



# CIS 148 HTML Development – Effective Website Creation (and Design) – Introduction – Lesson 0

Our goal in the course: learn how to create an effective website with text, images, and links using HTML5 (Hypertext Markup Language) and CSS (Cascading Style Sheets)





## Agenda For Today - Introduction

To learn how to create effective websites, we must realize two things:

- We create websites for search engines.
- We create websites for different users.
- Focus – two unique users:
  - mobile users
  - users with disabilities.



To accomplish this:

- Discuss The Poe Strategy
- Examine The Scan Method of User Behavior (Scan and Go)
- Learn Five Critical Issues (The Big 5) and Some Techniques



# Effective Website Design – Search Engines

- **We create websites for search engines.**

Search engines are software systems that find web pages that match a search query.

Search engines maintain real-time information by running an algorithm on a web crawler.

What is a web crawler?  
(Web crawlers are special software.)







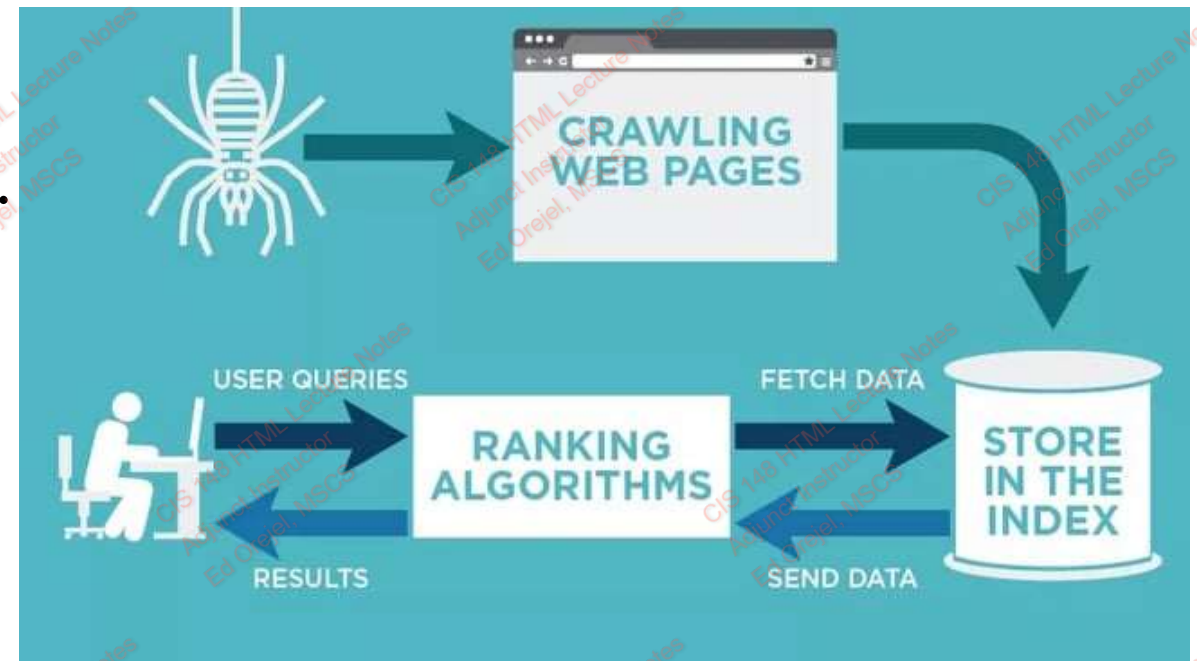
# Effective Website Design – Search Engines – Web Crawlers

- We create websites for search engines.

What is a web crawler? (Web crawlers are special software.)

Web crawlers are computer programs that automatically browse the internet.

They are known as robots, ants, bots, or spiders.





# Effective Website Design – Search Engines – Web Crawlers

Web crawlers visit websites to read their pages.

Web crawlers also read other information to create entries for a search engine's index.

The goal of a web crawler is to learn what every webpage on the web is about.

This is so that the information can be retrieved when it's needed.





## Effective Website Design – Search Engines

Search engines present search results as a line of results, often called search engine results pages.

The information may include hyperlinks to web pages, images, videos, infographics, articles, and other types of files.

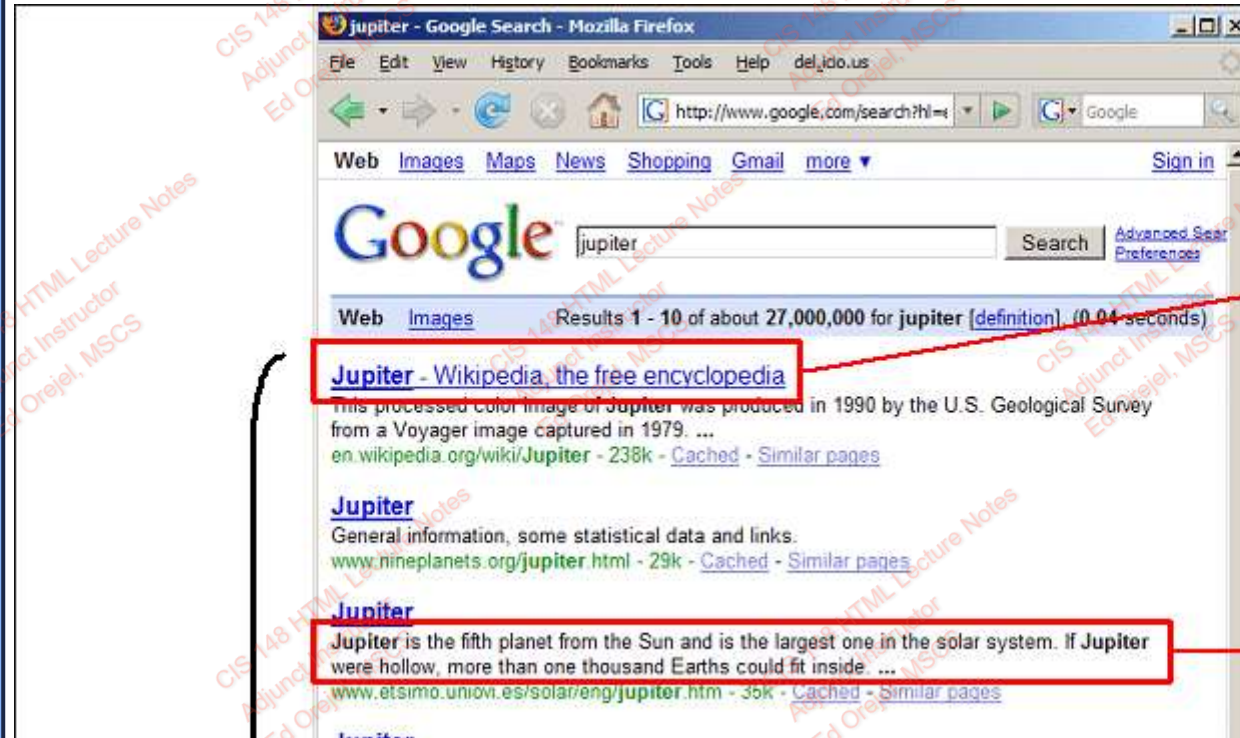
The most popular search engines in the United States are: Google, Bing, DuckDuckGo.







