

INSTRUCTIONAL TECHNOLOGY

Pensacola Junior College

Publishing to the Web

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The Client/Server relationships

You may have heard the term “Server” in your conquest of technology, or overheard someone using terms such as “client/ server” applications. A server is a computer that is setup specifically to distribute data to other computers. While generally these computers are more sophisticated, stable and more powerful than the desktop systems in your office, you could actually use most modern computers as a server. What sets the server apart from your office computer is the operating system and server applications that run on it. Servers are designed to “serve up” information to other users, called “clients”.

A person eating at a diner is a good analogy of the client/server relationship. The customer looks at the menu and requests a menu item. The waiter takes the request to the cook, who gathers the ingredients and prepares the item as requested. The waiter then takes the requested item back to the customer for consumption. Similarly, a person using a browser such as Internet Explorer looks at the menu, and clicks a button that sends a request for information to the web server. This request is analyzed, processed and sent back to the browser, which displays the requested page to the end user.

There are many types of information that can be processed by a server. Information requests are handled by the different **services** running on the server. Many times, these different services are running on a single server. For example: A single server may have FTP, Web, Mail and DNS *services* running. These **services** are sometimes called “**servers**”. A single computer can be an FTP *server*, a Web *server*, a Mail *server* and a DNS *server*, because it runs these *services*.

Terms used in Web Publishing

There are a few terms you should be familiar with when starting out in web publishing. Although you don't *have* to know all of them, knowing these building blocks can make website troubleshooting easier.

Client- the software program the user uses to connect to the server

DNS- stands for Domain Naming System. DNS allows us to map a name such as itech.pjc.edu to an IP address.

Download/Get/Receive- terms describing data transferred from the *server* to the *client*

Encryption- a method of encoding and decoding data for security purposes

FTP- File Transfer Protocol- a standard, non-encrypted protocol that allows files to transfer between two computers

Hostname- is a name associated with an IP address. For example: **Itech** is a hostname associated with the PJC domain (**pjc .edu**) by our DNS server, making the hostname **itech.pjc.edu**. To connect to a service such as FTP, a user would have to give the hostname, although sometimes an IP can be used. In addition, users usually have to provide the port number mapped to the service. In the case of FTP, the most common port number used is 21.

HTTP- Hyper Text Transfer Protocol is the standard non-encrypted protocol for web servers

HTTPS- an encrypted version of HTTP using a secured socket layer

IP Address- a number associated with a computer that provides logical address resolution in a TCP/IP network

Secure Shell- a secure, encrypted method of evoking a remote command line interface (a shell) that was designed to replace telnet. This was first introduced on Unix operating systems, but has since been ported to other operating systems

Server (also known as a “Host”)- a computer that is specially configured to process requests and serve information to clients

SSL- secure protocol using a public key supplied to the client, enabling data encryption over a secure connection. Websites that use SSL use HTTPS:// in the URL rather than HTTP://

TCP/IP- Transmission Control Protocol / Internet Protocol. This is the primary protocol used on the internet that controls data transmission.

Telnet- an un-encrypted command line interface (shell) interface that enables users to access remote computers

Password- a secret set of characters provided by a user, allowing access to a network service

Port- This term has several computer/network meanings, but for our purposes it is, in a TCP/IP-based network, an end connection point number associated with an IP address. Many ports are considered standard, such as port 80 for web servers. For example: 209.218.12.5:80 is probably a web server whose IP address is 209.218.12.80.

Virtual Directory- a virtual directory is an alias to a physical directory. For example, if you were to look at the physical directory structure of the Itech website, you would notice that no “pchaney” directory exists. This is because this physical directory is located elsewhere and is aliased as <http://itech.pjc.edu/pchaney>

Upload/Put/Send- terms describing data transferred from the *client* to the *server*

URL- the Uniform Resource Locator is the address of a particular web resource. For example, if some one asks you for PJC’s URL, you would say “<http://www.pjc.edu>”.

Username- This is the account name used to gain access to a network service.

