

G. PULLAIAH COLLEGE OF ENGINEERING AND TECHNOLOGY

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Department of Computer Science and Engineering

Lecture Notes

On

WEB AND INTERNET TECHNOLOGIES

For III YEAR – II Sem B.Tech CSE (R15 Regulations)

Internet

- The Internet is a global network of networks that enables computers of all kinds to directly and transparently communicate and share services throughout the world.
- In 1969 the precursor of Internet is born: ARPAnet.
- ARPA = Advanced Research Projects Agency sponsored by the American Department of Defense (DOD).
- Designed to connect military research centers.
- Distributed computer system able to survive a nuclear attack.
- Problem: ARPAnet could connect only networks of the same type.
- In 1970, ARPA starts developing the Transmission Control Protocol / Internet Protocol (TCP/IP), a technology for connecting networks of different types (produced by different companies).
- Other networks appear, such as CSNET and BITNET.
- The Internet = a network of networks.
- People around the world share ideas, information, comments, and stories.

Popular services:

- Email (electronic mail) is the most popular service.
- You can send and receive mail (electronic text), faster and cheaper than surface mail.
 - Example email addresses: [III](mailto:III@CSErocks@gpcet.ac.in)
CSErocks@gpcet.ac.in
- Web browsing to find information.
 - Example: www.gpcet.ac.in

Features of the Internet

- **Mailinglists**: you can subscribe to lists on various subjects to receive emails, you can post (send) messages, you can unsubscribe. Some lists are moderated.
- Newsgroups are collections of messages on various subjects
- FTP (File Transfer Protocol). You can copy files from one computer to another over the Internet.
- **Telnet or remote login**. Permits your computer to log onto another computer and use it as if you were there.

- You need to provide your username and password, for security reasons.
- **Chatrooms.** You can exchange messages with other
- people, anonymously (using a nickname).
- Internet services for companies: e-commerce, etc.

World Wide Web (WWW)

- The World Wide Web allows computer users to locate and view multimedia-based documents (i.e., documents with text, graphics, animations, audios or videos) on almost any subject.
- Even though the Internet was developed more than three decades ago, the introduction of the World Wide Web is a relatively recent event. In 1990, Tim Berners-Lee of CERN (the European
- Laboratory for Particle Physics) developed the World Wide Web and several communication protocols that form the backbone of the Web.
- The Internet and the World Wide Web surely will be listed among the most important and profound creations of humankind.
- In the past, most computer applications executed on “stand-alone” computers (i.e., computers that were not connected to one another).
- The W3C is also a standardization organization.
- Web technologies standardized by the W3C are called Recommendations. W3C Recommendations include the Extensible Hyper-Text Markup Language (XHTML), Cascading Style Sheets (CSS), Hypertext Markup Language (HTML; now considered a “legacy” technology) and the Extensible Markup Language (XML).
- The W3C homepage (www.w3.org) provides extensive resources on Internet and Web technologies.

Web Contents

- Web content is the textual, visual or aural content that is encountered as part of the user experience on websites.
- It may include, among other things: text, images, sounds, videos and animations.

HTML web content

- Even though we may embed various protocols within web pages, the “web page” composed of “html” (or some variation) content is still the dominant way whereby we share content. And while there are many web pages with localized proprietary structure (most usually, business websites), many millions of websites abound that are structured according to a common core idea.

- A web search engine is designed to search for information on the World Wide Web.
- The search results are generally presented in a list of results and are often called hits
- The information may consist of web pages, images, information and other types of files. Some search engines also mine data available in databases or open directories.
- Unlike Web directories, which are maintained by human editors, search engines operate algorithmically or are a mixture of algorithmic and human input.

