

Images

WEB DEVELOPMENT FUNDAMENTALS



Images

Objectives:

- To add images to a website
- To decide between GIF and JPEG image formats
- To use graphics as hyperlinks
- Background images

Practical Exercise:

- Adding images to a web site

Image File Formats

- A very large number of graphics file formats
 - BMP, GIF, PCX, JPEG, TIFF, CGM...
- Most browsers support a few well-known formats
 - GIF (Graphics Interchange Format)
 - JPEG (Joint Photographic Experts Group)
 - Text-only browsers (e.g. Lynx) ignore all images
 - Usually possible to disable images to reduce bandwidth
- Some browsers support other image file formats
- PNG (Portable Network Graphics) format

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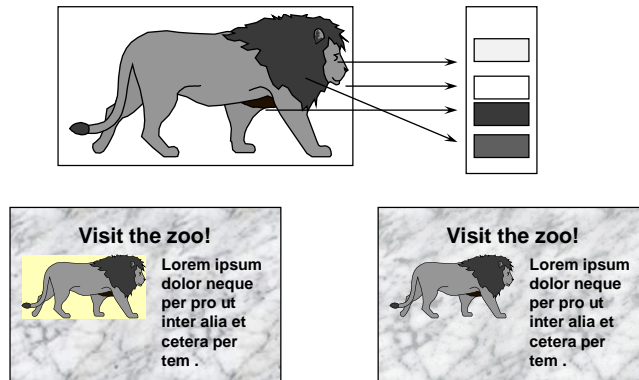
GIF and JPEG Compared

- GIF
 - Defined originally by CompuServe
 - Wide cross-platform support
 - LZW lossless compression of images (typically 5:1)
 - 256 colour limit
 - Supports interlacing
 - GIF89a variant supports animation and transparency
- JPEG
 - Designed for photo-realistic images (e.g. scanned photographs)
 - "Lossy" compression (typically 15:1)
 - 16 million colours (24-bit)
 - Progressive JPEG
 - Images display in series of passes, each pass contains more detailed information

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Transparent GIFs

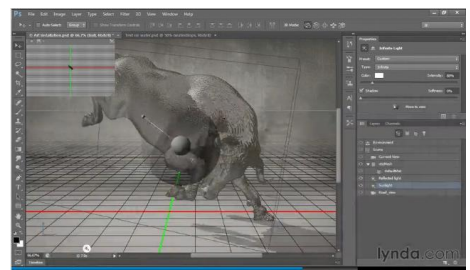
- All colours in a GIF image are palette-relative
- One colour may be the transparency colour



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GIF and JPEG Tools: A Sample

- Adobe Photoshop
 - Widely used by graphic designers
 - Mac and PC variants
 - Many "bells and whistles"
 - Plug-ins for expandability
 - <http://www.adobe.com>
- Corel Paintshop Pro
 - <http://www.corel.com>
- LView Pro
 - <http://www.lview.com/index.htm>



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Portable Network Graphic

- Transparency supported as well as the degree of transparency (opacity)
- lossless compression of images
 - 5% to 25% more than the GIF at 256 colour
- True Colour also supported
 - Although may be a larger file size than a JPEG
- Supports interlacing
- Gamma correction
 - (cross-platform control of image brightness)
- Does not support animation
- Developed by an Internet Committee to be patent-free

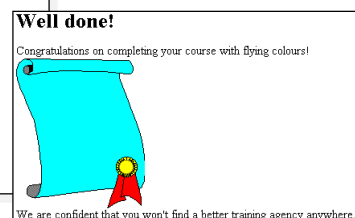
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Inline Images: the Tag

```
<html><head><title>Success!</title></head>
<body>
<h1>well done!</h1>
Congratulations on completing your
course with flying colours!<br/>

<br/>
we are confident that you won't find a
better training agency anywhere.<br/>
</body>
</html>
```

This text is shown when images are unavailable or disabled



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Image Height and Width

- A picture's size is usually found from data in the file
 - Can change this with WIDTH and HEIGHT attributes
- Do not use WIDTH and HEIGHT attributes to reduce the display size of an image
 - The browser will need to download the entire image

```
<!-- Force the image to be 100x100 -->

```

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Image Alignment

- Use FLOAT to align an image
- Can align to the left or right of a container
- Will wrap content around the image

```

```

```

```

Lorem ipsum dolor. Lorem ipsum dolor. Lorem
 ipsum dolor. Lorem ipsum dolor. Lorem
 ipsum dolor. Lorem ipsum dolor. Lorem
 ipsum dolor. Lorem ipsum dolor. Lorem
 ipsum dolor.