# Effective Website Design – Search Engines – Sample Results Page



Title

Snippet



Result List

Title

Snippet

URL



# Effective Website Design – Search Engines – Sample Results Page

## Result List

### Jupiter

Jupiter is the fifth planet from the Sun and is the largest one in the solar system. It contains more matter than all of the other planets combined.

[www.solarviews.com/eng/jupiter.htm](http://www.solarviews.com/eng/jupiter.htm) - 39k - [Cached](#) - [Similar pages](#)

### Jupiter Asset Management Jupiter Unit Trust Investments

Jupiter Asset Management unit trust funds and investment trust tax free investments ISAs PEPs and SIPPs and IFAs looking for Income Growth Funds and ...

[www.jupiteronline.co.uk/](http://www.jupiteronline.co.uk/) - 6k - [Cached](#) - [Similar pages](#)

### Jupiter Research

Business- and technology-based research, analysis, and advice to help companies profit from the impact of the Internet and emerging consumer technologies.

[www.jupiterresearch.com/](http://www.jupiterresearch.com/) - 31k - [Cached](#) - [Similar pages](#)

### Solar System Exploration: Planets: Jupiter

General features and data about the planet and its satellites.

[solarsystem.nasa.gov/planets/profile.cfm?Object=Jupiter](http://solarsystem.nasa.gov/planets/profile.cfm?Object=Jupiter) - 53k - [Cached](#) - [Similar pages](#)

### Jupiter Band Instruments

Jupiter Band Instruments offers a full line of student and professional woodwind and brass instruments and provides the quality and value that students ...

[www.jupitermusic.com/](http://www.jupitermusic.com/) - 47k - [Cached](#) - [Similar pages](#)

URL

## Result List



Title

Snippet

URL





# Create Websites for Users – Mobile Users

To learn how to create effective websites, we must realize two things:

- We create websites for users.





## Create Websites for Users – Mobile Users

To learn how to create effective websites, we must realize two things:

- **We create websites for users.**

From Google Search Results: Mobile internet traffic has overtaken desktop/laptop traffic, accounting for over half of all web traffic globally.





## Create Websites for Users – Mobile Users

As of the first quarter of 2023, mobile devices generated 58.33% of global website traffic.

In 2022, mobile phones generated over 60% of website traffic.

Desktops and tablets generated about 39%.







# Create Websites for Users – Users with Disabilities – Web Accessibility – The Internet For All

To learn how to create effective websites, we must realize two things:

- **We create websites for users with disabilities.**

People with disabilities should be able to perceive, understand, navigate, and interact with, and contribute to the web.





# Create Websites for Users – Users with Disabilities – Web Accessibility

- **We create websites for users with disabilities.**

Web accessibility applies to all disabilities that affect access to the web, including:

- Auditory.
- Cognitive.
- Neurological.
- Physical.
- Speech.
- Visual.

More information here: [Search Engine Journal](#)



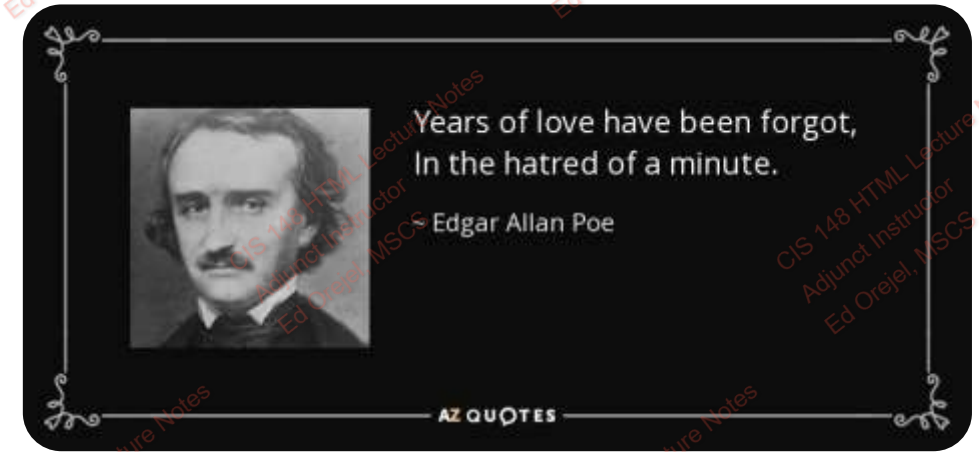


# The Poe Strategy – Do Not Become Edgar Allan Poe – What Does This Mean?

The Poe Strategy: as a website developer do not become Edgar Allan Poe.

- Website developers are not authors.
- Do not create a website as if you were writing a book.
- Research shows users do not read websites.

If users do not read websites,  
what do they do on a webpage?







