UI BASICS
BOILERPLATE

INTRODUCTION

- User Interfce (UI)
- HTML History
- Anatomy of HTML Elements
- HTML Document Boilerplate
- What is in the HEAD
  - HTML <meta> Element
  - HTML <link> Element
  - HTML <title> Element
  - HTML <style> Element
  - HTML <script> Element

- Styling (CSS)
- Anatomy of CSS Declaration
- Adding CSS to HTML Document
  - External CSS
  - Internal CSS
  - Inline CSS
- Cascading Order
- Exercises

INTRODUCTION

User Interface (UI)

- The **user interface (UI)** is the point of human-computer interaction and communication in a device.
- This can include display screens, keyboards, a mouse and the appearance of a desktop.
- It is also the way through which a user interacts with an application or a website.

- The **UI** is often talked about in conjunction with user experience (UX), which may include the aesthetic appearance of the device, response time and the content that is presented to the user within the context of the user interface.

- HTML and CSS have been geared toward making it easier to create a strong user interface and experience.

INTRODUCTION

HTML

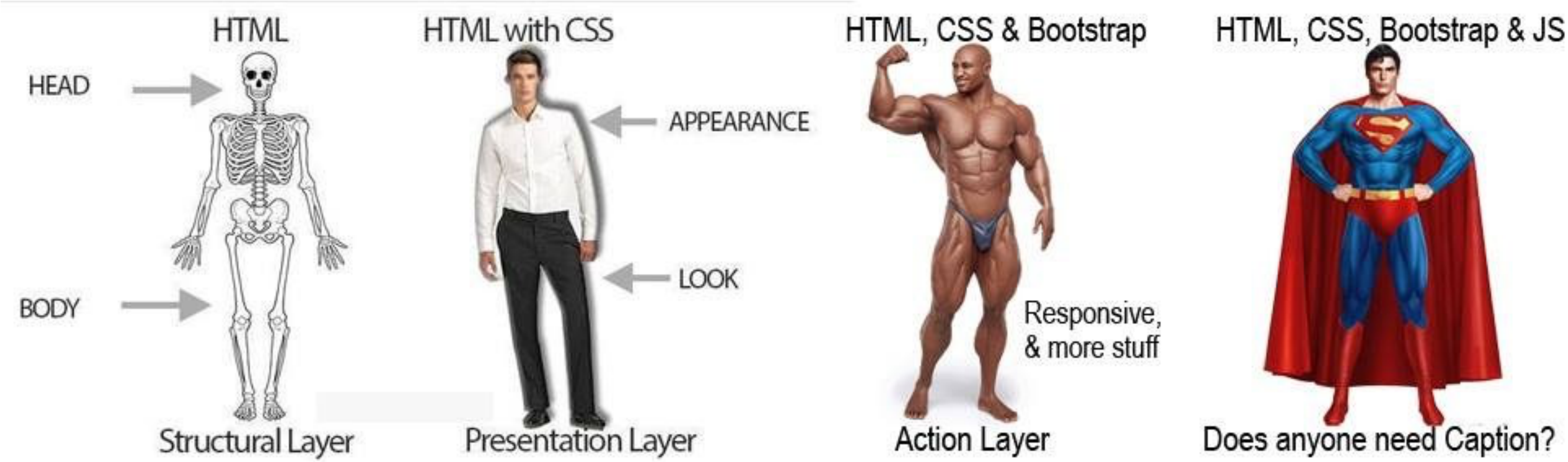
- **HTML** stands for **Hyper Text Markup Language**

- **“Markup”** means the way you can structure or format content.
- When the document is processed for display, the **markup language** is not shown, and is only used to format the text.
- Its **called markup language** because it marks the information by tagging them.

- HTML is the standard markup language for creating Web pages
- HTML describes the structure of a Web page
- HTML consists of a series of elements
- HTML elements tell the browser how to display the content
- HTML elements label pieces of content such as "this is a heading", "this is a paragraph", "this is a link", etc.