WebDAV- a standard developed by the IETF. It stands for **Web Distributed Authoring and Versioning**. In a nutshell, it uses HTTP to connect to the server for website editing. It allows for file locking, or checkout, so that a file being edited has less change of being overwritten by another user.

HTTP /FTP /Secure Shell

There are several ways to transfer files from your local client computer to the server. FTP or File Transfer Protocol is currently the most common. Many FTP products are available, and perhaps the most popular of these products is Ipswitch’s WsFTP.

Some programs can use HTTP to transfer files. The most popular methods of file transfer over HTTP are WebDAV and Frontpage extensions. WebDAV can be used by programs such as Dreamweaver.

One problem both FTP and HTTP share is that both are not secure methods of transfer. Passwords and usernames are sent in the clear. This gives an unscrupulous person with the appropriate software the ability to see this information.

Secure Shell was designed to encrypt information sent over the internet. Originally designed on the Unix platform as a replacement for Telnet, Secure Shell has been ported to other operating systems including Windows and MacOS. Secure Shell also allows users to transfer files over the same connection.

FTP and Secure Shell

There are several reasons why you should consider using Secure Shell rather than WsFTP. The primary reason is security, because the instruction and software needed for ill-willed individuals to collect your username and password is freely available on the internet. The teaching environment may produce disgruntled individuals who may try to disrupt or embarrass an instructor.

Another advantage to Secure Shell over WsFTP is connectivity from home. You cannot FTP anything from your home computer to PJC because FTP is blocked by PJC's firewall. Secure Shell is encrypted, allowing PJC to grant access through the firewall. Although no one likes to work from home, it can be really convenient to upload from home that page you forgot, rather than make the drive to use FTP!

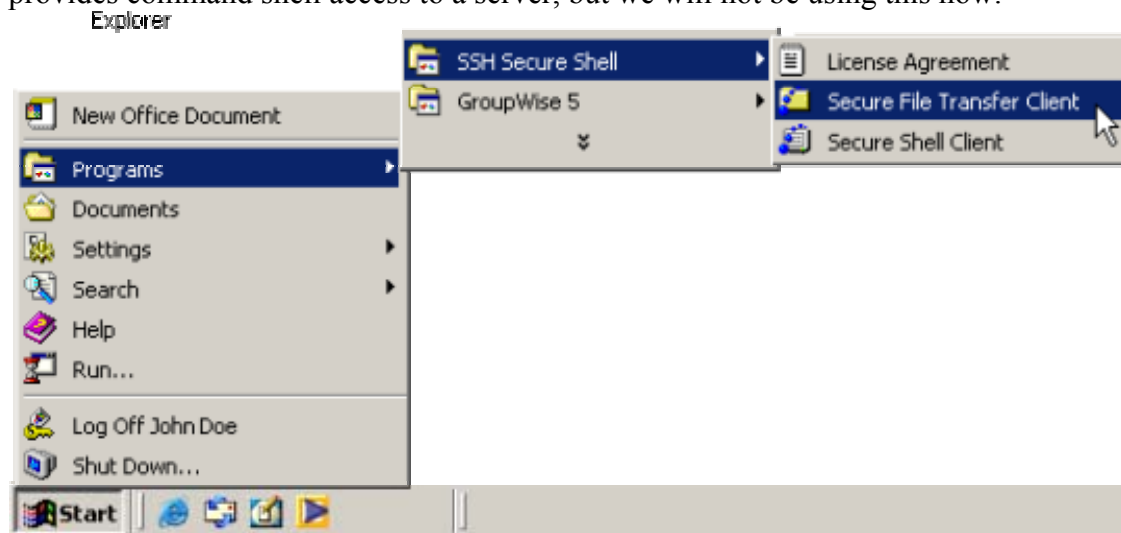
What is SSL?

SSL stands for Secured Socket Layer and while many of us have used SSL sites, some may have not been aware that they were doing so. Many e-commerce sites use SSL to provide secure data transfer. You can tell you are using an SSL site when you see a padlock at the bottom of your browser and an HTTPS instead of HTTP in the URL.