Types of Website Content

- Static Web Site
- Dynamic Web Site

Static Web Site

- A static web page (sometimes called a flat page) is a web page that is delivered to the user exactly as stored.
- Dynamic web pages which are generated by a web application
- Consequently a static web page displays the same information for all users, from all contexts, subject to modern capabilities of a web server to negotiate content-type or language of the document where such versions are available and the server is configured to do so.
- Static web pages are often HTML documents stored as files in the file system and made available by the web server over HTTP.
- However, loose interpretations of the term could include web pages stored in a database, and could even include pages formatted using a template and served through an application server, as long as the page served is unchanging and presented essentially as stored.
- Static Web pages are very simple in layout and informative in context. Creation of static website content requires great level of technical expertise and if a site owner is intended to create static
- web pages, they must be very clear with their ideas of creating such pages since they need to hire a web designer.

Advantages

- No programming skills are required to create a static page.
- Inherently publicly cacheable (i.e. a cached copy can be shown to anyone).
- No particular hosting requirements are necessary.
- Can be viewed directly by a web browser without needing a web server or application server, for example directly from a CDROM or USB Drive.

Disadvantages

- Any personalization or interactivity has to run client-side (ie. In the browser), which is restricting.
- Maintaining large numbers of static pages as files can be impractical without automated tools

Application areas of Static Website:

- Need of Static web pages arise in the following cases.
- Changes to web content is infrequent
- List of products / services offered is limited Simple e-mail based ordering system should suffice
- No advanced online ordering facility is required
- Features like order tracking, verifying availability of stock,online credit card transactions, are not needed
- Web site not required to be connected to back-end system.

Dynamic Web Sites

- A dynamic web page is a kind of web page that has been prepared with fresh information (content and/or layout), for each individual viewing.
- It is not static because it changes with the time (ex. anews content), the user (ex. preferences in a login session), the user interaction (ex. web page game), the context (parametric customization), or any combination of the foregoing.

Two types of dynamic web sites

- Client-side scripting and content creation
- Server-side scripting and content creation

Client-side scripting and content creation

- Client-side scripting and content creation Using client-side scripting to change interface behaviors within a specific web page, in response to mouse or keyboard actions or at specified timing events. In this case the dynamic behavior occurs within the presentation.
- Such web pages use presentation technology called rich interfaced pages. Client-side scripting languages like JavaScript or ActionScript, used for Dynamic HTML (DHTML) and Flash technologies respectively, are frequently used to orchestrate media types (sound, animations, changing text, etc.) of the presentation.

- The scripting also allows use of remote scripting, a technique by which the DHTML page requests additional information from a server, using a hidden Frame, XMLHttpRequests, or a Web service.
- The Client-side content is generated on the user's computer.
- The web browser retrieves a page from the server, then processes the code embedded in the page (often written in JavaScript) and displays the retrieved page's content to the user.
- The innerHTML property (or write command) can illustrate the client-side dynamic page generation: two distinct pages, A and B, can be regenerated as document.
- `innerHTML = A` and `document.innerHTML = B`; or "on load dynamic" by `document.write(A)` and `document.write(B)`

Server-side scripting and content creation

- Using server-side scripting to change the supplied page source between pages, adjusting the sequence or reload of the web pages or web content supplied to the browser.
- Server responses may be determined by such conditions as data in a posted HTML form, parameters in the URL, the type of browser being used, the passage of time, or a database or server state.
- Such web pages are often created with the help of serverside languages such as PHP, Perl, ASP, ASP.NET, JSP, ColdFusion and other languages.
- These server-side languages typically use the Common Gateway Interface (CGI) to produce dynamic web pages. These kinds of pages can also use, on the client-side, the first kind (DHTML, etc.).

Application areas of Dynamic Website

Dynamic web page is required when following necessities arise:

- Need to change main pages more frequently to encourage clients to return to site.
- Long list of products / services offered that are also subject to upgradation
- Introducing sales promotion schemes from time to time
- Need for more sophisticated ordering system with a wide variety of functions
- Tracking and offering personalized services to clients.
- Facility to connect Web site to the existing back-end system

The fundamental difference between a static Website and a dynamic Website is a static website is no more than an information sheet spelling out the products and services while a dynamic website has wider functions like engaging and gradually leading the client to online ordering. But both static web site design and dynamic websites design can be designed for search engine optimization. If the

purpose is only to furnish information, then a static website should suffice. Dynamic website is absolutely necessary for e-commerce and online ordering.

