

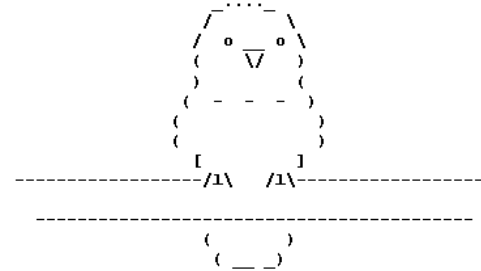
## Computer Graphics

- ❖ **Character Graphics**
  - ◆ In the beginning...  
Computers could only display text
- ❖ **Vector Graphics**
  - ◆ Image created from a mathematical coordinate description
- ❖ **Raster Graphics**
  - ◆ Image created from a description of the color of each individual pixel

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## Character Graphics

- ❖ **ASCII Art Requires use of fixed width font**
- ❖ **Very small file size**
- ❖ **Use code and preformatted elements**  
`<code><pre>;o</pre></code>`



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## Vector Graphics

- ❖ **Image created from a mathematical coordinate description**
- ❖ **Requires significant processing power, however very small file size**
- ❖ **Examples include PowerPoint, CAD software, and Visio**
- ❖ **Macromedia Flash has become the standard for Web Vector Graphics**

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## Raster Graphics

- ❖ **Most popular for computer graphics when memory became inexpensive**
- ❖ **Large file size, but very little processing power required to render**
- ❖ **Image is a rectangular group of pixels**
  - ◆ Color Description for each pixel
  - ◆ Usually, 8, 16, or 24 bit color for each pixel
  - ◆ Corresponds with 256, 64K, or 16M colors
- ❖ **Also called Bitmapped graphics**

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## Web Graphics

- ❖ Web Graphics are usually Raster Graphics
- ❖ Use compression to reduce file size for faster download through network
- ❖ Requires processing to uncompress and properly display within browser window
- ❖ Supported compressed graphics file formats
  - ◆ JPEG = Joint Photographic Experts Group
  - ◆ GIF = Graphics Interchange format
  - ◆ PNG = Portable Network Graphic (ver. 5 IE)

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## JPEG Format

- ❖ *filename.jpg* (note the extension)
- ❖ Best for photographs (24 bit RGB color)
- ❖ Excellent Compression (10:1 to 100:1)
- ❖ Lossy Process (Not for Archive)
- ❖ File Size Reduction
  - ◆ Reduce image size
  - ◆ Reduce quality
  - ◆ Gaussian Blur image
  - ◆ Do NOT reduce colors (Keep 24-bit color)
- ❖ Properties:
  - ◆ Loading: Progressive or Standard
  - ◆ No Transparency and NO Animation

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## GIF Format

- ❖ *filename.gif* (note the extension)
- ❖ Best for graphics with
  - ◆ Long runs of same color (i.e. Cartoons)
  - ◆ Maximum palette size of 256 colors
- ❖ Lossless LZW Compression
- ❖ File Size Reduction
  - ◆ Reduce image size
  - ◆ Reduce palette colors (128,64,32,16,8,4,2)
  - ◆ Do NOT Anti-alias or Blur
- ❖ Properties:
  - ◆ Loading: Interlaced or Standard
  - ◆ Transparency
  - ◆ Animation

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## Image Sources

- ❖ Acquire on Web (Right click and Save)
  - ◆ <http://www.iconbazaar.com/>
  - ◆ <http://multimedia.lycos.com/>
  - ◆ <http://www.artville.com>
  - ◆ <http://www.google.com>
- ❖ Digitize Photo or Drawing
  - ◆ Scanner
  - ◆ Digital Camera
- ❖ Create using Graphics Software
  - ◆ Paint Shop Pro
  - ◆ Adobe Photoshop
  - ◆ Macromedia Fireworks

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## XHTML: Image Element

### ❖ The Image Element is an Inline Element

#### ❖ ``

- ◆ Source file in same folder as html file = "bob.gif"
- ◆ Source file in sub-folder photo = "photo/bob.gif"
- ◆ Source file in parent-folder = "../bob.gif"
- ◆ Source file at another URL  
"http://www.bob.com/photos/bob.gif"

#### ❖ Optional Attributes:

- ◆ `alt="Bob's Mug"` Alternate text label
- ◆ `width="200" height="150"` Image dimensions

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## HTML: Image Tag Example

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.1//EN"
```

```
"http://www.w3.org/TR/xhtml1/
```

```
<html xmlns="http://www.w3.org/1999/
```

```
<head>
```

```
<title>My Mug Shot</title>
```

```
</head>
```

```
<body>
```

```

```

```
<h1 style="text-align:center">
```

```

```

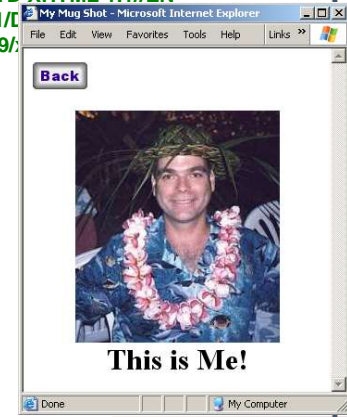
```
<br />
```

```
This is Me!
```

```
</h1>
```

```
</body>
```

```
</html>
```



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## Tips: Image Usage

- ❖ Don't contribute to the world wide wait...  
Use reduced size images! (< 50kbytes)
- ❖ Specify the height and width of your images to load text and layout first.
- ❖ Try to reduce image byte size by
  - ◆ Reducing size for all images
  - ◆ Reducing colors for GIF image
  - ◆ Reducing quality for JPEG image
- ❖ Do not use images located on other sites unless there is a good reason
- ❖ Only use GIF and JPG images on your web site
- ❖ Limit Animated GIF to one per web page

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## Graphics Exercise

- ❖ Manipulate an image that you intend to use on your home page.
  - ◆ Examine how these changes affect file size.
  - ◆ Save in both GIF and JPEG formats
- ❖ Create several buttons that you intend to use with your web site: Resume, Back
- ❖ Insert the images in your Web Pages using XHTML

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