Week 4 Day 1

HTML and CSS

HTML

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Hyper Text Markup Language

- Hyper Text – Connecting pages
- Markup – Describing data

Image source: https://www.oxfordwebstudio.com/user/pages/06.da-li-znate/sta-je-html/sta-je-html.jpg

HTML: Elements and Tags

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Elements

- Create the structure of the HTML document
  - Block-level render on new lines
  - Inline render next to one another on the same line

Tags

- Create the physical elements
  - Enclosed in brackets <>
  - Most need opening <> and closing </> tags
  - Some are self closing </img>

HTML: Document Structure

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- <!DOCTYPE>
  - Let's browser know what type of document its reading
- <html>
  - Root tag of the document
- <head>
  - Inside of html tag, holds metadata about the page
- <body>
  - Inside of html tag, holds the page content

```
<!DOCTYPE html>
<html>

<head>
  <title>My First Webpage</title>
  <meta name="viewport" content="width=device
  <link rel="stylesheet" type="text/css" hre
</head>

<body>

  <div class="container">

   <h1>Heading 1</h1>
```

Image source: https://henryegloff.com/media/How-to-Develop-a-Basic-Webpage-Using-HTML-and-CSS-Tutorial-2.jpg

HTML: Common Elements

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There are over 100 different HTML elements

- These are some of the most common:
  -
  - <p>
  -
  - </br>
  - </img>
  - <h1> . . . <h6>
  - <a>

HTML: Attributes

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Key/value pairs which give metadata about the tag

- Defined inside of the opening tag
- Global attributes
  - Class
  - Id
  - Hidden
  - Lang
  - Style
  - Title
- Tag specific
  - </img> src and alt
  - <a> href

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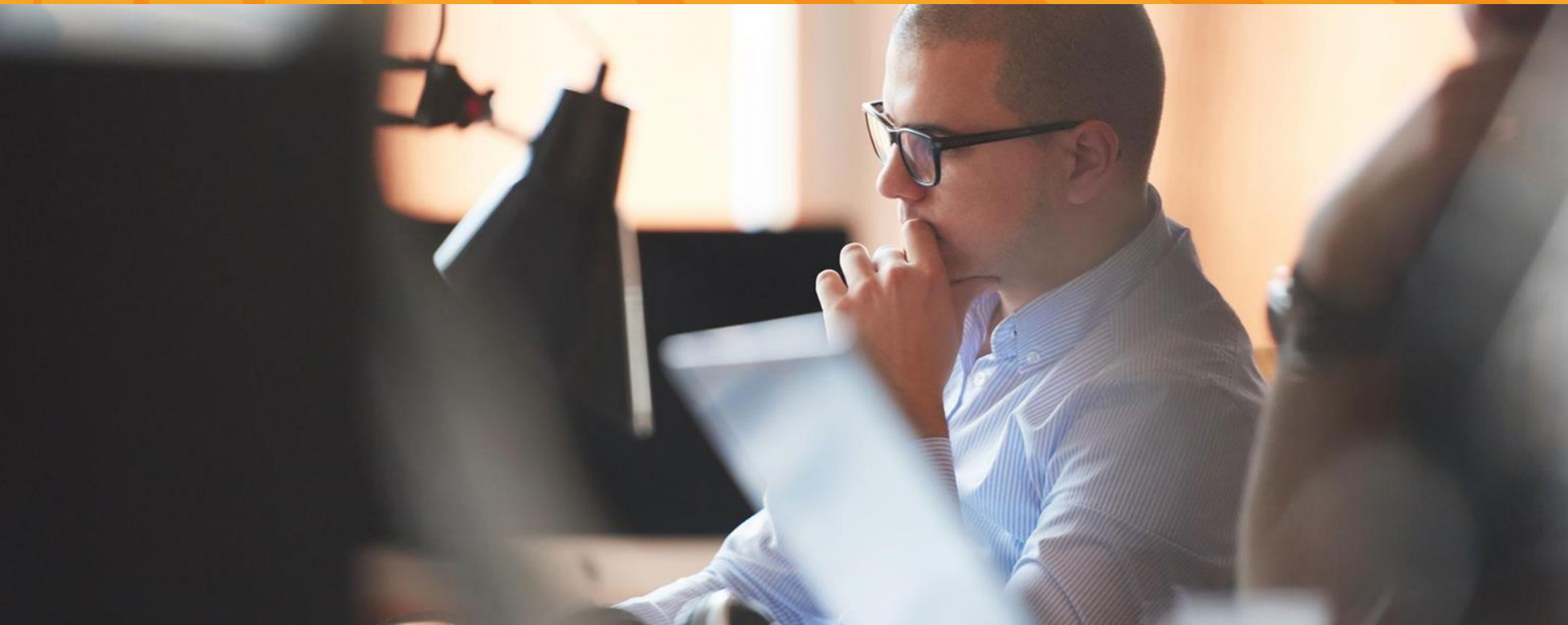
First HTML Page DEMO