# The Scan Method of User Behavior (Scan and Go)

## The Scan Method

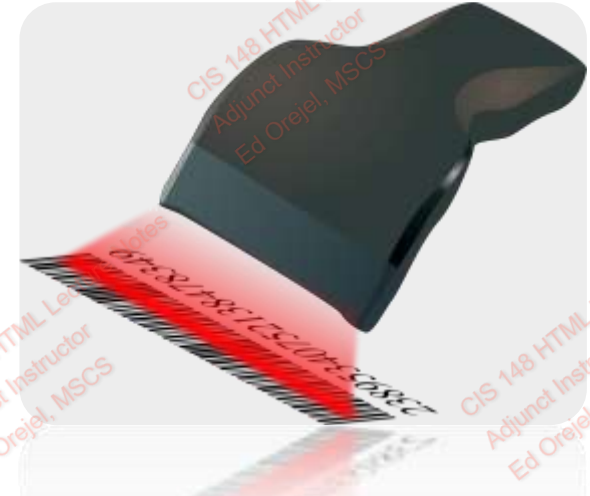
Users scan webpages to find what they are searching for. They scan and go!

- It could be something specific.
- It could be a specific link.

## Effective website design

is the ability to satisfy your user's needs – almost immediately.

You will satisfy scan and go behavior.







# Usability

## The Issue:

- **Usability**

Usability refers to how easy a website is to use.

Usability is a key factor in determining the effectiveness of a website.

## The Logic

If a site is easy to use, it has a chance to be effective.







# Usability – Four Key Guidelines

Four key guidelines for usability as are follows:

1. Present essential information above the fold, so users scroll less.
2. Group related items and limit the number of groups on each page.
3. Include a header that identifies the site and provide a navigation bar and links to utilities.
4. Use existing navigation conventions. A logo that goes to your home page when clicked and a cart icon that goes to your shopping cart when clicked. (Use best practices!)



# Usability – Users Can Find What They Want

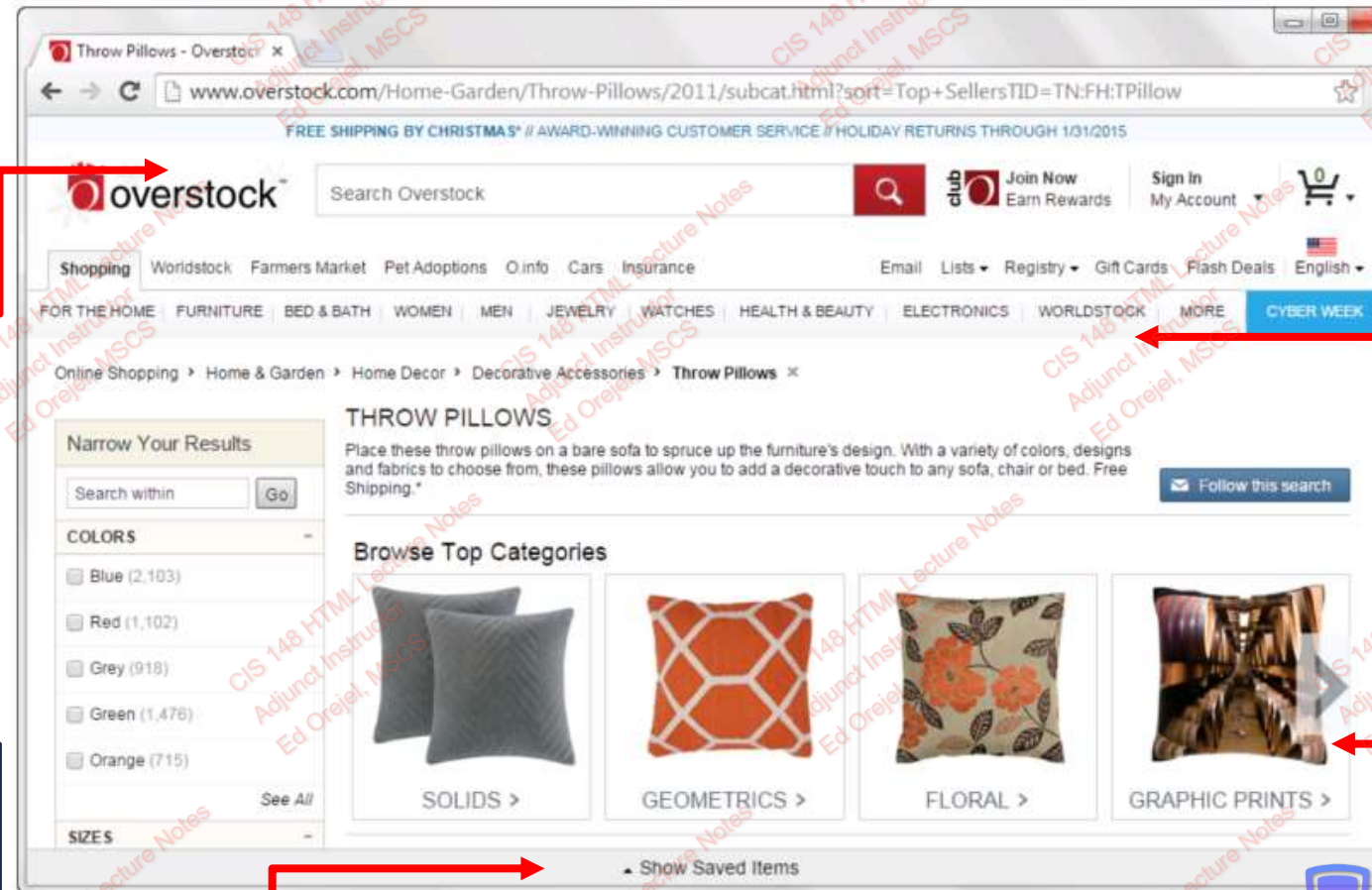
3. Include a header that Identifies the site.

4. Use existing navigation conventions.

1. Above the Fold.  
Essential information above the fold.

2. Group Related Items. Limit them on each page.

## A website that is easy to use



Watermarkly



# Usability – Users Can Find What They Want – What is “Above the Fold?”

The “fold” of a website is the bottom of the screen.

