# Planning and Designing a Website

**Module 2**

**Introduction**

Before one can start building a website, the person must have a clear understanding of the mission, goals, and objectives of the site.  Important questions to ask are why are you making a website, for who, and what will be in it. Also, the structural design, as well as the page and layout designs are crucial to creating an effective website. Understanding how the text, images, and media interact will also help in building a successful site.  This module will delve into all these issues.

# Interface Design Introduction

**Module 2 Lesson 1**

Web documents are different from print documents in that people can interact with the web pages.  The graphic user interface (GUI) gives a person an experience with more senses being felt, such as audio and video formats.  Not only is the content of great importance but so is the “other stuff,” such as graphic design, animation and hypertext. It is also important to understand that Web page design is different from conventional print design. Accessibility to all users of the Web is also an issue since there are so many different types of people using the Net today.

# Purpose and Goals of your Website



The first step in designing a website is to define your mission and goals. Without clearly stating your objectives, your website will be without purpose and will constantly drift from one idea to the next. Like anything in life, if you have no specific goal, the completion of the task will likely fail due to a lack of focus. Careful planning and a clear purpose are keys to success for a great website.

For example, what would be some of the goals for a high school website? What would it include? Think of at least five goals and post them on the Discussions board. You will probably find that sharing these ideas will make you think of many goals that you would have not thought of just by yourself.

There are usually two parts to the process of developing a website. First, you need to gather your team, analyze your needs and goals, and work through the development process. Secondly, site specification is created which details the intentions, content, length, and technology needed for the site. Assessment of the site will also be crucial for success.

Websites can be developed by one person but often they are created by a group of people. Although websites are based on technology, their content is based on human content. When websites are created for organizations, there will often be particular groups that will want to lead in the development. These types include “techies” who want a lot of digital media, Flash animation, XML, databases, and such. These additions require a lot of technical expertise. However, it is the content that will keep people coming back to a site and not flashy material with not much information to support it. Graphic designers, technical experts, writers, information architects, and marketers will all need input for a well-balanced site.

How many people do you think it took to develop this course? Would it be only one person that creates the material and maintains the website? Would the same person have created all the material including the multimedia information?

*Know your Goals*

Even before you can assemble a proper team, a short statement should identify two or three goals for your website. It should include specific strategies about the site design, construction, and evaluation. Building and maintaining a website is an on-going process that never ends, not like a book. Technical maintenance and constant editorial content management will be required.

A practical example for you, however, may be creating a website for a particular school project, such as for History 30S. Instead of handing in the project in the traditional paper method, the project could be completed using the Web. How do you see this as an advantage? Of course, multimedia, sound, images, video clips, and interaction are some of the ways that the project would be much more exciting for present. If the goal, for example, was to explain Canada's contribution to World War I, some of the purposes and strategies could include:

* Describing who went to the war
* Providing video clips of World War I footage
* An archived audio interview with a Canadian veteran
* Describing the impact Canada had in the success of the allies, providing maps, possibly some that are interactive

# Know your Purpose

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Once the purpose is identified, the target audience of the website needs to be defined. Knowing who you want to reach is crucial for identifying needs and expectations. Knowledge, background, interests and the needs of the users will define how you shape your site.

There are many reasons why you may need or want a website. For example, if you own a small sandwich shop in a mall, is it worth it to pay someone to maintain a website? Most people just go to the mall and order their food when they get there. They don’t search the Internet for a sandwich shop first. If your site has no purpose, then people will find no purpose to stay, look around or come back again. Once you have decided upon the purpose of your site, you need to design it accordingly.

Two important questions to ask yourself when deciding on content are:

1. Why would anybody want to visit my site?
2. Why would anyone revisit my site?

Keeping the content on your site accurate and updated is important. If it is not relevant, nobody will return to your site.

Adding dynamic content to your site such as discussion forums, chat rooms, or interactive games help build an online community but they also need to be properly maintained and technically correct. This can take a lot of time and resources.

***Types of Websites***

Here is a list of possibilities why you may want to have a website. Knowing this will lead you to a specific audience.

**Personal Websites:**

There are more personal websites than any other kind of site. This is an excellent way to promote your ideas, hobbies, opinions, beliefs, etc. Others have personal websites to keep track of day-to-day activities.

**Training Websites:**

These sites are sequential and linear in nature. That is, they follow logical steps going from step 1 to step 2 to step 3 and so on. Once the last step is completed, the next level is reached. (Just like a video game!) Quizzes are often attached at the end and the NEXT and PREVIOUS buttons are often present.

**Teaching Websites:**

These sites offer a lot of narrative and feedback in general. These sites can be quite sophisticated and complex offering services such as email, whiteboards, chat rooms, assignment areas, content and download areas. Interactive simulations may also be present. These are popular with Continuing Education schools.

**Educational Institution Websites:**

Educational Websites include universities, colleges, and K to 12 schools. Many high schools now have fairly sophisticated sites with information about the school, the staff, and mission. Parents, students, and the community can access information such as the school calendar, handbook, sports and daily activities. If you go to a high school, what does your school provide on their website? Post a link to your high school on the Discussions board.

**Reference Sites:**

A reference site will make it easy to search and find material quickly. A search engine is crucial for its success. Web 2.0 applications offer many reference sites, such as Wikipedia.

**Entertainment and Magazine Sites:**

These sites focus on dazzle and entertainment. They offer multimedia experiences with video, audio, and animation. Up-to-date information is very important. Most readers don’t stay a long time at these sites therefore they must be “catchy” and instantly appealing.

**News Sites:**

News sites have been created to keep up with the demand for instant information. Printed newspapers have “old” news by the time they hit the newsstands, therefore the news companies want an edge over their competitors.

**Sites to Advertise:**

The Internet is often the first place that people look to find information. The problem with this is that with all the sites being created, it becomes harder and harder to promote your site on the Internet. The best ways to promote your product or service is to create a system where your site will show up on a web search. In addition, traditional advertising such as newspapers and radio let potential customers know they can find out more information through your website.

**Sites to Provide Customer Services and Support:**

Companies who offer customer support may find that they can save money by having online support. Many of the questions asked by customers will be the same. It would take some of the strain off the support staff by placing the most frequently asked questions (FAQs) on a site.

**Company Information Sites:**

As mentioned earlier, the Internet is often the first place that people look for information. Therefore it is a good place to post information about new products and services.

**Give or Sell Information:**

The Internet was created for getting and sharing information. However, if the information you intend to sell is already available for free from the library or another site, or if there is no demand, then it probably is not worthwhile to create a site for this purpose. Trading websites, such as EBay are very popular sites and many people will simply use this route instead of listing things to sell on a personal website.

**Sites to Make Money (E-Commerce):**

Most of the companies on the Internet don’t make much money from it, including companies such as Amazon. Often they are losing money. Google makes millions of dollars per year but this is the exception. The main money-making companies are the ones who offer Internet services such as Web design, Web hosting, etc. Established companies that also offer websites tend to make money from their cyber-exposure. Large retail electronics companies such as BestBuy.com make large amounts of money off their website. This is an area that will expand greatly in the future.

**Internal Company Information:**

Large companies and organizations can use the Internet to communicate and share information more efficiently than traditional methods. These sites can be password protected or utilize Intranet (a private network available only within the enterprise). Intranets are very popular for in-company communication and training.

# Your Target Audience

Once you know what type of site you are planning, you need to consider who your target audience is. That is, who will be visiting your site? What will they expect to see? What is their skill level with the Internet? What is the overall theme of the site? What mood do you wish to evoke? The content of the website is tailored to the target audience.

The look of your site that targets an audience of 13-15 year olds will be different than that of a site targeting adult computer programmers. If the site you are creating is for a gaming company, feel free to use a dark background. Incorporate themes and characters from their games.

If the site you are creating is informational, such as a news site, make sure it is easily readable and easy to navigate. Current material will be crucial for success. The text should be easy to find, easy to read, and easy to print.

If the audience is very young you can use lots of bright contrasting colors and animations, sounds, and Flash movies. If the audience is over 40 years of age, generally avoid these things. The older audience has a longer attention span and a lower tolerance for noise and visual distractions. If the audience is for seniors, keep in mind that the font size may need to be increased.  Also, don’t have background music of Metallica if you are creating a website for a nursing home!

What would you consider for a website for a high school? Obviously, the majority of the "audience" would be teenagers between 15 and 18 years of age. Check two or three high school websites and note their style and how they attract (or don't attract!) you. What are the images like? What are the main colours? Is there any multimedia? What information is provided? Does it reach its audience? Would there be another audience such as parents? Post some of these ideas on the Discussions board.

***Characteristics of your Target Audience***

Your site can’t do everything for everybody. You need to focus on the people most important to viewing the site. It should be designed to bring those people to look and keep them coming back. To define your target audience, describe the intended viewers. The following are characteristics to consider.

* age
* gender
* religious aspects
* ethnic backgrounds
* economic situations
* technical equipment they are likely to have access to
* applicable jargon/buzz words
* geographic locations
* interests and hobbies
* their needs and reasons for coming to your site

If you still aren’t sure what type of style to go for, check out other sites offering the same sort of service or product.

If we use the same example as the snack-time place, the target audience may consist of characteristics such as:

* Local people and teenagers, along with young adults
* People looking for the particular foods you are offering
* People who have only a short time to eat
* People on a budget
* People who don’t worry about “health” food!
* No specific race, religion, or gender

# Site Definition and Information Architecture

***Site Definition***

Developing a website requires planning for budgets, personnel, and public relations, as well as technology.   Often a website is started by a few people who want a website and don’t include input from the entire organization.  The construction of the web pages is actually one of the final steps in website creation!

Once your goals and audience are defined, the next stage is to define the scope of the site content, the interactive functionality and the technology support required. This is known as site definition. Site definition helps to specify your exact needs by asking questions about the day-to-day process and maintenance. You will also need information and editing resources.

In the production process, you will need to answer some of these questions:

* Who will manage the process?
* Who will be the Webmaster?
* Who will be the content experts?
* What browsers will support your website?
* What will be your bandwidth and speed?
* What features will use Dynamic HTML, XHTML, XML, JAVA?
* What security will be in place?
* How will readers reach support personnel?
* What about data base and audiovisual support?
* Will there be an in-house Web server or outsourced to an ISP?
* What will be the budget?
* Who will be the site editor?

Answer the questions above for a high school website. Would it be quite different from a business or other organization? What would be some of the main differences? It is likely that many of the above responsibilities would be carried out by one person due to budget constraints! Who would be the most likely people involved in setting up and maintaining a high school website? Post your answers on the Discussions board.