HTML: Tables

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Tables are used to structure data

- <table>
- <thead>
- <tr>
- <th>
- <tbody>
- <td>
- <tfoot>

```
<table border="1">
        <tr>
            <th>Firstname</th>
            <th>Lastname</th>
            <th>Age</th>
        </tr>
        <tr>
            <td>Aryan</td>
            <td>Gupta</td>
            <td>23</td>
        </tr>
        <tr>
            <td>John</td>
            <td>Reece</td>
            <td>32</td>
        </tr>
        <tr>
            <td>Samntha</td>
            <td>Groves</td>
            <td>41</td>
        </tr>
    </table>
```


Image source: https://www.simplilearn.com/ice9/free_resources_article_thumb/defining_html_tables-html_tables.PNG

HTML: Lists

Used to display lists of items

- - ordered/numbered list
- - unordered/bulleted list
- - list element

Image source: https://www.tutorialbrain.com/html_tutorial/html_lists/

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HTML Table and List DEMO

HTML 5

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Most recent version of HTML, introduced:

- DOCTYPE
- Character encoding metadata
- Audio and Video embedding
- Run JS in background
- Semantic tags

HTML 5: Semantic Tags

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Tags which describe what they are doing

- Non-semantic
  - , <p>,
- Semantic
  - <table> pre HTML 5
  - <section>, <article>, <footer>
  - <footer>, <nav>, <aside>
  - <figure>, <figcaption>, <details>
  - <mark>, <summary>, <time>

