

CPSC 1045

Welcome to Introductory Web Programming!

COURSE STRUCTURE

- 003 Friday/001 Tuesday – Lecture
 - Introduce a new concept
- 003 Tuesday/001 Wednesday – In-Lab Exercises
 - Must be completed in the lab period
 - Must show your solutions to me before you leave
 - Cannot be made up
- 003 Wednesday/001 Thursday – Lecture
 - Finish discussing the concept
 - Worksheets/exercises
- 003 Thursday/001 Friday - Assignment lab period
 - Assignments are usually due one week after we start them
 - May take longer than one lab period to do, if so you must complete them on your own time

SOME NOTES ABOUT THE COURSE

- Basic computer literacy is recommended
- Intro to programming
 - Teaching you how to be programmers means teaching how to problem solve
 - Memorization will only get you so far (read: not very far)
- Students typically struggle with two key steps
 - Problems
 - Converting to JS
- How to succeed:
 - PRACTICE
 - Do not be afraid to ask for help – don't get behind!!!

The background of the slide features abstract, flowing waves in shades of red, orange, and yellow, creating a dynamic and modern aesthetic.

THE BASICS OF HTML

But I thought this was a course about JavaScript?

HTML, JAVASCRIPT AND THE WEB

- **Client side web applications**
 1. Built with HTML and JavaScript
 2. HTML provides content and structure
 3. JavaScript provides functionality
- You have to know some HTML before JavaScript is useful
 - You don't have to know a lot of HTML
 - The basic concepts and a couple of tags

WHAT ARE THE STRUCTURES OF A BOOK DOCUMENT?

1. ?
2. ?
3. ?
4. ?
5. ?
6. ?

COUNTRY LUCK.

CHAPTER I.

HOW IT CAME ABOUT.

"BE sure to look us up when you come to the city." This invitation was extended with that delightful affectation of heartiness that a man can assume when he believes that the person invited will never avail himself of the courtesy. Fortunately for the purpose of this story, Master Philip Hayn, whom Mr. Tramlay had asked to call, was too young and too unaccustomed to the usages of polite society to regard the remark in any but its actual sense.

It would have seemed odd to anyone knowing the two men and their respective stations in life. Tramlay was a New York merchant, well known and of fair standing in the iron trade; Hayn was son of the farmer at whose house the Tramlay family had passed the summer. When the Tramlays determined to exchange the late summer dust of the country for the early autumn dust of the city, it was Philip who drove the old-fashioned carryall that transported them from the farm

B

By John Habberton

THE STRUCTURES OF A BOOK DOCUMENT

1. Book title
2. Chapter title
3. Paragraphs
4. Quotations
5. Page
6. Page number

COUNTRY LUCK.

CHAPTER I.

HOW IT CAME ABOUT.

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IT'S LIKE HOT WHEELS FOR ADULTS: FIRST BEER CAN DERBY SET FOR VANCOUVER

by CAROLYN ALI in FOOD & DRINK on September 13, 2015



Photo courtesy of Beer Can Derby

Take an empty beer can. Put wheels on it. Kit it out so it looks super-cool and runs like an aerodynamic machine. Now you've got a beer-can racer—and all you need is a track and a bit of liquid courage.

For everyone who has dreamed of racing beer cans—or has never heard of racing beer cans but now can't envision their life without it—Vancouver's first Beer Can Derby is set for November 8.

"It's the only kind of racing you can do if you've had a beer," says John Moroney, laughing. He's co-organizing the event with Derek Furtney, with help from Bomber Brewing's Rachael Steele. "It's hysterical to watch," he adds.

The craft beer enthusiasts are holding the Sunday afternoon event at WISE Hall as a fundraiser for the Greater Vancouver Food Bank. Contestants can bring their own cars or make them on-site, and then race them on a 64-foot-long track, which has an 8 to 12 foot drop at the start to get things zooming.

As the derby's website puts it, it's "kind of like Hot Wheels, but for adults".

Continue reading:

IT'S LIKE HOT WHEELS FOR ADULTS: FIRST BEER CAN DERBY SET FOR VANCOUVER

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OF DOWNTOWN VANCOUVER: ZOMBIE SYNDRO...



PUT ON YOUR BEST GERMAN OUTFIT: HARVEST
HAUS DRESSES UP VANCOUVER'S OKT...



IT'S LIKE HOT WHEELS FOR ADULTS: FIRST BEER
CAN DERBY SET FOR VANCOUVER

WHAT ARE THE STRUCTURES OF A WEB BLOG DOCUMENT?