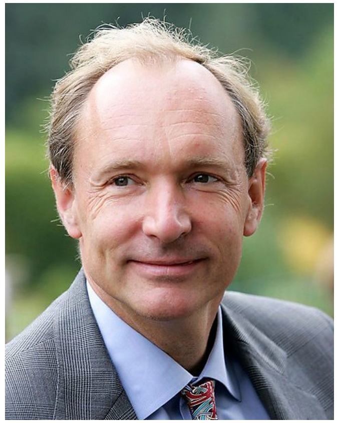
INTRODUCTION

HTML

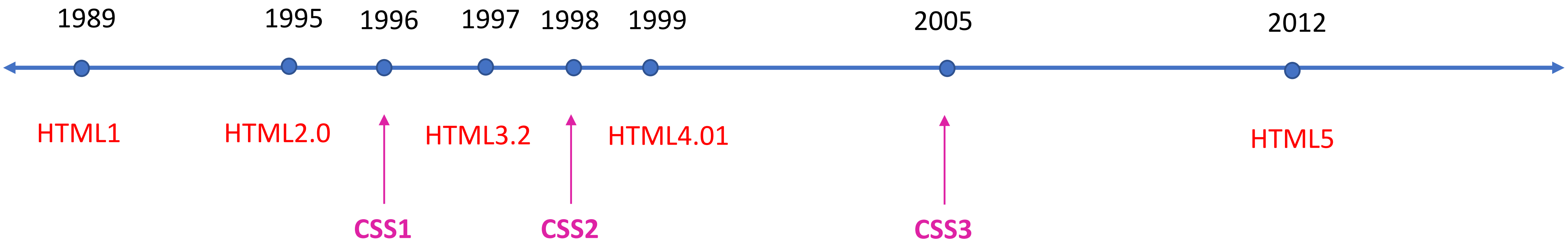


INTRODUCTION

HTML



Tim Berners-Lee



1989 HTML1

1995 HTML2.0

1996 CSS1

1997 HTML3.2

1998 CSS2

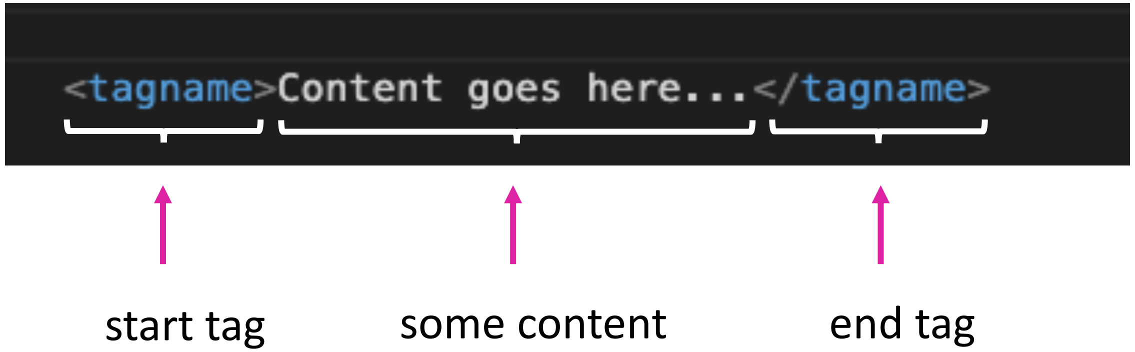
1999 HTML4.01

2005 CSS3

2012 HTML5

ANATOMY OF HTML TAG

HTML Element

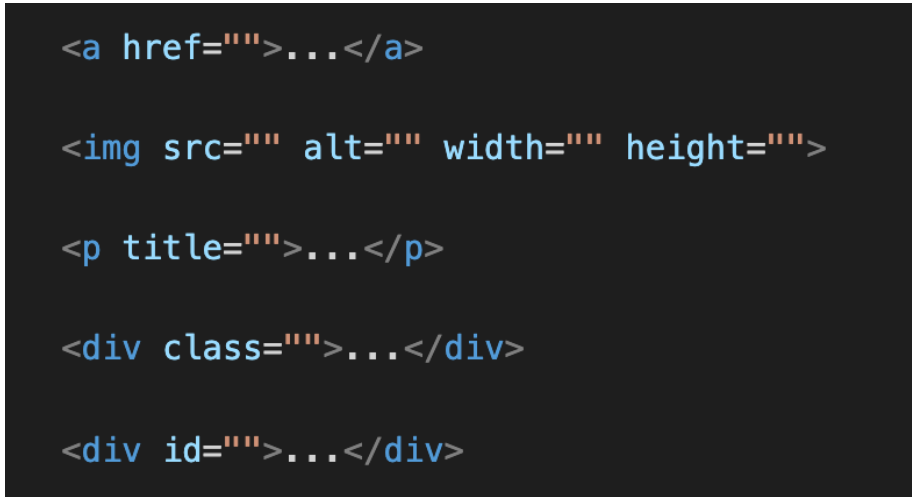


```
<tagname>Content goes here...</tagname>
```

start tag

some content

end tag



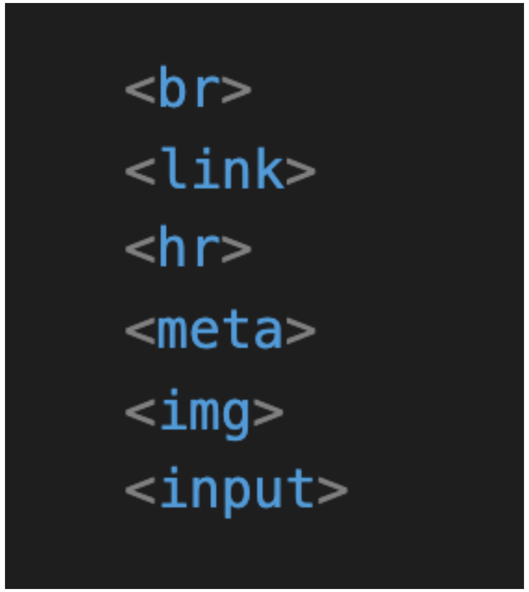
```
<a href="">...</a>

<img src="" alt="" width="" height="">

<p title="">...</p>

<div class="">...</div>

<div id="">...</div>
```

- All HTML elements can have **attributes**
- Attributes provide **additional information** about elements
- Attributes are always specified in **the start tag**
- Attributes usually come in name/value pairs

