

Multimedia Web-Site Design and Development

1

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Learning Objectives

2

- Basic **principles** involved with multimedia Web site design.
- **Tasks** involved with multimedia Web site development.
- Markup languages, scripting languages, and other tools used to create multimedia Web pages.
- A look at the **future** of Web-based multimedia

Multimedia Website Design

3

Web Site Design

- The process of **planning** how a multimedia Web site will look like and function
- Good planning is key- “**Work well planned is half done**”
- Basic design principles: Consider-user **focus**
 - **Users** like interesting and exciting applications
 - Users have little patience with **slow-to-load** or **hard-to-use** applications

- Multimedia web pages should be interesting and exciting applications
 - Provide information of **value** or interest
 - Provide a stimulating experience
 - Pages should load quickly and easy to use
- Plan for all needed/available delivery methods and devices

Multimedia Production-Team

5

- multimedia production can easily involve a host of people with specialized skills:
 - project manager
 - an art director,
 - graphic designer,
 - production artist,
 - producer,
 - writer,
 - **user interface designer,**
 - sound designer,
 - videographer, and
 - 3D and 2D animators,
 - as well as programmers.

Planning for Multimedia design

6

Careful consideration should be given to:

- Features that require a **specific** browser
- Features that require little used **plug-ins**
- The size of the **page content**
- Different devices, browser, and screen resolutions affects how Web pages display
- High-bandwidth items
 - Watch image file size (Image **Compression**)
 - **Use links** to audio, video, and other high-bandwidth items
 - Use streaming audio and video-for huge files

Planning...

7

- Determining the **intended audience** and objectives
 - The first steps in designing a multimedia application/Web site
 - **Objectives** of the site affect its content
 - Intended **audience** affects the **appearance** (such as the style, graphics, fonts, and colors) of the site
 - Once the objectives and audience have been identified, you should have a good idea of the main topics to be included in the site
- If the needed content is still unclear, rethink your **audience** and **objectives** and
- don't go further in the process until it becomes clear

The intended audience affects the design of a Web site. Shown here are four types of sites that are designed for different audiences.



BOLD
Shopping sites often use bold colors and crisp typefaces to give the site a contemporary, but rich, feel.



CONSERVATIVE
Many business sites use a conservative appearance to match their conservative image.



WHIMSICAL
Sites catering to young people often have an especially friendly look, sporting bright graphics and large fanciful typefaces.



BUSY
Sites designed for more technically-savvy users often have a busy appearance with lots of links so that visitors can go directly to the information they are seeking. This style is commonly used with portal pages, as well.

Flowcharts, page layouts, and storyboards

9

- Used to design the **structure** and **layout** of a site
 - Flowcharts:
 - Show how the **pages** in a Web site **relate** to one another
 - Page layouts:
 - Show the **basic layout** of the pages on a Web site
Typically one for the **home page** and one for the **rest of the pages** (consistency is key) on the site
 - Storyboards:
 - Illustrate the **content** of an animated sequence or other multimedia component

FLOWCHARTS

A Web site flowchart describes the logical organization of the site. Each box represents a separate Web page.

