What is HTML?

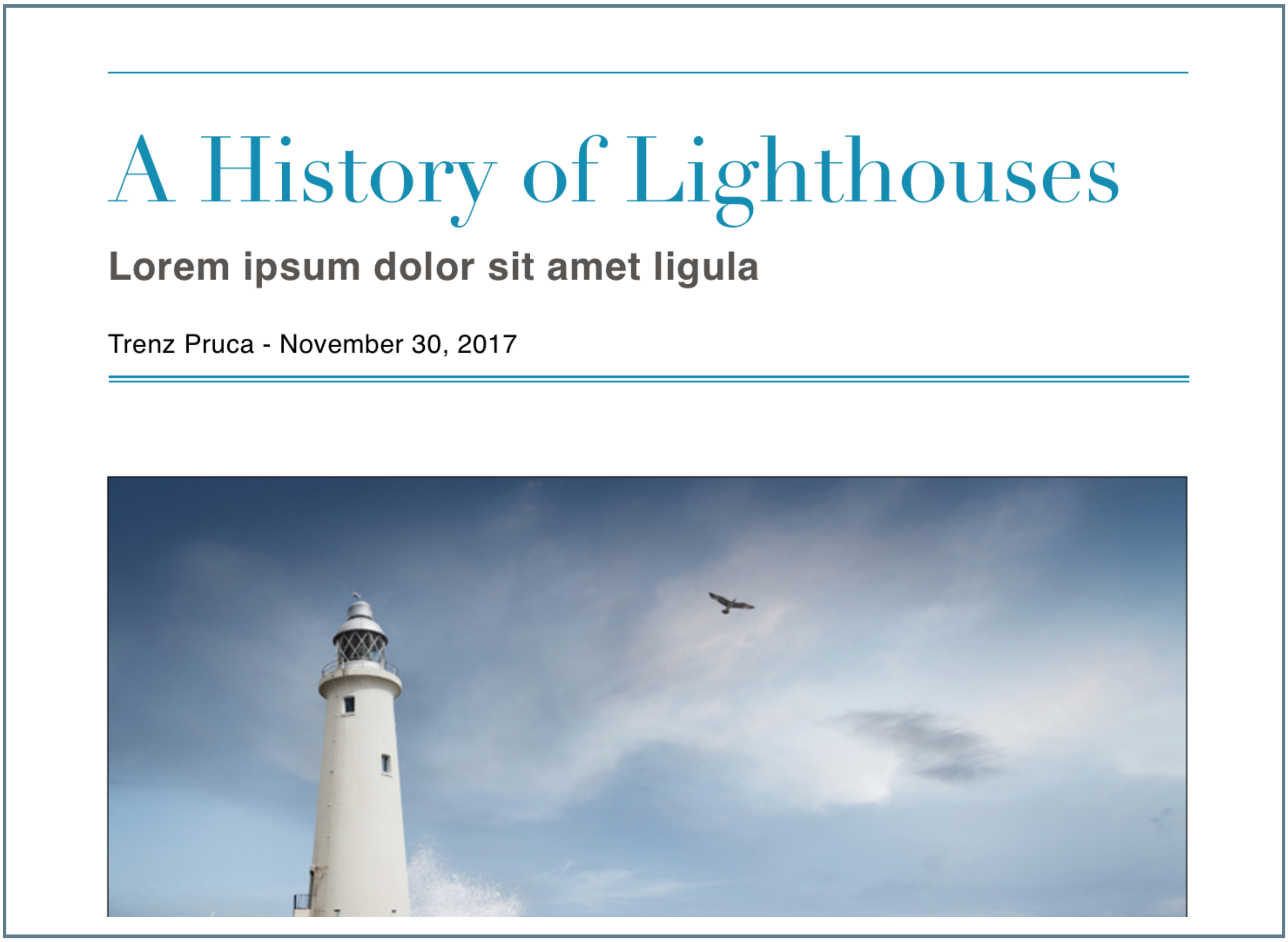
A Brief Overview of HTML's Purpose in Creating Web Pages.

We'll cover the following

Context

Think of a document that you would create in a word processor like Microsoft Word or Google Docs. They usually consist of more than one style. They use different font sizes to indicate different section of the text, like headers, main content, footers, table of contents, captions, and so on.

Whereas a human can simply look at a document and understand the difference between a heading and a paragraph, computers have no such intuition. In order for a browser to render a web page correctly, it must be **explicitly** told what each piece of content is.



A History of Lighthouses

Lorem ipsum dolor sit amet ligula

Trenz Pruca - November 30, 2017

Looking at this document, you can tell immediately where the heading, sub-heading, and cover image are. Your computer isn't nearly as smart.