HTML 5: Audio and Video tags

<audio>
- Attributes
  - controls

<source>
- Attributes
  - src
  - type

File Format	Media Type
MP3	audio/mpeg
OGG	audio/ogg
WAV	audio/wav

<video>
- Attributes
  - width
  - height
  - controls

<source>
- Attributes
  - src
  - type

Format	MIME-type
MP4	video/mp4
WebM	video/webm
Ogg	video/ogg

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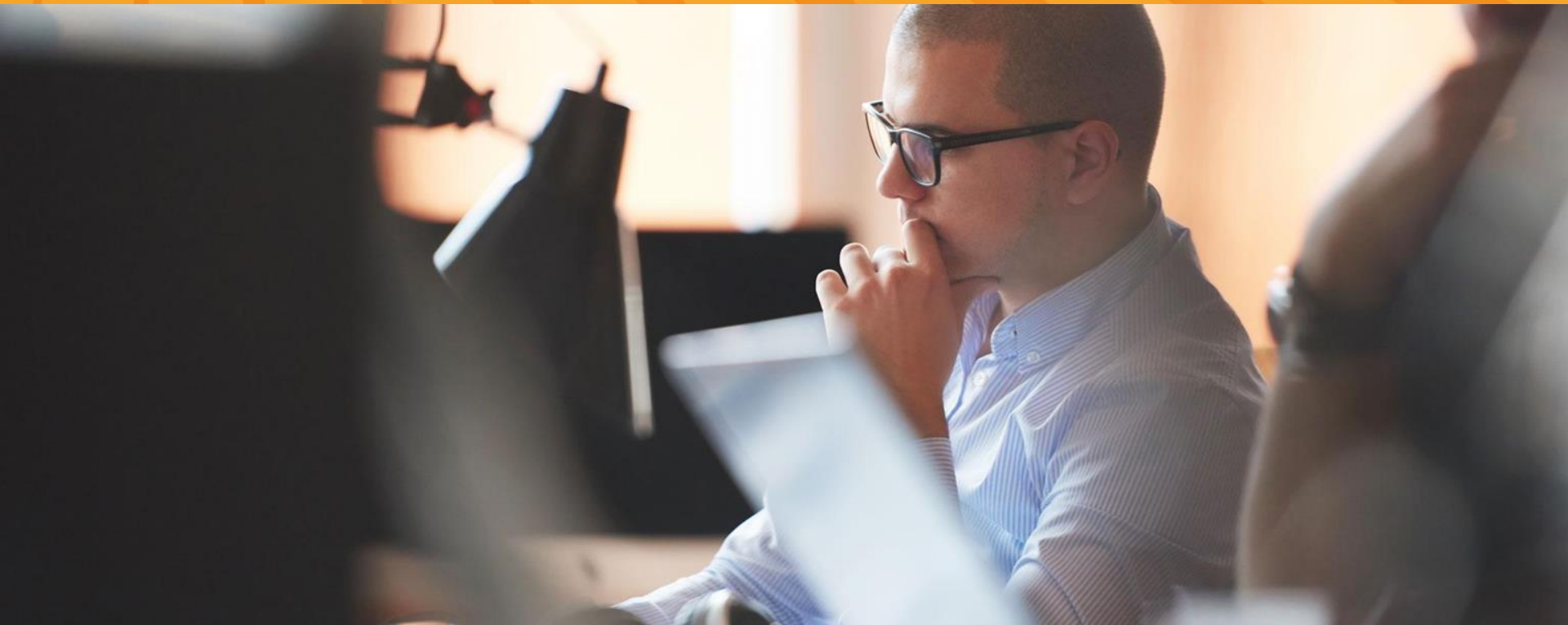
HTML 5 DEMO



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Cascading Style Sheets

- Key/value pair of rules that define the styling of the webpage
- Composed of selectors and declarations
  - Selector is an html element or group of elements
  - Declaration is the styling rules
- Linking CSS to an HTML page
  - Inline – applied directly to the element on the page
  - Internal/Embedded – declared in a <style> tag in the head
  - External – declared in an external css file, linked with <link> tag in the head