  like: **name="value"**

ANATOMY OF HTML TAG

HTML Empty Elements

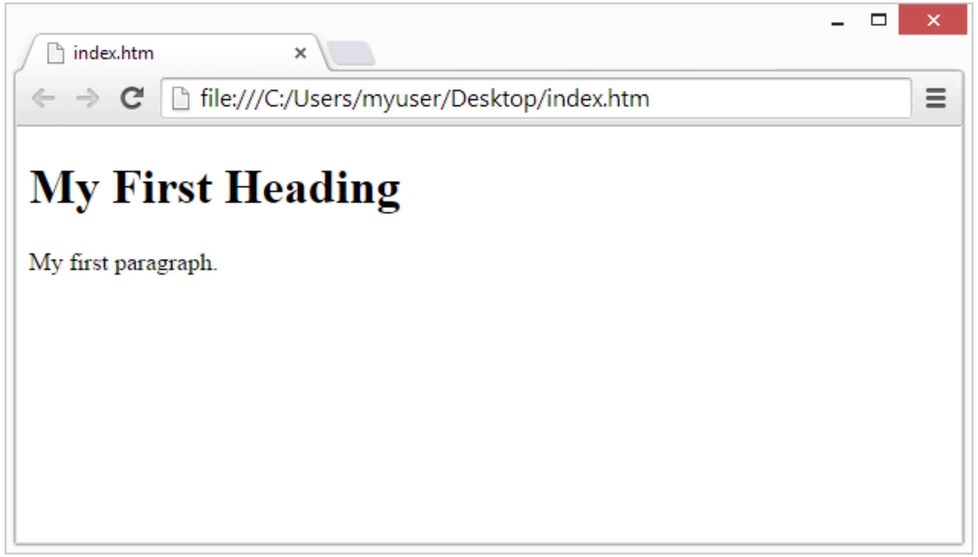


```
<br>
<link>
<hr>
<meta>
<img>
<input>
```

- Some HTML elements have **no content.**
- These elements are called **empty elements.**
- Empty elements **do not have an end tag!**

ANATOMY OF HTML TAG

Web Browsers



index.htm

file:///C:/Users/myuser/Desktop/index.htm

My First Heading

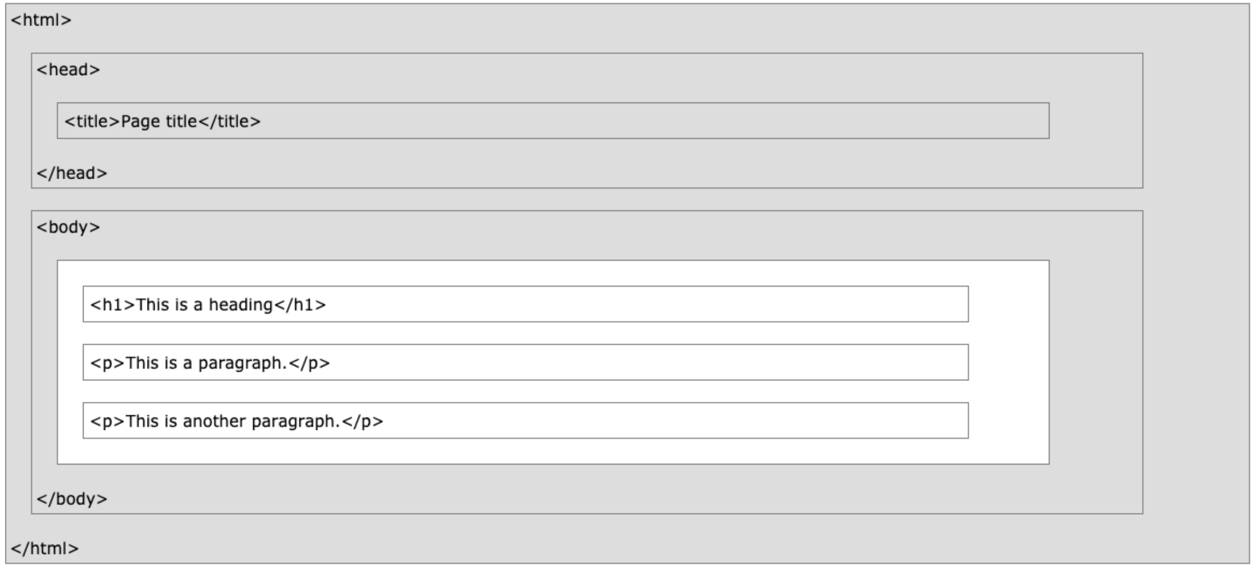
My first paragraph.

- The purpose of a **web browser** (Chrome, Edge, Firefox, Safari etc.) is to read HTML documents and display them correctly.

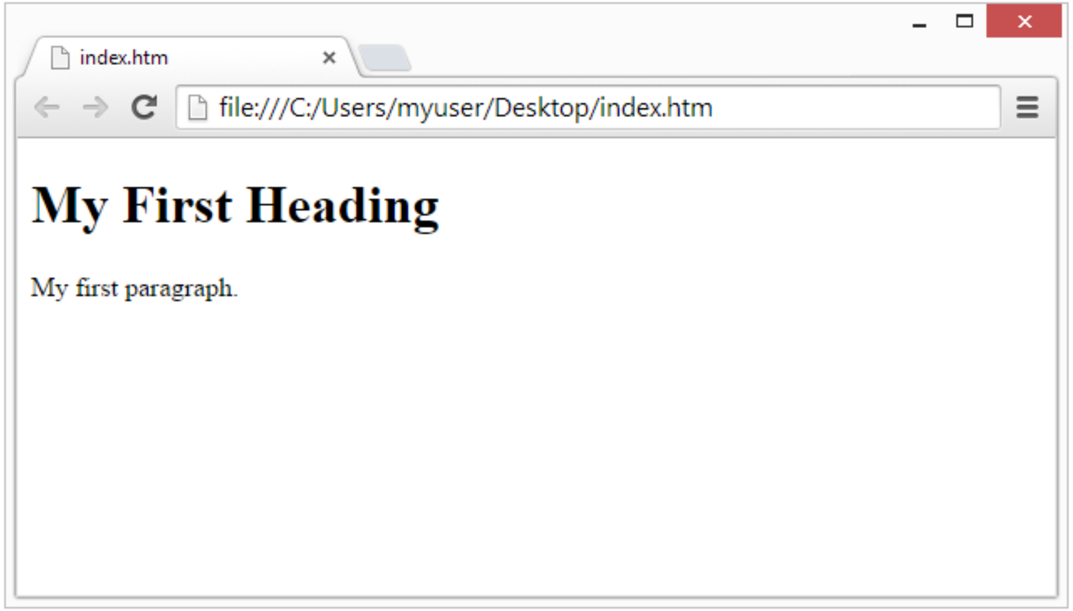
- A browser does not display the HTML tags, but uses them to determine how to display the document