Web Technologies

- HTML, which stands for Hypertext Markup Language, is the predominant markup language for web pages. It is written in the form of HTML elements consisting of "tags" surrounded by angle brackets within the web page content.
- It allows images and objects to be embedded and can be used to create interactive forms. It provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other items. It can embed scripts in languages such as JavaScript which affect the behavior of HTML web pages.
- HTML can also be used to include Cascading Style Sheets (CSS) to define the appearance and layout of text and other material. The W3C, maintainer of both HTML and CSS standards, encourages the use of CSS over explicit presentational markup.

Introduction to Web Servers

- A web Server is a program that automatically downloads pages from the Web
- An application server works with a Web server to handle requests for dynamic content, such as servlets, from Web applications. A Web server uses a Web server plug-ins to establish and maintain persistent HTTP and HTTPS connections with an application server.
- The web server software offers access to documents stored on the server.
- Clients can browse the documents in a web browser.
- The documents can be for example static Hypertext Markup Language (HTML) files, image files or various script files, such as Common Gateway Interface (CGI), Javascript or Perl files. The communication between clients and server is based on the Hypertext Transfer Protocol (HTTP)

We have the Following Web Servers

- **Apache1.1 2.WAMP 3.XAMPP**

Apache

- Introduced in 1995 and based on the popular NCSA httpd 1.3, Apache is now the most used web server in the world.
- One of the reasons to its popularity is that it is free to use. Also, since the source code is free, it is possible to modify the web server
- Being threaded (threaded or process-driven depending on the operating system, on Unix, Apache uses processes, while threads are used in Win32 environments) means that Apache maintains a pool of software threads ready to serve incoming requests.
- When a request enters the web server, it is assigned one of the free threads, that serves it

throughout the requests' lifetime.

- Apache puts a limit on the number of threads that are allowed to run simultaneously.
- If that number has been reached, requests are rejected.
- Over 56% of Internet Web servers run Apache or an Apache derivative
- Apache is the most commonly used Web Server on Linux systems. Web Servers are used to serve Web Pages requested by client computers. Clients typically request and view Web Pages using Web Browser applications such as **Firefox, Opera, or Mozilla**

What's "Open-Source"?

- Open-Source refers to software that is not only free, but includes the source as well
- Users are free to make whatever modifications they like to make the software work better for them
- Users are generally encouraged to submit improvements for inclusion in the master distribution
- Use `<http://www.apache.org/dist/>`

Modules in Apache

- What makes Apache so attractive is also its architecture.
- The software is arranged in a kernel part and additional packages called modules.
- The kernel is responsible for opening up sockets for incoming TCP connections, handling static files and sending back the result.
- Whenever something else than a static file is to be handled, one of the designated modules takes over
- Modules are convenient when new functionality should be added to a web server, because nothing has to be changed in the kernel
- In Apache, every request goes through a life-cycle, that consists of a number of phases, as shown in Figure below
- To install the Apache2 module for MySQL authentication, you can run the following command from a terminal prompt:

```
sudo apt-get install libapache2-mod-auth-mysql
```

- Apache is a very complex web server, mainly because of the vast number of features provided. Fortunately, most of this functionality stays in clearly separated and independent program modules, which facilitates program understanding and maintenance.

<http://www.apache.org/httpd>

- Apache is a public domain Web server developed by a loosely knit group of programmers. Public domain refers to any program that is not copyrighted.
- Public-domain software is free and can be used without restrictions.