***Information Architecture***

At this point, you need to detail the content and organization of the website. Once you have specific questions answered about the creation of a website, it is time to put down on paper the actual design, or information architecture. It is best to sketch out a diagram of what type of site you will want to create. This prototype will give you a good feel of what you are looking for.  This can cover some of the following elements:

* Detailed site design specification
* Description of site content
* Site maps, outlines, and table of contents
* Detailed technical support information
* Browser and connection speed technology requirements
* Web server details
* Schedules for timelines of construction
* Graphic design plans

***Organizing Your File Structure***

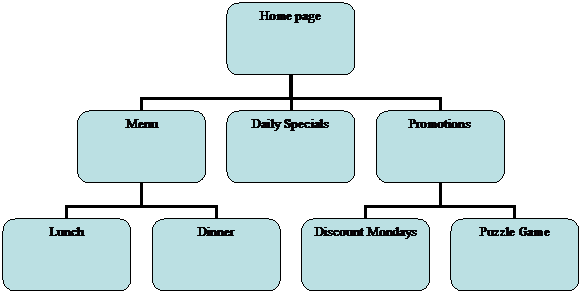
Folders are used to organize files. A website may contain many files including image files, sound files, flash movies, etc. The usual way to organize all this is to create a folder on your hard disk that contains all the files for your site. This is referred to as the root folder. When you publish, it is easy to find everything because it is all in this one folder.

Depending upon the planned size of your finished site, you may have a few or several subfolders within this main folder. For example, most sites have images. It is common to create a folder called ‘images’ inside of the root folder. All images will then be placed in this folder and referred to in the HTML as ‘images*/imagename.ext’.* (Example: images/cat.jpg) The same goes for sounds if you plan on having any. It is very important to organize your files into specific folders and subfolders.  Large websites can have thousands of folders. Folders allow for quick access and retrieval of files. They can be arranged by theme, such as visitor, staff, and students. Some folders are organized by date, and others by geographic location.  Choosing a theme for your folder system is needed before you start saving your files. If a website is created without subfolders, there would be too many files all at the same level at the root drive. This would make it difficult to maintain and update as files could be difficult to locate.

# Site (Navigation) Structure

Once you have a clear idea of your purpose, audience, and basic information structure plan in place, you will want to move to this next step—site (or navigation) structure.

Your Web pages will be determined from the purpose and target audience.  The home page contains general information and links to other Web pages that contain specific information.  This is your navigation structure. An example is below:



**Top-Level (Layer) Page**

This is your Home Page, the first page that people will see when they go to your website.

**Same-Level Page**

This would be the Menu, Specials, and Promotions pages seen above.  Lunch and Dinner are also same-level pages.

**Parent/Child Page**

A parent page has at least one page below it, called the child page.

A navigation structure shows the relationships of the pages to each other and to the whole site.  Sketching a structure is a good way to visually see how everything connects to each other. From the above example, “Daily Specials” is not directly linked to “Discount Mondays.”  This would mean that a user would be two links away from getting to and from these pages.

***Determining the Content***

The content of a site is the text, images, and other objects such as Flash or other audiovisual files. The content will be defined by the outline of the navigation structure. For example:

**Home page:** This usually provides location, hours of operation, contact names and a brief introduction. It could also include a logo or a picture of the business.

**Menu page:** This would probably have pictures of the food and a description of the meals.

**Lunch page:** There could be more images of the meals that are offered, how they are prepared and the prices.

**Promotions page:** Promotions are often flashy and this page could have Flash animation to grab someone’s attention.

Note that home pages sometimes have what is called a “Splash Page.”  A splash page is an introductory page to the website that will catch a person’s attention.  It could be as simple as an interesting logo or full animation. The idea is to have the person interested enough to click on an “enter here” button so that the user visits your site.

Remember who your target audience will be when deciding upon content. Some other possibilities for content are:

* frequently updated information
* product and company articles
* questions and answers
* online purchasing of products
* guest book
* forum or chat room
* website search
* weekly poll to poll your visitors on a particular question
* quizzes and sweep stakes with prizes
* free offers
* news
* unique information
* location maps
* contact and booking forms
* questionnaires

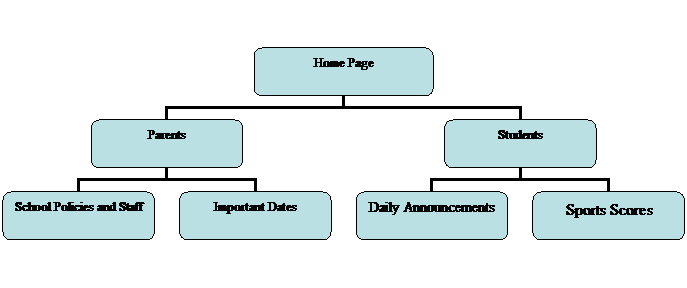
These are all designed to bring in new visitors and to encourage repeat visitors.

The idea behind your navigation structure is to design it so that users can get from point A to point B with as much ease as possible. To make a site easy to navigate it is best to keep each content item within 3 mouse clicks of the main page. Also, visitors should always have a way back to the main page. If the site is too difficult to navigate, the user is not going to enjoy their time spent browsing there.

In order to do this, you need to begin by listing all the content that you are going to have. Then you need to sort these items into categories that belong together.

As visitors advance through the levels or layers, they are getting more in-depth information as they get deeper into the layers. Try to keep individual pages fairly short so that scrolling is kept to a small amount.

Below is an example of a partial high school setup for a website. Note that the site is divided into *parents* and *students* as these two groups often want different information. It is not necessary to divide it this way but it is an option.



Parent information could include the school's street address, phone numbers, staff and administrative information. The school calendar of important dates would also be available along with the school handbook or courses. The students could access daily announcements, club and sports details and upcoming events and assemblies. What else do you think would be added to the website? Post your answers on the Discussions board.

# Navigation Controls

Navigation should be consistent throughout your entire site. If you place a navigation bar across the top of your home page, try to keep it there for all the linked pages. Consider the following points:

* Visitors should know where they are in the site
* Visitors should know how to return to the top level page
* Search features and/or Site Map can be helpful for larger sites
* A feedback link to the webmaster can help keep you informed of site problems

Keep your navigation controls as obvious and simple as possible. They can be text or image controls.

Text controls are the simplest. They allow for faster page downloading and can be viewed in all web browsers.

Image controls can be more attractive but not all browsers are set to view images. Remember to use the ALT attribute for these purposes. Consider combining text and images to create individual links.

A third alternative is an image map. This is the most difficult to create (if you are using straight coding). It consists of a medium to large size image with invisible areas called ‘hotspots’ that are links. For example, a map of Canada could have each province allocated as a hotspot to get you to more detailed information regarding that particular province.

***Navigation Bars***



A navigation bar is a set of hyperlinks that gives the user a way to see the different pages on a site.  There are usually many types of navigation bars on a website.

**Top or left global navigation bar:**

This typically contains a link to each page on the first or second levels. They can be image or text links.  It should always show up on every page of the website. On the WebCT site, the bar shows up on the left hand side.

**Bottom global navigation bar:**

This bar should appear near the bottom of the page and should only be in text format and in small size. There should never be a navigation bar on the right side because it could be cut off depending on the user’s computer.

**Local navigation bar:**

This bar can be at the top or left of the page. The links here usually go to the child pages of the current page. It can also go to same level pages too.

**Breadcrumb bar:**

A breadcrumb trail or path, is a bar that displays the page names in order of level from the home page to the current page the user is looking at.  WebCT has breadcrumbs you may have noticed.  It has a line which works like this: *Course Page, Modules, Module 1....* Each name is a link back to a formerly visited page. The links are usually separated by a > symbol. It is always best to use the breadcrumb bar to navigate instead of using the BACK or FORWARD buttons on your browser.

**Link to the home page:**

There should always be at least one link on each page back to the home page. This gives the impression that the user can “never get lost” on the website!

# Exercises

**Module 2 Lesson 1**

1. What are the two main parts of developing a website?
2. What are the types of websites that are developed?
3. Why is it important to know your audience when planning a website?
4. What are some of the questions you would ask when planning your website definition?
5. Explain some of the elements in information architecture.
6. Why is it important to create several themed folders for a website?
7. Explain three types of levels on a site navigation design.
8. What are navigation controls?  What types should you have on most websites?
9. What is a breadcrumb bar?
10. What is a FAQ page?

# Answers

1. There are usually two parts to the process of developing a website. First, you need to gather your team, analyze your needs and goals, and work through the development process. Secondly, site specification is created which details the intentions, content, length, and technology needed for the site.
2. Here is a list of possibilities as to why you may want to have a website:
   * Personal Websites
   * Training Websites
   * Reference Sites
   * Entertainment and Magazine Sites
   * News Sites
   * Sites to Advertise
   * Sites to Provide Customer Services and Support
   * Company Information Sites
   * Give or Sell Information
   * Sites to Make Money (E-Commerce)
   * Internal Company Information
3. Knowing your audience is very important because it will let you know who will be looking at your website. If you know who is going to your site, you can then plan according to their interests, therefore, developing a loyal audience.
4. Some of the questions to ask when designing your site definition include:
   * Who will manage the process?
   * Who will be the Webmaster?
   * Who will be the content experts?
   * What browsers will support your website?
   * What will be your bandwidth and speed?
   * What features will use Dynamic HTML, XHTML, XML, JAVA?
   * What security will be in place?
   * How will readers reach support personnel?
5. Some of the elements of information architecture include:
   * Detailed site design specification
   * Description of site content
   * Site maps, outlines, and table of contents
   * Detailed technical support information
   * Browser and connection speed technology requirements
6. Folders are used to organize files. A website may contain many files including image files, sound files, flash movies, etc. The usual way to organize all this is to create a folder on your hard disk that contains all the files for your site. This is referred to as the root folder. When you publish, it is easy to find everything because it is all in this one folder.
7. The three layers of site design are Top Level, Same Level, and Parent-Child Level.
8. Navigation controls set up the website in the way a user will move around the different pages and media. Types of controls include text controls, image controls, image maps, and navigation bars. A variety of but consistent number of navigation controls should be available on a site. This will give the user some option as to the way to navigate.
9. A breadcrumb trail or path, is a bar that displays the page names in order of level from the home page to the current page the user is looking at.  Blackboard has breadcrumbs you may have noticed.  Each name is a link back to a formerly visited page. The links are usually separated by a > symbol.
10. A FAQs (Frequently Asked Questions) page is one that has a list of questions and answers that many readers tend to ask. This helps in reducing repetitive emails answering the same question.

# End of Lesson 1

**You have reached the end of Module 2 - Lesson 1.**

In this lesson you have gained an understanding there are many and varied types of websites. However, common to all good websites are accepted design principles and processes that involve thought and planning. You now know that the identification of a site’s target audience, and the site’s purpose and goals, are of primary importance before even beginning to design a site.

Your explorations have allowed you to discover several “best practices” or “standards and conventions” to use in planning and designing a web site (website definition, information architecture, folder structure, navigation controls). You have seen how a site navigation structure (diagram) is a valuable tool to visualize the design or layout of your site before starting to build it.

# Interface Design Introduction

**Module 2 Lesson 2**

Web documents are different from print documents in that people can interact with the web pages.  The graphic user interface (GUI) gives a person an experience with more senses being felt, such as audio and video formats.  Not only is the content of great importance but so is the “other stuff,” such as graphic design, animation and hypertext. It is also important to understand that Web page design is different from conventional print design. Accessibility to all users of the Web is also an issue since there are so many different types of people using the Net today.

# Interface Design



***Web Page vs. Conventional Document Design***

Concepts about structuring information have mostly come from print material because that is all that there was for thousands of years.  Something as basic as bibliographies must be documented in a different way if it is a web page and not a printed page.  Web documents are going through an evolution and standardization that printed books had to since they were developed about 500 years ago.