1. ?
2. ?
3. ?
4. ?
5. ?
6. ?
7. ?
8. ?
9. ?

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Continue reading:

[IT'S LIKE HOT WHEELS FOR ADULTS: FIRST BEER CAN DERBY SET FOR VANCOUVER](#)

WHAT ARE THE STRUCTURES OF A WEB BLOG DOCUMENT?

1. Blog title
2. Navigation links
3. Photos
4. Search form
5. Popular posts
6. Titles
7. Buttons

DOCUMENT STRUCTURE

- All documents have structures that hold different types of content
- Pages with the same structure can hold radically different content
 - Different chapters in a book
 - Different magazine articles
 - Different blog posts
- By separating styling from structure and content, we change the look and feel without re-writing the whole document
 - Document structures hold document content
 - Styling is applied to structures and affects content look and feel
- **HTML IS WHAT WE USE TO CREATE STRUCTURE IN WEB PAGES**

MARKUP LANGUAGES

- A Mark Up Language is a set of Text Elements that wrap around content to convey the structure and meaning of the content

HTML ex.

<h1> Chapter 1 </h1>

<p> This is the content of a paragraph </p>

- Only the content is printed for the user to see, not the mark up



HTML ELEMENTS

- Consist of markup text that reflect the appropriate document structures for the content
 - Title, head, body, headings, paragraphs, quotations, list, etc.
- Describe only the structure surrounding the content
- Each structure is marked by using an element and spans between an open and close tag

`<p> some paragraph content between two tags </p>`

HTML SYNTAX

- HTML markup language is written in plain text documents (uses .html extension)
- Documents must be well-formed:
 - Element Tags and Attributes are expressed in lower case only
 - Paired opening and closing tags are used to explicitly define the start and stopping points of a document structure
 - Stand alone or void (empty) tags are used when there is no content to surround (for example, line breaks `
`)

HTML ELEMENTS

- DTD
- Head, Title, Meta
- Body

```
<!DOCTYPE html>
<html lang= "en">
  <head>
    <title>My First Web Page</title>
    <meta charset="utf-8">
  </head>
  <body>
    <p>body content goes here</p>
  </body>
</html>
```

HEADING ELEMENT NOT <HEAD>

<h1> Heading Level 1 </h1>

<h2> Heading Level 2 </h2>

<h3> Heading Level 3 </h3>

<h4> Heading Level 4 </h4>

<h5> Heading Level 5 </h5>

<h6> Heading Level 6 </h6>

Heading Level 1

Heading Level 2

Heading Level 3

Heading Level 4

Heading Level 5

Heading Level 6

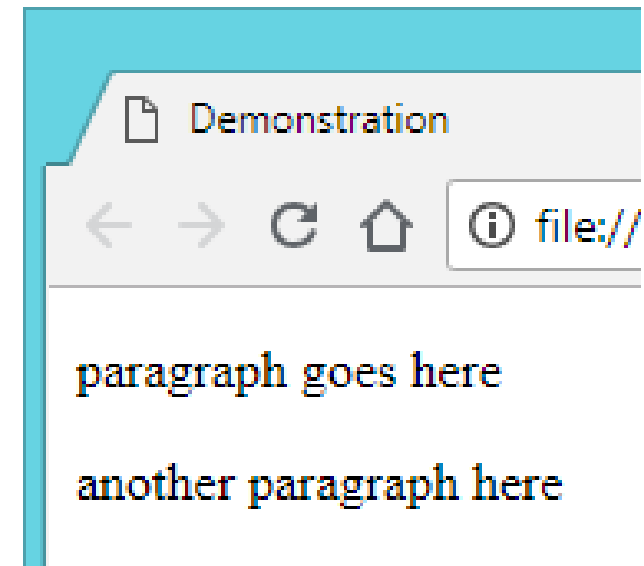
PARAGRAPH ELEMENT

```
<p> paragraph goes here </p>  
<p>
```

```
    another paragraph here
```

```
</p>
```

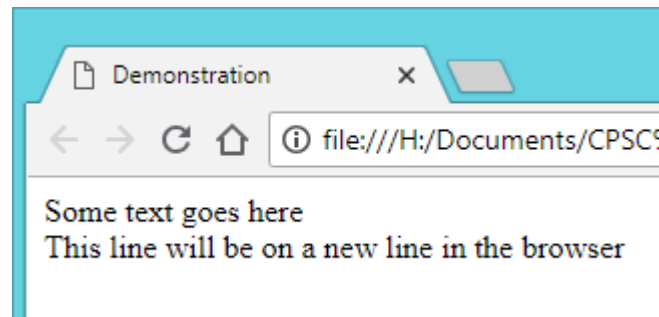
- Used to group sentences together to display in a block
- All white space, including new lines/returns in the HTML are ignored