ANATOMY OF HTML TAG

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

        <h1>My First Heading</h1>
        <p>My first paragraph.</p>
    </body>
</html>
```



```
<html>
  <head>
    <title>Page title</title>
  </head>
  <body>
      <h1>This is a heading</h1>
      <p>This is a paragraph.</p>
      <p>This is another paragraph.</p>
  </body>
</html>
```

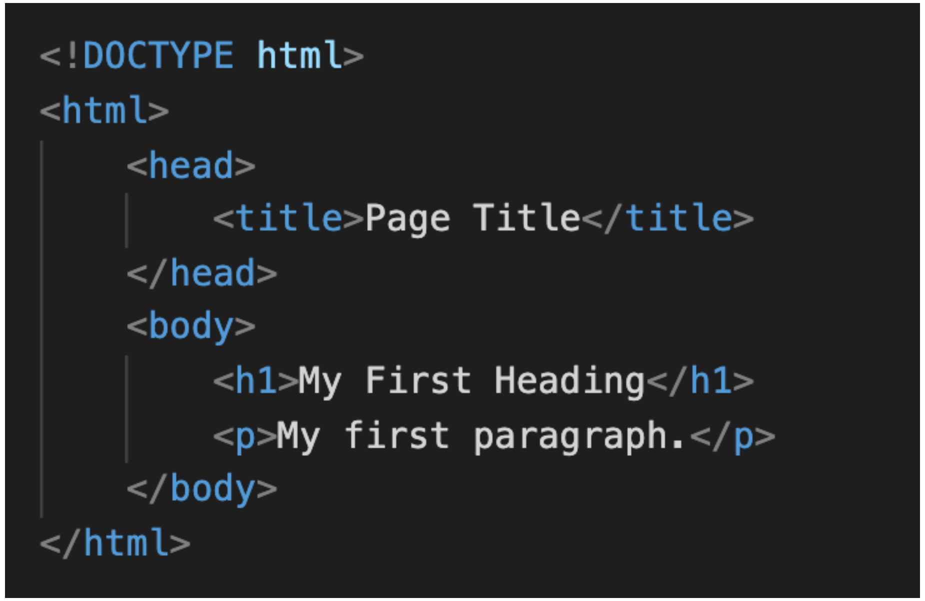


My First Heading

My first paragraph.

NOTE : Only the content inside the <body> section (*the white area above*) will be displayed in a browser.

HTML DOCUMENT BOILERPLATE



```
<!DOCTYPE html>
<html>
    <head>
        <title>Page Title</title>
    </head>
    <body>
        <h1>My First Heading</h1>
        <p>My first paragraph.</p>
    </body>
</html>
```

NOTE : HTML is **Not** Case Sensitive

- The <!DOCTYPE html> declaration defines that this document is **an HTML5 document**
- The <html> element is the **root element of an HTML page**
- The <head> element contains **meta information about the HTML page**
- The <title> element specifies **a title for the HTML page**
- The <body> element defines **the document's body, and is a container for all the visible contents**, such as headings, paragraphs, images, hyperlinks, tables, lists, etc.
- The <h1> element defines **a large heading**
- The <p> element defines **a paragraph**

HTML DOCUMENT BOILERPLATE

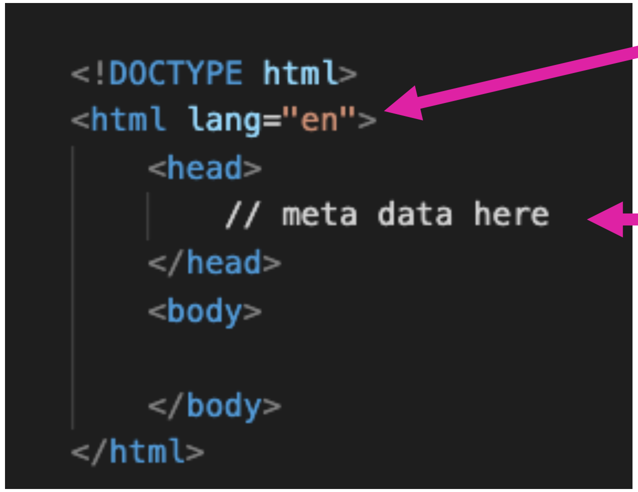
Let’s make fingers dirty

HTML DOCUMENT BOILERPLATE

Exercise - I

- Create an HTML file.
- In the file, declare the document type as HTML5.
- Create the root element of the document.
- Nested in that root element, create a head and a body element.
- In body element create a heading and a paragraph.

WHAT IS IN THE HEAD



```
<!DOCTYPE html>
<html lang="en">
    <head>
        // meta data here
    </head>
    <body>