Although hypermedia (media that is digital and on the Web) is vastly different from conventional media, the rules are not radically different.  Creating, editing, and organizing the material follow the same principles.  Due to the many types of media on a web page, clarity, consistency, and comprehensiveness is very important when developing websites.

It is imperative to apply fundamental design principles consistently on every Web page.  This is less technological and more journalistic in nature. This includes the who, what, when, and where.

**Who**

The user must know who is making the website to be able to make decisions about whether the information is credible or not. The Canadian Humane Society website will have better information about pets than “Billy’s Backyard Kennels.”

**What**

Documents need clear information and titles to get the user’s attention.  The title is often the first thing a person will notice and will actually leave a site basing their only experience on this.  The page title will also become a bookmark (Favourites) for the browser. No title or a vague one will cause confusion for the reader, as will a title that is too “techie.”

**When**

Timeliness is crucial for relevant information and evaluation by the reader.  Today’s newspaper does not print news from two years ago and claim that it just happened!  However, some websites do this all the time.  Dating Web pages and noting the most recent update is important to judge how current the information is on the page.  Some pages now stay on for years and a date should be mandatory on all pages.

**Where**

The origin of a Web document is often difficult to find.  Sites do have a two letter system to note the origin of the country, such as CA for Canada but often, a site will end with COM, EDU, or NET.  Where a site originates will explain a lot about the validity of the information.  A home page should always note the original point, usually as an address.  Every Web page should have:

* The author’s identity (person or organization)
* A creation and/or revision date
* At least one link to the home page
* An informative title
* A clear menu system

# User-Based Design

People are demanding more from websites because of the advances in technology and the speeds of connections.  Knowing your audience and their needs will help you in creating a user-centered design that will satisfy their needs. Creating an overly simple site may give the impression that it is “only for kids.”  If the site is too intimidating, it may scare or turn off potential customers.  Testing and feedback is the best way to judge the appropriateness of a website. Below are some basic user-based design principles that all websites should follow.

**Clear navigation system**

A main concern with Web users is not really knowing “where they are” on a website.  Links create this problem because it can bring you to randomly selected pages without any sequential order as page 1, 2, and 3. Clear, consistent graphics, icons, links, and menus will offer comfort for the user. A *Site Map* indicating the correlation between links will help people see where they are in relation to a specific page.  It is the same as those maps in shopping malls and showing “You are here” signs.

Users should always be able to return to the home page very easily. The links need to be consistent and easy to find. Graphic headers often show the company name and logo giving a sense of familiarity anywhere on the website.  Collapsible menus with sub-menus are a good way to keep things compact and efficient on large websites.

**No dead end pages**

Dead end streets are frustrating and so are dead end Web pages! All pages need to have at least one link back to the home page. Never have a page without any link, that would be like building a house without a door!

**Direct access**

A website should not be a labyrinth for the user.  A corn maze may be fun in real life but it is frustrating on any site.  People want information quickly and with the fewest clicks of a mouse possible.  This means that an efficient hierarchy should be developed before you start building your website. This involves creating pages and links with organized and logical relationships among each other. Studies indicate that users prefer five to seven choices on a menu.  If there are too many choices, the user will feel overwhelmed.

**Bandwidth**

People are getting more and more impatient and waiting longer than ten seconds for a site to download can be deadly!  Most studies show that ten seconds is the limit to waiting until the person tries another place to visit. Never put huge images on a website, even if the person has a high-speed connection.  It is not necessary unless the site is a graphic artist website.  Although Canada has a high ratio of high-speed Internet users, there are still many using slower dial-up services.

**Simplicity and consistency**

The world is a complex place but websites don’t have to be. Contrary to pop culture belief, complicated sites are not favoured by young people. Gratuitous animation, graphics, music, etc. is a source of annoyance rather than interest.  Simple, logical, and familiar design will give people a greater sense of belonging to the site. Unpredictable sites may be amusing for a select few but it will be avoided by the vast majority of people.

A site should follow the general conventions of other major sites giving the user the ability to quickly learn the design of the site. There is a saying that the best referees are the ones that you never see during a game. The same applies to website design, the better it is, the less you notice it! A page should have a consistent pattern of units that share the same basic layouts and themes.  Consistency and predictability are the main goals. A similar graphic will provide continuity on the pages.  Titles, text, colours, and links also need to be consistent.  An invisible system of page to page navigation is what should be strived for.

**Design integrity and stability**

Consistent and stable sites will provide integrity for a website. A site that is poorly designed and maintained will give a sense of being a “dirty room” in need of a clean-up. Grammar and spelling mistakes will not create a sense of authenticity and confidence. A properly functioning site will also make it easier to maintain.

**Feedback and dialog**

Feedback from the users is important.  Quick replies to email is courteous and important to maintain a loyal base of readers. There should always be links to the Webmaster and other important people in the organization.  Guestbook comments can help in general if one looks for patterns in the feedback. For example, if there are 500 entries and over 400 mention about out-of-date information, it is highly likely that the material is not current!

Above are several aspects to consider when creating a website. Can you think of other user-based design principles that would help define the design? What are examples of some aspects to *not* include on a website? Post on the Discussions board at least three or four examples of the most important user-based design principles that *you* think are the most important. Also post a few examples of the type of design that would detract from a good website design.

# Accessibility

The Web should provide accessibility to all people.  This is much easier to do compared to real-life situations where very expensive modifications in physical structures may be needed to give access to all.  Technology can be the great equalizer and design goals should take this into account.  For example, smaller images help those with slow connections. Clean HTML code will limit errors depending on the type of computers used.  It is the responsibility of Web designers to understand and support the requirements of all people. Below are some ways to increase accessibility.

**Alternates**

This idea refers to providing information but also offering an option to the users if the original format does not suit the user.  This could be as simple as providing a text-only version of a website.  Another example could be that blind users can use synthesized speech software to listen to your site. Using HTML code, the “alternate” text could be used, such as “ALT” code in an image. If the image does not appear, the ALT feature will give a written description of the picture.  Visually impaired users may not be able to use graphical menus, therefore a text version may be needed.  Offering links to sites such as Adobe to download Acrobat Reader is a courtesy because some readers may not have the program to read PDF files.

**Cascading Style Sheets**

Content can be more streamlined if Cascading Style Sheets are used (CSS).  CSS is code that helps to standardize web pages in terms of format such as colour and layout. Users can easily apply personalized formatting to Web pages if necessary. For example, if a site is mostly red and green (not recommended!), some people with colour blindness may not be able to read it properly. CSS would allow the user to change the colour scheme to another pattern by changing their browser preferences. (Students are not required to use CSS in this course.)

**Accessibility guidelines**

There should always be minimum standards for accessibility on all sites. Without this, many potential users will not be able to enjoy your site! In addition, not all people have the latest and best computers. Computers come in all shapes, sizes, and speeds.  If you have a brand new computer and design your website based on your computer, many users will probably be disappointed since many features may be missing. One example is page size.  Screens can be 800 X 600 or 1,200 X 800 pixels of resolution.  If you design a site based on 1,200 X 800 and it is read on a 800 X 600 monitor resolution, there will be scrolling needed from left to right as well as up and down.

It is also important to not create a website for only one browser. Although, as of 2008, Internet Explorer was still the most used browser, this does not mean that it will stay this way. The Netscape browser was used by over 95% of Internet users in the early nineties. Today it is not even supported anymore.  What works on IE often does not work on Firefox. The reason for this is that the code is different and these are competing companies that don’t share the same ideas and objectives. Also, if an animation is created with the latest version of Flash, it may not work on a computer with an older Flash player plug-in.  The user may be able to download the latest version but the person may just visit another site instead of going to the trouble of downloading and installing a new plug-in.

**Navigation**

As mentioned earlier, proper navigation is very important. Consistent and predictable menus provide logic and seamless surfing. Readers need to feel in control and not be lost in a sea of digital mayhem. Links that lead to large files, such as a PDF, should give information about the file before the person clicks on the link. This information can simply give the size of the file and note which software is needed to see the file.

Providing a “Go Back” button or link gives the user some feeling of sequence. The *Back* button brings the user to the page they just visited. This is different from *Previous Page*. This brings the user back to the previous page as defined within the website. For example, if you visited page 12 and then page 17, the Back button would bring you back to page 12 if you were on page 17.  The Previous button would bring you back to page 16 if you were on page 17.  Page 16 could have been a page you never visited.  Button bars are the most logical place for links back to the home page or other menu pages.

# Exercises

**Module 2 Lesson 2**

1. What should every Web page have?
2. What is a site map on a website?
3. What is the average amount of time a person will wait for a Web page to download?
4. How does the resolution of a computer screen affect accessibility?

# Answer Key

**Module 2 Lesson 2**

1. What should every Web page have?
2. What is a site map on a website?
3. What is the average amount of time a person will wait for a Web page to download?
4. How does the resolution of a computer screen affect accessibility?

**Answers**

1. Every Web page should have:
   * The author’s identity (person or organization)
   * A creation and/or revision date
   * At least one link to the home page
   * An informative title
   * A clear menu system
2. A site map is usually a text based Web page which indicates all the pages or areas of the website. By clicking on the text, the link will take you to the corresponding page. It is used to show a global view of the entire site on one page.
3. Usually a person won’t wait more than ten seconds for a Web page to download.
4. Computers come in all shapes, sizes, and speeds.  If you have a brand new computer and design your website based on your computer, many users will probably be disappointed since many features may be missing. One example is page size.  Screens can be 800 X 600 or 1,200 X 800 pixels of resolution.  If you design a site based on 1,200 X 800 and it is read on a 800 X 600 monitor resolution, there will be scrolling needed from left to right as well as up and down.

# End of Lesson 2

**You have reached the end of Module 2 - Lesson 2.**

You now have an understanding of the need for standards and conventions when creating the interface design for a website. Design conventions like having the information questions of who, what, when, and where answered on every web page, and the implementation of “user-based design principles” are important standards to follow. As well you now understand the need to build “accessibility standards” for users into a web page.

You have noted the importance of planning your website by using a visual cue or “site map” to help users understand where they are on a page in relation to the rest of the website, and how a visual design helps your overcome issues like navigation, dead end pages, and ease of access.

# Site Design Introduction

**Module 2 Lesson 3**

Once the interface design standards are set, the site design can now be developed. The site design is the framework of the organization. Think of an organizational chart of a company with the president at the top and the worker connections below. The president is the “home page.”  The design should meet the needs of the audience and not the needs of the organization creating the website. Site elements refer to the characteristics that help in creating great websites.

# Site Design Structure

Site design is the framework of the organization. Creating an efficient design structure will allow for easy expansion of the website affecting as little as possible in the current design. Creating an organizational chart of your website structure is a good way to visualize how the pages and themes interconnect.

