# HTML5 and CSS3 Complete

**Second Edition**

## Unit 0

## Optimizing Your Website for Search Engines

# Objectives

- Understand search engine optimization (SEO)

- Write indexable content

- Add a description with the meta element

- Incorporate microdata

# Objectives (continued)

- Create a sitemap file

- Create a robots.txt file

- Preview and finalize your site

- Submit your site

# Understand Search Engine Optimization (SEO)

- <u>Search engine optimization</u>: process of tailoring the structure and content of a web page with search engines in mind

Tags

Keyword

Content

Links
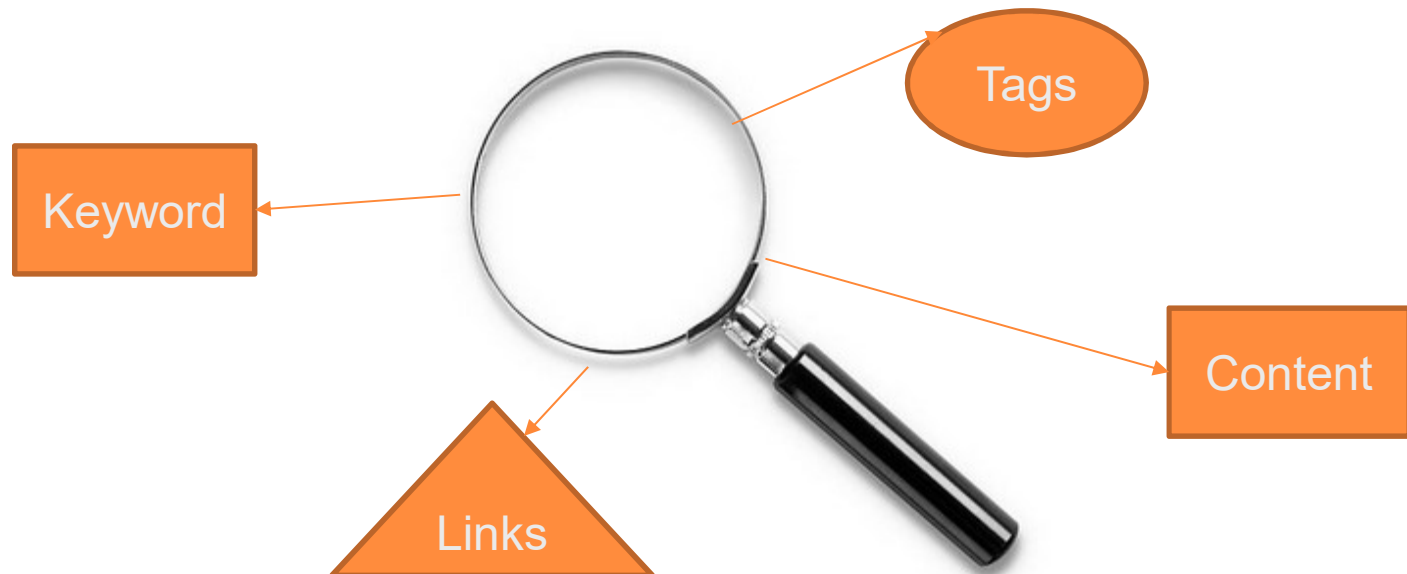
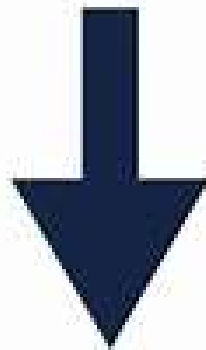# Understand Search Engine Optimization (SEO)

- Two main benefits:
  - ➤ Increasing site's priority in search results
  - ➤ Giving web applications useful semantic information about your site
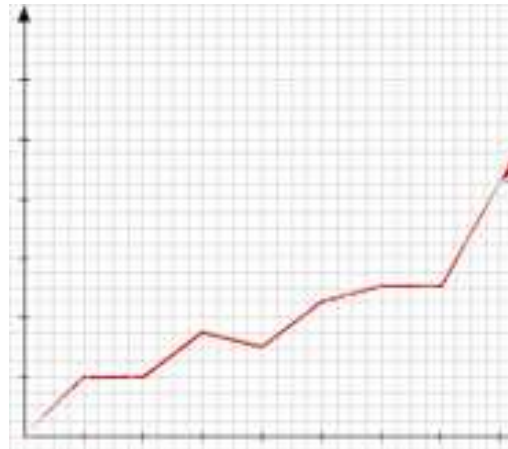
# What results if target key words?

- High probability of showing results for a particular search.
  - ➢ Meaning: To help your site to return the right results.

