Introduction to Web Development

Week 3 - Getting it Online & Graphics!

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Getting it online

For the world to see your fancy new site, you need a domain name, and a host to store and serve your content.

Domains

- `http://register.com`
- `http://godddy.com` Look for coupons!

Cheap Web Hosts

- `http://godaddy.com` $4.99/mo - 10 GB
- `http://ipage.com` $4.25/mo - free domain- wind
- `http://justhost.com` $4.45/mo - free domain
- `http://fatcow.com` $4.67/mo - free domain - wind
- `http://bluehost.com` $6.95/mo - free domain - SSH
- `http://linode.com` $19.95/mo for virtualized server! -

Uploading Content

File Transfer Technologies

- File Transfer Protocol (FTP) - Security risk!
- Secure File Transfer Protocol (SFTP or SCP) - The fix!

Command line (eeek!), or GUI
(`http://winscp.net/eng/index.php`)
rsync

Getting it online

ALL web hosts work in this manner: upload files via FTP/SFTP!

Things to Remember

- `public_html` may be your root, or something else. Will be obvious.
- `index.html` or `index.php` will be served if no file is specified (http://yoursite.com or http://yoursite.com/bla/)
- Some editors may have built-in FTP/SFTP capabilities.
- `robots.txt` should be in the root directory to allow bots.
- Most hosts package a domain name as well, removing much technical headaches.
- Most hosts also allow email addresses (bob@yoursite.com), but I recommend forwarding all to another address.

Basics

- Bitmap (Raster) Image - Describes each dot of color in a grid.
- Vector Image - How to produce the image without dots.
- Pixel - Smallest 'dot' of color in an image or display.
- Lossy Compression - Looses information during compression (jpeg)
- Lossless Compression - Does not loose information during compression (bmp, gif, png, tiff)
- Megapixel - Nominal # pixels recorded. $2048x1536 = 3,145,728$ 3.1MP
- Bits per pixel - # bits used per pixel. 24bpp, $2^{24} = 16.8$ million colors (Truecolor)
- RAW Image - Unprocessed from image sensor (12 or 14 bit per color pixel, color grid usually used)
- Images on web are 1-1 pixel w/ screen (unless changed).

Image Sizes on the Web

Best Case Scenerios Uncompressed

- 1 RAW image from 6.0MP camera: 8.5MB (12 bit)
- Using 56kbps modem, $56kbps = 7kBps$
- $8.5MB = 8704kB$
- $8704kB/7kBps = 1243s = 20$ minutes!
- Or a $5mbps$ modem, 13.6 seconds!

Compression saves us!

- JPG 'fine' setting, 6.0MP, 2-3MB
- $2048kB/7kBps = 1243s = 5$ minutes!
- Or a $5mbps$ modem, 3.2 seconds!