***Organizing information***

Being organized makes life much easier to maintain, it’s the same with a website. These are the basic steps in organizing information:

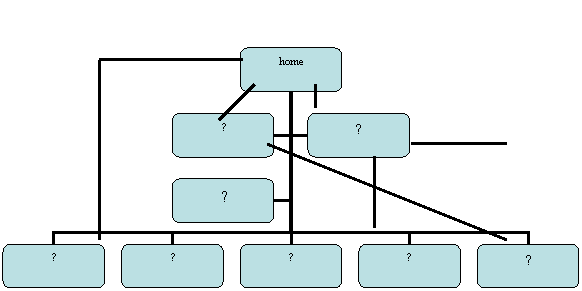
* Divide your content into logical sections
* Define a hierarchy of importance for these sections
* Make the connections among the sections using the hierarchy
* Build the site according to your information architecture
* Evaluate your site

**“Chunking” or themed information**

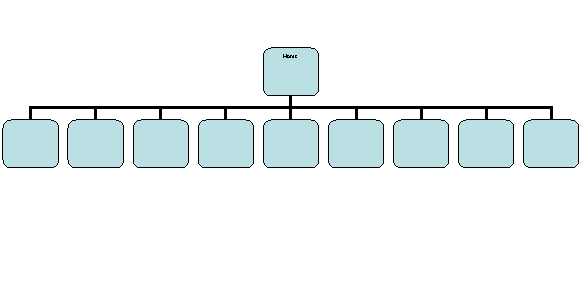
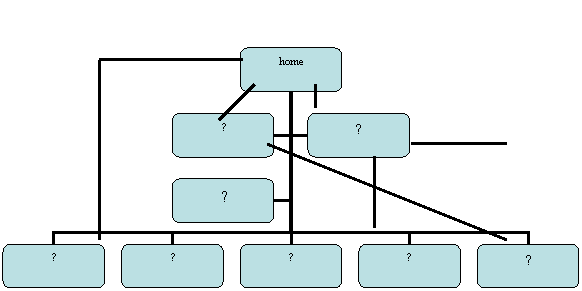
The Web is in digital format which means that everything can be accessed in random or non-sequential order.  It is therefore more important than ever to logically place information in proper areas.  Readers prefer material that is in chunks, that is, in areas that are easy to find and read.  Not many Web users read very long passages of information. If they do, they will print it out.  It is important to find the “happy medium” between offering pages that are too many and short and too few and long. Don’t overly subdivide material where a person spends as much time clicking links as they do reading. At the same time, don’t have pages that scroll for a very long time, making it difficult to find information.  Chunking is good for the Web since the computer screen is not all that large to show a lot of information.

**Hierarchy of importance and the relationships**

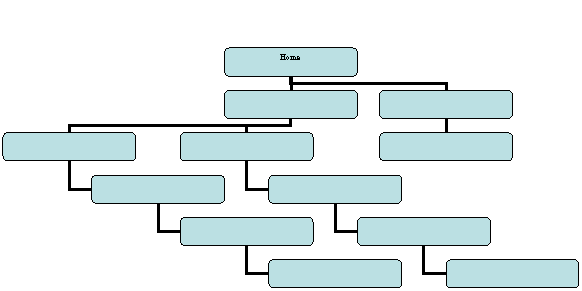
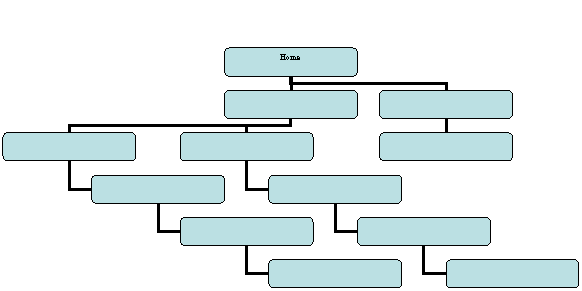
Hierarchical organization is crucial to success on the Web. Below is an example of what you don’t want in your site design:



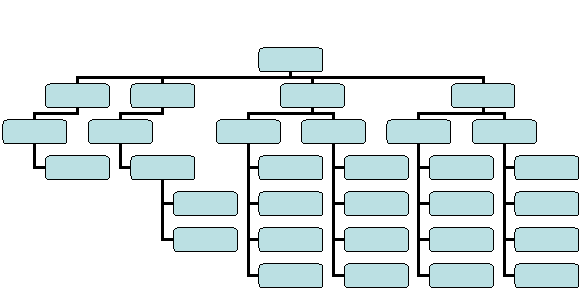
Once you have designed a site, analyze its functionality.  Web sites that are too shallow depend on large menu pages, as seen below:



Menus that are too deep may take too long to get to the information:



Feedback from users will let you know what works and what doesn’t. Balance of function and complexity will provide an effective site. The most important step in planning your site is to organize your information.  Doing this will save hundreds or thousands of hours later if you try to “fix” the problem after the site is created. Typical sites may have this kind of structure below but is certainly not limited to this type of structure.



This type of structure has the home page at the top. From there, there are four main menus, or themes. From each menu runs a list of options to choose.

***Basic Information Structures***

Websites are created around basic structural themes.  The best way to organize information is to put it in a sequence. This sequence can be based on specific themes or topics, chronologically, alphabetical, geographic, etc.

A **straight sequence** is best for a training site because steps have to be completed in sequential order. This is referred to as a linear path meaning that it only goes in one direction and is all at the same level.

A **hierarchical structure** is best for complex areas of information.  This is the most common type for websites. A home page is usually the “top” page. It also allows for expansion fairly easily without losing logical patterns and relationships among pages.

A **web-like structure** has few restrictions and works well in websites where there’s no clear “boss.”  It allows for free flow of ideas and patterns. These are difficult to maintain due to their random nature but can be effective with small organizations or personal websites.

# Site Elements Part I

Although websites are as varied as people, there are still certain elements that are shared among well designed sites. These elements are factors which help in creating efficient websites. Several of these elements are listed below.

***Home pages***

Websites are organized around a home page which acts as the anchor and point of entry of the site.  This is the top page in the hierarchy and all pages should link to this one.  The WWW URL is the address of this home page.  By default, the page should be named index.htm or default.htm so that the user doesn’t have to type the actual name of the page to get to it. For example, www.cbc.ca is actually www.cbc.ca/index.htm.  If the CBC had named their home page “homepage.htm,” then the user would have to type www.cbc.ca/homepage.htm to get to the main site.  The positioning of text and images is very important in that the computer screen will probably only show part of the home page. Think of a newspaper where only the top half fold is the one that is visible when it is being sold. You wouldn’t want to have the most important information on the bottom half of the page where most people wouldn’t see it. The home page should grab the person’s attention so that he or she will be interested in further investigation of the site!

**Menu home pages**

Menus should be very visible and logically placed on a home page. They are either text based or graphics based image maps. They can placed horizontally at the top with drop-down menus, [www.adobe.com](http://www.adobe.com/) is a good example of this.

**News-oriented home pages**

These sites offer high visibility and timely information such as “late-breaking” news and calendar events. [www.cnn.com](http://www.cnn.com/)  and [www.ctv.ca](http://www.ctv.ca/) are good examples.

**Path-based home pages**

These are sites that offer an option for entry depending on who the user is. For example, a school may have buttons for the visitor, staff, parents, and students. Each option will lead to an appropriate page based on the specific user. An example would be at www.iastate.edu.

**Splash screens**

A splash screen is an additional page before the home page to get a person’s attention immediately. There is controversy as to their effectiveness. Some people find these pages annoying and others enjoy them.  They usually involve some slick animation or graphic, however, after the first couple times, users tend to tire of the splash screen.  Whether one is added will depend very much on the type of audience that visits your site.

**Graphics or text?**

A decision to make is how important of a role graphics will play in creating your site. Balance will be the key as too many images are distracting but not enough can make for a boring site. The type of audience will also determine the amount of images and text.  Loading times of large images may make the website slow.

# Site Elements Part II

**Home page layout vs. general layout**

Home pages are there to get the person’s attention and often do not reflect the layout and objectives for the other pages. Once a person has made a decision to further look into a site, grabbing their initial attention is not as important. Content will be more of an issue. The overall layout of the entire website will be much more important than the single home page.

The terminology will be also very important. What kind of words or phrases will you use to get the person’s attention?  Using simple but clear words on a menu will help to avoid frustration by the user if he or she misinterprets the meaning of the menu choice. Using “More Here!” doesn’t really explain what is there if the person clicks on that link.

**Menus and submenus (subsites)**

Most sites need menus and submenus to keep things orderly and clean. Menus should have links to the basic units for the site. Submenus will have more links to more specific information within each unit. Be sure to create logical themes for your menus. Don’t have a menu of “Contacts” and then have another menu choice for “Email me.” The email contact should be in the Contacts option.

**Resource and other relevant site links**

Many websites list links to other related sites for more information. If this is done, it is important to check to see if the links still work as website URLs change quickly.  Also, you may not want people to leave your site so if you do this, the link should open a new browser window so that the user has not left your browser window.

**Site guides and maps**

Some websites are so large that site guides and maps are necessary to give people perspective of where they are on a site. A table of contents, just like a book, helps to bring order and a global picture to the site. Site maps offer text-based information on where certain pages are located. It is often visible on one page therefore a person can see all at once where all the connections are made on a site.

**What’s new? page**

Large websites can have so much data updated frequently that people can’t tell what has been updated. A What’s New page offers the chance to funnel all the new changes into one page of links. A revision date should also be added.

**Search features**

A search engine should be added to large sites so that people can quickly find information. A well-organized site should offer ease of finding material but sometimes a person wants to find specific data.

**Contact information**

There is nothing worse than going to a site that doesn’t offer contact information. This is like a retail store not having any telephone service for customers. Feedback helps to build better websites and find out the latest trends and interests of your audience. Provide street addresses, phone and fax numbers, email contacts, directions, hours of operation, and parking information.

**FAQ pages**

Frequently Asked Questions help in not only answering audience questions but also help the webmaster in not having to repeatedly answer the same question. Once a list of similar questions keep coming up, these should be added to the FAQ page.

**Error pages**

Broken links, files not found, pages “under construction” are irritating. There is no point in having a notice that a page is under construction because all web pages are always under construction!  It is important to quickly repair broken links as they give the impression of a place that is not well kept, just like a dirty motel.  Deleted pages, misspelled URLs, or new websites are all common examples of what may cause a broken link. The more sophisticated sites will offer options and suggestions when a broken link has occurred.

**Internet vs. intranet**

The Internet is a collection of networks around the world. An intranet is a collection of networks within an organization. It is often referred to as an internal Internet. Since an intranet serves a specific audience, such as a school or company, the objectives can be quite different from an Internet site. Speeds are faster, therefore multimedia is usually not an issue for demonstrations.  Efficiency is the key, surfing is not part of the plan. Get your information and leave.  Many intranet offer training services and separate email systems for faster communication.  The design standards will be different between the two systems. Intranets tend to have very clear goals and economic plans in place. However, with a lack of planning, they will suffer the same problems as Internet sites.

# Exercises

**Module 2 Lesson 3**

1. What is site design?
2. What does “chunking” mean? Why is it important to do this on websites?
3. What is the difference between the Internet and an intranet?
4. What is the purpose of a site map?  Find a site map on a particular website and note the website and URL.
5. Explain three information structures.