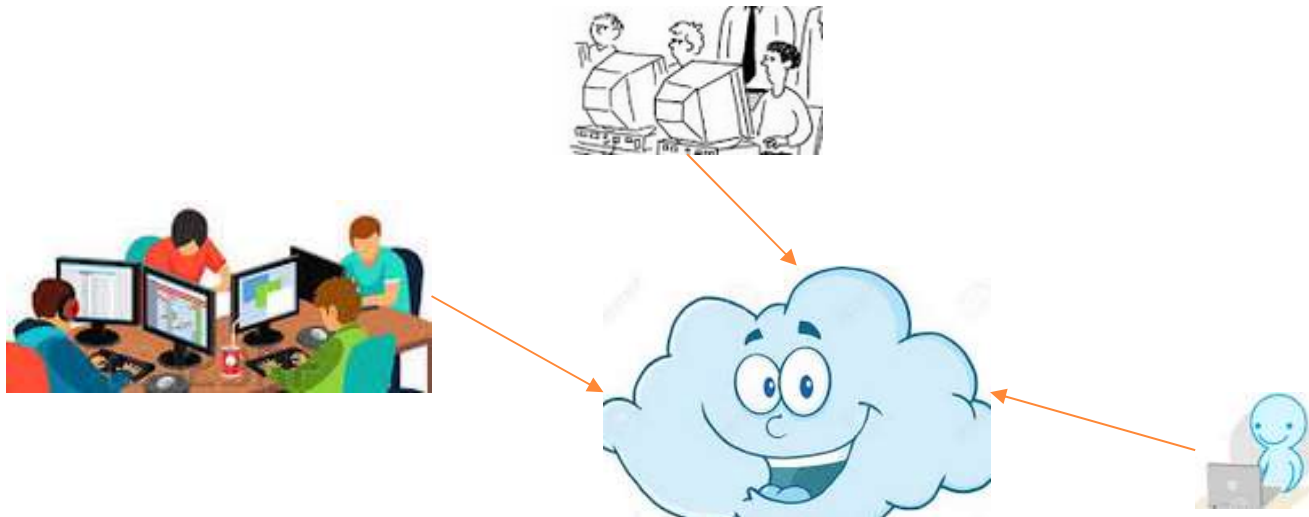  - ➢ What if your web traffic going down?

    …going down.

    …need to use SEO

# Ultimate Goal of SEO

- Increase your site's usability
  - ➤ Brings people in from the search engine.
  - ➤ Site should be clearly defined.
  - ➤ Site meets expectations.

# How does it work?

- Terminologies and concept to learn before knowing how it works.

1. Processing – search string = indexed pages.

2. Indexing – assign pages with particular keyword.

3. Crawling  - fetch sites' links

4. Relevance – one or more results.

5. Correct Results – get best match.

# SEO/Search Engine Crawling – look for certain pieces of information.

**Unit 0**

Keyword

links sites

CRAWLING

ranking

HTML

Social Network

feedback

content
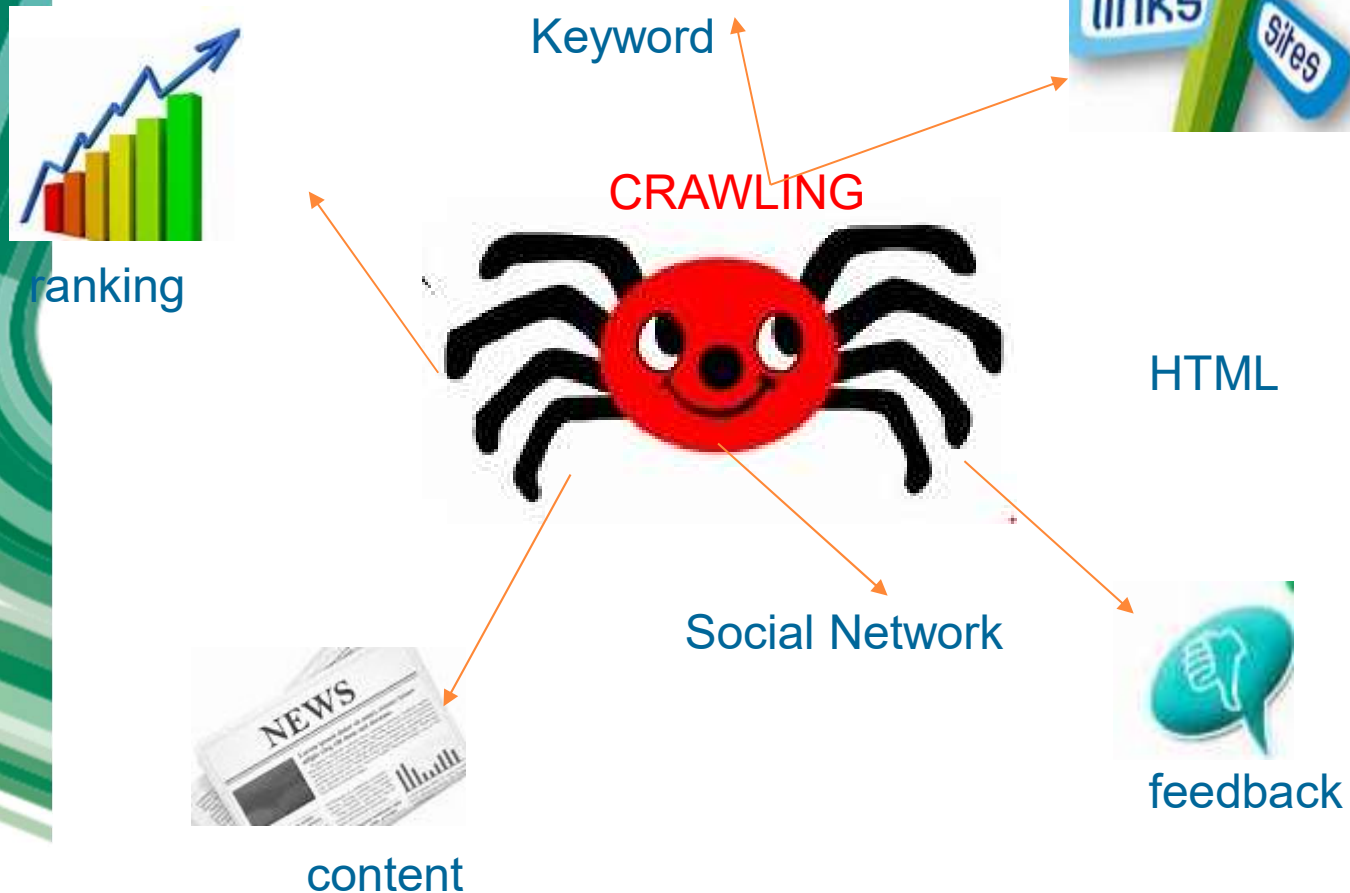
….understand what GOOGLE, YAHOO, BING looking for…CHECK guidelines

# SEO Techniques/Strategies

- Search Engine Optimization – find out how people are coming to your website.