LINE BREAK ELEMENT

Some text goes here **
** This line will be on a new line in the browser

- Additional Paragraph Elements should be used rather than forcing a line break with **
**
- **
** should only be used where **absolutely** necessary



LISTS – 3 TYPES

1. Ordered list

1. Item
2. Item
3. Item

2. Unordered list

- Item
 - Item
 - Item
- Each item in the list uses tag

3. Description list <dl>

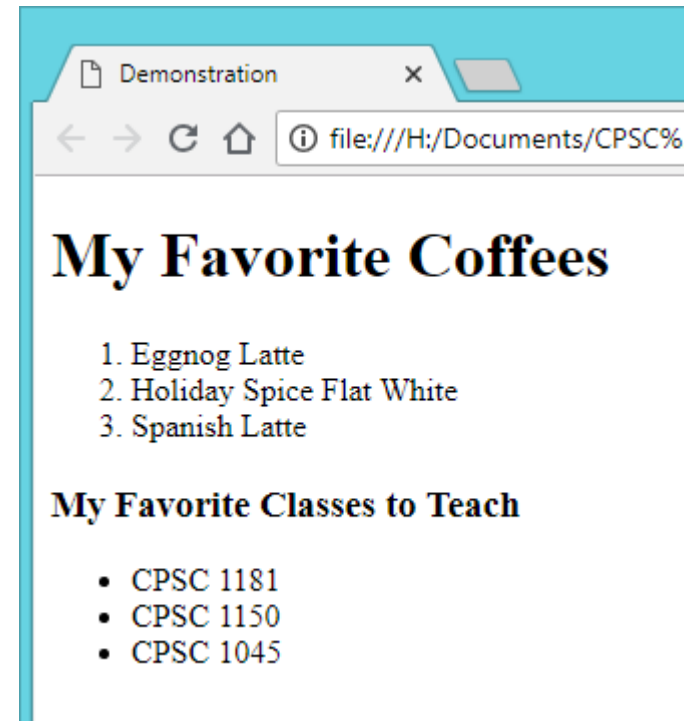
- **Name or term**
Name or term definition
 - **Next name/term**
Next name or term definition
- Each name/term item in the list uses a <dt> tag
 - Each definition/description item in the list uses a <dd> tag

OUTPUT?

```
<body>
  <h1>My Favorite Coffees</h1>
  <ol>
    <li>Eggnog Latte</li>
    <li>Holiday Spice Flat White</li>
    <li>Spanish Latte</li>
  </ol>
  <h3>My Favorite Classes to Teach</h3>
  <ul>
    <li>CPSC 1181</li>
    <li>CPSC 1150</li>
    <li>CPSC 1045</li>
  </ul>
</body>
```

SOLUTION

```
<body>
  <h1>My Favorite Coffees</h1>
  <ol>
    <li>Eggnog Latte</li>
    <li>Holiday Spice Flat White</li>
    <li>Spanish Latte</li>
  </ol>
  <h3>My Favorite Classes to Teach</h3>
  <ul>
    <li>CPSC 1181</li>
    <li>CPSC 1150</li>
    <li>CPSC 1045</li>
  </ul>
</body>
```



DESCRIPTION LIST

```
<body>
```

```
<p>Here are some terms from today's lecture.</p>
```

```
<dl>
```

```
<dt>HTML</dt>
```

```
<dd>Hyper Text Markup Language</dd>
```

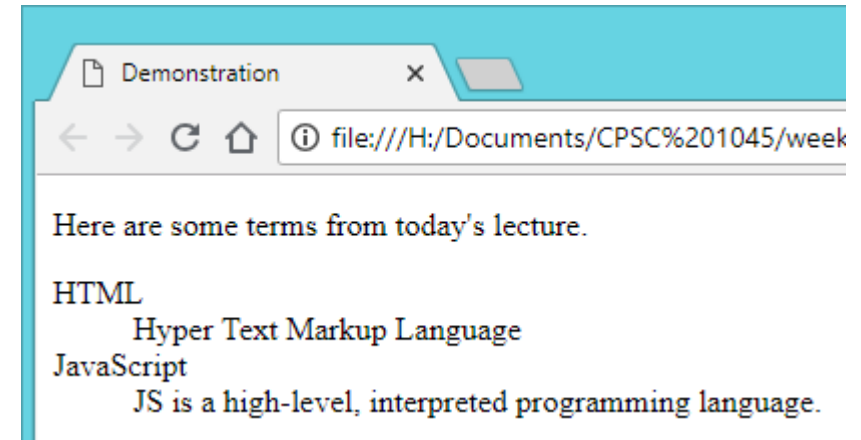
```
<dt>JavaScript</dt>
```

```
<dd>JS is a high-level, interpreted  
programming language.
```

```
</dd>
```

```
</dl>
```

```
</body>
```



