

What is the WWW?

The Internet is the world's largest, most powerful computer network connecting personal computers, sophisticated mainframes, and high speed supercomputers around the globe. Current estimates suggest that over four million computers are part of the Internet (Kochmer, 1995).

Because a myriad of computers and programs are part of the Internet, incompatibility problems can result because information is created using different computers and software. In 1989, a group of scientists at the European Laboratory for Particle Physics (CERN) in Geneva, Switzerland began developing an Internet tool that would link information produced by all of the CERN researchers. The tool provided a way to link textual information on different computers and created by different scientists. The object was to overcome issues of incompatibility and utilize a new way of linking made possible by computers, called "hypertext". Rather than presenting information in a linear or hierarchical fashion, hypertext permits information to be linked in a web-like structure. Nodes of information can be linked to other nodes of information in multiple ways. As a result, users can dynamically criss-cross the information web using pieces in the order most convenient to them. The CERN project resulted in an innovative front-end to the Internet, now referred to as the World-Wide Web (WWW).

The WWW provides users with a uniform and convenient means of accessing the vast resources of the Internet. In 1993, the National Center for Supercomputing Applications (NCSA) at the University of Illinois pushed the CERN scientists' idea further by creating a software tool called Mosaic. Mosaic is an easy to use graphical user interface that permits text, graphics, sound and video to be hyperlinked. Mosaic was the first of the Internet tools that are now referred to as "Web browsers". Other well-known browsers include Netscape (the first commercial browser developed by some of the programmers involved with the Mosaic project) and Microsoft's Internet Explorer.

Web browsers permit users to connect to the Internet and facilitate accessing information located on another remote computer. The Web browser links to the remote computer just long enough so that the information you need can be sent to your computer for you to view. Documents created to be viewed by a browser are formatted using Hypertext Markup Language (HTML).

HTML solves incompatibility problems by using standardized tags which indicate such things as whether a piece of text should be plain, bold, italic, or linked to another piece of text. Pages of information on a computer formatted with HTML and accessible to someone with a Web browser, are referred to as "home pages" or "Web pages".

Why Use the WWW for Distance Learning?

The WWW and Web browsers have made the Internet a more user-friendly environment. The ability to integrate graphics, text, and sound into a single tool means that novice users do not have to struggle with such a steep learning curve. In addition, organizations and individuals can create home pages independently and link to other home pages on their own computers or to pages created by others on different computer systems.

For educators, the WWW provides an exciting new opportunity for distance teaching and learning. The WWW can be used by the distance educator to build a classroom home page. The home page can cover information about the class including the syllabus, exercises, literature references, and instructor's biography. The instructor can also provide links to information on the WWW that would be useful to students in the class (e.g., research data on agricultural markets, global climate change, or space missions). Other links can access library catalogs or each student's individual home page. In addition, the home page can link students to a discussion list or listserv that set up for student communication. It is also a relatively simple matter to use the homepage to create forms that students can fill out and that will end up being sent to you as an e-mail message.

Developing a Home Page for Distant Students

Distance educators who are ready to develop a web presence, should avoid the following pitfalls:

❑ Rushing in without a master plan. Don't get so caught up in learning HTML and developing the home page that the purpose for developing your presence on the WWW is lost. Spend less time struggling with HTML, developing amusing graphics or playing with possible background and more time considering the purpose and content of the home page. Before you start your home page:

- *Think about your reason for developing a Web presence.* Will your home page be a stand alone course or will you be using it in conjunction with other technologies such as video or audio? Sound instructional design principles apply to home pages just as with any other materials prepared for a course.

- *Become familiar with new software tools for developing home pages.* Computer software tools such as *HotMetal* (see <http://www.sq.com>) and *HotDog* (see <http://www.sausage.com>) mean that anyone familiar with using word processing software can develop a good looking and functional home page. Reviews of other such computer software tools are available on the WWW and many of them can be downloaded for a free trial (see for example, <http://www.techsmith.com/community/htmlrev/index.html>).

● *Utilize information that already has been developed for your course.* If you already have your notes and syllabi in word processed form, make use of tools such as *HotDog* to format them for distribution on the WWW.

● *Look at what is already available.* Hundreds of home pages have already been developed for courses. Some of these home pages allow students to complete an entire course from the WWW and others are developed in conjunction with lectures delivered on-campus or by video or audio. A great place to check out what others have done is *The World Lecture Hall* (see <http://www.utexas.edu/world/lecture/index.html>) *The World Lecture Hall* contains links to pages created by faculty worldwide who are using the Web to deliver class materials.

□ **Laying out home pages poorly and inconsistently.** To avoid ugly and confusing home pages, consider the following:

● *Consulting sites on the WWW which provide information on home page layout and style.* Two popular sites are the *Web Style Manual* (http://info.med.yale.edu/caim/StyleManual_Top.HTML) and *Guide to Web Style* (<http://www.sun.com/styleguide>).

● *Utilizing a consistent format for each of your pages.* Based on suggestions made by the above mentioned style manuals, develop a consistent format for each web page. While colored or patterned backgrounds can be used on homepages, plain grey or white backgrounds make text easier to read.

● *Keeping page lengths short.* Your main index should jump to a lot of shorter pages. In cases where page information is long, index internally so that the student can jump to specific information as needed.

● *Maximizing links to internal information and minimizing links to external information.* The purpose of your home page is to provide information on a specific subject area. Only provide external links to home pages that provide useful related information for your students.

□ **Using unnecessarily large graphics or including sound/video clips.** Consider that while graphics can add appeal to a home page, a large number of Internet users are still accessing the Internet using a 14.4K modem. Graphic images which are 20K to 40K are acceptable for people with 14.4K modems. Pages which take too long to download frustrate students and may force them to beat a hasty retreat. If your home page requires extensive use of graphics to demonstrate points, warn your students. If you plan to use sound or video clips, you will need to be sure that all of your distant students have access to computers that have sound and video cards installed in them.

□ **Letting the home page become out-of-date.** The home page should be an ongoing part of course development. Make sure that you add or change information as necessary. Periodically verify whether other home pages to which you are linking still exist.

What Should I Put on the Home Page?

The home page should help your students to find necessary course information, learn the material, and get involved in thinking about the course material (Ackermann, 1996). Properly designed home pages will encourage thought, discussion and active participation by your distant students. The following elements can be included in your class home page (Ackermann, 1996):

□ **Course & Instructor Information** — Include such items as course topics to be covered, your office hours, textbook information, course objectives, and grading policies.

□ **Class Communication** — Provide access to your e-mail, link to discussion groups that you have set up for student-to-student communication, and create forms that your students can use to report problems or provide biographical information about themselves.

□ **Assignments and Tests** — Distribute assignments and tests, provide for online completion or submission, and give solutions, hints, or samples of what you expect.

□ **Material covered in the classroom** — Make lecture notes and handouts available either as web pages or as downloadable files.

□ **Demonstrations, Animation, Video, Audio** — This is more complex than other suggestions and will require that your students have access to computers with sound and video cards.

□ **Reference Material** — List materials in print and electronic form that supplement the textbook. To avoid copyright problems, electronic articles should either be written by you or in the public domain (e.g., government documents or are already available on the WWW with author's permission to distribute). In addition, provide links to other pages which cover information on the topic, similar courses that may also be available on WWW, your university library, and other on-campus resources that may help your student complete the course.

References

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For Further Information Contact

Director of Engineering Outreach,
College of Engineering, Moscow, ID 83844-1014
Phone: (208)885-6373 Fax: (208)885-6165
Internet: bwillis@uidaho.edu