  - Terms

  - Provide answers

  - Appealing to your audience

  - Think of popular keywords

  Note: Incorporate these words to sites content.

# More SEO Techniques/Strategies

- Link Building

  - Link to your site appear on other sites.

  - But it seems SPAMMY

  - SO focus on content.

  Note: It works in the past.



Ref: Link from Webdigia.

# Understand Search Engine Optimization (SEO) (continued)

- Algorithm: set of instructions through which search engines balance factors to decide priority of search results

- Google search engine wants the most relevant sites.

## Berry Oatmeal Muffins
makes 12 small muffins

| | |
|---|---|
| 150g | cake flour |
| 1½ tsp | baking powder |
| 20g | quick cooking oats |
| 100g | golden caster sugar |
| | a pinch of salt |
| 2 | eggs |
| 110g | non-fat yogurt |
| 60ml | vegetable oil |
| 125g | fresh blueberries |

> Pre-heat oven to 200°C.
> Sift flour and baking powder into a mixing bowl.
> Stir in oats, sugar and salt.
> Mix eggs, yogurt and vegetable oil together.
> Pour the wet ingredients into the dry ingredients. Add in the blueberries.
> Mix with a spatula or a wooden spoon until just combined. Do Not Over-mix. The mixture should appear lumpy.
> Spoon batter into paper muffin cups or muffin tins, lined with paper liners.
> Bake for 20-25 minutes or until golden browned. Leave to cool. Serve warm.

# Understand Search Engine Optimization (SEO) (continued)

- Search rank: A site's position in list of search results returned for relevant queries

  ➢ https://serps.com/tools/rank-checker/

| flower show | 🌐 all | 👤 en-us 🖥 Desk| 📍 National | avg. monthly searches 2400 | est. CPC $1.46 |
|---|---|---|---|---|---|

| URL | Position |
|---|---|
| https://theflowershow.com/ | 1 |
| https://theflowershow.com/plan-your-visit/show-info/ | 2 |
| https://theflowershow.com/plan-your-visit/ | 3 |
| https://theflowershow.com/about/ | 4 |
| http://bostonflowershow.com/ | 5 |
| http://www.visitphilly.com/events/philadelphia/philadelphia-international-flower-show/ | 6 |

# Understand Search Engine Optimization (SEO) (continued)

- Microdata: standard for using attributes to add more types of semantic data to web page content.
  - HTML tags tell the browser how to display the information included in the tag.
  - Example:
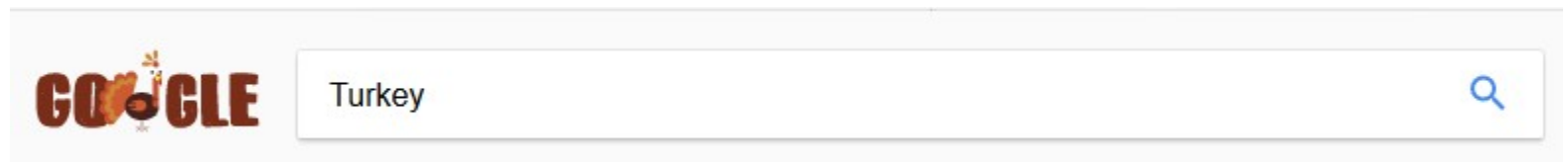


Thanks Giving Turkey or Turkey Pet

# Microdata Continue:

GO GLE    Turkey stuffing                                    🔍

- Microdata elements uses schema tags
- Advantages of using microdata:
  - Give engine more context
  - Create rich snippets
    - Display more information about the results.

Easy Turkey Stuffing Recipe - BettyCrocker.com
https://www.bettycrocker.com/...turkey-stuffing/380d2532-b381-4336-8... ▾
★★★☆☆ Rating: 3 - 27 votes - 20 min - 70 cal
Steps. In 10-inch skillet, melt butter over medium-high heat. Add onion, celery and
carrots; cook, stirring occasionally, until tender. In large bowl, mix bread cubes,
parsley, poultry seasoning, salt and pepper. Use to stuff 1 (14- to 18-lb) turkey.

