

Data visualization

COSC 480B

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Lecture 2

HTML

Basics

```
<!DOCTYPE html>
<html>
<head>
<title>Page Title</title>
</head>
<body>

<h1>This is a Heading</h1>
<p>This is a paragraph.</p>

</body>
</html>
```

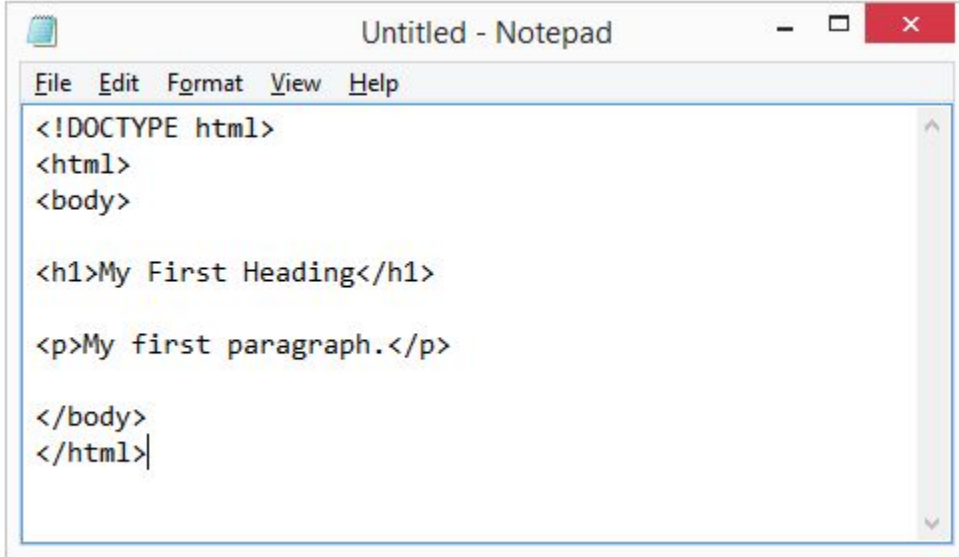
This is a Heading

This is a paragraph.

Basics

Start tag	Element content	End tag
<h1>	My First Heading	</h1>
<p>	My first paragraph.	</p>
 	<i>none</i>	<i>none</i>

Basics

A screenshot of a Notepad window titled "Untitled - Notepad". The window has a menu bar with "File", "Edit", "Format", "View", and "Help". The text area contains the following HTML code:

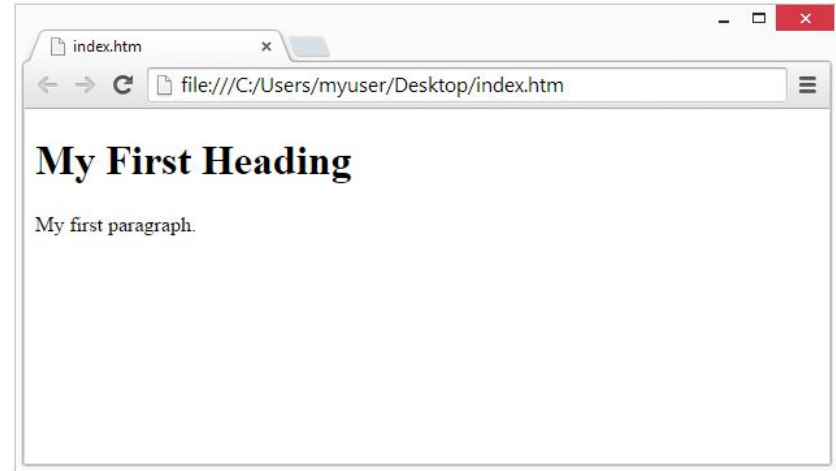
```
<!DOCTYPE html>
<html>
<body>

<h1>My First Heading</h1>

<p>My first paragraph.</p>

</body>
</html>
```

The code is written in a monospaced font. The window has standard Windows window controls (minimize, maximize, close) in the top right corner.



Basics

```
<!DOCTYPE html>
<html>
<body>

<h2>The href Attribute</h2>

<p>HTML links are defined with the a tag. The link address is specified in
the href attribute:</p>

<a href="https://www.google.com">Google</a>

</body>
</html>
```

The href Attribute

HTML links are defined with the a tag. The link address is specified in the href attribute:

[Google](https://www.google.com)

Basics

```
<!DOCTYPE html>
<html>
<body>

<h1>Heading 1</h1>
<h2>Heading 2</h2>
<h3>Heading 3</h3>
<h4>Heading 4</h4>
<h5>Heading 5</h5>
<h6>Heading 6</h6>

</body>
</html>
```

Heading 1

Heading 2

Heading 3

Heading 4

Heading 5

Heading 6

Basics

<p>

This paragraph
contains a lot of lines
in the source code,
but the browser
ignores it.