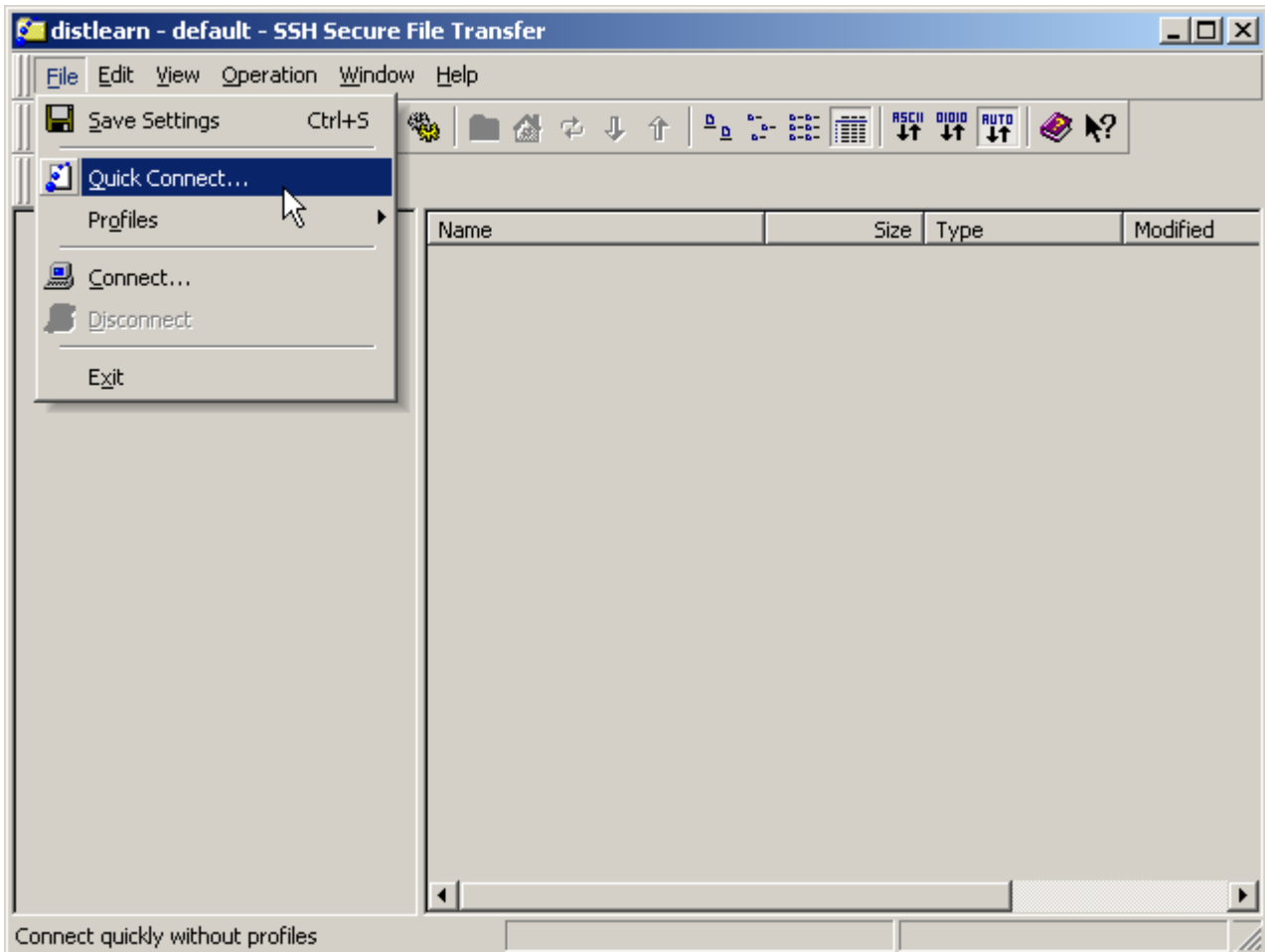
SSL accomplishes this security by using "keys" on both the client and server. These keys provide a secured socket connection, allowing secure data transfer over this connection.