Defining structure using HTML elements

So how exactly do we tell the browser what's what? This is where **Hyper Text Markup Langauge** (or **HTML** for short) comes in handy. HTML is a markup language that provides a description of the structure/layout of your web page. We define this structure by wrapping content in **HTML elements**.

An HTML *element* is formed using a *tag*, which serves as a descriptor for each piece of content on your page. As an example, the `<p>` *tag* is used to describe a paragraph HTML *element*.

Some other examples of HTML elements include:

- `<h1>`: Highest-level heading
- `<h6>`: Lowest-level heading
- `<img>`: An image

- `<a>`: An *anchor* which creates a hyperlink to things like other HTML pages, files, email addresses, and more

Most HTML elements contain both *opening* and *closing* tags to indicate where an element starts and ends, like so:

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

There are a few exceptions, such as the `<img>` tag, which we will describe in subsequent lessons.

A Basic HTML File

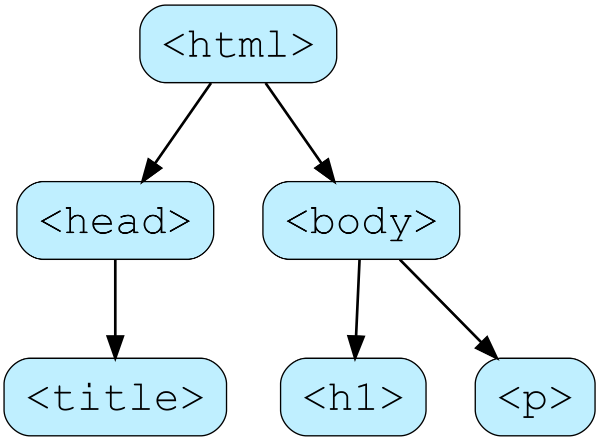
Let’s examine a basic HTML file to get a better understanding of how to use markup to define the structure of a web page:

```
<DOCTYPE! html>
<html>
  <head>
    <title>A Basic Web Page</title>
  </head>
  <body>
    <h1>My First HTML File</h1>
    <p>Congratulations! You're well on your way to creating your own web pages.</p>
  </body>
</html>
```

The first line, `<DOCTYPE! html>`, is referred to as a *doctype declaration*. This is used to indicate to a browser what HTML version the file is written in. For this file, specifying `html` indicates that the file is written in HTML5.

For the second line, take particular note of how the closing tag for the `<html>` is on the last line of the file. One of the properties of HTML elements is their ability to be **nested**. In other words, HTML elements can exist within other HTML elements. This gives rise to an interesting structure, referred to most commonly as a **tree** data structure in computer science lingo.

In an HTML file, we indicate the *root* element with the tag `<html>`. Within this root element there are multiple elements, which can be considered *branches* of the root node:



HTML files have a tree-like structure, with <html> being the root element.

To properly define an HTML file, we must place `<head>` and `<body>` elements within the root `<html>` element.

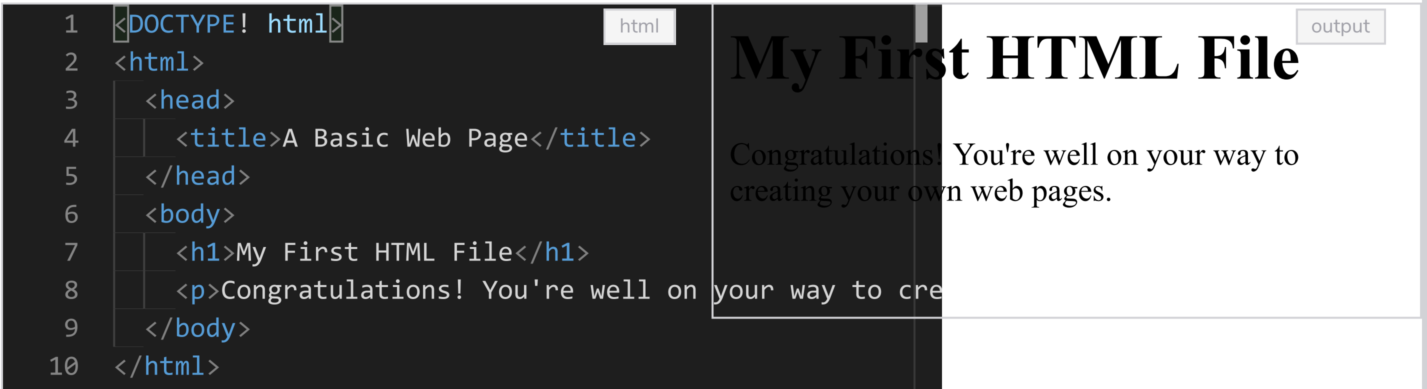
The `<head>` element contains supporting information about the file, commonly referred to as **metadata**. There must be a `<title>` (providing the webpage a title) directly underneath the `<head>` element in order be complete. The `<head>` element may also contain links to Javascript files and CSS stylesheets.