Classic Turkey Stuffing Recipe - Genius Kitchen
www.geniuskitchen.com/.../betty-crockers-classic-bread-turkey-stuffing-... ▾
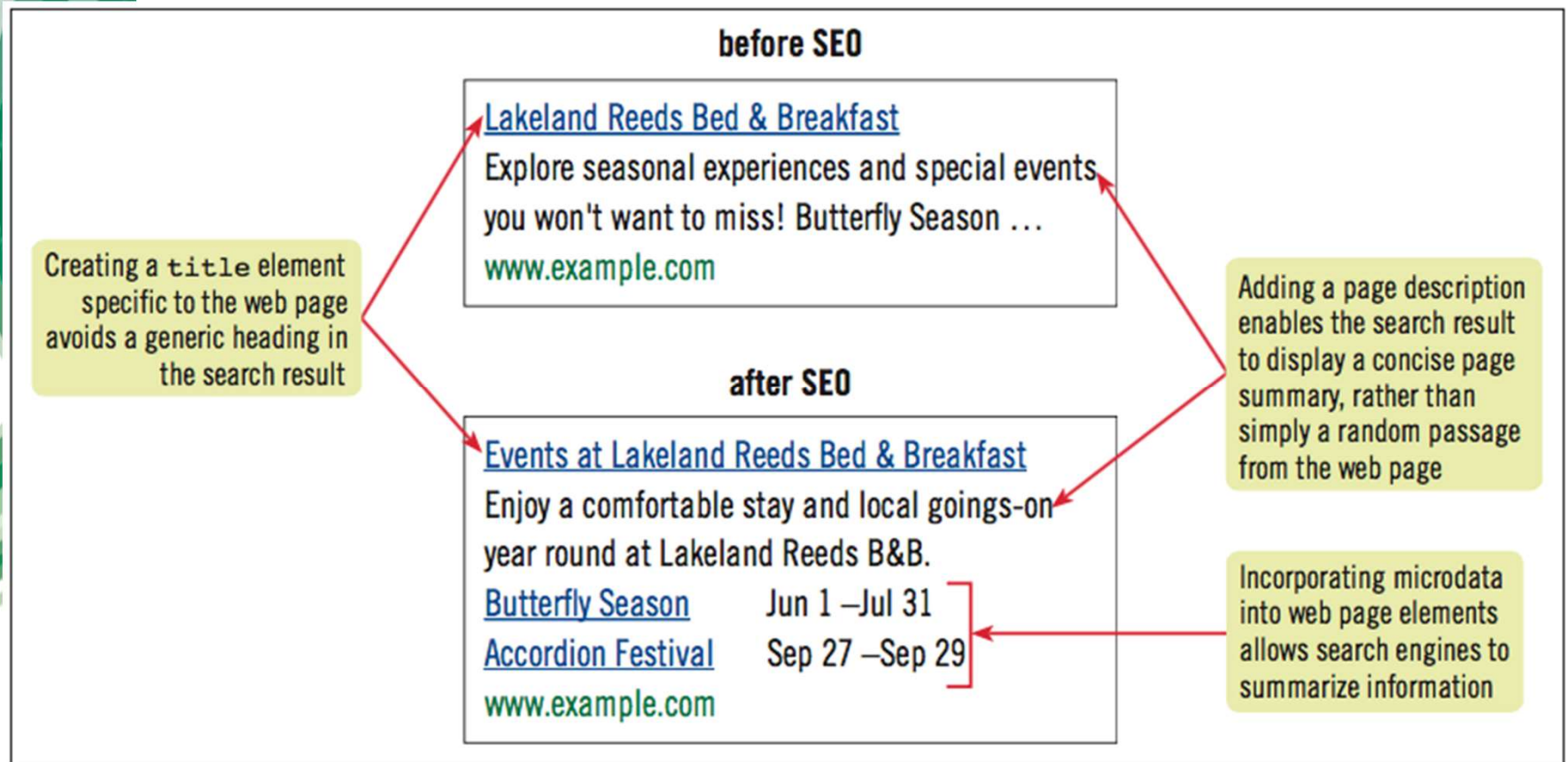★★★★★ Rating: 5 - 46 reviews - 15 min - 1049.5 cal
Directions. In a large, heavy skillet over medium heat melt the butter, then sauté the
onion and celery (and mushroom, if using) until the onion is soft, stirring occasionally.
Stir in the salt, pepper, and sage and cook for an additional 3 minutes. Place the
bread cubes into a large, deep bowl.

# Understand Search Engine Optimization (SEO) (continued)

- Sample search results showing effects of SEO techniques:

**before SEO**

Creating a `title` element specific to the web page avoids a generic heading in the search result

Lakeland Reeds Bed & Breakfast
Explore seasonal experiences and special events you won't want to miss! Butterfly Season ...
www.example.com

Adding a page description enables the search result to display a concise page summary, rather than simply a random passage from the web page

**after SEO**

Events at Lakeland Reeds Bed & Breakfast
Enjoy a comfortable stay and local goings-on year round at Lakeland Reeds B&B.
Butterfly Season       Jun 1 – Jul 31
Accordion Festival      Sep 27 – Sep 29
www.example.com

Incorporating microdata into web page elements allows search engines to summarize information

# Quick Quiz

a. T/F: Search engines balance many factors, known as microdata, to decide the priority of search results.

b. T/F: Search engines can use microdata to present and format relevant web page content in search results.

# Write Indexable Content

- To make website search engine friendly depends on the content
  - Even small adjustments can improve accuracy of indexing
  - `title`, headings, `img`, and linked text play important roles

# Write Indexable Content (continued)

- Guidelines for creating indexable content:

| element(s) | do | don't |
|---|---|---|
| title | create short, descriptive titles<br>customize the title text to accurately describe the current page | use generic or long titles<br>copy the same title text for every page in a website |
| h1–h6 | add headings to major subdivisions of the page | mark text with a heading element merely for visual formatting |
| img | give image files short, descriptive names<br>supply alternative text using the alt attribute | give image files long or nondescriptive names<br>include text in images that's not available elsewhere on the page |
| a | make links concise<br>use text that describes the link target | add links to long sections of text<br>link generic text such as click here |

# Indexable content continue: To make visible to search engine crawlers.

**Unit 0**

- Provide "alt" text for images.