# Answer Key

**Module 2 Lesson 3**

1. What is site design?
2. What does “chunking” mean? Why is it important to do this on websites?
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5. Explain three information structures.

Answers

1. *Site design is the framework of the organization. Creating an efficient design structure will allow for easy expansion of the website affecting as little as possible in the current design. Creating an organizational chart of your website structure is a good way to visualize how the pages and themes interconnect.*
2. *The Web is in digital format which means that everything can be accessed in random or non-sequential order.  It is therefore more important than ever to logically place information in proper areas.  Readers prefer material that is in chunks, that is, in areas that are easy to find and read.*
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4. *Some websites are so large that site guides and maps are necessary to give people perspective of where they are on a site. A table of contents, just like a book, helps to bring order and a global picture to the site. Site maps offer text-based information on where certain pages are located. It is often visible on one page therefore a person can see all at once where all the connections are made on a site.*
5. *A straight sequence is best for a training site because steps have to be completed in sequential order. This is referred to as a linear path meaning that it only goes in one direction and is all at the same level. A hierarchical structure is best for complex areas of information.  This is the most common type for websites. A home page is usually the “top” page. It also allows for expansion fairly easily without losing logical patterns and relationships among pages. A web-like structure has few restrictions and works well in websites where there’s no clear “boss.”  It allows for free flow of ideas and patterns. These are difficult to* *maintain due to their random nature but can be effective with small organizations or personal websites.*

# End of Lesson 3

**You have reached the end of Module 2 - Lesson 3.**

In this lesson you explored the process of creating a navigation plan or site map for a website. You understand that this involves the organization of information, chunking or grouping information that is related, setting up a hierarchy of importance and relationships, while creating a structure for a website. This site map is often displayed as an organizational diagram.

You have gained knowledge of a number of design elements that can be used as criteria for making decisions related to what to include in a website design or for suggesting improvements to the design of an existing website.

# Page Design Introduction

**Module 2 Lesson 4**

Proper page design and page layouts will give the reader of a website a pleasant experience when navigating. Order, clarity, and aesthetic beauty will give confidence.  Spatial organization of graphics and text on Web pages will engage the reader and provide impact and get their attention.

Page Design Principles

Below are some of the concepts that are important to good page design principles.

**Visual idea**

Logical manner is needed for great design. Off balanced graphics will direct the user to things that are not important. Shape, colour, and contrast will determine the effectiveness of a page. Highly textual pages will not offer interesting visual interest. Again, the audience will determine how much to use but balance is always an effective goal. Images will provide visual relief, but those images must also be relevant.  However, if the page is too graphical in nature, this will turn off the reader.  The limitations of HTML code will also come into play. HTML cannot do everything a designer wants it to do. More will be explored in this area in the HTML section.

**Visual hierarchy**

The objective of graphic design is to create a consistent visual hierarchy where the important design elements are emphasized. The first impression of a Web page is usually the visual sense. People notice the background colour, the images, the format, fonts, and contrasts. Only after do users start to read the information.

**Contrast**



Graphic balance and organization of a Web page is needed to get not only the person’s attention but to keep it.  Visual balance involves offering the correct mixture of text, images, and format.  A Web page with straight text and no paragraphs which scrolls for a very long time is going to be dull. By simply adding a section column on the left or top in a slightly different colour, it will make the visual structure much more effective.

**Consistency**



When creating a page layout, first set out a layout grid and a style for your text and images.  This will need to be consistent throughout your website. Although repetition seems like a “boring” concept, it is the consistency that will provide a sense of belonging to the site.  The repetition of sleeping in the same home each night is better than trying to decide where you will sleep night after night. Layout and navigation consistency allow the reader to quickly adapt to the site and find things properly.

**Page dimensions**

The size of which to base your website is always a problem because people have different screen sizes. As people get bigger computer screens, the resolution of pixels becomes smaller and sharper.  A 1,200 X 800 screen will make a website look very different from a resolution at 800 X 600 pixels.  There is a “safe area” for Web page sizes, meaning that there is a minimum screen size in common to all users.  If a website is created too wide, the horizontal scroll bar will appear and this is terrible for a site. Having to scroll in four different directions will almost always result in a lost audience. Therefore, if a site is created for a 800 X 600 screen, this means that a 1,200 X 800 monitor will simply show extra space on the sides but will not affect the graphics of the site.

Although a screen could be 800 X 600, this does not mean that all the area is available. Status bars, scroll bars, menu bars, etc. affect the eventual size so that the safe area is only 760 X 410 pixels at best.

**Page length**

To determine the page length of a Web page, one has to take the following into account:

* Bandwidth
* Content of the page
* Relation between page and screen size
* Whether the reader is to read, print or download material

Especially long pages will have to be scrolled up and down.  The user will lose perspective of the screen.  Anchors will be needed at minimum. Long pages may also result in the loss of a menu bar or other navigational buttons. The one advantage of a long Web page is that it is easier to print so this works well for information-based pages.

A rule of thumb is to divide a page into one or two printed pages worth of information. Provide a link for the full-length text for easy printing.  Short Web pages are good for home pages, pages to be read online and pages with large graphics. Long pages are easier to maintain, easier to download, and easier to print.

# Page Design Principles II

**Design Grids for Web pages**

Design grids set the “backbone” of the page design.  HTML code is very limited in its ability to format and control text and images. Therefore, clever use of tables and other means can create complex and functional sites and pages.  Without developing a design grid, inconsistency will come into play and make maintaining a site very difficult. The type of grid system you have will depend on your goals and audience. The design grid will determine the major themes for text, images, and style.  Most Web pages have “zones” with different functions. For example, a block of menus on the left of the screen will have this sole purpose to direct people to other areas. The top block of the Web page may have a logo and contact information.  Only the right side may actually change although three zones are visible.  Page headers provide site identity with a graphic or slogan. Page footers usually give basic information about the site or page, such as the date it was created. These are also zones within the screen page. A typical design grid could have the following sections on a Web page as seen below. Each section would carry a specific type of information, header, footer, or menu.

|  |  |  |  |
| --- | --- | --- | --- |
| Header | | | |
| Menu | Content | Content | Content |
| Footer | | | |

All these factors will finally determine your page layout.

# Page Layout Design

HTML code, the basis for web pages, was never meant to work as a design tool or program. Pressing “enter” won’t even bring the cursor down to the next line. Before the browsers, the WWW was a text-based world run through an operating system called UNIX. With the development of Mosaic, the first browser, and then the likes of Netscape and IE, the Web became much more graphical.  Layout became very important but HTML still had the same layout problems.  With some fancy coding, there are many ways to make a page look very good. Using *tables* is one way to align text and images in a proper manner.

**Flexible design**

The Web is flexible in a way that print media isn’t.  Display size, resolution, default settings, and software affect the look of a Web page.  A printed page in a book will always look the same.  With this in mind, Web pages should be built with this “advantage” in mind.

**Layout tables**

The size of a person’s computer screen will determine the line length of text, that is, the width of the monitor.  If you want to control your text and images, you will need to use tables on your Web pages. Normal reading distance with the eyes is about 12 words per line.  Margins provide visual contrast and definition to a page.  Columns are used quite often to create pleasing space on a Web page. Often, a page is divided into two columns, a narrow one on the left which contains the menu and a wider one on the right with the information.  Multiple columns can give added flexibility to a site.  A gutter is the space between columns and allow for blank space between text.  A typical example of a page layout with tables is seen below:

|  |  |  |
| --- | --- | --- |
|  |  |  |

Another type of layout is to have headers and footers as show below. This gives consistency for always having a menu, a top row for a logo and title, and a footer with text based links.  The difference between the width of the first and second column varies, however, the range is usually from a 30/70% to a 40/60% split. Note that this layout does not have a gutter between the columns.

|  |  |
| --- | --- |
|  | |
|  |  |
|  | |

# Borders

Tables on Web pages usually don’t have borders that define the area.  If borders are desired, they can be added in.

**Fixed vs. flexible**

HTML tables are flexible by nature, meaning that if you adjust your computer screen size, the table information will re-adjust to the size of the table.  This is a good feature as computers do not have standard size screens and resolutions. It is possible to make your table layout fixed so that it cannot be altered no matter what the size of the screen. Some prefer fixed tables so that their layout will always look the same. To accomplish this, the layout width has to be narrow enough to accommodate all sizes. This means that a computer with a large screen may have a lot of dead space on the sides.  This may be the desired effect but it can also lead to a “blank” looking page. Colours can be added to liven up the dead space if that is preferred. Fixed tables are defined with absolute values such as pixels = 400, instead of giving a percentage of the size.

You can also insert a table inside a table for added flexibility. This is called a nested table. You will see this on a site like [www.yahoo.com](http://www.yahoo.com/). Note the columns of information. This is done using HTML tables.

**Spacing and alignment**

Tables can also be used to space and align text and images such as what you see below.

|  |  |
| --- | --- |
| One | HTML tables are flexible by nature, meaning that if you adjust your computer screen size, the table information will re-adjust to the size of the table. |
| Two | HTML tables are flexible by nature, meaning that if you adjust your computer screen size, the table information will re-adjust to the size of the table. |
| Three | HTML tables are flexible by nature, meaning that if you adjust your computer screen size, the table information will re-adjust to the size of the table. |

Shading can also be used to highlight or contrast information, as seen above.

Images can also be aligned within tables:

|  |  |
| --- | --- |
| 1  2  3  4  5  6 | HTML tables are flexible by nature, meaning that if you adjust your computer screen size, the table information will re-adjust to the size of the table.  https://bblearn.merlin.mb.ca/bbcswebdav/xid-5546765_1HTML tables are flexible by nature, meaning that if you adjust your computer screen size, the table information will re-adjust to the size of the table. |

# Exercises

**Module 2 Lesson 4**

1. Name four concepts that are important to page design.
2. What is meant by visual hierarchy? Find a home page which you find pleasing and explain why it catches your attention.
3. What does consistency give to a website?
4. Why are page dimensions so important to developing a website?
5. What is meant by flexible design? How is it different from design in a book?

# Answer Key

**Module 2 Lesson 4**

1. Name four concepts that are important to page design.
2. What is meant by visual hierarchy? Find a home page which you find pleasing and explain why it catches your attention.
3. What does consistency give to a website?
4. Why are page dimensions so important to developing a website?
5. What is meant by flexible design? How is it different from design in a book?

