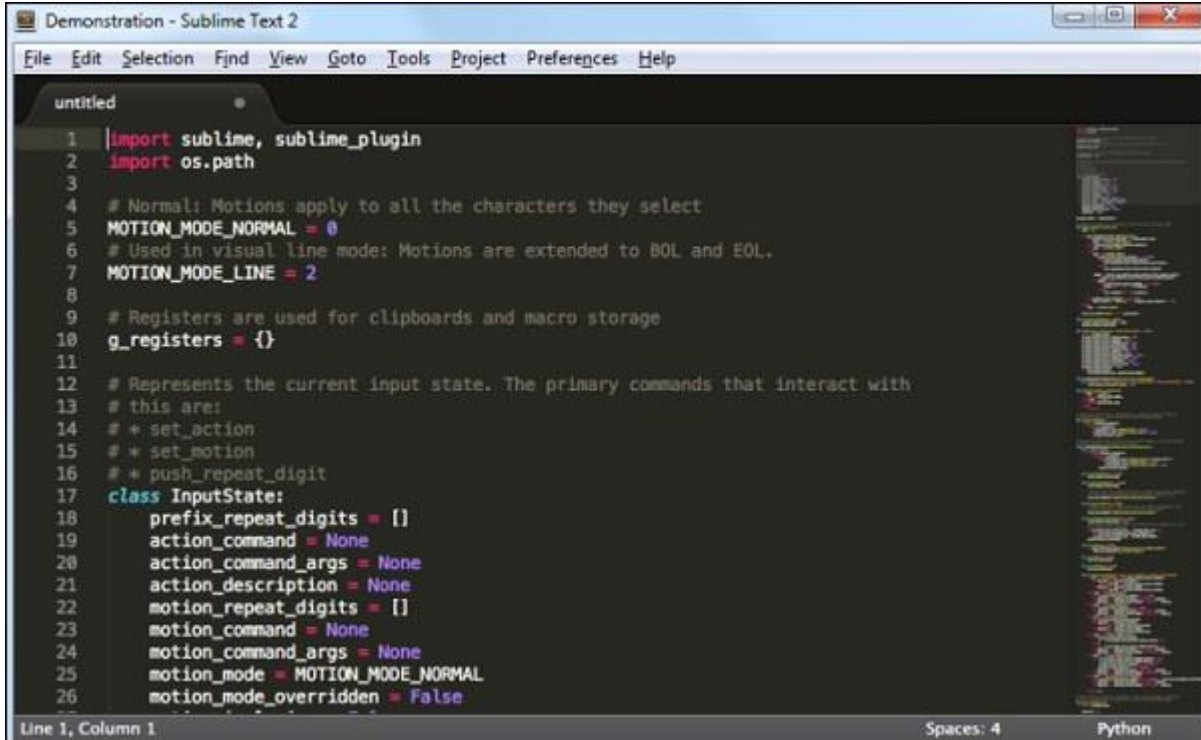
As you now know the fundamental necessities for developing a website as a beginner developer, you will need some tools that you should have for primary usage.

Firstly, you should have a basic package of internet that has a good upload speed, minimally 1Mbps. Secondly, you should have a computer with any Operating System (it can be Linux, iOS X or Windows). Then the hardware specifications should be minimum – 1-2 GB RAM, Processor should be at least a Dual-Core one and the hard disk must be around 80 GB.

The next step is – you should have a text editor that will help you for code writing and editing. Some of the best text editors for this purpose are as mentioned below.