- The first version of Apache, based on the NCSA httpd Web server, was developed in 1995.
- Because it was developed from existing NCSA code plus various patches, it was called a patchy server - hence the name Apache Server.
- The home page of the Apache HTTP server project, also known as the Apache.
- Here you can find official information about the Apache web server. Any new Apache release is announced on this site.
- Whenever a security problem occurs, you can find the details (and fixes) there.
- The site also provides information about the people behind Apache.
- It is under direct control of the Apache Group core team and is located in San Francisco, California.
- As a result of its sophisticated features, excellent performance, and low price - free, Apache has become the world's most popular Web server.
- Source code for the apache is freely available, anyone can adapt the server for specific needs, and there is a large public library of Apache add-ons. Add ons' refers to a product designed to complement another product.
- The original version of Apache was written for UNIX, but there are now versions that run under OS/2, Windows and other platforms.
- Apache has been shown to be substantially faster, more stable, and more feature-full than many other web servers
- The Apache Group maintains rigorous standards before releasing new versions of their server, and the server runs without a hitch on over one half of all WWW servers available on the Internet
- The Apache Group and the free Apache HTTP server stand as an appealing throwback to the early, less-commercial
- Free and open standards supported and maintained by the people who use them are still a good thing for the Web
- The Apache httpd server is a powerful, flexible, HTTP/1.1 compliant webserver.
- It implements the latest protocols, including HTTP/1.1 (RFC2616) and is highly configurable and extensible with third-party modules.
- Apache can handle run-time execution of external applications (scripts)
- Server-side includes allow the server to modify pages at run-time before sending them
- Java servlet modules are available, but not yet part of the base package (still under development)
- SSL-enabled versions of Apache are available, both from commercial vendors and under

open-source licence

- It can be customized by writing 'modules' using the Apache module API provides full source code and comes with an unrestrictive license runs on Windows NT/9x, Netware 5.x and above, OS/2, and most versions of Unix, as well as several other operating systems is actively being developed encourages user feedback through new ideas, bug reports and patches implements many frequently requested features, including.

DBM Databases for Authentication

- It allows you to easily set up password-protected pages with enormous numbers of authorized users, without bogging down the server.

Customized Responses to Errors and Problems

Allows you to set up files, or even CGI scripts, which are returned by the server in response to errors and problems, e.g. setup a script to intercept 500 Server Errors and perform on-the-fly diagnostics for both users and yourself.

Support For CGI Scripting

Allows you to script web applications in PHP, Perl, Python and many more languages.

Multiple Directory Index Directives

Allows you to say Directory Index index.html index.cgi, which instructs the server to either send back index.html or run index.cgi when a directory URL is requested, whichever it finds in the directory. Unlimited flexible URL rewriting and aliasing. Apache has no fixed limit on the numbers of Aliases and Redirects, which may be declared in the config files. In addition, a powerful rewriting engine can be used to solve most URL manipulation problems.

Content Negotiation

The ability to automatically serve clients of varying sophistication and HTML level compliance, with documents which offer the best representation of information that the client is capable of accepting.

Virtual Hosts

A much requested feature, sometimes known as multi-homed servers. This allows the server to distinguish between requests made to different IP addresses or names (mapped to the same machine). Apache also offers dynamically configurable mass-virtual hosting.

Configurable Reliable Piped Logs

You can configure Apache to generate logs in the format that you want. In addition, on most Unix architectures, Apache can send log files to a pipe, allowing for log rotation, hit filtering, real-time splitting of multiple vhosts into separate logs, and asynchronous DNS resolving on the fly. Taking your first steps into Apache territory are a lot easier than you think. If you are a regular Unix user, you will be well prepared to set up Apache. And the Windows version has the same install procedure as any other Windows application.

The first step is to obtain a copy of Apache HTTP Server. Because it's free there's no reason not to

give it a try <http://httpd.apache.org> . The download files are 4.2MB for the Windows version, and a little over 4.7MB for the Unix version. It is possible to write slim, high-end applications.

Install Apache Web Server on Ubuntu

Install Apache

Open Terminal in UBUNTU and open Terminal by using CTRL+T

Type the following

```
Step -1: $ sudo apt-get install apache2
```

Test it

Surf to your own server on your own local computer:

```
$ firefox "http://localhost"
```

Find out how your server is found on the net. Anyone can use your IP address or DNS name to connect to your server:

```
$ ip addr
```

Use your own IP address (eth0, first IP number, does not end .255)

```
$ firefox "http://1.2.3.4"
```

If DNS is working on your network, you can see your fully qualified domain name with:

```
$ host 1.2.3.4
```

User homepages

With user homepages, anything you put in public_html in your home directory is published on the web.