    </body>
</html>
```

Language Attribute

- to declare the language of the Web page.
- This is meant to assist search engines and browsers.

https://www.w3schools.com/tags/ref_country_codes.asp

Metadata

HTML metadata is data about the HTML document. **Metadata is not displayed.**

<meta>

<link>

<title>…</title>

<style>…</style>

<script>…</script>

<base>…</base>

WHAT IS IN THE HEAD

HTML <meta> Element

The **<meta>** element is typically used to specify the character set, page description, keywords, author of the document, and viewport settings.

- **<meta charset="UTF-8">**

ASCII, ISO-8859-1, ANSI, UTF-8

- **<meta name="description" content="Free Web tutorials …">**
- **<meta name="keywords" content="HTML, CSS, JavaScript …">**
- **<meta name="author" content="John Doe">**
- **<meta name="viewport" content="width=device-width, initial-scale=1.0">**

WHAT IS IN THE HEAD

HTML <link> Element

- The **<link>** element defines a link between the current document and an external resource.
- The **rel** attribute specifies the relationship between the two documents.

Examples :

to link to external style sheets

```
<link rel="stylesheet" href="style.css">
```

to link to favicon icon

```
<link rel="icon" type="image/png" href="images/logo_icon.png">
```

to link to external font-family source

```
<link href="https://fonts.googleapis.com/css2?family=Kalam&display=swap" rel="stylesheet">
```

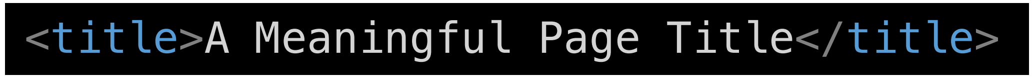
to link to external bootstrap library source

```
<link rel="stylesheet"
href="https://stackpath.bootstrapcdn.com/bootstrap/4.5.2/css/bootstrap.min.css">
```

WHAT IS IN THE HEAD

HTML <title> Element

- The **<title>** element defines the title of the document.
- The title must be text-only, and it is shown in the browser's title bar or in the page's tab.
- The contents of a page title is very important for search engine optimization (SEO)! The page title is used by search engine algorithms to decide the order when listing pages in search results. So, try to make the title as accurate and meaningful as possible!

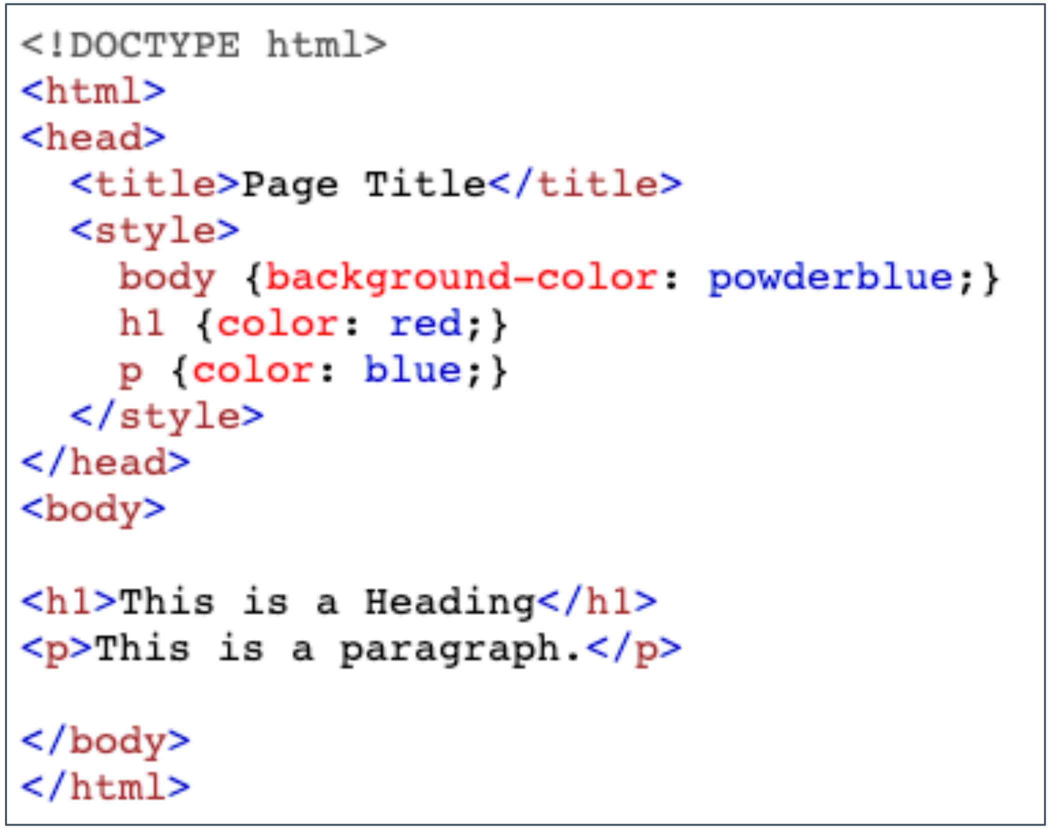


