# Mobile Design

Responsive & Adaptive Websites

# Brochure-ware

- Web mimicked hard copy design
- TBL tech, not designed for that
- Use set heights and widths to "nail" elements
- A desktop was a desktop was a desktop - the fact of life
  - 1024 x 768 display resolution

- Web evolution: users don't like to scroll
  - Horizontal and vertical
- "Above the fold"
  - page "chunking"
  - small fonts
  - boxes, densely packed



# June 29, 2007



- No mobile-friendly websites
- Screen: 480 x 320px (portrait)
- New fact of life: pinch-and-zoom
  - Default: every website, zoomed out



# "Responsive" "Fluid" "Adaptive"



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Back

# Mobile Web Limitations

- Small Screen Size
- Low bandwidth
- Awkward controls
- Limited processor and memory

http://m.whitehouse.gov/





### **FEATURES**

- 1. Weekly Address
- 2. Resurgence of the Auto Industry
- 3. West Wing Week
- 4. Deepest Condolences for Missouri and the Midwest

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# Mobile Web Design Best Practices



- Assuming: the same website makes sense on a mobile device, then...
- Need to re-factor:
  - 1. Layout
  - 2. Navigation
  - 3. Graphics
  - 4. Text

# **Best Practices**

Layout, Navigation, Graphics, Text

# Dealing with Mobile Devices

### Goals

- No horizontal scroll bars
- All elements fit their containers
- Text must not be too small to read comfortably; there must be a lot of contrast between text color and its background
- Images must still be recognizable for what they are, i.e. not too small
- The navigation elements look like buttons and they are finger-sized (easily tap-able)

### Techniques:

- 1. Add viewport meta tag
- **2. Scale images** as necessary
- Use media queries to UNDO desktop layouts
  - Return side-by-side content to the natural document flow
  - Remove floats
- **4. Reconfigure or move** wide elements like HTML Tables

# Layout

- Single column design
- Limit scrolling to one direction
- Use clear, short heading elements
- Use simple lists with short phrases instead of heavy textual content
- Avoid using HTML tables
- Avoid using pixel units in style sheets
- Avoid absolute positioning
- Hide content that is not essential for mobile use.



### wrapper

# Navigation

- Provide minimal navigation near the top or bottom of the page
- Toggle lesser navigation until needed
  - Use micro-interactions to show sub-menus as needed (sliding in and out when tapped)
  - hamburger menus?
- Avoid hyperlinks that open files in new windows or pop-up windows

# **Images**

- Avoid using floats
- Avoid displaying images that are wider than the screen width
- Configure alternate, small optimized background images or no background images at all
- Avoid using images that contain text
- Avoid the use of large graphic images (large file sizes)

### Text

### Remember: images can scale; text stays the same size

- Configure good contrast between text and background colors
- Use common font typefaces
- Increase text sizes (sometimes)
- Use a short, descriptive headings





# Viewport Meta Tag

The default action for most mobile devices is to zoom out and scale the web page The fix...

- Viewport Meta Tag
- Created as an Apple extension to configure display on mobile devices
- Configures width and initial scale of browser viewport
- Insert, in the <head>...

<meta name="viewport" content="width=device-width, initial-scale=1.0">





# Flexible Images in HTML

Desktop Browser



Tablet Display Width

Located in the Heart of

At Casita Sedona Bed & Breakfast you'll be

close to art galleries, shops, restaurants, hiking trails, and tours. Ride the free troley

bed, balcony overlooking the red rocks, private bath with shower, and whirlpool tub for two. Choose from the Canyonk, Javelina,

point of your vactaion experience.

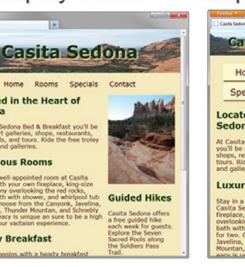
**Hearty Breakfast** 

Manzanita, Thunder Mountan, and Schnebly

Sedona

to shops and galleries.

**Luxurious Rooms** Stay in a well-appointed room at Casita Sedona with your own fireplace, king-size



- Smartphone Display Width
- Casita Sedona Home Rooms Contact Specials Located in the Heart of Sedona At Casita Sedona Bed & Breakfast you'll be close to art galleries, shops, restaurants, hiking trails, and tours. Ride the free troley to shops **Luxurious Rooms** Stay in a well-appointed room at Casita Sedona with your own fireplace, king-size bed, balcony overlooking the red rocks, private bath with shower, and whirlpool tub for two. Choose from the Canyonk, Javelina, Manzanita, Thunder Mountan, and Schnebly rooms

- In the HTML:
  - remove height and width attributes
  - wrap the image in a container that has a controlled width
- In the CSS:
  - target the image that needs to scale example:
    - .scalable { width: 100%; }

# Media Queries

- Media Query
  - Determines the capability of the mobile device, such as screen resolution
  - Directs the browser to styles configured specifically for those capabilities

### In CSS

```
@media (max-width: 768px) {
    //CSS here
}
@media (max-width: 480px) {
    //CSS here
}
```

### Reference:

https://developer.mozilla.org/en-US/docs/Web/Guide/CSS/Media queries



# Reconfigure HTML Tables, Floats ...anything that doesn't fit

- HTML Tables
  - Change the *font-size*
  - Move the table to a different area of the webpage
  - Use *overflow-x:auto* on a container element
  - Reconfigure the table into some other element (like an unordered list) using JavaScript
  - Google: responsive html tables ...or something like that
- Floats
  - Remove floats use text-align: center instead