How to use SSH Secure Shell

SSH Secure Shell File Transfer program is a popular commercial product that uses Secure Shell to transfer files. After installing the SSH program, click the "Start/SSH Secure Shell/Secure File Transfer Client" link. This will launch the Secure File Transfer program. You'll also notice a link beneath the "Secure File Transfer Client" link labeled "Secure Shell Client". Secure Shell Client provides command shell access to a server, but we will not be using this now.

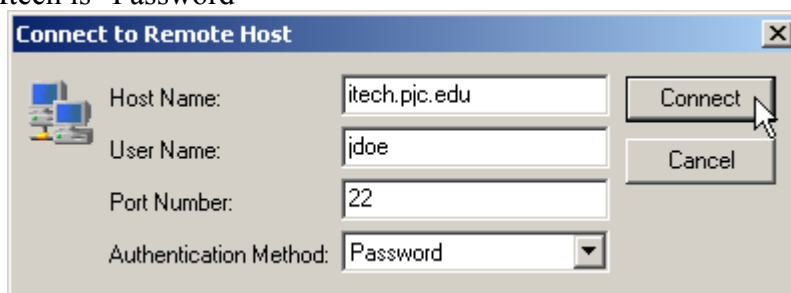


After the program is running, you will want to connect to the server (or host). To do this, go to the file menu, select "File", and then click "Quick Connect" as shown.

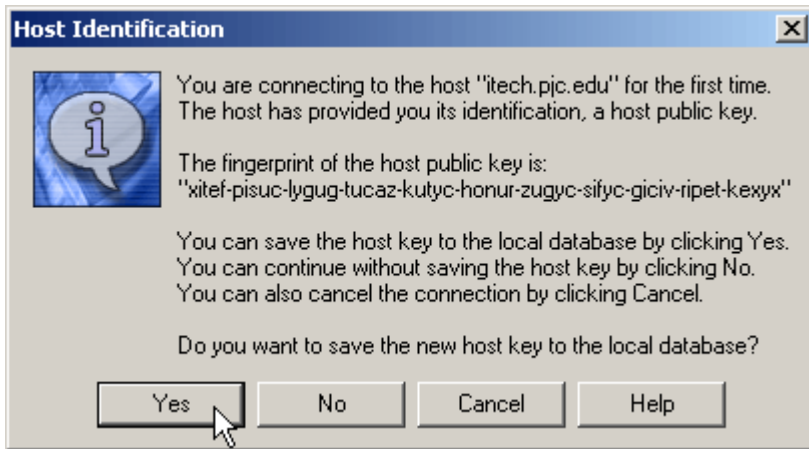


To connect your SSH Client to the SSH Server, you'll need to provide the hostname, the username, the port number and authentication method. The hostname is the URL or IP number of the server you wish to connect.

1. If you are connecting to the Itech server, put "itech.pjc.edu" for the host name. Next, type in your Username as shown. The port number for the Itech server is "22". The Authentication Method for Itech is "Password"



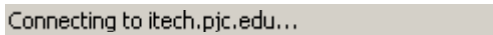
2. If you are connecting to the server for the first time, you'll get a Host Identification dialog box offering to save the public key. Click "Yes" as shown below.