- Use CLEAR to not allow a floated element on the specified side of this element (left, right or both)

```
<p style="clear:both">.....</p>
```

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Page Background Colour and Images

- The background can be a colour fill
 - Use background-colour CSS property of the <body> tag

```
<body style="background-colour: #FFFFFF;">  
<!-- White background -->
```

- Alternatively, you can tile an image
 - Use background-image CSS property of the <body> tag

```
<body style="background-image: url('paper.jpg');">  
<!-- Background of paper texture -->
```

- Can also set whether to repeat and position

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Element Background Images

- The background of an element can be set using the URL property
 - The CSS requests an image asset using the URL property
`background-image: url(../img/thumb/mountain.jpg);`
- The following properties can also be set:
 - Repeat
 - Sets whether the image tiles appear only once
 - Or repeat only horizontally or vertically
 - Attachment
 - Sets whether the image scrolls with the rest of the page or stays in one place
 - Position
 - Moves the image to the left and down (positive values) or to the right and up (negative values)
 - Calculated from the top-left corner of the parent element

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Background Images – CSS3 only

- Size
 - Sets the width and height of the image within the element
 - As an absolute length or percentage
- Clip
 - Sets if the background fits to the border or within the content area
- Origin
 - Sets the position of the bg relative to the border, padding, or content
- Multiple background images
 - CSS3 allows you to layer multiple background images
 - Uses a comma-separated list

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Graphical Hyperlinks

```
<html>
<head><title>Graphical links</title>
</head>
<body>
<p>
<a href="http://www.microsoft.com">Microsoft home page</a>
<br/>
Alternatively, click on this star:
<a href="http://www.microsoft.com">
  
</a>
<br/>
</p>
</body>
</html>
```

[Microsoft home page](http://www.microsoft.com)

Alternatively, click on this star:



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Thumbnail Images

- Images can be large
 - An issue if the users connection is slow
- For larger images, provide a thumbnail image
 - Acts as a preview
 - Leads on via a hyperlink to the full image
- Create thumbnail as separate image
- Don't use WIDTH and HEIGHT attributes to shrink

```
<a href="pictures/monalisa.gif">  
  
</a>
```

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Srcset Attribute

- The srcset attribute allows us to provide the user agent with sufficient information for it to make the best decision on what image to use
- A string of comma separated URLs with (optional) white-space separated width descriptors

```

```

- The browser uses this information to select the best image based on factors, such as screen size and bandwidth

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Srcset Attribute - Sizes

- The sizes attribute allows us to further describe the image usage to the user agent
- A string of comma separated media conditions with white-space source size value

```

```

- If the screen is below 600px wide, then the image will be full width. If the screen is below 900px wide, then the image will be half-width. If neither of those conditions are met, then the image will be 30% of the viewport's width

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So or background-image? Pt1

- Pros for IMG Tags
 - Use IMG plus alt attribute, if the image is part of the content
 - Use IMG when the image has an important semantic meaning, such as a warning icon
 - This ensures that the meaning of the image can be communicated in all user-agents
 - Including screen readers
 - Use IMG if you rely on browser scaling to render an image in proportion to text size
 - Use IMG with a z-index in order to stretch a background image to fill its entire window
 - Using IMG instead of background-image can dramatically improve performance of animations

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So or background-image? Pt2

- Pros for CSS Background Images
 - Use CSS background images, if the image is not part of the content
 - Use CSS background images, when doing image-replacement of text
 - Use background-image if you need to improve download times, as with CSS sprites
 - Use background-image, if you need for only a portion of the image to be visible
 - Use background-image, if you need different images for different screen resolutions

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Exercise

- Insert multiple images into the page
- Wrap text around the images
- Set up a background image

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Review

- Image file types: GIF and JPEG
- Image editing tools
- The tag
- Transparent GIF files
- Graphical hyperlinks
- Background images