```
<title>A Meaningful Page Title</title>
```

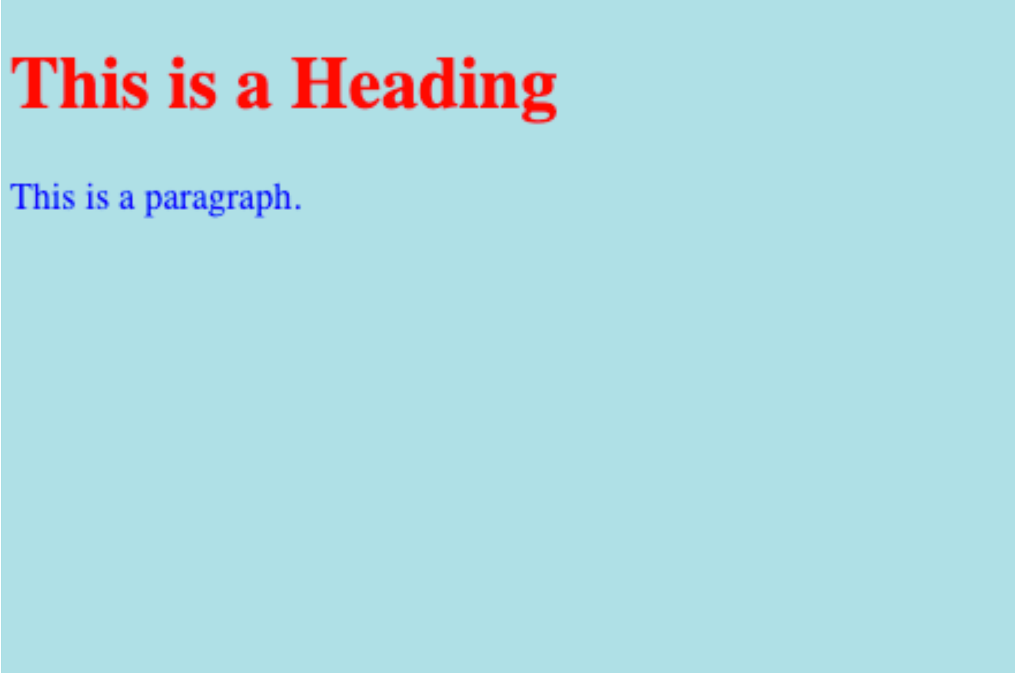
WHAT IS IN THE HEAD

HTML <style> Element

The **<style>** element is used to define style information for a single HTML page



```
<!DOCTYPE html>
<html>
<head>
  <title>Page Title</title>
  <style>
    body {background-color: powderblue;}
    h1 {color: red;}
    p {color: blue;}
  </style>
</head>
<body>

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

</body>
</html>
```



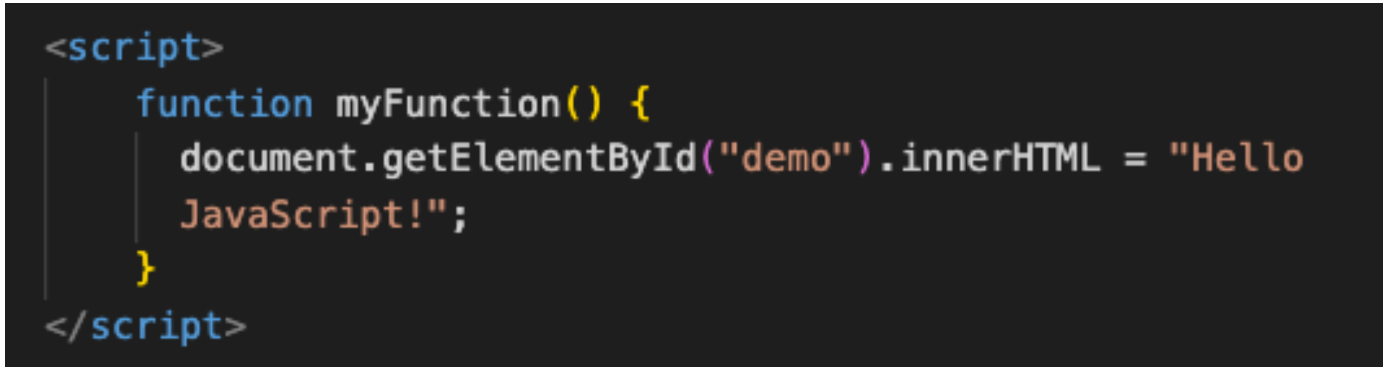
This is a Heading

This is a paragraph.

WHAT IS IN THE HEAD

HTML <script> Element

The **<script>** element is used to define client-side JavaScripts.



```
<script>
    function myFunction() {
      document.getElementById("demo").innerHTML = "Hello
      JavaScript!";
    }
</script>
```

WHAT IS IN THE HEAD

Exercise - II

- Create and HTML file.
- In the file, declare the document type and add the root element.
- Nested in the root element, add a head element and a body element.
- In the head element, create a meta tag for charset and author. Add your name to the author tag.
- Add a title in the head and give your document a title.

STYLING

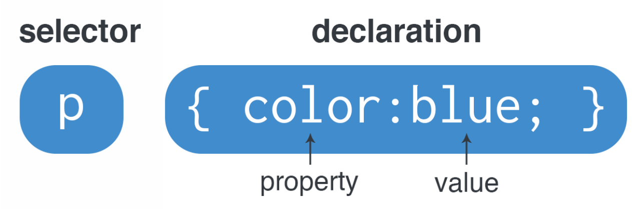
CSS

- **CSS** stands for **C**ascading **S**tyle **S**heets
- CSS describes **how HTML elements are to be displayed on screen or in other media**
- CSS **saves a lot of work**. It can control the layout of multiple web pages all at once
- External stylesheets are stored in **CSS files**

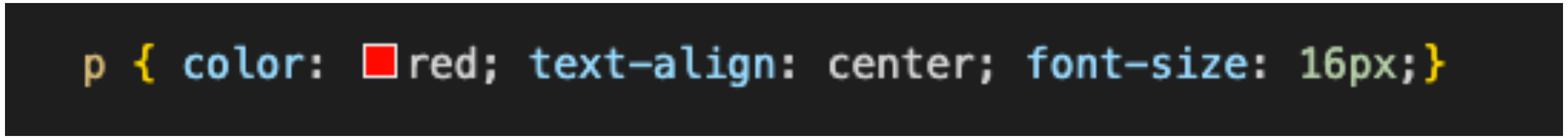
STYLING

Anatomy of a CSS Declaration

A **CSS rule-set** consists of a **selector** and a **declaration** block



- The **selector** points to the **HTML element** you want to style.
- The **declaration** block contains one or more declarations separated by semicolons.
- Each declaration includes a **CSS property name and a value**, separated by a colon.
- Multiple CSS declarations are separated with semicolons, and declaration blocks are surrounded by curly braces.