## Text Sublime

Text sublime can be downloaded from <https://www.sublimetext.com/>. It is good because the text changes the color of the parameters depending on their functions.



```

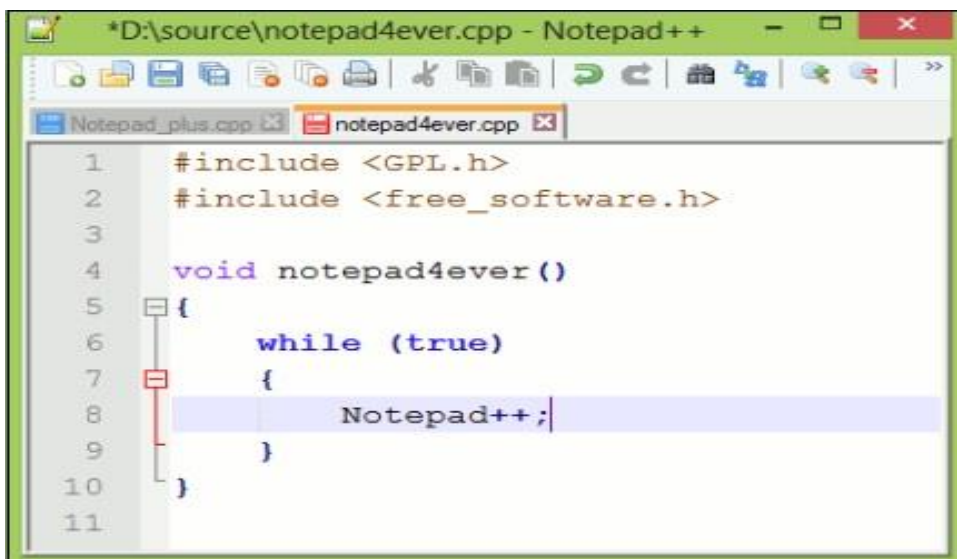
Demonstration - Sublime Text 2
File Edit Selection Find View Goto Tools Project Preferences Help

untitled
1 | import sublime, sublime_plugin
2 | import os.path
3
4 # Normal: Motions apply to all the characters they select
5 MOTION_MODE_NORMAL = 0
6 # Used in visual line mode: Motions are extended to BOL and EOL.
7 MOTION_MODE_LINE = 2
8
9 # Registers are used for clipboards and macro storage
10 g_registers = {}
11
12 # Represents the current input state. The primary commands that interact with
13 # this are:
14 # * set_action
15 # * set_motion
16 # * push_repeat_digit
17 class InputState:
18     prefix_repeat_digits = []
19     action_command = None
20     action_command_args = None
21     action_description = None
22     motion_repeat_digits = []
23     motion_command = None
24     motion_command_args = None
25     motion_mode = MOTION_MODE_NORMAL
26     motion_mode_overridden = False
  
```

Line 1, Column 1      Spaces: 4      Python

## Notepad++

Another popular text editor is Notepad ++ that can be downloaded from – <https://notepad-plus-plus.org/>.