The users have to scroll to see the contents beneath it.  
The fold is where the browser window ends, but the content continues underneath. (Ineffective!)

Best practice! Avoid making the user have to scroll for your content.

Place your content above the fold (that is, above the bottom).



semrush.com

SEMRUSH

Watermarkly





# Usability – Users Can Find What They Want – What is “Above the Fold?”

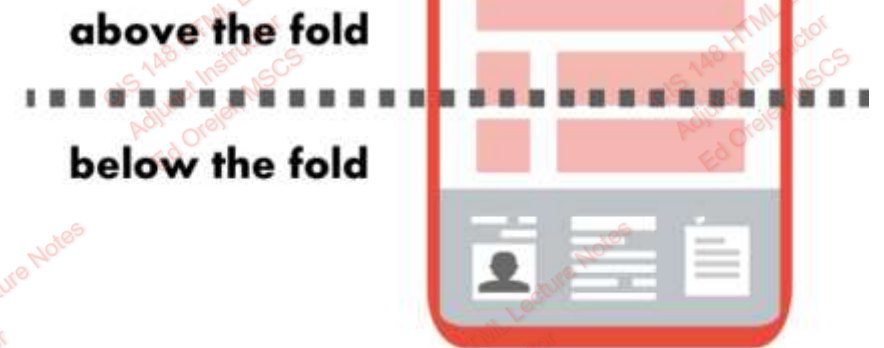
The exact location of the fold depends on the device that the visitor is using to load the page. An effective website would accommodate the user by “marking up” the document to present contents above The fold.

In website design, the fold is usually set to the most widely recognized PC monitor and browser dimensions.

These range from 1024×786 pixels to 1280×1024 pixels.

Where does “The Fold” come from?

Old Newspapers were folded to read important content.





# Cross-Browser Compatibility

## The Issue

- Cross-Browser Compatibility

An effective website should be compatible with many browsers.

## The Logic

- Users are not limited to a single browser.
- Users have preferences.
- Try to accommodate them.





# Cross-Browser Compatibility – How?

## How to Achieve

- Use the latest HTML and CSS features that are supported by most browsers.

## What to Test for

- Test for maximum HTML5 support.
- Effective websites ensure that HTML and CSS work correctly on many browsers.







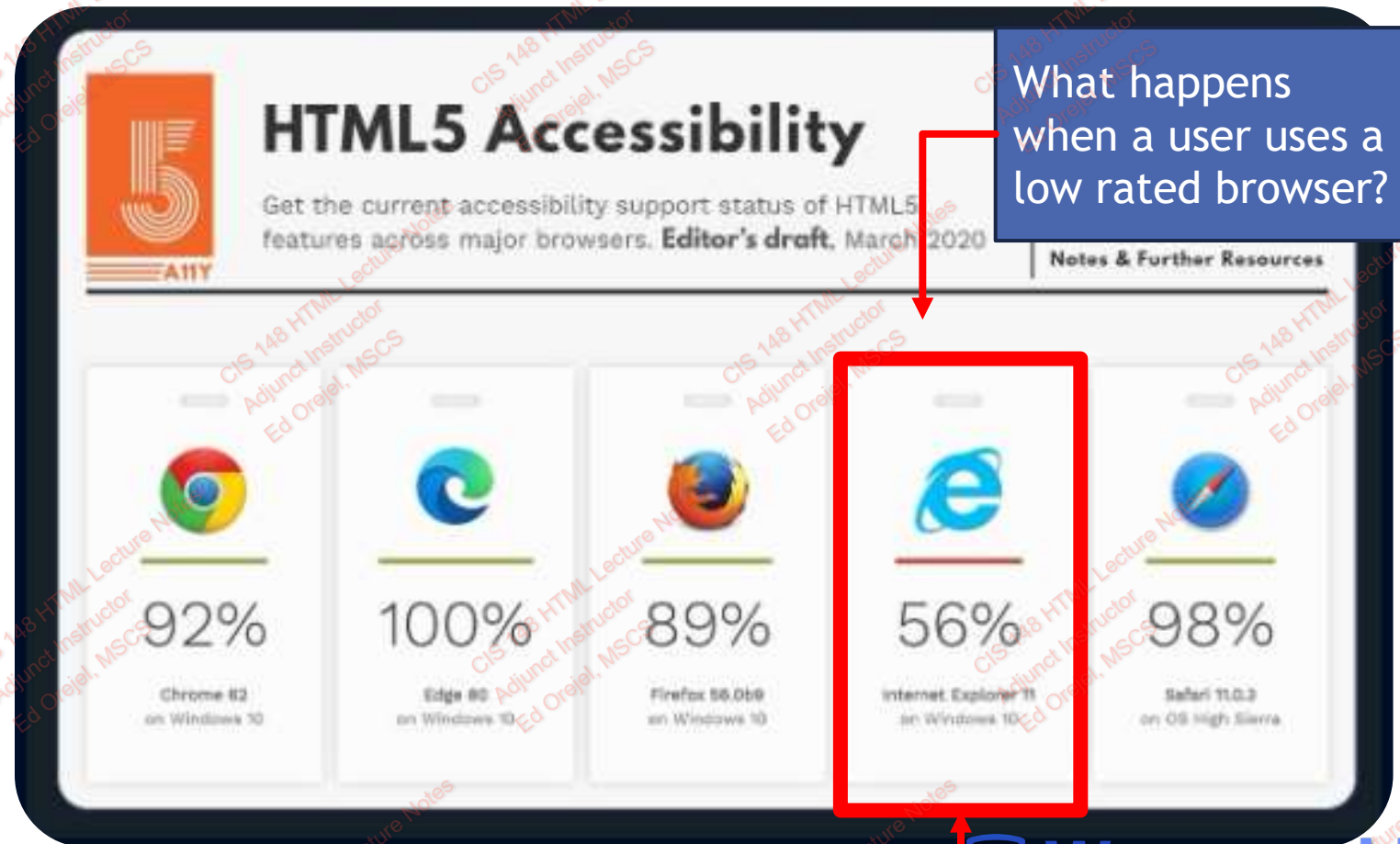
# Browser Support for HTML5 – Ratings

## Check Current Ratings

Ratings dated to  
April 10, 2020.