```
p { color: 🟥red; text-align: center; font-size: 16px;}
```

ADDING CSS TO HTML DOCUMENT

Three ways to insert CSS

- External CSS
- Internal CSS
- Inline CSS

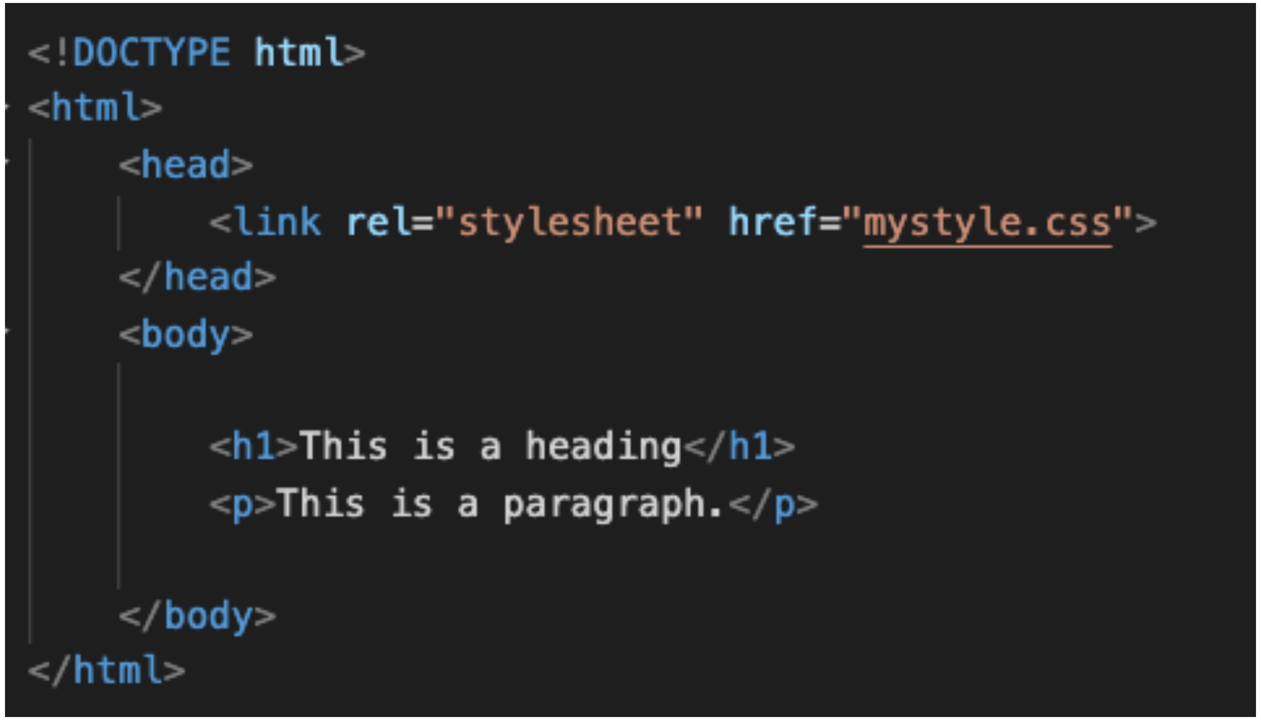
ADDING CSS TO HTML DOCUMENT

Three ways to insert CSS

- External CSS

This is an external style sheet file inside the <link> element, inside the head section

It must be saved with a .css extension.



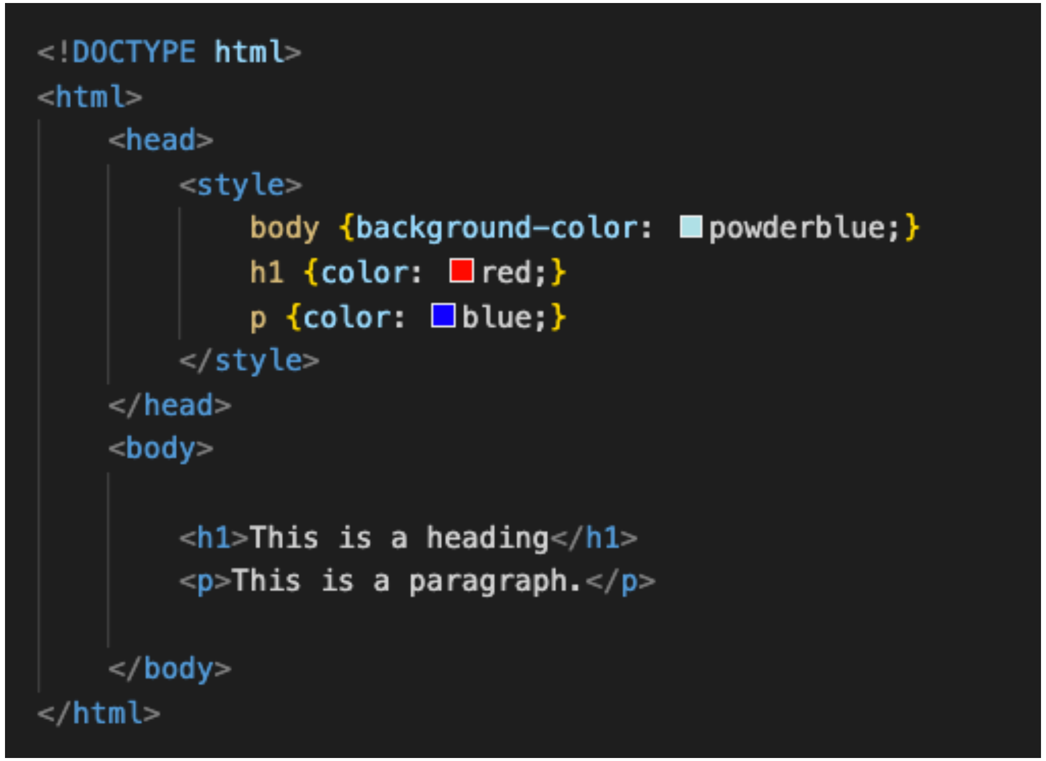
```
<!DOCTYPE html>
<html>
    <head>
        <link rel="stylesheet" href="mystyle.css">
    </head>
    <body>