The `<body>` element contains the main content of an HTML file. This is the element that holds the information that is rendered by your web browser. There can be **only one** `<body>` element within an HTML file, and most of the HTML you write will exist within this element.

Within the `<body>` element of this file, we have a high-level heading (`<h1>`) and a paragaph (`<p>`).

Rendering the HTML file in the browser

Now, lets take a look at how this web page is rendered by the browser:



```html
<DOCTYPE! html>
<html>
  <head>
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  </head>
  <body>
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```
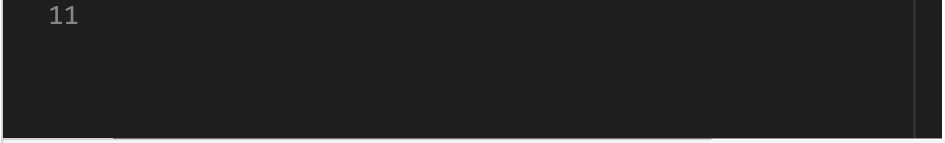

My First HTML File

Congratulations! You're well on your way to creating your own web pages.



Check Your Understanding

1 HTML elements must always have an opening and closing tag to be interpreted correctly:

2 HTML is used to annotate content and describe the structure of a web page.

3 HTML is not absolutely required to render a web page correctly.

4 What element includes general information (metadata) about the HTML file?

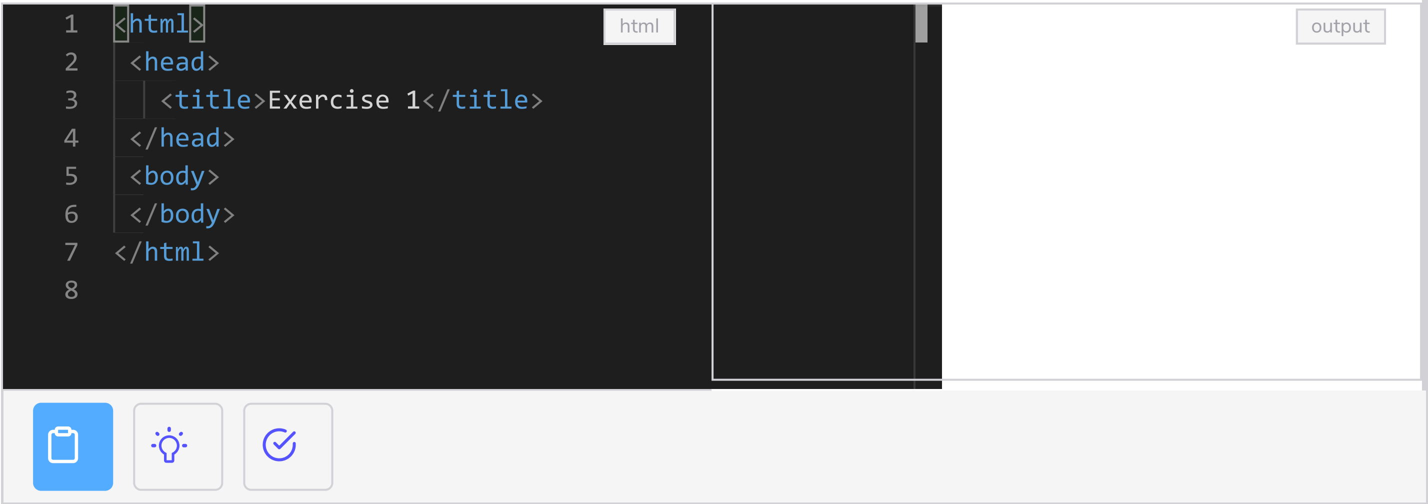
5 What element contains the content that will be rendered by the browser?

Retake Quiz

> **Note:** For all challenges, wait for a few seconds after writing the solution and then press the test button.

Exercise

Add a top-level header with a paragraph underneath to your HTML file. The header and paragraph can contain any content you would like.



```html
<html>
  <head>
    <title>Exercise 1</title>
  </head>
  <body>
  </body>
</html>

```

Hint 1 of 3

Where do you place *main content* that will be rendered by the browser?

Now that you have learned about the basics of HTML, let’s learn about adding attributes to an html element and using hyperlinks in the next lesson.