## Low vs High Ratings

Compare the ratings!



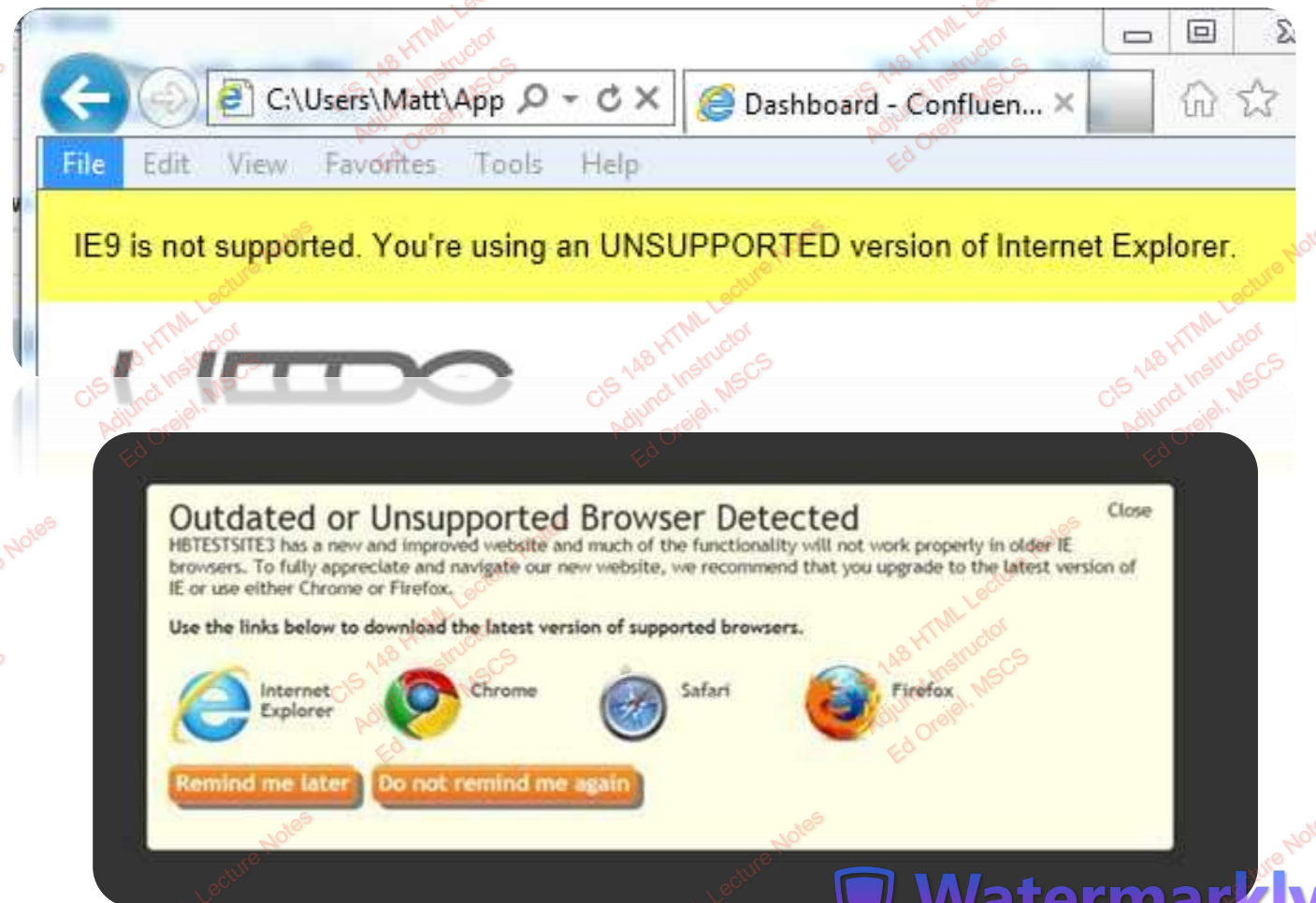
What happens  
when a user uses a  
low rated browser?



# Browser Support for HTML5 – Low Rating

## Interact with Users

- Encourage them to upgrade their browser.





# User-Accessibility

## The Issue

- **User Accessibility**

Effective websites ensure a website is accessible to as many users as possible, especially disabled user.

## The Logic

- Websites are accessed by many different types of people.
- Users will access a website in various ways.
- Different senses will be used by different people.







# User-Accessibility – How?

## How to Achieve

- Do not depend on a single human sense.
- Ensure keyboard access.
- Provide text equivalents of images.
- Develop a website so that content is still usable if images, CSS, (and JavaScript) are disabled.
- Images must have correct “alt” descriptions.
- Images must be sized correctly.
- Do not break the website layout.





## User-Accessibility – alt=“sample”

### Alt Attribute (alt=“sample”)

- The alt tag, or alt attribute, provides a text alternative for images on a web page.
- The alt tag describes the image and why it's important to the content of the page.
- It's also provides a description of the image if it's not displayed properly on screen.





# Search Engine Optimization (SEO)

## The Issue

- Search Engine Optimization (SEO)

Effective websites optimize for search engines so that web pages rank higher.

## The Logic

- Higher ranked websites attract more visitors.
- Studies show, more than 90% of people never click on the second page of Google search results.
- Google's first page receives at least 71% of web traffic.
- The second page receives only 6%.







# Search Engine Optimization (SEO) – How?

## How to Achieve

Following best programming practices when using HTML or CSS will result in using elements that are search engine friendly, by default.

## HTML5 and CSS Naturally Help SEO

- CSS helps to create clean and organized HTML code.
- Clean and organized HTML code is essential for SEO.
- CSS makes it easier for search engines to crawl and index a website.