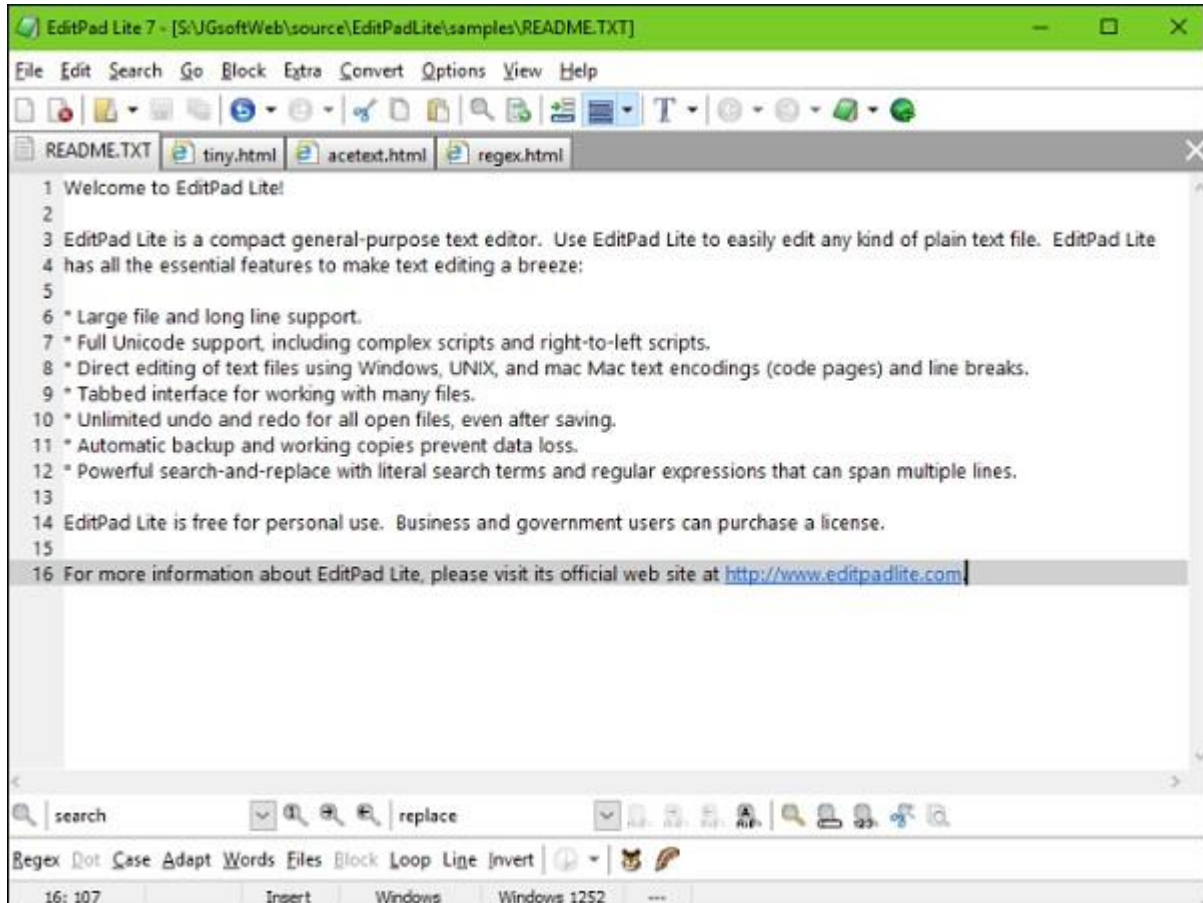
```

*D:\source\notepad4ever.cpp - Notepad++
Notepad_plus.cpp notepad4ever.cpp
1 | #include <GPL.h>
2 | #include <free_software.h>
3
4 | void notepad4ever()
5 | {
6 |     while (true)
7 |     {
8 |         Notepad++;
9 |     }
10 | }
11
  
```



## Editpad

The next one in the list of most popular text editors is EditPad, which is another free tool. It can be downloaded from – <https://www.editpadlite.com/>.



**Note** – You should always use a text editor that you feel more comfortable working on.

## XAMPP & LAMPP

Another tool that you need to have in your computer when you are specially developing a dynamic webpage is – XAMPP for Windows OS and LAMPP for Linux OS. It has various products such as