</p>

This paragraph contains a lot of lines in the source code, but the browser ignores it.

<p>

This paragraph
contains a lot of spaces
in the source code,
but the browser
ignores it.

</p>

This paragraph contains a lot of spaces in the source code, but the browser ignores it.

Basics

```
<!DOCTYPE html>
<html>
<body>

<p>This is<br>a paragraph<br>with line breaks.</p>

</body>
</html>
```

This is
a paragraph
with line breaks.

Basics

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

```
<p>The pre tag preserves both spaces and line breaks:</p>
```

```
<pre>
```

```
    My Bonnie lies over the ocean.
```

```
    My Bonnie lies over the sea.
```

```
    My Bonnie lies over the ocean.
```

```
    Oh, bring back my Bonnie to me.
```

```
</pre>
```

```
</body>
```

```
</html>
```

The pre tag preserves both spaces and line breaks:

```
    My Bonnie lies over the ocean.
```

```
    My Bonnie lies over the sea.
```

```
    My Bonnie lies over the ocean.
```

```
    Oh, bring back my Bonnie to me.
```

Basics

```
<!DOCTYPE html>
<html>
<body>

<p>I am normal</p>
<p style="color:red;">I am red</p>
<p style="color:blue;">I am blue</p>
<p style="font-size:50px;">I am big</p>

</body>
</html>
```

I am normal

I am red

I am blue

I am big

Basics

```
<!DOCTYPE html>
<html>
<body>

<p><b>This text is bold</b></p>
<p><i>This text is italic</i></p>
<p>This is<sub> subscript</sub> and <sup>superscript</sup></p>

</body>
</html>
```

This text is bold

This text is italic

This is_{subscript} and^{superscript}

Basics

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

```
<!-- This is a comment -->
```

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

```
<!-- Comments are not displayed in the browser -->
```

```
</body>
```

```
</html>
```

This is a paragraph.

Basics

```
<!DOCTYPE html>
<html>
<body>

<h1 style="background-color:Tomato;">Tomato</h1>
<h1 style="background-color:Orange;">Orange</h1>
<h1 style="background-color:DodgerBlue;">DodgerBlue</h1>
<h1 style="background-color:MediumSeaGreen;">MediumSeaGreen</h1>
<h1 style="background-color:Gray;">Gray</h1>
<h1 style="background-color:SlateBlue;">SlateBlue</h1>
<h1 style="background-color:Violet;">Violet</h1>
<h1 style="background-color:LightGray;">LightGray</h1>

</body>
</html>
```

Tomato

Orange

DodgerBlue

MediumSeaGreen

Gray

SlateBlue

Violet

LightGray

Basics

```
<table>
  <tr>
    <th>Company</th>
    <th>Contact</th>
  </tr>
  <tr>
    <td>Alfreds Futterkiste</td>
    <td>Maria Anders</td>
  </tr>
  <tr>
    <td>Centro comercial Moctezuma</td>
    <td>Francisco Chang</td>
  </tr>
  <tr>
    <td>Ernst Handel</td>
    <td>Roland Mendel</td>
  </tr>
  <tr>
    <td>Island Trading</td>
    <td>Helen Bennett</td>
  </tr>
</table>
```

Company	Contact
Alfreds Futterkiste	Maria Anders
Centro comercial Moctezuma	Francisco Chang
Ernst Handel	Roland Mendel
Island Trading	Helen Bennett

Basics

```
<h2>An Unordered HTML List</h2>
```

```
<ul>
  <li>Coffee</li>
  <li>Tea</li>
  <li>Milk</li>
</ul>
```

```
<h2>An Ordered HTML List</h2>
```

```
<ol>
  <li>Coffee</li>
  <li>Tea</li>
  <li>Milk</li>
</ol>
```

An Unordered HTML List

- Coffee
- Tea
- Milk

An Ordered HTML List

1. Coffee
2. Tea
3. Milk

Basics

Block-level Elements

A block-level element always starts on a new line.

A block-level element always takes up the full width available (stretches out to the left and right as far as it can).

A block level element has a top and a bottom margin, whereas an inline element does not.

The `<div>` element is a block-level element.

Basics

Here are the block-level elements in HTML:

<code><address></code>	<code><article></code>	<code><aside></code>	<code><blockquote></code>	<code><canvas></code>	<code><dd></code>	<code><div></code>
<code><dl></code>	<code><dt></code>	<code><fieldset></code>	<code><figcaption></code>	<code><figure></code>	<code><footer></code>	<code><form></code>
<code><h1>-<h6></code>	<code><header></code>	<code><hr></code>	<code></code>	<code><main></code>	<code><nav></code>	<code><noscript></code>
<code></code>	<code><p></code>	<code><pre></code>	<code><section></code>	<code><table></code>	<code><tfoot></code>	<code></code>
<code><video></code>						

Basics

Inline Elements

An inline element does not start on a new line.