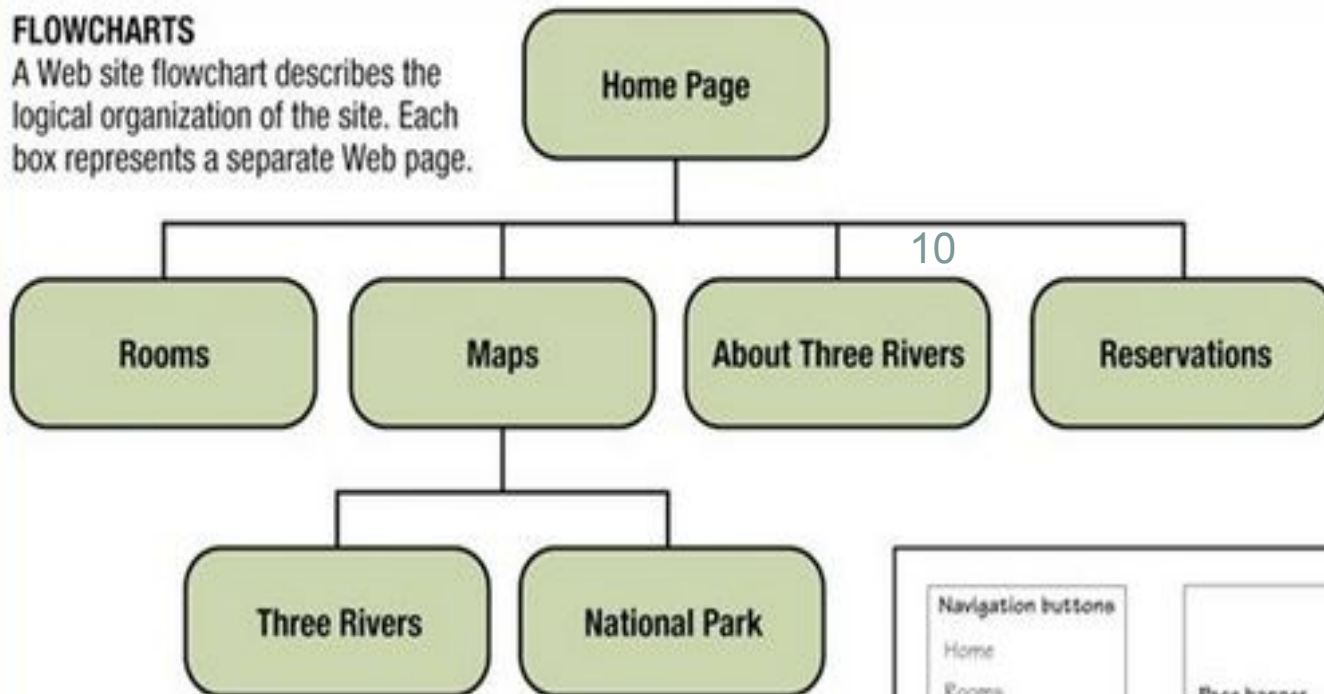
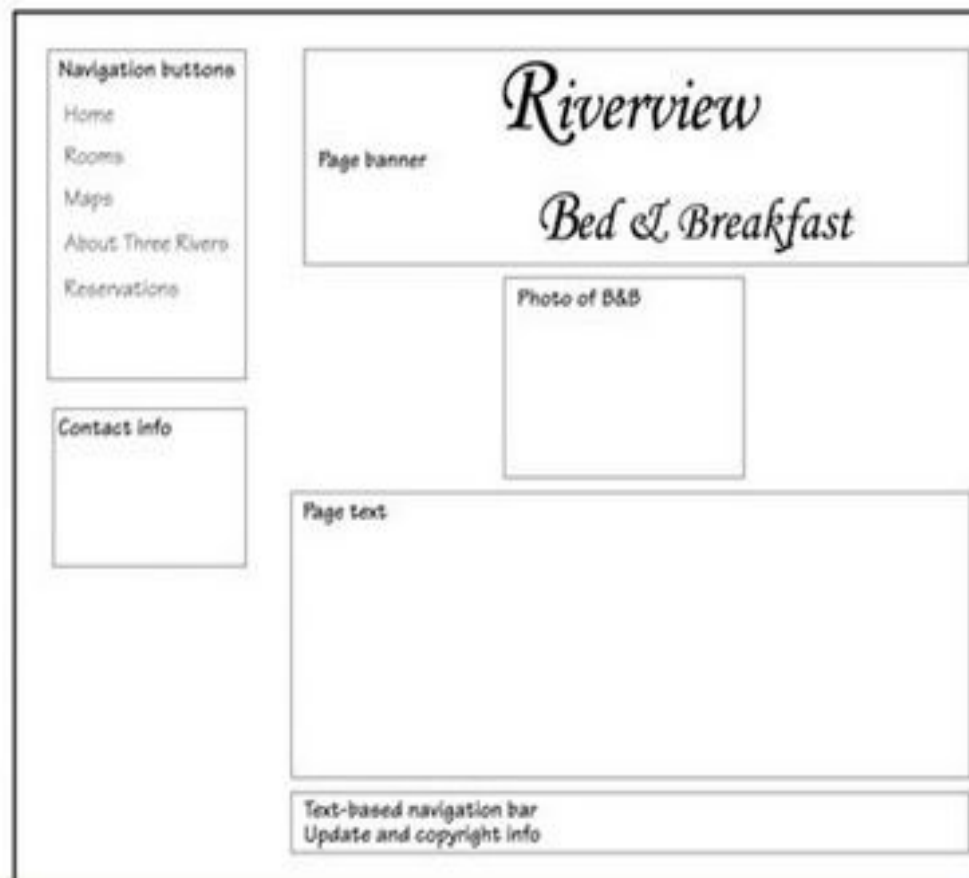


FIGURE 10-13

Web site flowcharts and page layouts. A sample flowchart and page layout for a bed and breakfast Web site are shown here.