ENTITY DESCRIPTION CODES

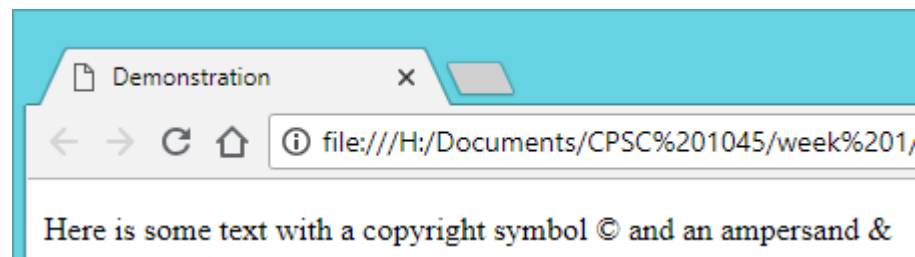
- Special characters are also ignored by the browser
- Use a special coding technique to make the browser display things like &, quotes, spaces, etc.
- Ex. © character replaced with `©`
- Ex. & character replaced with `&`

```
<body>
```

```
    <p>Here is some text with a copyright  
        symbol &copy; and an ampersand &amp;
```

```
    </p>
```

```
</body>
```



ANCHOR ELEMENT

- The defining aspect of a web page is that it contains hypertext
- A hyperlink or link implements the basic concept of a hypertext reference `<href>`
- In HTML the hyperlink is implemented with the HTML anchor element
- Specifies a that the content is hypertext and the current page will be replaced by the referenced information if clicked on
- href Attribute – Hypertext reference that indicates the target file name or URL - This could reference another Web page, a photo, a pdf file, etc

ANCHOR ELEMENT

- We talk about three different types of links
- Absolute link: link to a page on another Web site, usually with a full URL
- <https://www.google.com>
- <http://www.vetstreet.com/dogs/boston-terrier>
- <https://www.w3schools.com/js/>

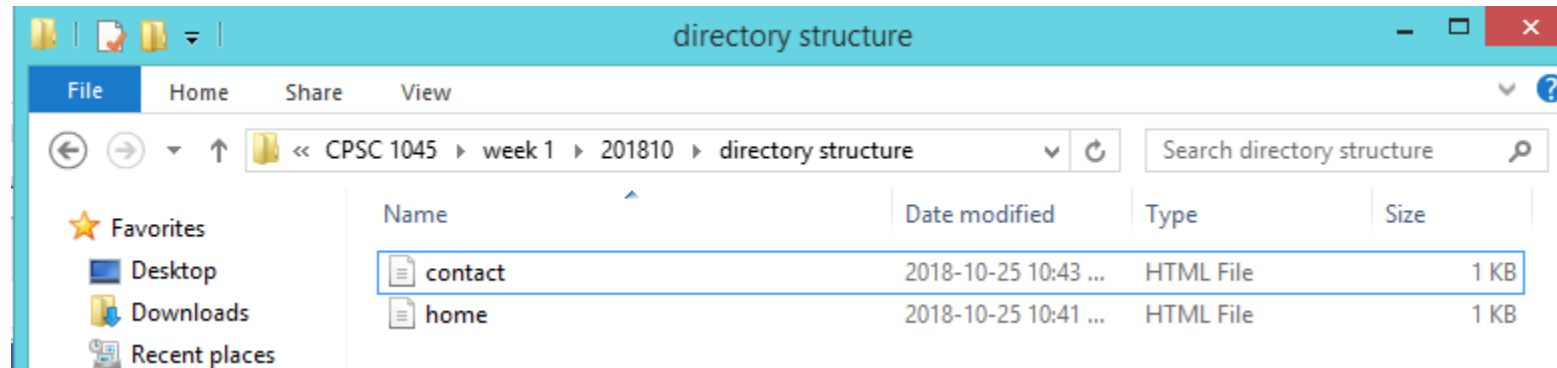


ANCHOR ELEMENT

- Relative link: Link to another page on the same Web Site, coded with a path relative to the page the link is on
- Email link: uses mailto instead of http, launches default email application with mailto address as recipient