- Supplement search boxes

- Flash/Java plug-ins with text on the page

- Transcript for video/audio content

# Quick Quiz

- T/F: You should use generic or long titles in a title element to create ideal indexable content.

- T/F: you should not mark text with a heading element merely for visual formatting.

# Add a Description with the `meta` Element

- Code added to provide information specifically for search engines

- Page summary using `meta` element
  - Use `name` attribute with value of `description`
  - `content` attribute value is description of site

# Add a Description with the `meta` Element (continued)

- Code for `description` meta element

```
1   <!DOCTYPE html>
2   <html lang="en">
3       <head>
4           <title>Room selection at Lakeland Reeds Bed &amp; Breakfast</title>
5           <!--
6               Lakeland Reeds Bed & Breakfast Rooms page
7               Filename: rooms.html
8
9               Author:
10              Date:
11              HTML5 and CSS3 Illustrated Unit O, Lessons
12          -->
13          <meta charset="utf-8">
14          <meta name="viewport" content="width=device-width">
15          <meta name="description" content="Lakeland Reeds Bed &amp; Breakfast offers 4
16          comfortable rooms that accommodate from 2 to 5 people. All have private baths and
17          views of Twin Lakes.">
18          <script src="modernizr.custom.40753.js"></script>
```

Meta Element: a list of words or terms that describe the page content, separated by commas

# Quick Quiz

- T/F    You can add a summary of your page content by creating a new meta element with the description value for the name attribute.

- T/F    Like the meta element for indicating the character encoding of a web page, which uses the charset attribute, you specify a description using a single attribute.

# Incorporate Microdata

- <u>Vocabularies</u>: sets of terms and definitions used to indicate semantic value of specific types of info
  - Anyone can define and use custom vocabulary
  - Most widely supported is schema.org
    - <u>Schemas</u>: groups of terms and definitions related to different types of information

# Click to edit Master title style

- <u>Vocabularies</u>: define keyword values for specific types of information
  - Serve as common language for referencing data
  - Anyone can define and use custom vocabulary
  - Reference in code using URI
  - Data-vocabulary.org contains popular, widely used vocabularies

# Common used vocabularies

- Creative works: CreativeWork, Book, Movie, MusicRecording, Recipe, TVSeries
- Embedded non-text objects: AudioObject, ImageObject, VideoObject
- Event
- Health and medical types: Notes on the health and medical types under MedicalEntity
- Organization
- Person
- Place, LocalBusiness, Restaurant
- Product, Offer, AggregateOffer
- Review, AggregateRating
- Action
- Thing
- Intangible

# Incorporate Microdata (continued)

- Code for microdata in footer section

```
103        <footer itemtype="http://schema.org/LocalBusiness" itemscope>
104          <span itemprop="name">Lakeland Reeds Bed &amp; Breakfast</span> &bull;
105          <span itemprop="address" itemtype="http://schema.org/PostalAddress" itemscope>
106            <span itemprop="streetAddress">45 Marsh Grass Ln.</span> &bull;
107            <span itemprop="addressLocality">Marble</span>,
108            <span itemprop="addressRegion">MN</span>
109            <span itemprop="postalCode">55764</span>
110          </span>&bull;
111          <span itemprop="telephone">(218) 555-5253</span>
112        </footer>
```

The business name, address, and phone number are marked with properties from the LocalBusiness schema

The parts of the address are marked with properties from the PostalAddress schema

Note: Specify how this bits of data relate to each other as shown below, the search engine will be able to better understand your page

# Structured Data Testing Tool
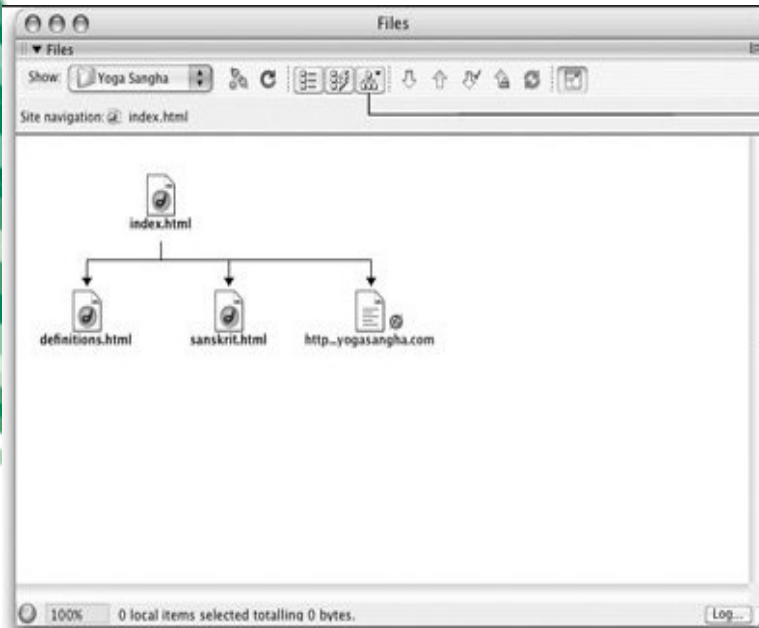
# Create a Sitemap File

- Making relationships between pages on site understandable is important
  - ➢ Site should be navigable
  - ➢ Search indexes should search all pages on the site

- <u>Sitemap</u>: file in a specific format that lists all the pages available to users in a web site
  - ➢ May include information about content

# Does sitemap really matter? Unit 0

Reasons of creating:

It can improve crawling…sitemap helps your SEO in the way it helps search engines to find faster your website and make better crawl for indexing.