CSS: Box Model

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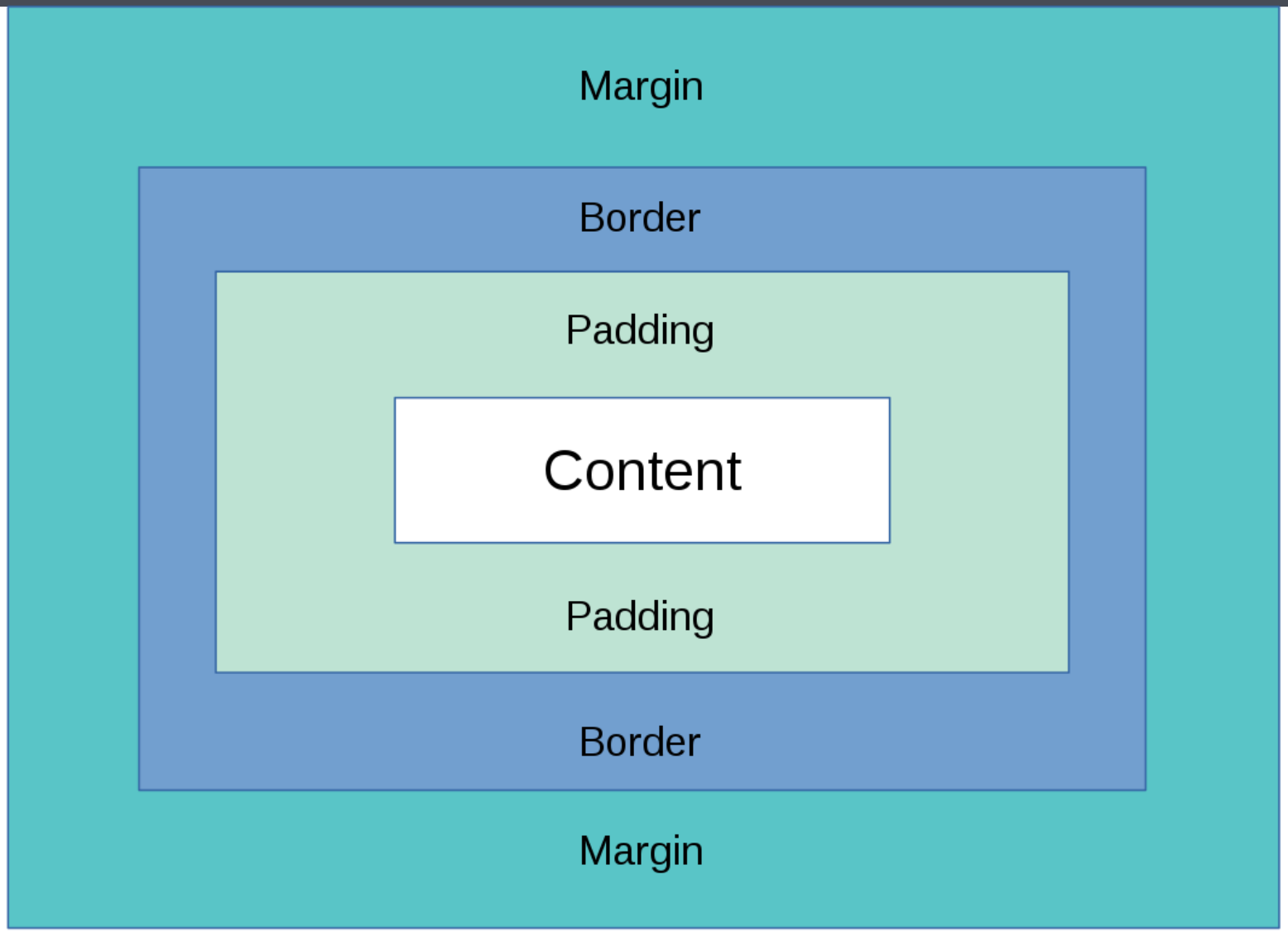

Image source: https://upload.wikimedia.org/wikipedia/commons/thumb/e/ed/Box-model.svg/1200px-Box-model.svg.png

CSS: Properties and Selectors

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Properties: used to style the elements

- border
- padding
- margin
- display
- position
- color
- text-align

Selectors: used to select elements to style

- Element: p {}
- Id: #elementId{}
- Class: .class{}
- Universal: *{}
- Attribute: [attribute]{}
- Child: div > p {}
- Descendent: div p {}

CSS: Specificity

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Determines the styling rules for elements that have been selected by multiple selectors

- Follows a specific ordering:

1. Inline CSS
2. ID selector
3. Class attribute and Pseudo-class selector
4. Element and Pseudo-element selector

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CSS DEMO

CSS: Responsive Web Design

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Approach that allows websites to render on all devices

- Done through css selectors
- Media queries
- Flexible grids
- Flex boxes
- Flexible images

Responsive Web Design: Media Queries

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Allows the CSS to change based on the device

- Consists of:
  - Media feature expressions, and optional media type
- Media Types
  - all, print, screen, speech
- Media features
  - grid, height, width, hover, and more
- Logical Operators
  - not, any, only

Responsive Web Design: Flex Box

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One dimensional layout method for arranging elements in row or columns

- Create a flex container with css property “display: flex”
- And element in the flex container will be responsive to flex box properties

Flex Box Properties

- Flex direction
- Flex wrap
- Flex flow
- Justify Content
- Align Items

Flex Item Properties

- Order
- Flex grow
- Flex shrink
- Flex basis
- Flex property
- Align self

Responsive Web Design: CSS Grid

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Two-dimensional grid-based layout system

- Set the grid container with “display: grid”
- Set columns with “grid-template-columns”
- Set rows with “grid-template-rows”
- Used similarly to flex box