Enabling Userdir on Server

For newer Ubuntu such as 8.04 Hardy, you have to explicitly enable userdir module. On older ones such as 6.06 LTS Dapper, userdir is enabled by default.

```
$ sudo a2enmod userdir  
$ sudo /etc/init.d/apache2 restart
```

Test homepages

Go to your home directory

```
$ cd
```

Create a folder for public html files, note the underscore `_'

```
$ mkdir public_html
```

Check your name

```
$ whoami
```

Surf to ~yourname:

```
$ firefox "http://localhost/~tkarvine/"
```

You should see a directory listing of an empty directory. You can also try it using your IP address and a different machine.

If you see your homepage, well done. You have successfully installed a server with user homepages. You can create some web pages with OpenOffice and save them to your public_html directory.

Second Method

- Open Terminal (Application -> Accessories -> Terminal) and execute the following command:
- `sudo apt-get install apache2`
- When the setup is complete you can check if the Apache is working properly by pointing your browser to <http://localhost>. If you see the text "It works!", it means Apache is working just fine.
- Towards the end of the installation if you see a message like this inside Terminal, "*Could not reliably determine the server's fully qualified domain name, using 127.0.1.1 for ServerName*", you can fix this by executing the following command. It will open Gedit (text editor).
- `gksu gedit /etc/apache2/conf.d/fqdn`
- When Gedit opens, type "ServerName localhost" inside the file and click Save. Then close the file

Configuration

Start, Stop and Restart Apache

- After you have installed Apache, it will be added to the init.d list and will autostart

whenever you boot up your computer. The following commands allow you to

Start,
Restart,
Stop Apache.

```
sudo /etc/init.d/apache2 start    #start apache
sudo /etc/init.d/apache2 stop    #stop apache
sudo /etc/init.d/apache2 restart #restart
                                apache
```

- Apache is configured by placing directives in plain text configuration files.
- The main configuration file is called `apache2.conf`.
- In addition, other configuration files may be added using the Include directive, and wildcards can be used to include many configuration files.
- Any directive may be placed in any of these configuration files. Changes to the main configuration files are only recognized by Apache2 when it is started or restarted.
- The server also reads a file containing mime document types; the filename is set by the `TypesConfig` directive, and is `mime.types` by default.
- The default Apache2 configuration file is `/etc/apache2/apache2.conf`. You can edit this file to configure the Apache2 server. You can configure the port number, document root, modules, log files, virtual hosts, etc.

HTTPS Configuration

- The `mod_ssl` module adds an important feature to the Apache2 server - the ability to encrypt communications. Thus, when your browser is communicating using SSL, the `https://` prefix is used at the beginning of the Uniform Resource Locator (URL) in the browser navigation bar.
- The `mod_ssl` module is available in `apache2-common` package. If you have installed this package, you can run the following command from a terminal prompt to enable the `mod_ssl` module:
- `sudo a2enmod ssl`
- In order for Apache to provide HTTPS, a certificate and key file are also needed. For information on generating a key and obtaining a certificate.
-

XAMPP

- XAMPP is a small and light Apache distribution containing the most common web development technologies in a single package. Its contents, small size, and portability make

it the ideal tool for students developing and testing applications in PHP and MySQL.

- XAMPP is available as a free download in two specific packages: full and lite.
- While the full package download provides a wide array of development tools, this article will focus on using XAMPP Lite which contains the necessary technologies that meet the Ontario

Skills Competition standards. As the name implies, the light version is a small package containing Apache HTTP Server, PHP, MySQL, phpMyAdmin, Openssl, and SQLite.