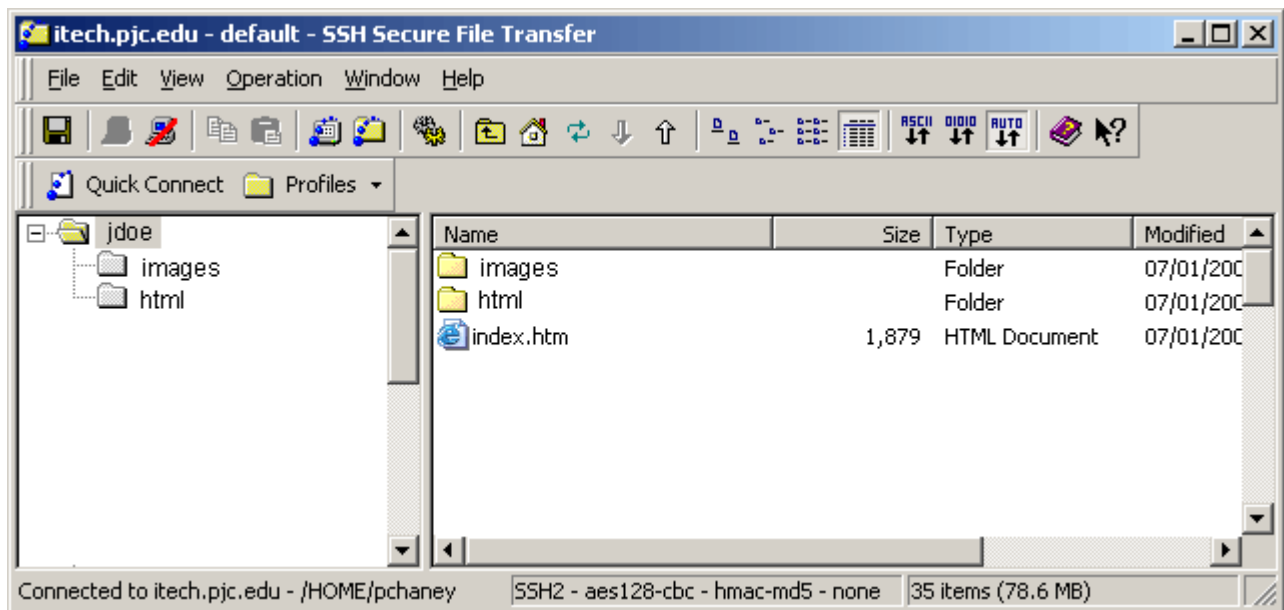
3. Enter the password, and click "OK". Remember the password is case sensitive, and ensure the Caps Lock key is not on.



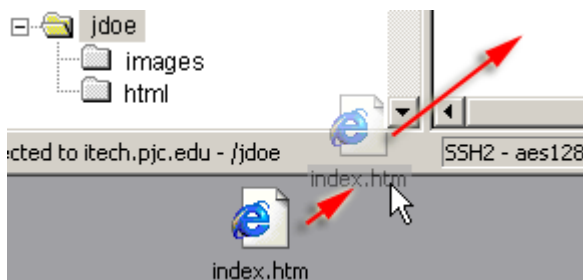
Check the bottom left status bar to see your connection progress.



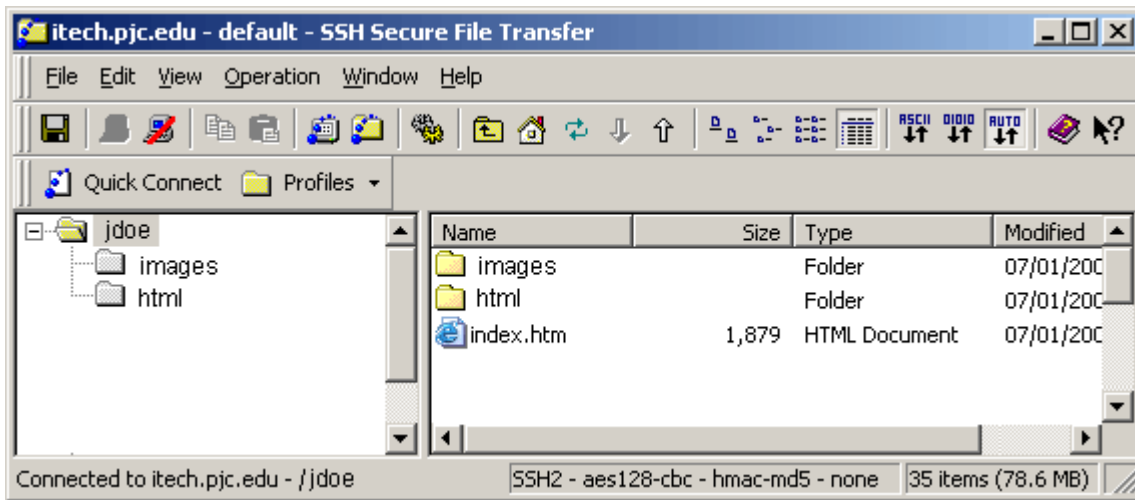
1. After successfully connecting, you should see a directory structure.