# Answers

1. *Four concepts of good page design include contrast, consistency, short page length, and proper page dimensions.*
2. *The objective of graphic design is to create a consistent visual hierarchy where the important design elements are emphasized. The first impression of a Web page is usually the visual sense. People notice the background colour, the images, the format, fonts, and contrasts. A site with good visual hierarchy is adobe.com.*
3. *When creating a page layout, first set out a layout grid and a style for your text and images.  This will need to be consistent throughout your website. Although repetition seems like a “boring” concept, it is the consistency that will provide a sense of belonging to the site.  The repetition of sleeping in the same home each night is better than trying to decide where you will sleep night after night. Layout and navigation consistency allow the reader to quickly adapt to the site and find things properly.*
4. *The size of which to base your website is always a problem because people have different screen sizes. As people get bigger computer screens, the resolution of pixels become smaller and sharper.  A 1,200 X 800 screen will make a website look very different from a resolution at 800 X 600 pixels.  There is a “safe area” for Web page sizes, meaning that there is a minimum screen size in common to all users.  If a website is created too wide, the horizontal scroll bar will appear and this is terrible for a site. Having to scroll in four different directions will almost always result in a lost audience. Therefore, if a site is created for a 800 X 600 screen, this means that a 1,200 X 800 monitor will simply show extra space on the sides but will not affect the graphics of the site.*
5. *The Web is flexible in a way that print media isn’t.  Display size, resolution, default settings, and software affect the look of a Web page.  A printed page in a book will always look the same.  With this in mind, Web pages should be built with this “advantage” in mind.*

# End of Lesson 4

### ****You have reached the end of Module 2 - Lesson 4.****

You have gained an understanding of the standards and conventions that are important for use as page design principles. You noted how a design grid can be used as a visual guide to create a consistency of design for pages on a web site. You have seen how design principles for a page can be applied through using tables, gutters, image boxes and shading, allowing the definition of where content will be placed on a page.

You should competent in the application of these standards of layout and graphic design later in the creation of your own website design, and can use this knowledge to critique and suggest improvements to existing websites.

# Typography Introduction

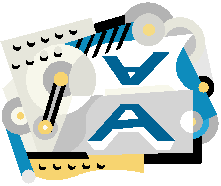
**Module 2 Lesson 5**

Typography is the science of letterforms on a page.  It can be both of verbal and visual communication. Good typography gives a sense of balance between text and images, headlines and subtext.

***Characteristics of type on Web pages***

One major difference between text on printed paper and the Web is the resolution.  Most magazines and books have 1,200 dots per inch (DPI) to create letters. Computer screens have about 72 PPI (pixels per inch). The usable size of a computer screen is also smaller than a page in a book or magazine. Web typography is highly variable compared to print on paper. This means that things constantly change on the Web depending on the browser, computer, operating system, server, and other dynamics. For example, if a Web page has a font type such as *Chunky Monkey* and the computer doesn’t have the *Chunky Monkey* font type installed, the page will not show this particular font and choose another random one to display the text.  You can never be guaranteed that what you see is what you will get!

# Typography - Legibility



Good typography offers contrast and distinctive patterns. If the Web page is full of plain text, it will be just shades of grey after a while. On the other hand, a quilt-like, or patchy set of blocks of text will create inconsistent patterns. Predictable patterns make pages much easier and more enjoyable to read.  The following elements should be followed to create good legibility:

**Alignment**

Margins provide a border and visual relief on a page. If there were no margins in a book, the text would continue to the edge of the paper and give a sense of words being cut off.  White space on pages is not a bad thing to have and is not considered a waste of space. Think of your home, just because there’s an empty spot somewhere in the room, it does not mean that it would look better by putting more furniture in that area. Margins provide balance between tables and columns and also menus.

**Justified text**

This is text that is flush (straight) on both sides of the margin. This gives a sense of formality and symmetry. On the other hand, justified text creates large white spaces between words and excessive hyphenation. Generally, justified text should not be used on Web pages.

**Right-justified text**

This type of text is difficult to read in general. Never center text across a whole page. You may find this harder to read. A title is fine but that is about it.

**Left-justified text**

This is the most legible form of text on the Web because it is predictable. Having ragged right edges also offers some variety to the reader and less eye strain.

**Headline justification**

Headlines can be centered or left-justified. Centered titles is more traditional and symmetrical. Left-justified titles offer a somewhat more modern approach to layouts.

**Line length**

Lines of text on the Web are generally too long and creates eye strain. Text in columns should not be longer than the eye span. If it is too long, the eyes develop the “tennis ball syndrome,” that is, the eyes keep moving side to side to keep up with the long lines. Thirty to forty characters per line is considered ideal. This number will however be affected by several factors, such as the age of the reader, the eye sight of the reader, the size of the monitor, and the resolution of the screen.

**White space**

White space is the area that has no text or images on the Web page. The amount of white space that is optimal will depend on the audience and type of material that is displayed.

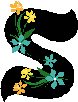
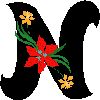
**Indenting paragraphs**

Today, there is less and less indenting of paragraphs and there is simply an extra white line between paragraphs.

# Fonts

**Typefaces**

**or**

****

Typefaces are also known as *fonts* by most people.  Some typefaces are easier to read than others, especially on a computer screen.  Traditional serif fonts such as Times New Roman work well in both print and on the computer screen. A serif font is one with a small “hook” at the end of the letter giving a flow into the other letter. In theory, printed text works best with serif fonts but sans serif (without serif) fonts work best on the Web. Therefore, although Times New Roman is common on the Web, it is not the best font to use.

Fonts like Verdana and Georgia were designed specifically for the Web and are sans serif fonts. They are also larger in size which makes them look too big on printed paper.

Choosing a typeface is important. Many do still choose Times New Roman and may use Verdana for the titles. The other important factor to remember is that the font you use must also exist on the user’s computer if the page is to show the font. Times New Roman and Verdana exist on nearly every computer in the world so it is a safe bet to use. A font like *Chiller* is not only difficult to read but most computers don’t have this font installed therefore you’ll be doomed from the start to use an odd one like that.

HTML allows you to specify the typeface for Web pages. It also offers alternates, such as Verdana or Georgia if Times New Roman is not an installed font on the reader’s computer.

Type size

The default size is usually of 12 point for most fonts.  12 point means that a typeface is 12/72 of an inch high. Titles will be of larger size and some prefer to use 10 point to add more text within a small area. Sometimes, 10 point will be too small, especially for older readers.

CASE

AS MENTIONED EARLIER, ALL CAPS IS LIKE SHOUTING!  This is certainly not good practice but is used far more than it should be. It not only looks bad, but it is harder to read and very monotonous. If you want to emphasize a point, try these following options below.

**Emphasis and bold**

Emphasis is using an element like **bold**.  This provides the reader with a focus to a particular word. **Too much bolding doesn’t give emphasis to anything in a line**. Use it sparingly as it can get annoying if every tenth word is in bold.

*Italics*

Italics is quite useful and gives a more subtle emphasis on a word. It is often used when emphasizing a certain term or title of a book or magazine.

Underlined

An underline on Web pages is not very useful. It provides emphasis but it also gives the impression that the underlined text is a link too. Use it sparingly on Web pages.

**Coloured** **text**

Colour is great on images but in text it is not as affective and can actually be a negative element. It can look child-like but if used in subtle ways, it can look good to distinguish section titles.

Spacing and

indentation

This is a good technique to isolate text such as titles, headers, and footers. Indentation is very good for bulleting text and quotations.

Consistency

Consistency is one of the hallmarks of good page layouts. Once fonts, colours, indents, spacing and the like are decided, these elements should be used consistently throughout the website. CSS can create this consistency.

Remember that cross-platform issues will come up. What shows up well on Windows may not look good on a Macintosh computer.  Accessibility has to be also considered. Use a larger font if you know your audience is of an older age.

Anti-aliased type

Anti-aliasing is a technique used in computer graphics to optimize the look of graphics and typography. It smoothes out fonts by inserting pixels of fading colours as it moves away from the text. It is important to usually use this feature when creating graphic text.

# Editorial Style

Reading on the Web is different from reading a book.  Web readers tend to skim text a lot more than book readers.  Web material needs to be in short bursts of concise and interesting reading. Reading on screen is not very relaxing or pleasing. Scrolling, the brightness of the screen, the resolution, and the constant movement of banners make for frenetic reading. Hyperlinks also easily stray the reader into areas they weren’t planning on going and they end up not finishing the material that they started.

The “pyramid” style of writing works well, in that the conclusion is at the beginning of the written material. Facts should also be at the beginning.  It is also better to be concise than to write a lot of “deadwood.”  Deadwood is unnecessary material that doesn’t add to the clarification of a subject. If an idea can be explained in half a page, then it should be half a page and not a full page of extra words.

**Online style**

Most text will not be read word for word on the Net, compared to a printed book. This is why it is important to not be vague and verbose in your writing, especially on a Web page.  Being clear and factual is more effective.  Always stick to the main idea and be stingy with your words. Also think globally since many readers may be scattered all over the world. If you are referring to a particular place in Winnipeg, make sure that not only the province is indicated but also the country.  Many people in Minnesota have no idea where Manitoba is situated! The international date format is d/m/y and not m/d/y. Month, day, and year is for the United States only.

**Titles**

Headlines should be bold and the first letter should be capitalized.  Always enter a title in the head section of the HTML code. This will display in the blue line at the top of the screen, on the bookmark, and on the description of the site when it is searched.

**Text formatting and links**

Avoid putting too many links on words. This makes it more difficult to read and also distracts the reader into clicking on the link to visit another site.  There is no point in creating a great website just to invite people to leave within seconds. If you must have external links to other sites, have the link open a new browser window. This will leave your site on the screen at all times. Never write a phrase such as “Click here to get more information.”  Simply write the sentence as you would normally and then choose a word or two for the link. Link colours should closely resemble the text colour.

Always spell check and check for grammatical errors. A website filled with errors will not have a” believability” factor for most people.

# Design "CRAP" Principles

Good design principles are the basis for making effective Web pages.  Although a perfect list of concise design principles is difficult to attain, there are some ideas that apply to all pages. One group of these principles is referred to as the “CRAP” principles.  It is an acronym for Contrast, Repetition, Alignment, Proximity.

**Contrast**

If two elements are not exactly the same, then make them different. Effective contrast must be strong.  It adds visual interest and it helps to organize information.  Contrast in titles, headings, and subheads helps in filtering information.  Typeface contrast with bold, colours, shapes, and textures can also be effective.  Contrast creates a focal point on the Web page. For example: sharp contrast allows the reader to not be confused about the theme in each of two columns, although they are on the same page.

The following link will take you to a more in depth description of the use of contrast and its application on web pages. It includes several examples as well.

<http://www.webdesignfromscratch.com/web-design/contrast/>

**Repetition**

Repetition is the idea of repeating an aspect throughout your website.  If bold is used for a heading, then it is prudent to use bold for all headings. Keep the same colour background for most pages. This will unify the different sections into one whole piece and give a sense of familiarity to the reader.  Repetition also controls the reader’s eyes and attention. It also helps to organize and unify interest on the pages. For example: the sections headings, fonts, and layout can be repeated for each page. This allows for easy reading and a sense of knowing where everything is very quickly.  This provides comfort to the reader and they will probably return due to the ease of use.

The following link will take you to a more in depth description of the use of rhythm and repetition and their application on web pages. It includes several examples as well.

<http://www.webdesignfromscratch.com/web-design/rhythm-and-repetition/>

**Alignment**

Everything should be placed on a page with a purpose.  The alignment of text, tables, forms, headings, and images can have a huge impact on the feel of a website. Align elements on vertical hard edges, usually on the left side. Do not centre your text.  Even titles can be aligned to the left instead of in the middle of a page.  Centered titles and images are more formal and more ordinary than placing them on the left or right side. Do not justify your margins on the left and right. This will make the text look too “boxy” and difficult to maintain interest in reading.  Alignment also creates unity on a page and provides order to a site which can often have large amounts of information. For Example: if the image above provides effective alignment with the text and the text is in symmetry with each block, this provides balance and keeps any one area from getting all the attention.