Obtaining and Installing XAMPP

- As previously mentioned, XAMPP is a free package available for download and use for various web development tasks. All XAMPP packages and add-ons are distributed through the Apache Friends website at the address: <http://www.apachefriends.org/>.
- Once on the website, navigate and find the Windows version of XAMPP Lite and download the self-extracting ZIP archive. After downloading the archive, run and extract its contents into the root path of a hard disk or USB drive.
- If extracted properly you will notice a new xampplite directory in the root of your installation disk.
- In order to test that everything has been installed correctly, first start the Apache HTTP Server by navigating to the xampplite directory and run the apache_start.bat batch file.
- The below Screen Appears
-



- In order to stop all Apache processes do not close the running terminal application, but instead run another batch file in the xampplite directory called apache_stop.bat.
- The next step is to write a simple “Hello World” program in PHP that will test the configuration of PHP under XAMPP.
- In the previous pages we installed and ran the Apache HTTP Server with success. The next step is to write a simple “Hello World” program in PHP that will test the configuration of PHP under XAMPP.
- In a text editor, such as TextPad, write the following lines of code:

Example:

<HTML>

<Head>

<Title>Hello World</Title>

```

</Head>

<Body>

?> echo "Hello World": ?>

/Body> />Html

```



FIGURE 2: Resulting output for helloWorld.php.

- The above code example starts a new XHTML document with the page title set as “Hello World” and then prints a single line of text, Hello World, using the echo PHP language construct.
- In order to run and test this PHP program, save it into your xampplite\htdocs directory with the file name of helloWorld.php. Then, to view it in your browser, simply type in http://localhost/helloWorld.php into the address bar. If done correctly, you will see your Hello World line of text in the web browser as shown in FIGURE 2.

Windows Install

- Installing PHP/MySQL on Windows using XAMPP requires nothing more than mastering the following skills:
- Using an Internet Browser, such Internet Explorer, Mozilla, or Firebird Locating the xampp folder that was created by the extract Double-clicking on a few files
- If you've got these basic skills, you're ready to go!
- Click on this link <http://www.apachefriends.org/en/xampp-windows.html> to download the latest version of XAMPP for Windows.. The EXE (7-zip) is recommended. It is smaller (almost half the ZIP version) and also self-extracting.
- Download it to the C:\ directory, double-clion it and a dialogue box appears.

- Click the Extract button.
- Everything will be extracted to a created folder called "xampp" under the C:\ directory. (You could, if you like, place it in another subdirectory of your choosing.)
- Double-click on the file setup_xampp.bat which is in the subdirectory containing the XAMPP installation.
- Follow the directions it displays on the screen.

Configuration

- The "Apache" and "MySQL" folders created by the XAMPP installation will have batch files for installing Apache and MySQL as services. Run these two batch files.
- Then create a shortcut in your Windows Startup folder
- that points to the file "ApacheMonitor.exe" which is located in the \apache\bin subdirectory. Finally, go to the Windows Control Panel and configure these services - Apache and MySQL - to start manually.
- You want to minimize the services that run automatically for security purposes.
- The next time you start up your Windows machine, the Apache Monitor will appear in your system tray.
- Double-click on it to open it up, click on the button to start up Apache.
- Click on the Services button to bring up the Services window to start MySQL.
- The ApacheMonitor is handy for when you want to restart Apache after making changes to the php.ini.
 - A few helpful notes:
- The php.ini file in \xampp\apache\bin is the one to edit when PHP runs as an apache module
- Web pages go in the \xampp\htdocs directory (the DocumentRoot) Files for the XAMPP splash page are in \xampp\htdocs\xampp
- Default installation of XAMPP is "wide open", i.e., MySQL has no root password and register_globals is On
- If you can't see the flag icons to switch from German to English, change scrolling to "yes" in index.html
- After installing MySQL as a service, remember to copy \xampp\mysql\my_example.cnf to C:\my.cnf
- The file type may indicate a "SpeedDial" shortcut, but MySQL will treat it as a configuration file

WAMP

- WAMP is an acronym for **Windows, Apache, MySQL and PHP**. It is a combination of independently created software's bundled together into a SINGLE installation package to set up a SERVER on your machine with out any hassles. It comes with the GPL license.