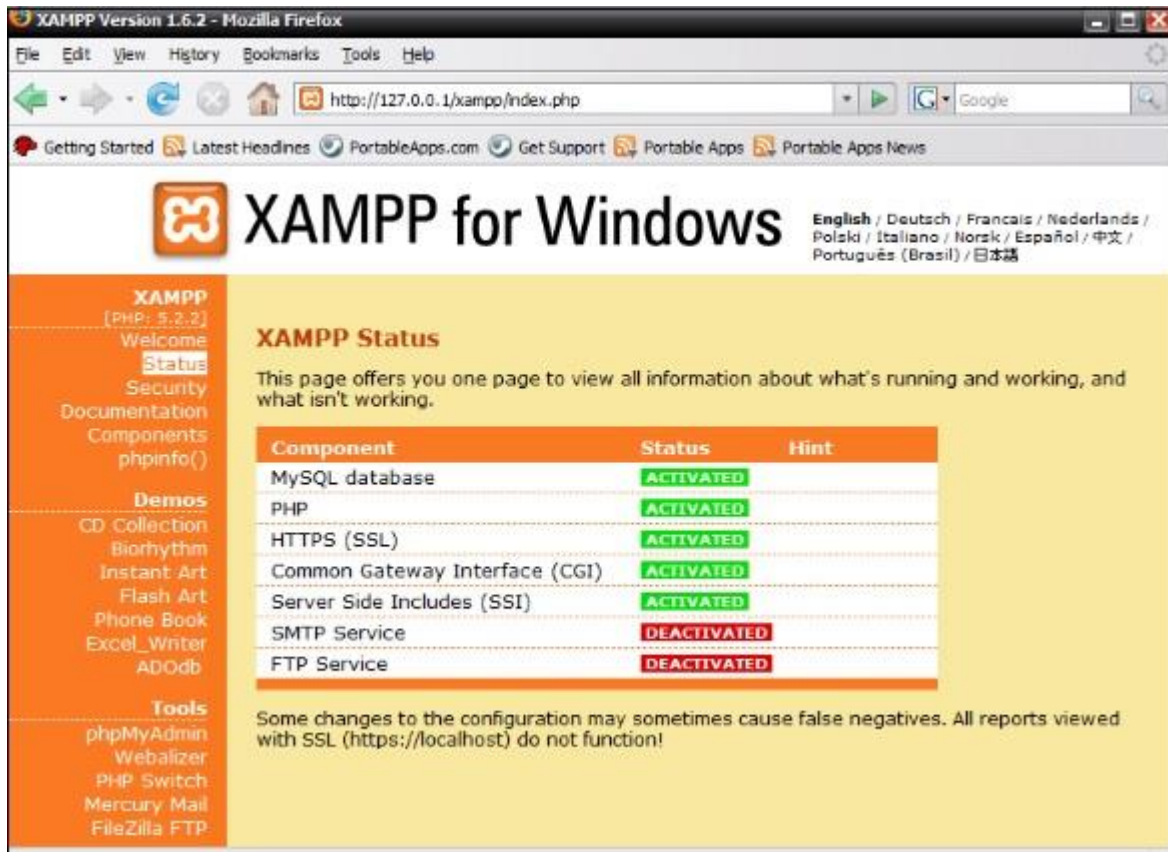
Web Apache

MariaDB with phpMyAdmin for DB Management

PHP and

Perl Extra.

If you want, you can also create an FTP Server and Mail Server with Mercury.

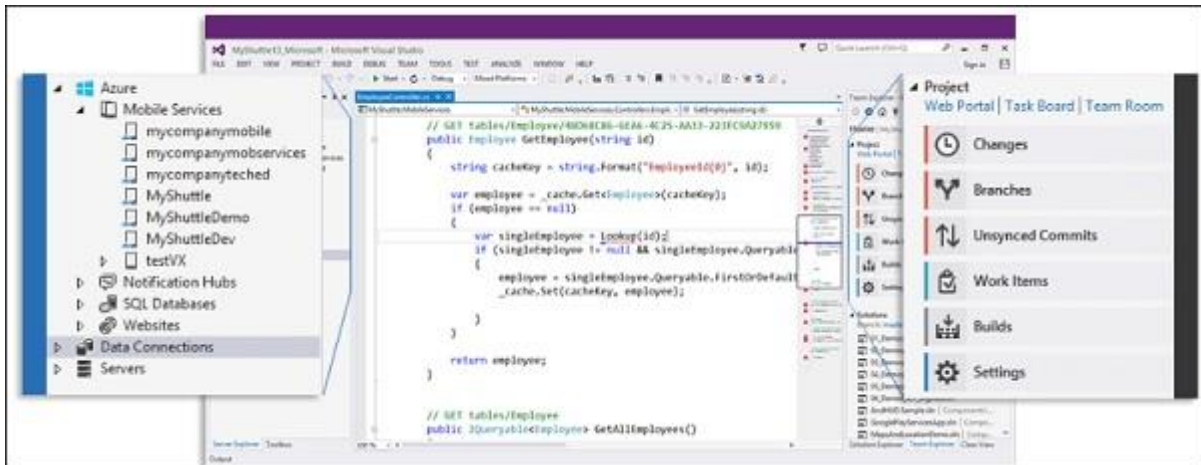


Another similar tool like XAMPP is **WAMPSEVER**, which can be downloaded from the following link – <http://www.wampserver.com/en/>.

