

Browser Issues

- Differences between browsers and between Operating Systems
- Note also: a user can choose (in preferences) to override what is specified in the HTML file.
- Fonts may be missing.

MailTo

` ... `

Relies on the user having set a default email client.
This is an alternative to a feedback form.

Color Display: Grid x Color Depth

- Grid of pixels = picture elements
 - Higher resolution (more elements) means more detailed image. Typical is 72 pixels/inch
 - To minimize apparent stair-casing from grid, there is *antialiasing* = using intermediate colors to present smoother appearing boundary
- Each pixel displays a color. Color from a palette
 - 2 colors (aka monotone) requires 1 bit = 1 unit of information: ON for 1 color, OFF for 1 color
 - Bit Depth Number of Colors Available per Pixel
 - 4 bit color 16 colors (2⁴)
 - 8 bit color 256 colors (2⁸)
 - 8 bit grayscale 256 shades of Grey (2⁸)
 - 24 bit color 16 million colors* (2²⁴)
 - 30 bit color 1 billion colors* (2³⁰)
 - 36 bit color Billions of colors* (2³⁶)

“True color”

24 bit = 8 bits for each of Red, Green, Blue

Additive model: red, green, blue add up to white light. This is not the color wheel.

What is the 6 character color code? Answer: 6 hexadecimal characters: 0,1 to 9, A, B, C, D, E, F (0 to 15). Each hex character = 4 bits, so two of them is 8 bits (256 levels). Also 16 times 16 is 256.

6 hex characters = 3 times 2 times 4 = 24 bits = #RRGGBB, parameter for bgcolor and other tags.

To be “Browser-safe”

- First, assume that the display can only display 256 colors
- Second, assume operating systems is reserving 40 colors for its own purpose
- Image Editors have features to help you decrease color depth.
- Browser ‘dithers’(juxtaposes colors it has) to approximate colors outside the palette.

You may choose NOT to do this and, instead, assume your audience has higher quality equipment (or will when your Web site is ready).

Differences in displays

- Screen resolution
- Color depth (what the computer is capable of AND what the current setting is)
- Gamma = degree of contrast
 - There are known differences between Mac and Windows.

JPG

- Short for Joint Photographic Experts Group, the original name of the committee that wrote the standard.
- JPG is a lossy compression technique. Works well for compressing images with areas of similar saturation of color (not diagrams or line drawings)
- JPG images support 16 million colors and are best suited for photographs and complex graphics. The user typically has to compromise on either the quality of the image or the size of the file.

GIF

- Short for Graphics Interchange Format.
- Unlike JPG, the GIF format is a lossless compression technique and it supports only 256 or less colors. GIF is better than JPG for images with only a few distinct colors, such as line drawings, black and white images and small text that is only a few pixels high.
- With an animation editor, GIF images can be put together for animated images.
- GIF also supports transparency, where the background color can be set to transparent in order to let the color on the underlying Web page to show through.
- Patent Issues until 2003

PNG

- Short for Portable Network Graphics, (though not supported by all browsers).
- PNG was developed as a patent-free answer to the GIF format but is also an improvement on the GIF technique.
- An image in a lossless PNG file can be 5%-25% more compressed than a GIF file of the same image.
- PNG builds on the idea of transparency in GIF images and allows the control of the degree of transparency, known as opacity. Saving, restoring and re-saving a PNG image will not degrade its quality.
- PNG does not support animation like GIF does.

Color formats

- Find existing images (photographs, complex drawings) and
 - Change color depth
 - Save as gif, gif interlaced, gif with transparency,
 - Save as jpg with different compressions
 - Slicing Images

Client-Side Image Maps

- Image maps link the areas of an image with a series of URLs so that a click in a particular area brings the user to the corresponding page.

Image Map Mark-Up

```
<map name="navbar">  
  <area shape="rect" coords="395,12,445,35" alt="new" href="newinfo.html">  
  <area shape="rect" coords="395,38,445,55" alt="press" href="press.html">  
</map>  
  

```

Shape Attribute

shape="type" rect for rectangle, circle for a circle, poly for an irregular shape.

Rectangle type coords="x1,y1,x2,y2", where x1,y1,x2, and y2 represent the upper-left and lower-right corners of the rectangle.

Circle type coords="x,y,r" where x and y represent the center of the circle and r is the radius.

Polygon type coords="x1,y1,x2,y2" (and so on), giving the x and y coordinates of each point on the polygon.