Contents Of WAMP Server (Package)

- Apache
- My Sql
- Paperphp
- MYAdmin
- SQLite_Manager
- Zend Optimizer

OBTAINING THE RESOURCES

- So you need a Windows desktop server ... but what EXACTLY do you need?
- For a basic Windows server you need the following:
 - Apache (The most commonly used web server software)
 - MySQL (A relational database for holding all the information)
 - PHP (a scripting language used for producing dynamic web pages)
- This combination of software is known as WAMP server software (Windows, Apache, MySQL,
- PHP) and that's what you will need if you are using a Windows computer.
- If you have a Linux computer, it's known as LAMP server software. (If you're into Linux, then you probably already know how to install a LAMP server). This eBook concentrates on the vast majority of people, who will be using Windows.
- So ... you need Apache, MySQL, and PHP ... The good news ... they're all FREE and they're all easy to obtain.
- Now you could search the internet for all three pieces of software and install them separately But a much better way is to install a single package that already contains all three in a single application (quicker and easier).
- There are several such packages available but we're going to use one called WampServer which is available from <http://www.wampserver.com/en/index.php> From the home page, click on the "Download the latest release of Wampserver" link.
- There are two versions available, depending upon whether you are using 32bit or 64 bit Windows (If you're unsure go to your Windows Control Panel, click on "System" and it'll tell you what bit you have).
- Once you're sure which version to download (32 bit or 64 bit) simply click on the appropriate download link and download WampServer to your desktop.

INSTALLING THE SERVER SOFTWARE

- Once the software has finished downloading, find it on your desktop (Figure 1)



Figure 1

- Double click on it to start the installation process. (Figure 2)

- - Figure-2
- Close any other applications you've got open, then click on the “Next” button and read the License Agreement (Figure 3)



- Click on “I accept the agreement”, then click on the “Next” button.
- You can choose where WampServer2 is installed. (Figure 4)



Figure 3



Figure 4

-
- I would recommend leaving the default of “C:\wamp”, then click on the “Next” button.
- The next choice (Figure 5) is a matter of personal preference. Leave blank or make your choice, then click on the “Next” button.



Figure 5

-
- Click on “Install” (Figure 6)

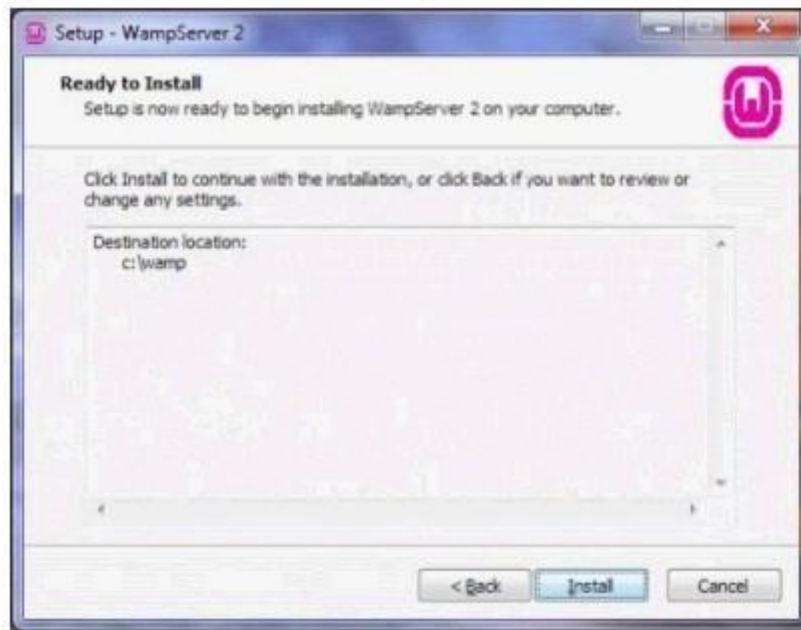


Figure 6

- Wait (Figure 7)! Press the wall switch to “ON” and boil the kettle. Make yourself a coffee!



Figure 7

-
- WampServer2 may be able to tell what browser you usually use. If not, it will display a page like this (Figure 8) and ask you to choose.