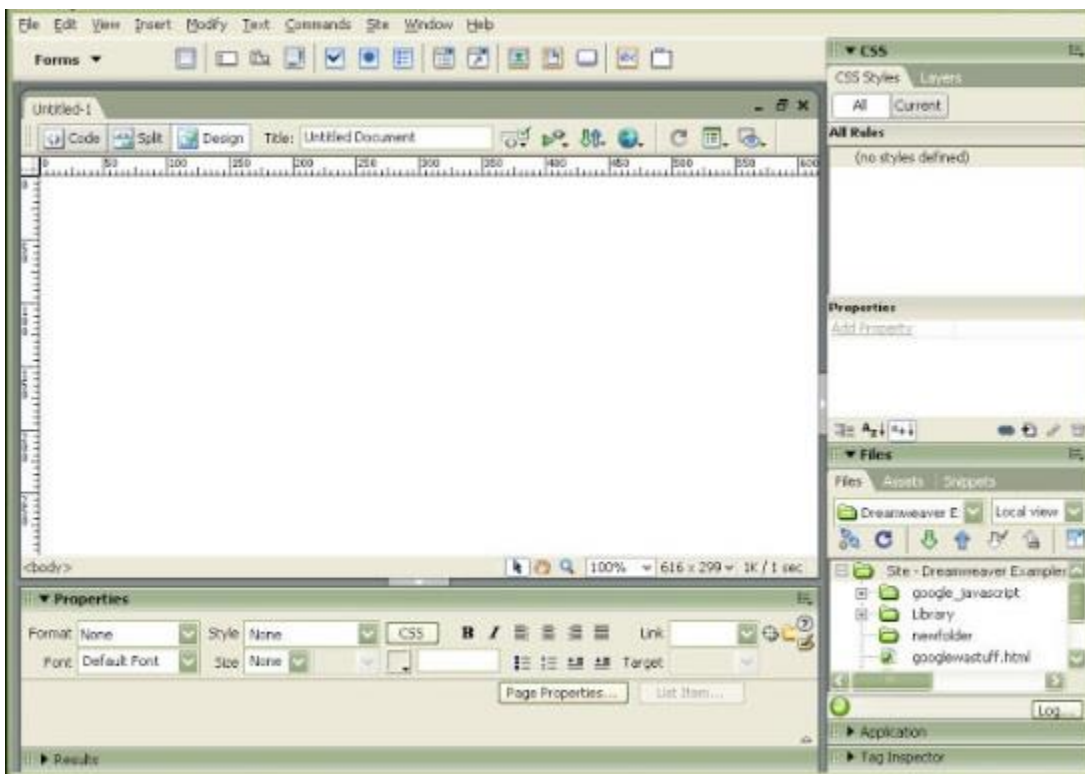


For developers who want to code ASP should have Visual Studio provided by Microsoft. It can be downloaded from – <https://www.microsoft.com/web/>.