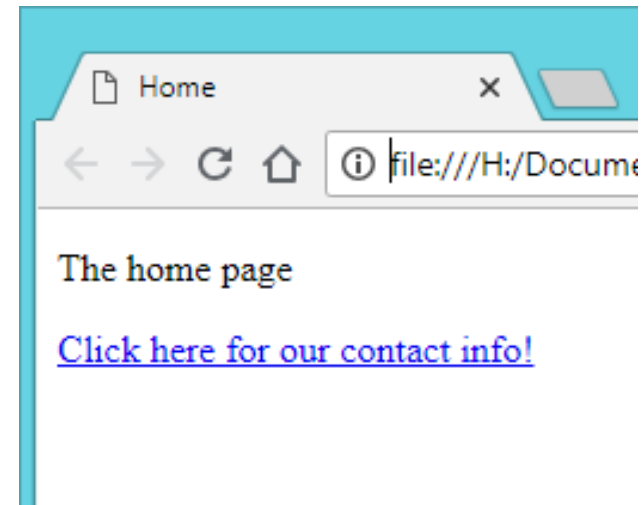
EXAMPLES

- Suppose we have two webpages in the same directory folder:
 - home.html
 - contact.html



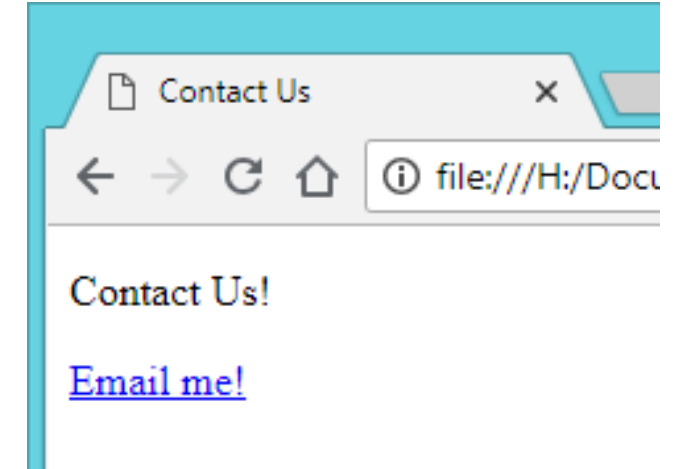
HOME.HTML

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="utf-8">
  <title>Home</title>
</head>
<body>
  <p>The home page</p>
  <a href="contact.html">
    Click here for our contact info!
  </a>
</body>
</html>
```

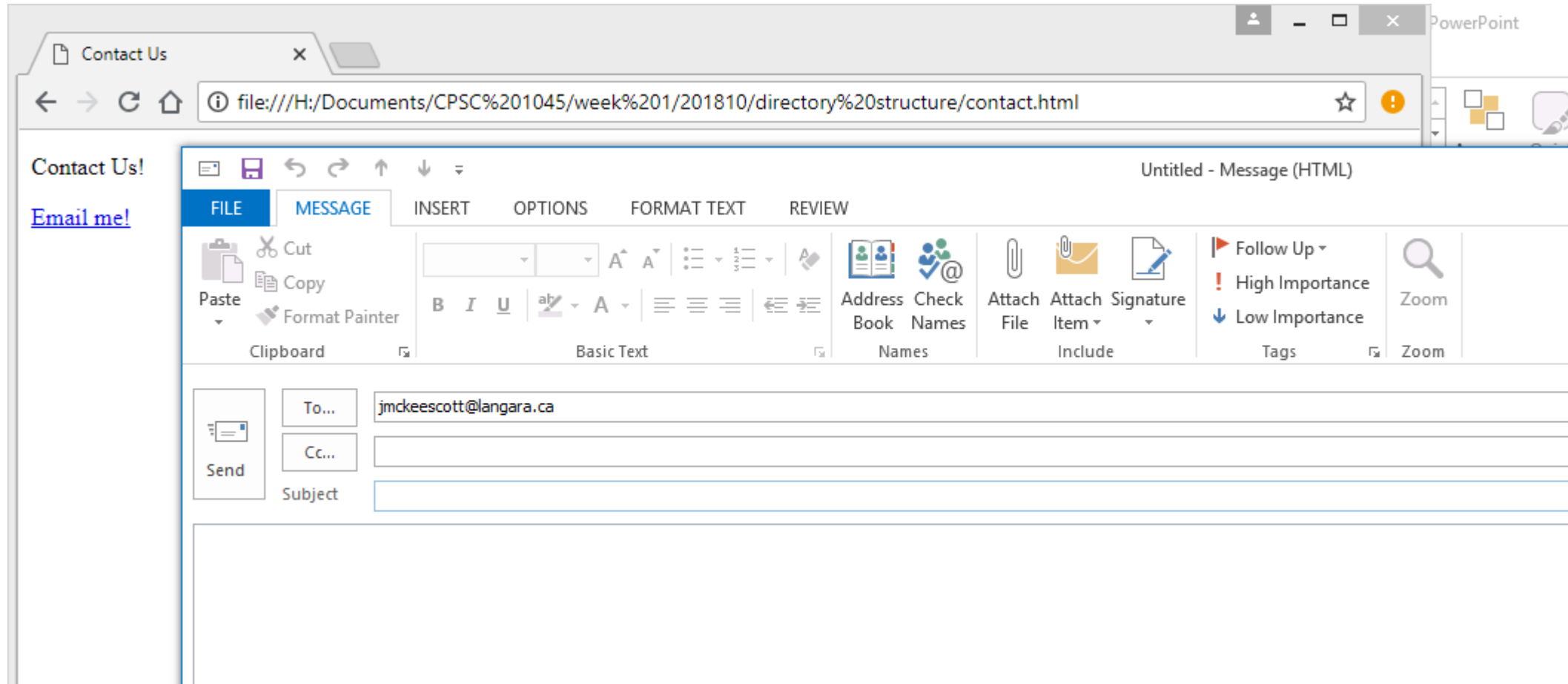


CONTACT.HTML

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="utf-8">
  <title>Contact Us</title>
</head>
<body>
  <p>Contact Us!</p>
  <a href="mailto:jmckeescott@langara.ca">
    Email me!
  </a>
</body>
</html>
```



CONTACT.HTML



STRUCTURAL ELEMENTS

- Non-visual elements that create page structures (ex. nav, main, footer, div)
- Throughout the course, you will encounter the `<div>` tag a lot
- `<div></div>`
- It is used to help organize our HTML page, as well as play nice with CSS
- The `<div>` tag by itself does not add special formatting to its content
 - Just adds blank space before and after any content within the div
- However, by using CSS or JavaScript special formatting can be applied to the div

TAG ATTRIBUTES