PAGE LAYOUTS

Page layouts illustrate the basic design and navigational structure of a Web site. There are typically two basic layouts—one for the home page (shown here) and one for all other pages on the site.



Navigational **design** considerations

11

- **Aim:** Users should be able to get to most pages on the site within **three mouse** clicks
 - Using **site maps** and **drop-down menus** with larger web sites will help
- **Navigational items** should be placed in the same **location** on every page
- Add a Caption (text name) to images
- Each page should have a **link to the home page** of the site

Navigational design considerations...

12

- Long Web pages:
 - Consider breaking into several pages
 - Include link to **view** or **print** entire document
 - Use table of contents and links to top of page
- Be sure to include identifying information on each page to indicate which page is **currently** displayed

Navigational tools...

13

- Navigational tools include: **Options available**
 - Drop-down menus
 - Site maps
 - Search boxes
 - Text-based hyperlinks and navigation bars
 - Image-based navigation bars
 - Image maps Frames
 - Hyperlinks that show more options when pointed to

Navigational design considerations



FIGURE 10-14

Navigational tools.

A wide variety of navigational tools exists to help make Web sites easy to use.

14

SEARCH BOX

Allows users to find pages on the site containing specific information.

MENU TABS

Provide access to the main pages of a site, as well as indicate the currently displayed page.

NAVIGATION BAR

A group of text- or image-based links; should be in the same location on every page of the site.

HOME PAGE LINK

Gives users a quick link to the site's home page from any page on the site; link is often a company logo.



SITE MAP

A Web page that contains links to all of the main pages on a site.

IMAGE MAP

A single image that has multiple clickable areas; each designated area is linked to a specific page on the site.



Access considerations: **Devices**

15

Device compatibility:

- Web pages display differently on different devices



FIGURE 10-14

Web pages display differently on different devices.

Access- PLWD's-Assistive Technology:

16

- **Hardware** and **software** designed for use by individuals with physical disabilities
- Affects Web design because some content is not compatible with **assistive devices**
- Rehabilitation Act (US) requires federal agencies to have accessible web pages
- It is important to consider making websites accessible to **all types of audience**

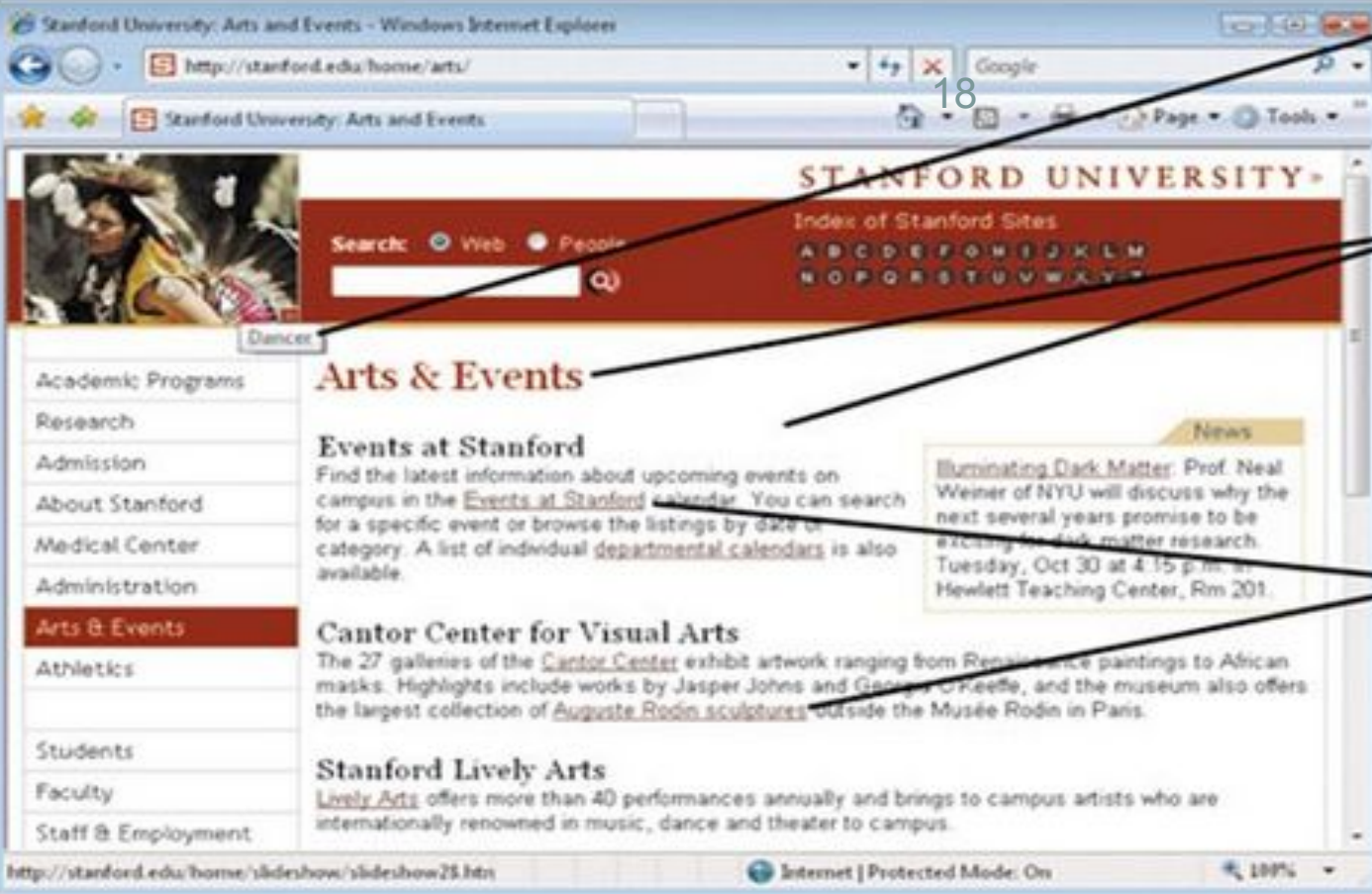
Assistive Technology:

17

- **Accessibility tips:**

- Screen readers and braille displays
- Use alternative text description for all images
- Use meaningful text-based hyperlinks
- Use alternative content for Flash, JavaScript, and other types of animated elements
- Consider creating an alternate text-based page
- Keep readability in mind

Assistive Technology:



ALTERNATIVE TEXT
Images have alternative text descriptions.

COLORS AND CONTRAST
There is a high degree of contrast between the text and the background colors.

DESCRIPTIVE HYPERLINKS
Hyperlinks make sense when read aloud because they are descriptive instead of saying only "Click here."



FIGURE 10-16

Some Web page characteristics that are compatible with assistive hardware.

Multimedia Web Site Development

19

- Web site development:
 - The process of creating, testing, publishing and maintaining a website
 - Occurs after the site is designed
 - Can be performed **in-house** or **outsourced**
- Three basic steps
 - Creating the multimedia elements
 - Creating the Web site
 - Testing, publishing, and maintaining the site

Creating the multimedia elements

20

- Usually several different software programs (Commercial or GPL License) are used, such as:
 - Image editing software
 - Animation software
 - Audio editing software
 - Video editing software
- Each element should be saved in the appropriate size, resolution, and file format (recall last class)

Creating the Web site

21

- Often a markup language is used
- Markup language:
 - A coding system that uses **symbols** or **tags** to describe what a document should look like when it is displayed in a Web browser (address formatting)
- Hypertext Markup Language (HTML):
 - The original markup language
 - Uses HTML tags to indicate where effects and elements belong in the Web page Some tags are paired
- The computer and browser being used still determines exactly how the Web page will display

HTML Tags are used to

22

- Identify text as **headings**
- Mark end of **paragraphs**
- Assign **typefaces** and relative size to text
- Make text or images **hyperlinks**
- Identify where elements (graphics, animations, video clips, etc.) should appear on the page
- Specify the **layout** of tables and frames
- Identify keywords and other meta tags associated with the page

XML and XHTML

23

- Extensible Markup Language (**XML**)
 - A set of **rules for exchanging data** over the Web
 - Addresses/focus on the **content** but not the **formatting**
 - Uses **XML tags** to identify data
 - Allows data to be extracted and reused as needed
- Extensible Hypertext Markup Language (**XHTML**):
 - A newer version of **HTML based on XML**
 - Controls the **appearance** and **format** of a Web page like HTML
 - Stricter rules than HTML
 - Beginning to replace HTML

XHTML Tags

24

- Used for the same purpose as HTML Tags but **stricter**
 - All attribute values must be in quotation marks
 - Tags are lowercase (**case-sensitive**)
 - Tags must be closed
 - `<p>` and `</p>` or `<p />`
 - Tags must be in proper order
 - Main sections of XHTML Web page
 - Declaration statement with XHTML standard used
 - Head statement with title and meta tags
 - Body of the Web page