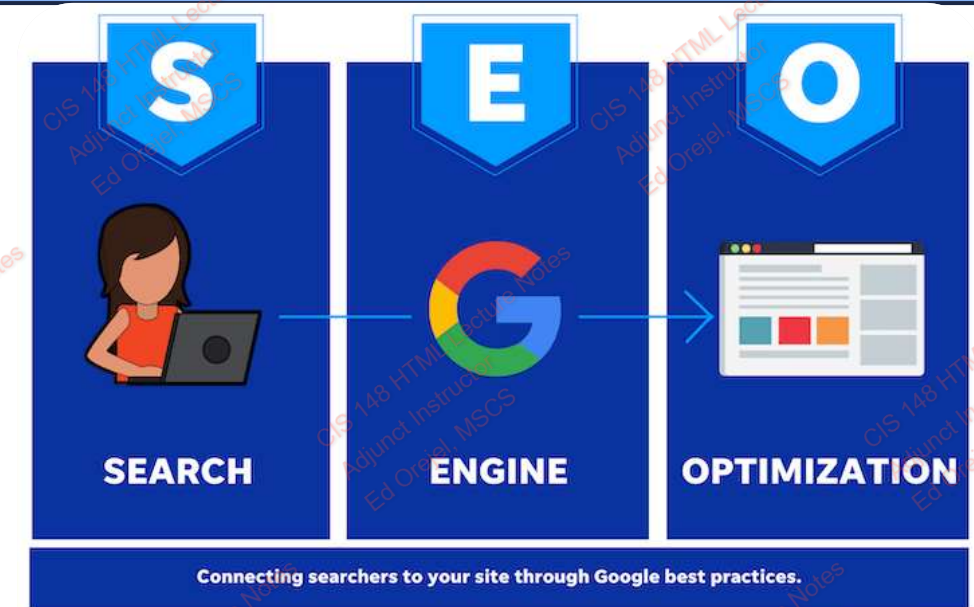


# (SEO) – How? Best Practices!

## Best Practices for SEO

- Header Tags
- Title tags
- Meta description tags
- Alt tags in images
- Formatting your pages – how to perform?

We will cover these.



WordStream



# Format the Texts – Header Tags

- Format the texts of your website.
- Use appropriate header tags.
- Header tags break up texts.
- They make texts easier to read by creating structure on a web page.

## Common tags

- H1
  - H2
  - H3

Here is the hierarchy of header tags:

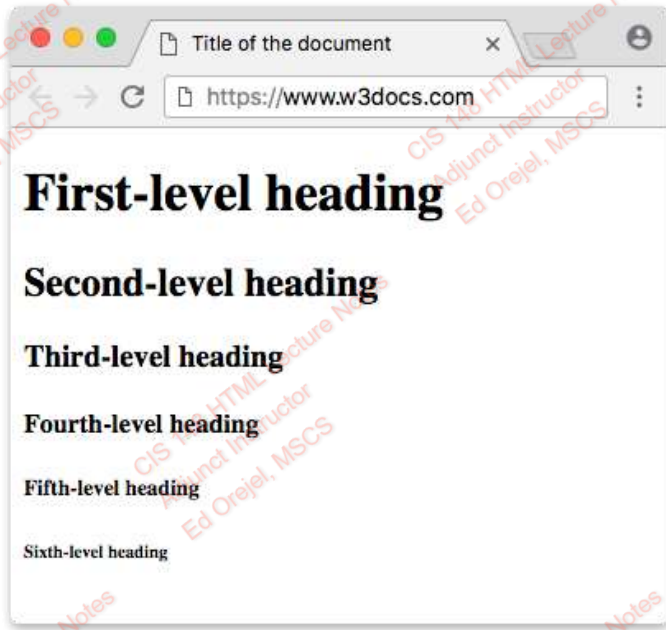
- `<h1></h1>` – usually reserved for webpage titles.
- `<h2></h2>` – highlights the topic of the title.
- `<h3></h3>` – reflects points in regards to the topic.
- `<h4></h4>` – supports points from `<h3>`.
- `<h5></h5>` – not often used, but great for supporting points of `<h4>`.





# Format Texts – Sample Pages

## Headings (Including H1 Tags) Improve User Experience by Creating Hierarchy



Cannot scan!

`<h3>Page title</h3>`

`<h1>Subheading</h1>`

`<h2>Sub-subheading</h2>`



Hard to skim

Can scan!

`<h1>Page title</h1>`

`<h2>Subheading</h2>`

`<h3>Sub-subheading</h3>`



Easy to skim





# The Paragraph Tag <p>

- Use the paragraph tag <p> tag to define paragraphs.
- Paragraphs are blocks of text separated by blank lines and/or first-line indentation.
- Try to limit your paragraphs to five HTML lines.
- For long paragraphs, break them down into subtopics.
- Use header tags to achieve this logical structure.
- The logical structure is:
  - Topic
    - Sub-topic





## The <br> tag

- Use the <br> tag to format the text of your web page.
- It will create line breaks. (The Poe Strategy: No walls of text!)
- Line breaks will add formatting to your web page.
- Make it easy to scan!

Here's an example of using the <br> tag in a paragraph:

```
<p>This is a paragraph.</p>  
<br>  
<p>This is a paragraph.</p>
```

The text will look like this:

```
This is a paragraph.  
This is a paragraph.
```





# The Links – Anchor Text

- Format your links!
- Hyperlinks are the backbone of every website.
- Ensure links have proper tags.
- Ensure appropriate anchor text
  - Succinct and relevant to the target page.

## Anchor text placement

Anchor text (also known as *link text*) is the visible text of a link. This text tells people and Google something about the page you're linking to. Place anchor text between `<a>` elements that Google can crawl.

✓ Good:

```
<a href="https://example.com/ghost-peppers">ghost peppers</a>
```



# The Links – Anchor Text

- Anchor Text should be meaningful and descriptive.

✓ Better (more descriptive):

For a full list of cheese available for purchase, see the [list of cheese types](https://example.com).

✗ Bad (weirdly long):

Starting next Tuesday, the [Knitted Cow invites local residents of Wisconsin to their grand re-opening by also offering complimentary cow-shaped ice sculptures](https://example.com) to the first 20 customers.