Site Map button

Can use Dreamweaver as visual tool to create sitemap or you can use any other tools.

# Create a Sitemap File (sitemap.txt) - guidelines

● Content of plain-text sitemap file

```
1   http://www.example.com/index.html
2   http://www.example.com/aboutus.html
3   http://www.example.com/rooms.html
4   http://www.example.com/reserve.html
```

- The text file must have one URL per line. The URLs cannot contain embedded new lines.
- You must fully specify URLs, including the http.
- Each text file can contain a maximum of 50,000 URLs and must be no larger than 50MB (52,428,800 bytes). If you site includes more than 50,000 URLs, you can separate the list into multiple text files and add each one separately.
- The text file must use UTF-8 encoding. You can specify this when you save the file (for instance, in Notepad, this is listed in the Encoding menu of the Save As dialog box).
- The text file should contain no information other than the list of URLs.
- The text file should contain no header or footer information.
- If you would like, you may compress your Sitemap text file using gzip to reduce your bandwidth requirement.
- You can name the text file anything you wish. Please check to make sure that your URLs follow the RFC-3986 standard for URIs, the RFC-3987 standard for IRIs
- You should upload the text file to the highest-level directory you want search engines to crawl and make sure that you don't list URLs in the text file that are located in a higher-level directory.

# Creating sitemap using XML (sitemap.xml).



```
1   <?xml version="1.0" encoding="UTF-8"?>
2   <urlset
3         xmlns="http://www.sitemaps.org/schemas/sitemap/0.9"
4         xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
5         xsi:schemaLocation="http://www.sitemaps.org/schemas/sitemap/0.9
6             http://www.sitemaps.org/schemas/sitemap/0.9/sitemap.xsd">
7
8   <url>
9       <loc>http://example.com/</loc>
10      <lastmod>2018-10-06T01:39:16+00:00</lastmod>
11  </url>
12  <url>
13      <loc>http://example.com/compatibility.html</loc>
14      <lastmod>2019-03-18T10:53:03+00:00</lastmod>
15  </url>
16  <url>
17      <loc>http://example.com/blog/</loc>
18      <lastmod>2019-04-06T16:35:05+00:00</lastmod>
19  </url>
20  <url>
21      <loc>http://example.com/mobile/</loc>
22      <lastmod>2019-02-17T19:09:25+00:00</lastmod>
23  </url>
24  <url>
25      <loc>http://example.com/about/</loc>
26      <lastmod>2019-01-13T22:33:35+00:00</lastmod>
27  </url>
28  <url>
29      <loc>http://example.com/blog/index.html</loc>
30      <lastmod>2019-04-06T16:35:05+00:00</lastmod>
31  </url>
32  <url>
33      <loc>http://example.com/sitemap.html</loc>
```

-This document describes the XML schema for the Sitemap protocol.
-Sitemap protocol – XML tags.
-file – UTF-8 encoded.
-    <urlset> must be opening tag
-    <url> parent URL tag
-    <loc> child enetry of url parent tag.
-    The rest of the tags are optional

+PUT this public folder right after web, www, or public_html.
+Put sitemap.xml on root folder and submit in all search engines that helps to index pages.
+References:
https://www.sitemaps.org/protocol.html

**Quick Quiz:**

A sitemap file cannot include information about content such as images or video in the pages in a web site. (T/F)

**Create a robots.txt File (REP) Robots Exclusion Protocol.**

- <u>Bots</u> (<u>crawlers</u>): programs that search engines use to index web pages
  - ➢ Look for files named robots.txt
  - ➢ Cannot rely on this file to keep a document hidden
    - • May use password-based system
  - ➢ Influences which pages are indexed