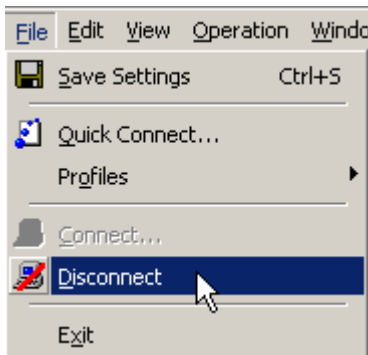
2. To transfer a file(s), simply click on the file you want to transfer, hold the mouse button down while dragging the file(s) to the right pane of the program window.



3. The file you transferred now appears in the right pane.



4. After completing your file transfers, close the program correctly by using the "Disconnect" button rather than closing the window by clicking the "X" in the upper right of the Title Bar.



Zipping and WebCT

Compressing files to reduce the file size is a common practice, particularly when it comes to transferring files over the internet. Many people use a product called “WinZip” to compress files, and the process of compressing is called “zipping” the file. Extracting the files from the zip file is called “unzipping”.

WebCT offers users the ability to expand a zipped file on the server after uploading, and allows the user to zip files on the server to download. Look at the diagram of the process below.



The first step is to create the zip file on your computer. Next, log onto WebCT. On the left-hand menu, select “Manage Files”

Now we need to upload the zipped file using WebCT’s Manage Files Interface. Click “Upload File”, then “Go”

Manage Files: Designer Options

[Home](#) » [Manage Files](#)

File Options

Upload a file Select file(s) below, select file(s) and click Go.

Create a new file

You’ll see an interface that will allow you to pick the zip file you want to upload. After browsing, selecting and uploading the zip file to the server, you’ll want to unzip the file on the server. When you are ready to unzip, place a checkmark next to the zip file you wish to unzip, go to the drop-down menu and select “Unzip”, then click “Go”.

File Options

- Upload a file Select file(s) below, select file(s) and click **Go**.
- Create a new file

Folders and Files
Click on a folder below

Display this file information Date

- [My-Files](#)
- [4files.zip](#)

Edit
Copy
Move
Rename
Delete
Zip
Unzip
Upper Case
Lower Case
Download

After clicking “Go”, you’ll be presented with the unzip dialog

Manage Files: [Designer Options](#)

[Home](#) › [Manage Files](#) › [Unzip File](#)

Unzip File

Unzip [4files.zip](#) to

This dialog allows you to choose the directory you want this zip file unzipped. Select the directory you wish to put the files in, then click “Unzip”.

To zip files on the server and download them to your computer, log on to WebCT, click “Manage Files”. Under the drop down menu, click “Zip”

Manage Files: Designer Options

Home > Manage Files

File Options

- Upload a file Select file(s) below, select file(s) and click Go.
- Create a new file

Go

Edit

Go

Folders and Files

Click on a folder below

Display this file information

  [My-Files](#)  [4files.zip](#)

- Edit
- Copy
- Move
- Rename
- Delete
- Zip**
- Unzip
- Upper Case
- Lower Case
- Download

 Date

The zip dialog will allow you to select the files you want in the zip file.