✓ Better (more concise):

Starting next Tuesday, the [Knitted Cow invites local residents of Wisconsin](https://example.com) to their grand re-opening by also offering complimentary cow-shaped ice sculptures to the first 20 customers.



# The <title> tag

- Use the Title tag to format your web page.
- This will give a title to your page in the search engines.

```
<title>Your Title Goes Here</title>
```

how to start a fight

<https://www.wikihow.com/Start-a-Fight>

**How to Start a Fight (with Pictures) - wikiHow**

Maintain a defensive posture. Flex your knees and turn sideways very slightly with your hips, turning your non-dominant or non-punching side toward your opponent. Raise your hands, fists balled loosely but not so tightly you cut off blood flow. Keep moving, hopping around, and bouncing on the balls of your feet.





# The <meta> tag

- Use the meta tag to format your web page.
- Meta tags describe what the website is about.

```
<meta name="description" content="Your description goes here">
```

how to start a fight

<https://www.wikihow.com/Start-a-Fight>

## How to Start a Fight (with Pictures) - wikiHow

Maintain a defensive posture. Flex your knees and turn sideways very slightly with your hips, turning your non-dominant or non-punching side toward your opponent. Raise your hands, fists balled loosely but not so tightly you cut off blood flow. Keep moving, hopping around, and bouncing on the balls of your feet.



# (SEO) – How? Best Practices!

## Best Practices for SEO

- Cleanly lay out the framework and design for your website.
- Name all the pages with descriptive, keyword-rich URLs.
- Utilize the `<head>` tag.





# Responsive Web Design (RWD)

## The Issue

- **Responsive Web Design (RWD)**

An effective website will adapt to various screen sizes in an efficient manner, that is, gracefully, causing no discomfort to the user.

## The Logic

If a website uses Responsive Web Design, it can satisfy many users, that all may be using different devices to visit the site.

An effective website will cater to many users, specifically, mobile users.







# Responsive Web Design (RWD) – How?

## How is it Achieved

Use three fundamental principles:

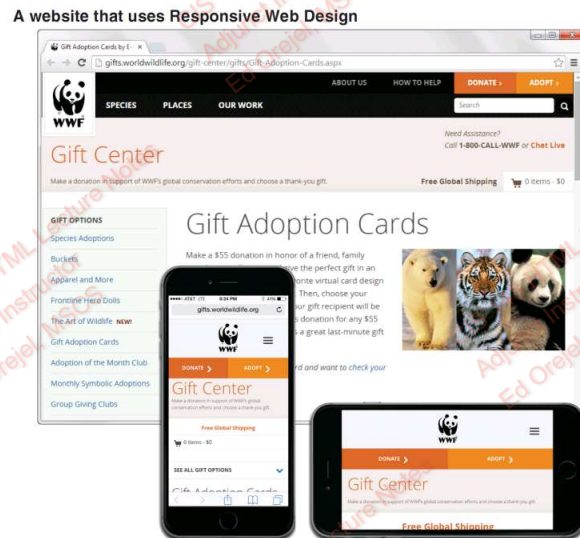
- Fluid Layout (instead of fixed)
- Media Queries
- Fluid Image Use





# Fluid Layouts

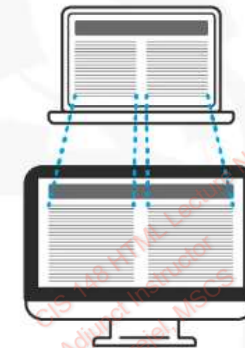
- Fluid Layouts – use a fluid layout to adjust the width of a web page and its structural elements to the size of the screen.
- A website will fill 100% of the screen, using a fluid layout, regardless of the device being used to view the web page.



**Fixed Version**



**Fluid Version**



In this image, you can see that the fixed version of the content has the same width regardless of the device, whereas in the fluid version, the content fills the available screen space of the device.



# Responsive Web Design (RWD) – How? – Media Queries

Media Queries – let you change the appearance of a page based on conditions, such as the width of the screen.

- Media queries will have a unique view on a mobile device, that is different than the view on a desktop.
- Typically called Mobile First Design.
- **Why?**

## The Syntax

declaration

Media Type

```
@media screen and (max-width: 768px){  
  .container{  
    // Write styles here  
  }  
}
```

styles to apply  
when all conditions  
are met

Specifying amount  
of screen to cover





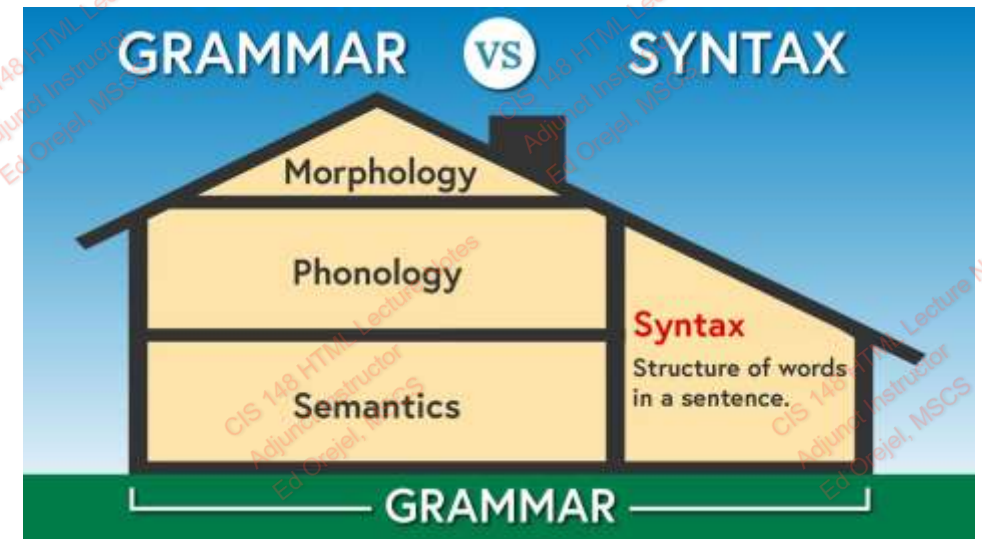


# Responsive Web Design (RWD) – How? – Media Queries – Syntax – What is “syntax”?

HTML syntax is the order in which elements appear in HTML code.