# Robots.txt example:

## Basic format:

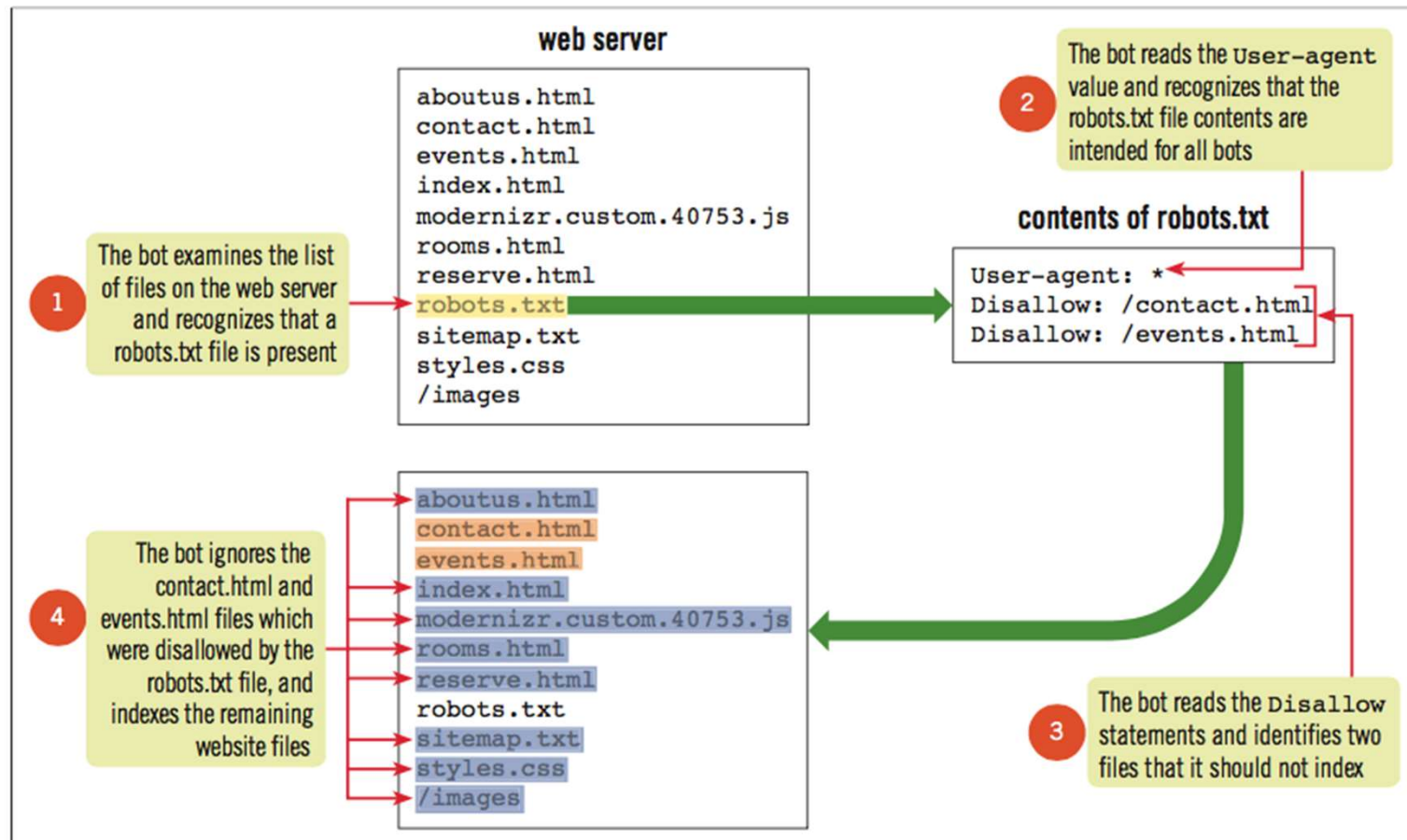```
User-agent: [user-agent name]
Disallow: [URL string not to be crawled]
```

```
1  User-agent: *
2  Disallow: /contact.html
3  Disallow: /events.html
```

# Create a robots.txt File (continued)

- How a bot uses a robots.txt file



**web server**

```
aboutus.html
contact.html
events.html
index.html
modernizr.custom.40753.js
rooms.html
reserve.html
robots.txt
sitemap.txt
styles.css
/images
```

The bot examines the list of files on the web server and recognizes that a robots.txt file is present ①

② The bot reads the User-agent value and recognizes that the robots.txt file contents are intended for all bots

**contents of robots.txt**

```
User-agent: *
Disallow: /contact.html
Disallow: /events.html
```

The bot ignores the contact.html and events.html files which were disallowed by the robots.txt file, and indexes the remaining website files ④