The following link will take you to a more in depth description of the use of rhythm and repetition and their application on web pages. It includes several examples as well.

<http://www.webdesignfromscratch.com/web-design/alignment/>

**Proximity**

Group related items together so that related objects are viewed as one cohesive group.  Elements that are not related to each other should not be in close proximity. If you do this, the reader will get the impression that elements in close proximity are somehow connected. If a page has too many elements, the reader will not know where to begin or end his or her reading. This will cause confusion and the main ideas may be missed.  Also have sufficient white space between the themed units. If two different ideas are very close to each other, this will also add to confusion about the meaning of the material. For Example: even though the two main titles on adjacent columns can be larger than their subtitles, the proximity of the subtitles to the main title makes you read the text on the left columns together before reading the column on the right. Proximity in this example provides cohesion to the information in each column.

<http://www.webdesignfromscratch.com/web-design/grouping/>

**Conclusion**

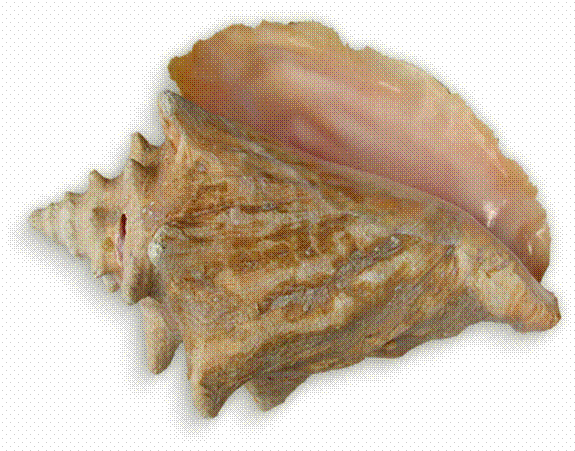
In general, don't be afraid to use a good amount of white space. Large lettering can be very effective to get the attention of the reader. Realize that you are placing material on a computer medium and not a book. Design rules don’t always apply to both types.  Simplicity is a powerful tool, a minimalist approach can be just as effective, or more so, than a page that is bloated with text, images, and colours. Good design also has a strong focal point and always makes sure that your message is easy to understand. Keep your information concise and to the point.

# Common Web Page Design Issues

Even though people can have good intentions about great design, it is easy to fall into a trap of frustrations because there are so many factors which can affect your website.  There may be a team of people creating a website, therefore, many personal preferences come into play. Also, budgets, computer problems, server sizes, and timelines may cause problems.

Below are some areas to be aware of when creating Web pages.

**Large graphics**



Large images can take a long time to download. High resolution photographs may look nice but it’s not necessary to have the best quality possible on a page since most people do not analyse the quality of an image on the Web. Thumbnails (smaller images) can be used instead. This gives the user the option to see a large image by clicking on the smaller preview image.

**Long lines of text**

Try to keep your lines fairly short. Using tables can create columns of text, similar to a newspaper. This is much more effective than reading right across the screen. Long lines tire the reader quickly because of the constant eye movement back and forth.

**Broken links**

[Broken links](http://www.pembinertrails.com/) give the reader the impression that a site is not well maintained and will also frustrate the reader. It would be like having several rooms in a house but not installing doorknobs on the doors!  Broken links are also easy to fix. Also avoid using the term “Page under construction.”  If you don’t have a page finished, don’t advertise it by making a link to nowhere.

**Not enough contrast**

Don’t use light blue text on a medium blue background, the lack of contrast makes it more difficult to read.  Black text on a white background is always the easiest to read.

**Bright backgrounds**

Don’t use graphic or page backgrounds with bold colours as it tires the reader more quickly.  Try to avoid patterned backgrounds too.  Muted or pastel backgrounds work best for warmth and tranquility.

Lack of **consistency**

As mentioned **earlier,** Web pages that are constantly changing in contrast, colour, format, layout, and themes result in a chaotic site.

**Too many graphic accents**

Limit accents such as exclamation marks!!!, ALL CAPS, **bold,** and underlines.  This results in amateurish looking websites!!!!!!!!!!!!!!

Too  much spacing

Avoid a lot

of blank space

 between             words, such as using full       justification.  Also limit very short lines and save those for headlines and subheads.

Oversized **pages**

Never have a page which requires horizontal scrolling. Always leave a little space on your pages when creating them to give some leeway to different sized screens and resolutions. Use tables to control your page columns and widths.

After reading the examples above, find sites that have examples of these issues. Find two sites that follow proper Web design principles and two that do not. Post the sites on the Discussions board along with your reasons for choosing them.

# Exercises

**Module 2 Lesson 5**

1. Define typography.
2. How many characters per line is considered ideal?
3. What is the difference between a font and a typeface?
4. What is the difference between a serif and a sans serif font?
5. What is “deadwood?”
6. Why is it important to not put too many links on one page?
7. What are the four “CRAP” principles? Briefly explain each one.
8. Why are large graphics a problem for Web pages?

Answer Key

**Module 2 Lesson 5**

1. Define typography.
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5. What is “deadwood?”
6. Why is it important to not put too many links on one page?
7. What are the four “CRAP” principles? Briefly explain each one.
8. Why are large graphics a problem for Web pages?

Answers

1. *Typography is the science of letterforms on a page.  It can be both of verbal and visual communication. Good typography gives a sense of balance between text and images, headlines and subtext.*
2. *Thirty to forty characters per line is considered ideal.*
3. *There is really no difference between typeface and a font. Most people refer to a typeface as a font.*
4. *A serif font has a little “hook” at the end of each letter so that it blends into the next one. A sans serif font does not have this. Serif is considered better for print and sans serif better for computer reading.*
5. *Deadwood is using too many words to explain something. I’m not saying any more than that!*
6. *Having too many links on a page creates too many options for the reader to leave the page and go somewhere else to read. It also doesn’t look very nice to have so much text underlined or different colours.*
7. *CRAP stands for Consistency, Repetition, Alignment, and Proximity.* *Contrast in titles, headings, and subheads helps in filtering information.  Typeface contrast with bold, colours, shapes, and textures can also be effective.  Repetition also controls the reader’s eyes and attention. It also helps to organize and unify interest on the pages.   Alignment also creates unity on a page and provides order to a site which can often have large amounts of information. For proximity, group related items together so that related objects are viewed as one cohesive group.*
8. *Large graphics are a problem because they can take up too much space on a Web page. They can also take too long to download and make the reader wait to see a page.*

# End of Lesson 5

### ****You have reached the end of Module 2 - Lesson 5.****

You have an understanding of standards and conventions related to the use of typography, fonts, writing styles, and page design principles (contrast, repetition, alignment, and proximity) in designing pages for the web.

You have noted a number of issues or design pitfalls to be aware of in designing your own web pages, or in critiquing and making improvements to existing pages.

# Graphics and Multimedia Introduction

**Module 2 Lesson 6**

Graphics are of course a major part of Web pages. They offer visual stimuli and a good balance to rather mundane text.  At the same time, graphics also give particular problems for pages given the multitude of formats and preferences on a computer.  It is often necessary to optimize your graphics for efficient display of websites. Multimedia applications and files are even more complicated to work with. Everybody’s computer tends to work differently when showing video or playing audio.  Some of these issues will be discussed in this lesson.  The following are some of those areas which webmasters must pay close attention to for creating a great website.

# Multimedia: Web Graphics

**Graphic File Formats**

There are several file formats that are used on computers. Some of these include:

* JPG (mostly for photographic images)
* GIF (mostly for line art or animated and transparent images)
* PNG (transparent images)
* BMP (large files, Windows based and not for the Web)
* PSD (large, editable Photoshop files--too large in file size for the Web)
* Vectors (a series of coordinates to draw images, used in Flash--very efficient in using file sizes)

The first three, jpg, gif, and png, are the most common formats on the Web.

**Colour displays**

Liquid crystal displays (LCDs) offer a sharp image on a computer screen. Using liquid crystal technology, the screens are much flatter. By 2007, this technology replaced the cathode ray tubes (CRTs) which dominated the computer monitor industry since the birth of the PC in the late 1970s.  A CRT screen was made of a large glass picture tube. Although LCDs offer new technology, there are still limitations to a computer screen compared to colour print material. RGB (red, green, blue) colour transmits the image to the screen. However, the reds, greens, and blues will be different if an image is printed on a colour printer.  The computer’s operating system organizes the display screen into X and Y coordinates. Each little box on the screen is a pixel.  The more the pixels, the greater the resolution and the better the image. In addition, the smaller the pixel, the sharper the image is displayed.

Some computers can only display 256 colours on the Web. In many cases, this also applies to images created in the GIF format.  Without getting into a deep discussion of technology, there is also 8-bit, 16-bit, or 32-bit technology which will also affect the quality of the colour and display. These describe the colour depth in graphic files. The larger the bit, the better the quality, but also the larger the file. In addition, although many computers can display thousands or millions of colours, there is still a “Web safe” system of colours. This means that only 216 colours are truly guaranteed to be displayed even if computers are set to show “millions” of colours.

**Screen resolution**

Screen resolution refers to the number of pixels a screen can display within a given area. If a screen display may display 72 pixels per inch and be referred to as 72 ppi. Therefore, an image that is 72 by 72 pixels would be one square inch.  An image of 72 ppi is considered standard resolution.  If the image was to be printed, it would not look very crisp because printed images are usually 300 dpi (dots per inch) for black and white and 600 dpi for colour.

A series of pixels will look like this:

https://bblearn.merlin.mb.ca/bbcswebdav/pid-2565513-dt-content-rid-5545846_1/courses/WebDesign35S_preview2/course_content/module2/lesson6/p1_files/image001.gif

Each little box is a pixel, the more the pixels, the sharper the image.  If you only increase the pixel size, the image will be larger but it will also not be very clear or crisp. Look at the two examples below:

|  |  |
| --- | --- |
| Eiffel tower at 72 pixels per inch | Same picture enlarged |
| https://bblearn.merlin.mb.ca/bbcswebdav/pid-2565513-dt-content-rid-5545846_1/courses/WebDesign35S_preview2/course_content/module2/lesson6/p1_files/image003.jpg | https://bblearn.merlin.mb.ca/bbcswebdav/pid-2565513-dt-content-rid-5545846_1/courses/WebDesign35S_preview2/course_content/module2/lesson6/p1_files/image005.jpg |

The picture on the left (courtesy Paul Doyle) is clear but if you increase the size of the image with the same resolution, the pixellation will only be increased and lead to what you see on the right.

It is best to compress image files, especially .jpg format images. Jpg images are usually digital photographs taken with digital cameras. Today’s cameras can result in pictures being very large, sometimes over five megabytes in size.  A picture this size should never be inserted on a Web page because it would take too long to download from the page.  Programs such as Photoshop, Fireworks, or Irfanview, can compress these images into much smaller sizes and not lose much quality.  The key is to reduce the image as much as possible without losing quality. As mentioned, 72 ppi is what an image should be reduced to for the Web. Any larger ppi is a waste of size because the quality will not reduce all that much.