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

    </body>
</html>
```

ADDING CSS TO HTML DOCUMENT

Three ways to insert CSS

- Internal CSS

An internal style sheet may be used if one single HTML page has a unique style.



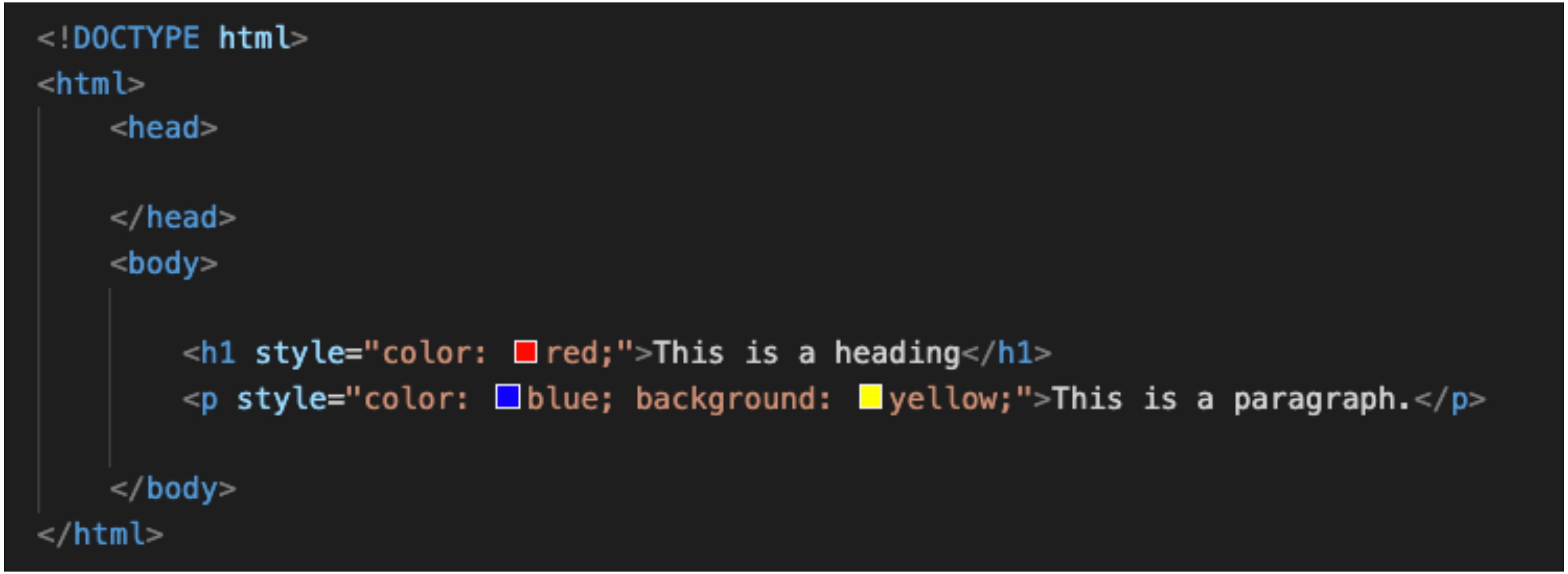
```
<!DOCTYPE html>
<html>
    <head>
        <style>
            body {background-color: ⬜powderblue;}
            h1 {color: 🟥red;}
            p {color: 🟦blue;}
        </style>
    </head>
    <body>

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

    </body>
</html>
```

ADDING CSS TO HTML DOCUMENT

Three ways to insert CSS

- Inline CSS

An inline style may be used to apply a unique style for a single element.



```
<!DOCTYPE html>
<html>
    <head>

    </head>
    <body>

        <h1 style="color: 🟥red;">This is a heading</h1>
        <p style="color: 🟦blue; background: 🟨yellow;">This is a paragraph.</p>

    </body>
</html>
```

ADDING CSS TO HTML DOCUMENT

Cascading Order

What style will be used when there is more than one style specified for an HTML element?

1. Inline style (inside an HTML element)
2. External and internal style sheets (in the head section)
3. Browser default

NOTE : number one has the highest priority.

ADDING CSS TO HTML DOCUMENT

Exercise - III

1. Create and HTML file.
2. In the file, declare the document type and add the root element.
3. Nested in the root element, add a head element and a body element.
4. In the head element,

   - Create a meta tag for charset, viewport, description, keywords and author.

   - Add your name to the author tag.

   - Add a favicon icon

   - Give your document a title.
5. Create a myStyle.css file and for h1 selector add color red, for paragraph add color blue
6. In body create a h1 heading and two different paragraph tags
7. With the last paragraph create an inline style and give color green