An inline element only takes up as much width as necessary.

This is a element inside a paragraph.

Basics

Here are the inline elements in HTML:

<code><a></code>	<code><abbr></code>	<code><acronym></code>	<code></code>	<code><bdo></code>	<code><big></code>	<code>
</code>
<code><button></code>	<code><cite></code>	<code><code></code>	<code><dfn></code>	<code></code>	<code><i></code>	<code></code>
<code><input></code>	<code><kbd></code>	<code><label></code>	<code><map></code>	<code><object></code>	<code><output></code>	<code><q></code>
<code><samp></code>	<code><script></code>	<code><select></code>	<code><small></code>	<code></code>	<code></code>	<code><sub></code>
<code><sup></code>	<code><textarea></code>	<code><time></code>	<code><tt></code>	<code><var></code>		

Basics

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

```
<p>I will display &euro;</p>
```

```
<p>I will display &#8364;</p>
```

```
<p>I will display &#x20AC;</p>
```

```
</body>
```

```
</html>
```

I will display €

I will display €

I will display €

Forms

```
<form action="/action_page.php">
  <label for="fname">First name:</label><br>
  <input type="text" id="fname" name="fname" value="John"><br>
  <label for="lname">Last name:</label><br>
  <input type="text" id="lname" name="lname" value="Doe"><br><br>
  <input type="submit" value="Submit">
</form>
```

First name:

Last name:

Forms

Type	Description
<code><input type="text"></code>	Displays a single-line text input field
<code><input type="radio"></code>	Displays a radio button (for selecting one of many choices)
<code><input type="checkbox"></code>	Displays a checkbox (for selecting zero or more of many choices)
<code><input type="submit"></code>	Displays a submit button (for submitting the form)
<code><input type="button"></code>	Displays a clickable button

Forms

Notes on GET:

- Appends the form data to the URL, in name/value pairs
- NEVER use GET to send sensitive data! (the submitted form data is visible in the URL!)
- The length of a URL is limited (2048 characters)
- Useful for form submissions where a user wants to bookmark the result
- GET is good for non-secure data, like query strings in Google

Notes on POST:

- Appends the form data inside the body of the HTTP request (the submitted form data is not shown in the URL)
- POST has no size limitations, and can be used to send large amounts of data.
- Form submissions with POST cannot be bookmarked

Forms

```
<h2>Textarea</h2>
```

```
<p>The textarea element defines a multi-line input field.</p>
```

```
<form action="/action_page.php">
```

```
  <textarea name="message" rows="10" cols="30">The cat was playing in the  
garden.</textarea>
```

```
  <br><br>
```

```
  <input type="submit">
```

```
</form>
```

Textarea

The textarea element defines a multi-line input field.

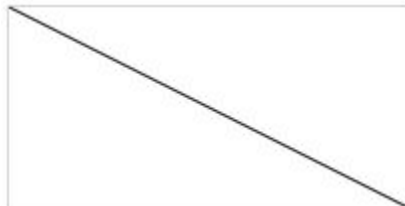
The cat was playing in the
garden.

Graphics

```
<canvas id="myCanvas" width="200" height="100" style="border:1px solid #d3d3d3;">
```

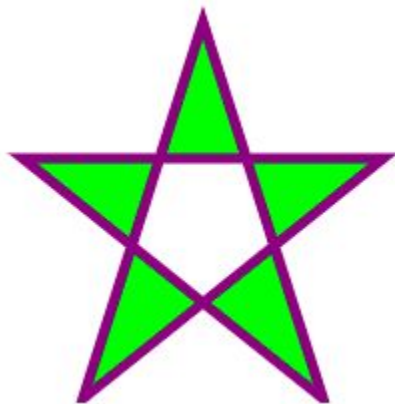
Your browser does not support the HTML canvas tag.</canvas>

```
<script>  
var c = document.getElementById("myCanvas");  
var ctx = c.getContext("2d");  
ctx.moveTo(0,0);  
ctx.lineTo(200,100);  
ctx.stroke();  
</script>
```



Graphics

```
<svg width="300" height="200">  
  <polygon points="100,10 40,198 190,78 10,78 160,198"  
    style="fill:lime;stroke:purple;stroke-width:5;fill-rule:evenodd;" />  
Sorry, your browser does not support inline SVG.  
</svg>
```



Media

```
<video width="400" controls>
  <source src="mov_bbb.mp4" type="video/mp4">
  <source src="mov_bbb.ogv" type="video/ogg">
  Your browser does not support HTML video.
</video>

<p>
Video courtesy of
<a href="https://www.bigbuckbunny.org/" target="_blank">Big Buck Bunny</a>.
</p>
```



Video courtesy of [Big Buck Bunny](https://www.bigbuckbunny.org/).