# Other Multimedia Applications

***NOTE: The multimedia links on this page may not function properly due to server restrictions or computer limitations. They are only examples and are not imperative to view for completing excersises or assignments.***

***Images and Other Media***

The Internet has evolved a great deal since the days of simply textual information. Today, the Internet has much more interactivity which means that the visual (video and animation) and aural (audio) aspects greatly enhance your experience.

Some of the major media experienced on the Web include:

* Images
* Audio
* Video
* Flash animation
* Interactivity (example: Java games)

To see an example of Flash animation, click on the link below. It combines the visual and aural stimuli into an effective “E-Card.” created by Billy Galatas, and used with his permission. (Note: the link below may not work on some computers due to restrictions or limitations.)

[Frosty the Snowman](https://bblearn.merlin.mb.ca/bbcswebdav/pid-2565514-dt-content-rid-5545854_1/courses/WebDesign35S_preview2/course_content/module1/lesson2/frosty.swf)

The reason that there are possible issues in playing multimedia on a website is due to to several factors. This could include the age of the computer, its capacity and processing power, the installed plugins on the browser and restrictions from your school or home. How do you think this could affect this course you are taking? Can you open the above link? If not, why do you think you cannot? Post a message on the Discussions board and mention some things that may restrict **you** from accessing all the multimedia files.

Images are a static form of media, meaning that it doesn't change. To save an image, simply right click on the image and go to the option SAVE PICTURE AS. Try this with the image below. Once you do this, you will be able to save that particular image to your computer.



Images on the Web usually come in either .jpg or .gif files.  JPG files are usually photograph type images and GIF files are often images that have been drawn and only have a few colours. Image formats will be discussed in greater detail in the HTML section of this course.

There are times when you click on an image or animation and you will not get SAVE PICTURE AS but you will have an option that says ABOUT FLASH.  This means that this media is a Flash file and is in vector style. This means that the file is not actually an image but a series of code that makes up an image.  Flash is an excellent web animation program which has greatly reduced the size of animated files due to its vector based graphics.

Video clips come in the form of .avi or .mov files in most cases. There is not one that is better than another, it is just a different format.  AVI movies are associated with PC computers and work well with Windows Media Player. MOV files are often associated with MacIntosh computers.  QuickTime is a program that works best with .mov files. There are also other video formats including MPEG.

Audio clips also come in many forms. WAV files are large sound files and MP3 files are condensed sound files. A typical three minute song will be about 50 megabytes (50 million bytes). MP3 files are usually ten times smaller than WAV files for almost exactly the same sound.  This is why this format is so popular for music sharing. In addition, the quality is very good.  WMA files for Windows are half the size of MP3 files and have the same quality too. There are also AU and MIDI files. MIDI files are quite small and of high quality but cannot reproduce voice as properly, therefore, it is limited in its use. MIDI files are often used for generic sounds on your computer, such when you turn it on and get a TADA! or something of that nature.

Many people also used JAVA based files but don’t realize it. JAVA files and applets (files) are used in interactive games such as chess or Tetris and many others on the Web.

Although this is not a specific type of interactive media, the Portable Document File (PDF) is a very useful format on the Web. This is an electronic document that must be read with the Adobe Acrobat Reader program (a free download from Adobe.com). These documents are platform independent which means they work with all operating systems such as Windows or MAC, and maintain the original formatting intended by the page creator regardless of user margins, fonts, browser, etc. The user views the document exactly as it was created. This is very useful for manuals and other large documents as well as forms and documents with specific formatting.

**Multimedia Strategies**

The explosion of multimedia applications has radically changed the Internet experience in the last few years. Video, audio, animation, interactive games, and so on have made the Internet much more stimulating and a two-way process. This two-way process is what makes it so different from television or the radio. In fact, today, teenagers are spending more time on the Internet than they are watching TV.  High-speed Internet and faster computers have allowed this to happen since large bandwidth capabilities are needed to carry this multimedia.

Along with this new media, there are also more complications. Many different plug-ins are needed to run different multimedia applications. For example, Flash player is needed for Flash animation and movie players, such as QuickTime are needed to play video.

Before one plasters a website with a multitude of media applications, one has to realize that not everybody has the fastest and latest computers.  Many computers will be too slow to properly play animations or video. New versions of plug-ins are constantly being introduced and the newest multimedia files may not work on older plug-in versions.  A Web designer must offer options to the user, such as links for downloads of plug-ins or offer several options. An example would be to provide links to .avi or .mov video files. AVI files are Windows based and .MOV files are Macintosh based.  Browsers will also react differently to diverse media applications and files.

Just because something is possible to do, it doesn't mean that it is necessary.  In the 1990s, a company was offering to sell the “Internet Fridge.”  People could surf the Net while eating from the fridge. People fortunately realized that this was a somewhat dubious advantage and this famous fridge never really sold all that well. The following are some options that can be provided for the Web user.

**Audio**



Audio is very efficient at delivering information. However, like large graphic files, audio should be compressed into manageable files.  A quick way to deliver audio is by streaming the sound. Using a streaming server, such as RealAudio, a sound file can be listened to while it is downloading. The advantage is that a person doesn't have to wait until the complete file is downloaded just to listen to it. The disadvantage is that the sound quality tends to be quite low.  There are also many different audio formats available to use on the Web. Some of these include:

**Wave**

.WAV files are one of the most versatile sounds files available.  They can be easily played on Web pages, either by clicking on a link or simply as background sounds.  Be very careful about inserting sound files as “background” music on a website. The music can become very irritating very quickly!  Wave files tend to be quite large therefore they should be used in moderation.  A typical three minute song will be about five megabytes in size.  Wave files can also be compressed so that they become only mono instead of stereo.  Be aware that the greater the compression, the worse the quality will be, as it is with all file formats.

**MP3**

MP3 files stormed onto the Internet scene in the 1990s with music sharing programs such as Napster.  MP3 files had a big advantage over wave files in that the quality was the same but was also ten times smaller in size. Soon, millions of people were downloading millions of MP3 song files from the Net.  MP3 is an excellent format for recording and should be used instead of wave files due to their smaller format.

**WMA**

Windows Media Application files are half the size of MP3 files but retain the same quality. This is one reason why this format is becoming more and more popular. This format still has a way to go to reach the popularity of MP3 files on the Net.

**MIDI**

Midi files are to sound what vectors are to graphics. Midi files are mathematical codes that make up sounds. This results in very small files of high quality. A two minute sound file can sometimes only be 25 kilobytes in size!  The disadvantage with midi files is that they are limited in scope. It cannot record human or animal voices and can only be used for sound effects or background sounds.  Many people refer to midi files as “cheesy” because of its tinny and tacky sound. They are usually used as background sounds on websites.

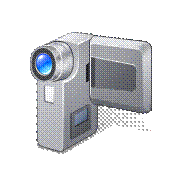
# Other Multimedia Applications II

**Other Media Formats**

**Slide shows**

Slide shows using a program such as Microsoft Powerpoint is a good way to give the reader a visual and textual experience on the Web. Slide shows are often used for training or teaching. Emphasis is on still images and the bandwidth requirements are kept to a minimum.  Most browsers will also show Powerpoint slides, therefore, it will not be a problem to view the information on the Net.

**Video**



Video offers many challenges to the Webmaster but sometimes the frustrations are worth it. Offering video and audio on a website gives maximum impact for the user.  The main problem is the size of video files. One second of uncompressed NTSC (National Television Standards Committee) video, the international standard for television and video, requires 27 megabytes of storage!  Therefore, compression is a necessity and along with this comes a loss of quality.  As mentioned with audio, video can also be streamed to make viewing manageable.  This also results in sometimes low quality video and audio, choppy images, and small viewing areas.

NOTE: It is possible that some of the links may not function properly due to restrictions or limitations with either the Web server, Internet or your computer software, or computer specifications and setup!

[Click here](https://bblearn.merlin.mb.ca/bbcswebdav/pid-2565515-dt-content-rid-5545866_1/courses/WebDesign35S_preview2/course_content/module2/lesson6/multi/pd6b.mov) for an example of a MOV file. This usually runs with QuickTime software, depending on the computer you are using, Windows Media Player will also be able to show it. If the file doesn’t play, just read on! As with most movie files, they can be large. This one is 2,800KB in size.  It is only 52 seconds in length and also has a small viewing area to keep the file size as small as possible.

**Animation**

Animation is becoming very popular on the Web because it takes the visual and audio impact of video and combines it with efficient bandwidth use. Creating animation with Flash gives websites very effective multimedia experiences.  Quality can be outstanding because of the vector based technology.  Most large websites today offer some level of Flash animation. A way to see if it is Flash is to right click on the animation and see if the mouse indicates a phrase “about Flash Player…”

[Click here](http://www.rush.com) for a Flash animation. It has animation and sound but is only 22KB in size due to the vector based images.

Animated GIFs were mentioned earlier and should no longer be used on Web pages due to their low quality, large files, and to the “child-like” perception it portrays.

**Design controls**



If there is to be multimedia on a website, it is important to inform the user of specific demands of the computer and browser.  If the wait is too long or if the computer “freezes” while downloading or streaming, this will result in a highly frustrated user. High-demand content such as video should not be part of the basic page design and should only be offered as an option.  Consoles, having a play, pause, forward, reverse, and volume controls helps in giving power to the user. Without controls, the user will have no way to control the environment. The interaction should be entirely user-driven.  At a minimum, a website should give the reader information about the multimedia content if it cannot be viewed due to technological or physical limitations.

# Exercises

**Module 2 Lesson 6**

1. Why should a Web designer know what is meant by a Web safe colour?
2. What is the standard resolution for an image on the Net?
3. Why are PSD files not used on the Web?
4. What is the best type of audio file to use on the Web? Does it depend on certain factors?
5. What are the best type of images to use on the Web? Does it depend on certain factors?

# Answer Key

**Module 2 Lesson 6**

1. Why should a Web designer know what is meant by a Web safe colour?
2. What is the standard resolution for an image on the Net?
3. Why are PSD files not used on the Web?
4. What is the best type of audio file to use on the Web? Does it depend on certain factors?
5. What are the best type of images to use on the Web? Does it depend on certain factors?

Answers

1. *A Web safe colour is a colour that can be seen by any computer in the world. There are technically 216 Web safe colours.*
2. *Standard resolution is 72 pixels per inch on the Web.*
3. *PSD files, for Photoshop, are good for editing but are too large to insert on Web pages. In addition, the user would need a PSD reader to see the image.*
4. *The best type of audio file on the Web depends on the circumstance. However, MP3 files offer a good combination of quality and size reduction.*
5. *JPG files are best for photographs on the Web. GIFs are best for line art or drawn images. Both types should be compressed to save file space.*

# End of Lesson 6

### ****You have reached the end of Module 2 - Lesson 6.****

In this lesson you developed an understanding of the common standards and conventions surrounding the use of multimedia on websites. This includes the typical file formats and standards for images, audio, video and animation files.

As well you have an understanding of some potential issues that can arise from not applying some of these conventions, and can use this knowledge to avoid issues as you design your own website, or as you critique existing sites.