HTML 5- Dynamic HTML (DHTML)

25

- Newer version of HTML
- Designed to replace current HTML and XHTML
- Includes new tags and features that support the creation of more **complex** and **dynamic** web pages
- Designed to work across various browsers including **mobile browsers**
- Adds dynamic capabilities and interactivity to Web pages

HTML 5- Dynamic HTML (DHTML)

26

- Dynamic HTML (DHTML):
 - Used to add **dynamic** capabilities and **interactivity** to Web pages
- Wireless Markup Language (WML):
 - Used to create Web pages to be displayed on **WAP-enabled devices**, such as smart phones
- Scalable Vector Graphics (SVG):
 - Used to describe vector-based images that are to be displayed **scalable** (in different sizes) on Web pages to match the browser window size

Cascading style sheets-CSS

27

- Used to specify the **styles** used with a **web page** or an **entire website**
- Specified in an internal style (head section of web page) or in an external style sheet
 - Normally used in an external style sheet and connected to web pages through a link statement in the head section of desired pages
 - Styles are applied to all of the linked web pages at one time
- Improves consistency and efficiency

Scripting languages

28

- Scripting languages can be used to **add dynamic content**
 - Allows the inclusion of scripts (instructions) in the Web page code
- **JavaScript** (based on the Java programming language)
- **VBScript** (based on Microsoft's Visual Basic programming language)
- **Perl** (used to write CGI scripts (Common gateway interface) to process data input via a Web page)

Scripting languages..

29

- **AJAX:**

- A new set of Web standards to create **faster** and more **efficient** interactive Web applications
- Only requests **new data** from the server, not the entire Web page, when the page is updated
- Interactive web pages built with AJAX **run faster**
- Normally require **less bandwidth** than conventional web applications

Web site authoring software

30

- Used to create **Web pages** and **complete Web sites** e.g. Dreamweaver, Microsoft Expression Web, Kompozer
- Toolbar **buttons**, **menus**, etc. are used to **create** and **format the page** -Simplified
- Appropriate HTML code is automatically **generated**
- Allows you to create an entire cohesive Web site, not just individual pages
- Allows you to easily include: **Forms** and **database** connectivity for more **dynamic interactions** with your visitors
Other helpful development tools, such as tests for broken links and accessibility tests

Testing, publishing, and maintaining the site

31

- Multimedia websites should be thoroughly tested prior to publishing
 - All **hyperlinks** should be **clicked** to ensure they take the user to the proper location
 - Every possible action that could take place with an animated element should be tested
 - Proofread each page or screen carefully
 - Consider a “**stress test**” Update content and check links on a regular basis
- XHTML Web pages can be checked with an **XHTML validator**

Website validation

32

- ✓ **FIGURE 10-23**
Validating an XHTML Web page.
This Web site (validator.w3.org) can be used to validate XHTML Web pages.

Web pages can be checked before they are published by choosing the File Upload option.

Any coding errors on the Web page will be identified.

Once any coding errors have been corrected, the page will be declared valid.

Testing, publishing, and maintaining the site

33

- Once thoroughly tested, web site should be published
 - Identify an ISP
 - Upload all files to the ISP Server
- After publishing, the website must be maintained
 - Update content and check links on a regular basis
 - Site should be evaluated on a regular basis to locate areas that need improvement

The future of Web-Based Multimedia

34

- Web-based multimedia will be more exciting and more **embedded into everyday events**
- Technology will evolve to support **mobile multimedia**
 - New types of multimedia will likely be developed to fit our growing need for increasing mobile content
- As Internet users keep moving to broadband, we expect to see multimedia sites and TV merge closer together

The future of Web-Based Multimedia

35

- **Web based multimedia** and **home entertainment** devices will continue to converge to allow seamless access to desired content on the users device of choice
 - Game boxes (Xbox, Sega Dreamcast 2, and Sony PlayStation 2) already have built-in Internet and multimedia capabilities
- **Interactive TV** and **video-on-demand** may soon be the norm on the Web
- Usage of multimedia applications that are **tied to a geographic location** or current status and that involve **user-generated content** will also continue to grow

Summary

36

- Multimedia Web Site Design
- Multimedia Web Site Development
- The Future of Web-Based Multimedia

THE END.

THANK YOU!