- Tags can have attributes
 - An id name is one type of attribute
 - Ex. `<div id="idExample"></div>`
 - The above div has the id name of idExample
- We can use this id to refer to or access the div element in JavaScript
- Other attributes may include:
 - information the elements needs
 - modification to the default look of the element
 - meta information to allow manipulation of the element easier

ATTRIBUTES

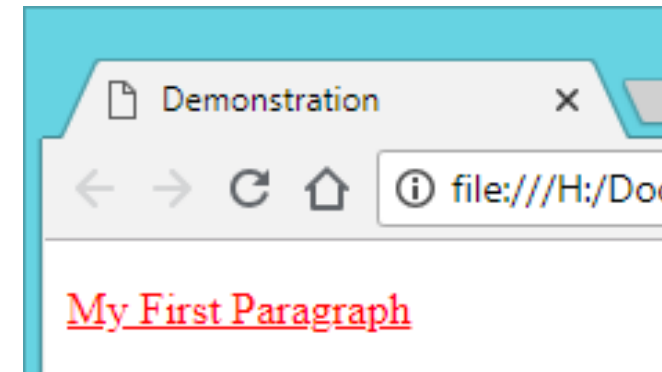
```
<!DOCTYPE html>
<html>
<head>
  <title>Attributes</title>
  <meta charset="utf-8">
  <style>
    #para1{
      text-decoration: underline;
    }
  </style>
</head>
<body>
  <p id="para1" style="color: red;">
    My First Paragraph
  </p>
</body></html>
```

What do you think this page looks like in the browser?

ATTRIBUTES

```
<!DOCTYPE html>
<html>
<head>
  <title>Attributes</title>
  <meta charset="utf-8">
  <style>
    #para1{
      text-decoration: underline;
    }
  </style>
</head>
<body>
  <p id="para1" style="color: red;">
    My First Paragraph
  </p>
</body></html>
```

What do you think this page looks like in the browser?



ONE LAST TAG!

```
<script>  
/*your javascript will one day go here*/  
</script>
```