```
aboutus.html
contact.html
events.html
index.html
modernizr.custom.40753.js
rooms.html
reserve.html
robots.txt
sitemap.txt
styles.css
/images
```

③ The bot reads the Disallow statements and identifies two files that it should not index

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# Preview and Finalize Your Site

- Useful to give documents final check from bot point of view
  - Helps identify missing or hidden content
  - Ensures that pages are ready for indexing
  - Can install free programs to view only text
  - Can approximate view by changing browser settings

# Previewing and Finalizing Your Site (continued)

- Part of rooms.html displayed without images or styles



Elements displayed without the style sheet, using only the default styling applied by the browser

Alt text displayed in place of images
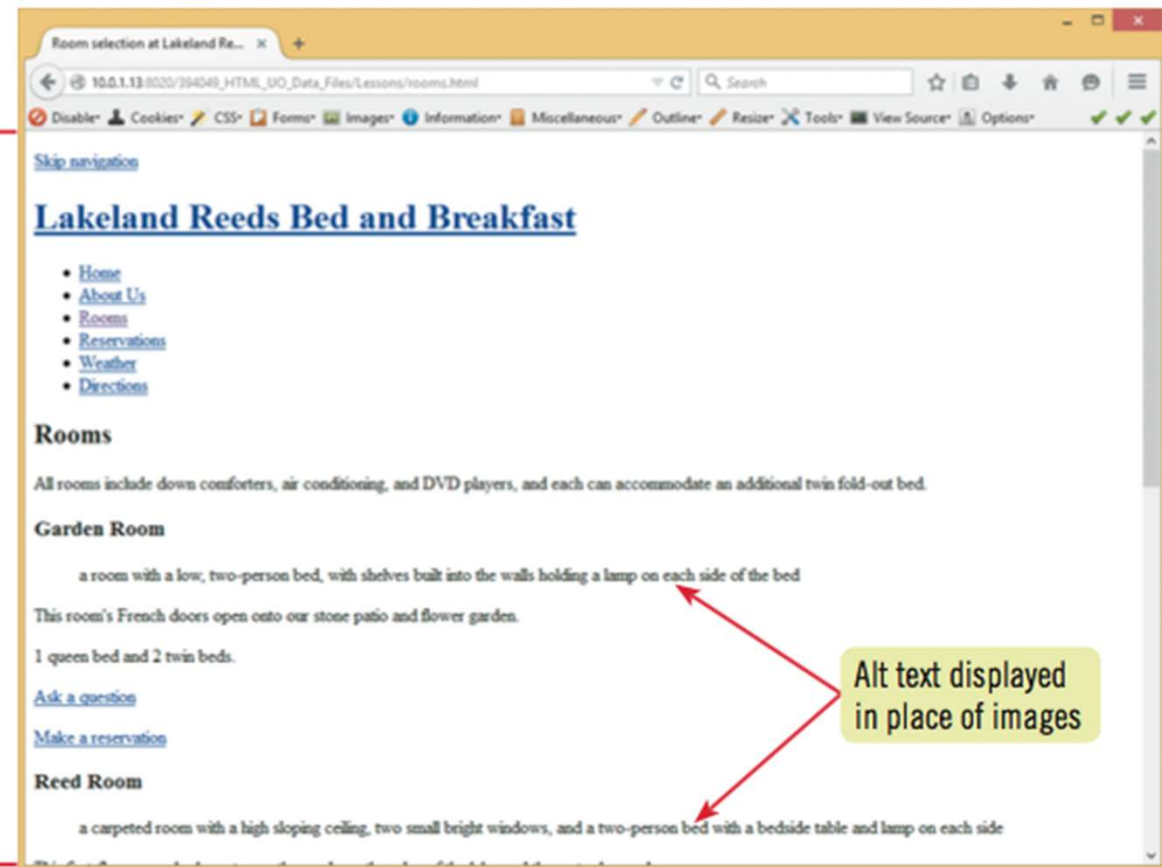
# Submit Your Site

- <u>Webmasters</u>: people in charge of websites

- Web site can be simply published to make it available to potential users and bots

- Other measures can be taken to increase page popularity
  - ➤ Submit page directly to search engines

# Submitting Your Site (continued)

- Submit your content page at google.com. https://support.google.com/webmasters/answer/6259634?hl=en
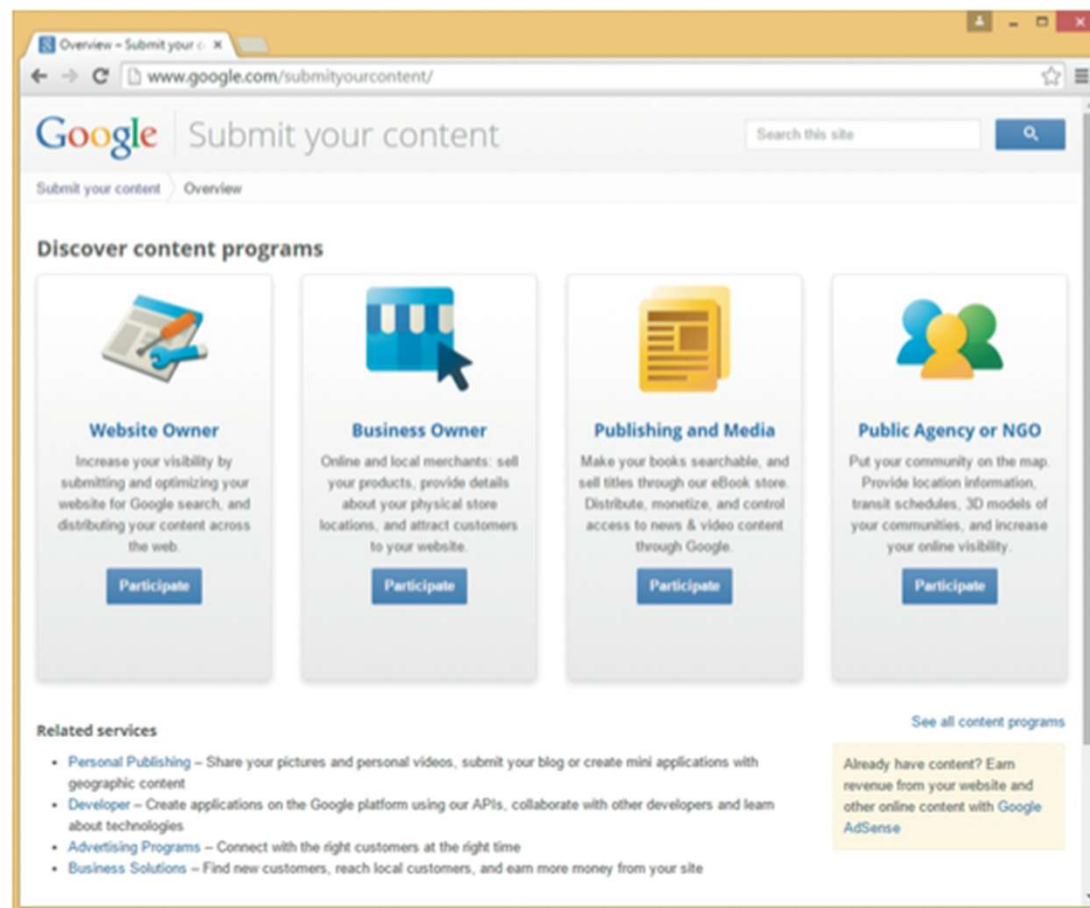
# Summary

- SEO tailors your website with search engines in mind to increase site popularity and give applications useful information about your site

- It does not take much to make a site more SEO friendly
  - Indexable content element changes are easy

# Summary (continued)

- Vocabularies define keyword values for specific types of information

- Sitemap file contains list of all pages of a website

- Bots are used by search engines to target indexable information

- robots.txt file influences which website pages are indexed by search engines

# Summary (continued)

- View site from bot point of view to finalize

- Submit site directly to search engines