Image Sizes on the Web

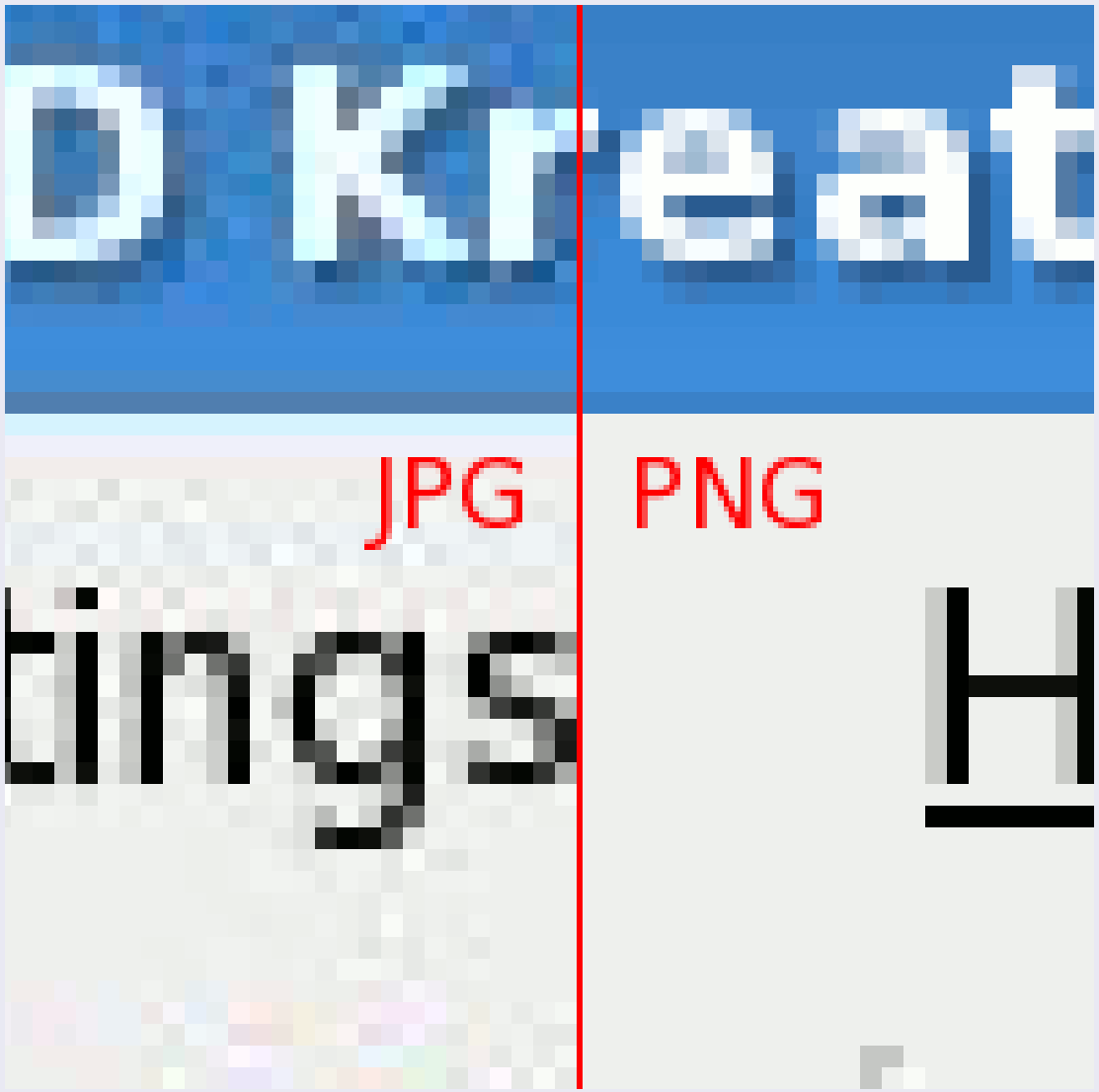
How to make your images smaller?

- Reduce image size (pixels)
- Use compression (lossy or lossless)
- Use indexed colors if possible

What file type for images?

- Photograph, lots of colors, complex, no lines (10:1)= `JPG`
- Low color count, simple, old-browser compatable = `GIF`
- Low color count, simple, needs alpha = `PNG`

JPG vs. PNG



JPG

JPEG Highlights

- Lossy (10:1 average without visible degredation)
- 24bit Color (16.8 Million)
- Variable compression (quality) 0-100
- Interlaced option
- No alpha
- Essentially send frequency info, with high cut off.

JPG Quality 100 to 1

JPG Demo Q100, 83KB (PNG 164KB, 214KB 24bit)

JPG Quality Demo Q50, 15KB

JPG Quality Demo Q25, 9KB

JPG Quality Demo Q10, 4KB

JPG

PNG Highlights

- Lossless
- Allows Alpha channel
- Allows index color values.
- Interlaced option (+15%)

PNG Alpha Demo

PNG Index Demo 141x100px

Full = 23.8KB

16 colors = 5.7KB