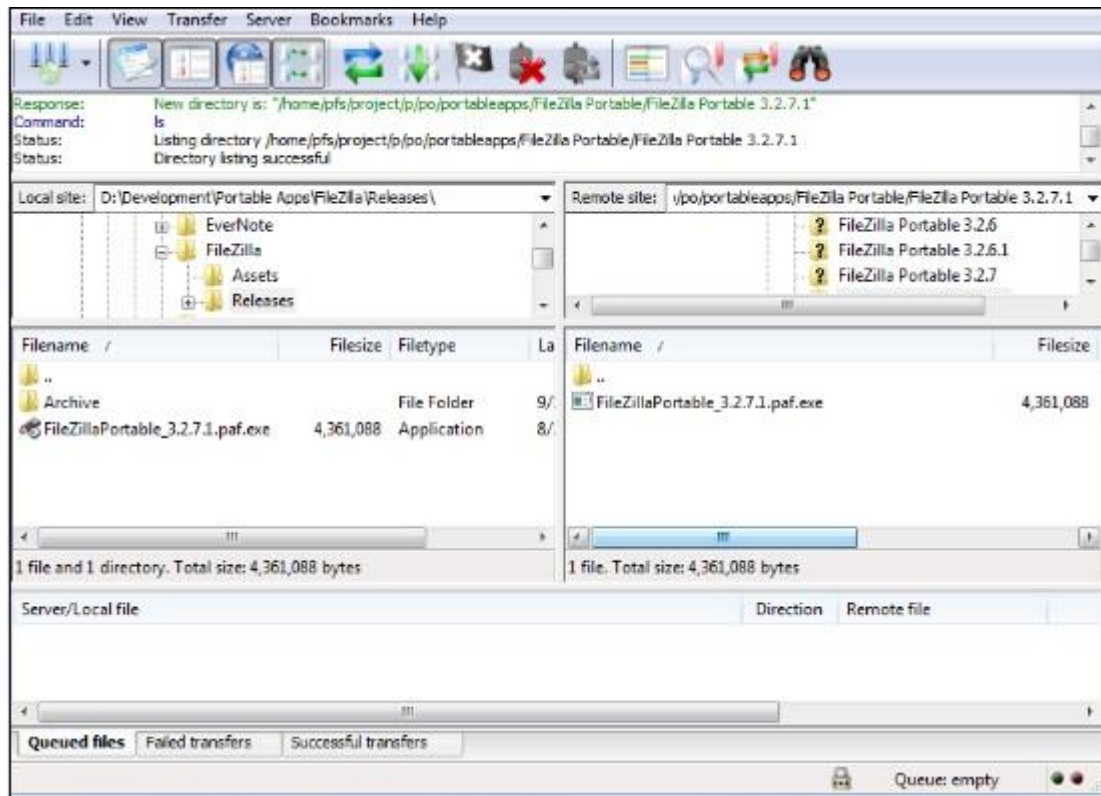
If you are a beginner and you are planning to develop a flat (static) website, you should have Visual HTML text editors called WYSIWYG. One of the most commonly used editor is **Macromedia Dreamweaver**. It can be easily downloaded from the following link – <http://www.adobe.com/products/dreamweaver.html>.



The other tool that you need to have is FTP Client, which is used to transfer files to the Hosting Container. Generally, these FTP Clients are free and can be easily downloaded from the internet.

WinSCP can be downloaded from [https://winscp.net/eng/docs/guide\\_install](https://winscp.net/eng/docs/guide_install).

FileZilla can be downloaded from <https://filezilla-project.org/download.php>.



<https://www.wpbeginner.com/beginners-guide/how-to-register-a-domain-name-simple-tip-to-get-it-for-free/>

## Self-Review Questions (SRQ) For Study Session 2

Now that you have completed this study unit, you can assess how well you have achieved its Learning Outcomes by answering these questions. Write your answers in your Study Diary and discuss them with your Tutor at the next Study Support Meeting or Online interactive sessions.

1. Why should we use MySQL database?
2. Describe Top Five database?
3. What is Domain and Hosting? Describe Top Domain hosting Companies.
4. Describe about web hosting platforms and types.
5. What is the World Wide Web?
6. How does the WWW work?
7. How does a Browser Fetch a Web Page?
8. What is a Web Server?
9. What is an Internet Service Provider?
10. Describe basic hosting Components
11. What are the advantages of using web-based databases?
12. What is the difference of XAMPP and WAMP server?
13. What is XAMPP and what are the advantages of XAMPP?
14. Explain the basic components of Xampp.
15. What are the Developments tools that we need to Develop and web application?

## References and Additional Reading Materials

<https://www.w3schools.com/sql/>

<https://www.tutorialspoint.com/mysql/index.htm>