Manage Files: Designer Options

Home > Manage Files > Zip Files

Zip Files

- Zip the selected files to
- File1.txt
- File2.txt
- File3.txt
- File4.txt

My-Files

Filename 4filesnew.zip

Zip

Cancel

Select the files you want by checking the appropriate box, then use the drop-down menu to select the directory where you want the zip file produced, then give the zip file a name in the text box next to “Filename”. In this case, we called the zip file “4filesnew.zip”. Click “Zip”. After executing the Zip command you’ll be back to the “Manage Files” section, and see the newly created zip file

  [My-Files](#)  [4filesnew.zip](#)

If desired, use the Manage Files menu to download the file from the server to your computer.

Itech Web Guidelines

Web Policies

The PJC website is managed by the Microcomputer Resources Department that maintains a Help Desk to handle all web related requests. The content supplied for the website is managed and constructed by many departments throughout the college.

The college supports and requires institutional compliance with the local, state and federal statutes regulating information technology and will not knowingly provide information or services contrary to the policies and procedures established in statute.

The college supports and requires institutional compliance with accessibility requirements as set forth in Section 508 of the Rehabilitation Act Amendments to the 1998 Workforce Investment Act. The full text of section 508 can be found at <http://www.usdoj.gov/crt/508/508law.html>.

A comprehensive list of accessibility guidelines and development strategies can be found at the World Wide Web Consortium website at <http://www.w3.org>.

Content and design used on the PJC website must reflect current PJC marketing strategies and must adhere to web guidelines defined herein. PJC departmental managers will be responsible for the content on the web as it relates to the department. All content is subject to periodic review and a redesign may be requested if it is found to be out of compliance. Although instructor pages are not subject to the same review process, the college would request that they follow these guidelines whenever possible.

Web Design Guidelines

The guidelines that follow have been established in order to assist the user in developing quality web pages that provide an effective presentation and quick download for the public. These guidelines should be followed in the design and construction of all PJC Web pages.

1. PJC web materials should be housed on PJC servers in order to facilitate support and ensure accuracy of current information. Departments who choose to utilize outside sources for web hosting or development will still be responsible for keeping the information current. PJC employees cannot support outsourced pages.
2. Pages will be built on a development server and must be complete and tested prior to making public. Page designer can e-mail the help desk at completion for inclusion on the public site.
3. All pages developed should be tested for compatibility with industry standard browsers. "Virtual domain" name requests will be reviewed on a case by case basis and must receive additional Vice President approval.

4. Copyright laws must be obeyed. Any material used by permission should be clearly marked.
5. Do not post student work without explicit permission from the student.
6. websites representing PJC should not contain profanity, obscenity, or other offensive language (if you can't show it to your mother, don't post it!)
7. PJC's web resources shall not be used for personal financial gain or commercial business not related to the business of the college.
8. Limit the number and size (approximate maximum of 100K) of graphics on Web pages for quicker downloads. Web pages must be designed for slow speed users.
9. Each page must provide a link back to department home page or PJC home page.
10. Identify Pensacola Junior College or PJC on each page, preferably in the title bar.
11. There must be a PJC contact person listed on each page. (could be labeled webmaster, but link should be to departmental responsible person)
12. Avoid excessively long pages. Long documents should be divided into logical sections and accessed through a contents page.
13. Use relative addressing in HTML links to ease future maintenance.
14. Test interactive pages in test directories on a local computer before contacting the help desk for posting.
15. Use client-side image maps rather than server-side image maps.
16. Use the Adobe Acrobat PDF format for camera ready documents.
17. Include download links for all plug-ins required for website. Itech's Web Links

Itech's Web Links

Get server space on Itech server

Go to the Itech Website to signup for a Course Companion Website:
<http://itech.pjc.edu/html/serverspace.asp>

Itech Tutorials

Go to the <http://itech.pjc.edu/html/tutorials.htm> for tutorials such as:

- Copyright Basics
- HTML Basics
- WinZip
- WsFTP
- WebCT Basics

and more...

SSH Secure Shell

You can download the SSH Secure Shell software from PJCnet or from the SSH site
(<http://commerce.ssh.com/>)