It is the grammar and spelling of the language.

HTML syntax rules ensure that the language is written in a way that can be read by a computer.



```
<a href="/contact.html">Contact Us</a>
```

Opening  
tag

Contents

Closing  
tag

Watermarkly



# Responsive Web Design (RWD) – How? – Media Queries

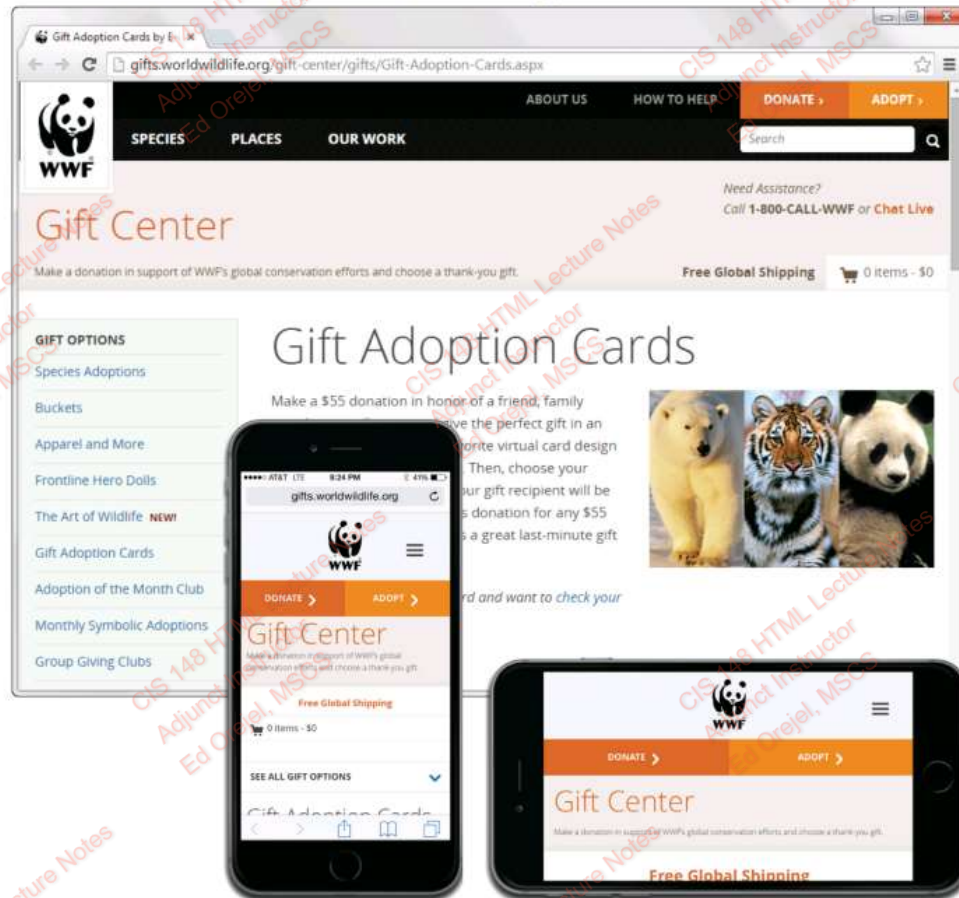
- Media queries create a single-column layout for narrow-screen devices.
- Check for wider screens and implement multiple-column layouts when necessary.





# Responsive Web Design (RWD) – How? – Media Queries – Columns Arranged

## A website that uses Responsive Web Design



## Responsive Web Design



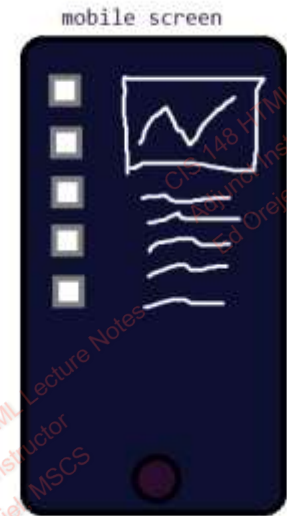
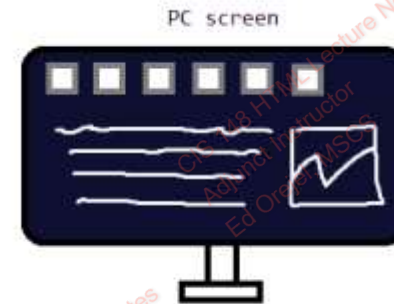
In this image, you can see how the placement of the columns is rearranged depending on the screen real estate available. The content is displayed in one column on the smartphone, two on the tablet and three on the desktop.





# Responsive Web Design (RWD) – How? – Fluid Image Use

- Fluid Image Use – in RWD, an effective website uses images whose sizes change along with the size of their containing elements.
- You can create a single image and instruct the browser to scale the image according to the size of the container.
- Such images are scalable images because the size of the image is scaled to the size of the element that contains it.





# Responsive Web Design (RWD) – How? – Fluid Image Use





# Effective Website Creation – Recommendations – Best Practices

## Aligning with the Big Five

- Effective websites rank higher in search engines.
- Texts, links and images are naturally optimized using HTML and CSS.
- They are aligned with the Big 5 of web development. **How so?**



HTML and CSS are designed to make a website effective.

Follow good programming practices, using HTML and CSS, to create effective websites.





# Effective Website Creation – Best Practices – How to Test, Debug, and Validate HTML

- Testing - Run the page in all browsers that are likely to access your site.
- Check the contents and appearance of the page on the browsers.
- Debug when necessary.
- Validating HTML and CSS files
- HTML validation checks a website's code to see if it follows the World Wide Web Consortium (W3C) standards.
- This can help improve the quality, performance, and accessibility of a website, as well as its search engine optimization (SEO) ranking.





# Effective Website Creation Introduction – The End

