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Introduction to HTML

The language of the Web

You can follow along in the lecture slides,
but also following the guide at <https://www.w3schools.com/html/>

What is HTML

- First described in 1991 by Tim Berners-Lee
- Standard now maintained by the World Wide Web Consortium (W3C) & the Web Hypertext Application Technology Working Group (WHATWG)

What is HTML

Hyper**T**ext **M**arkup **L**anguage is used to describe the structure and content of web pages.

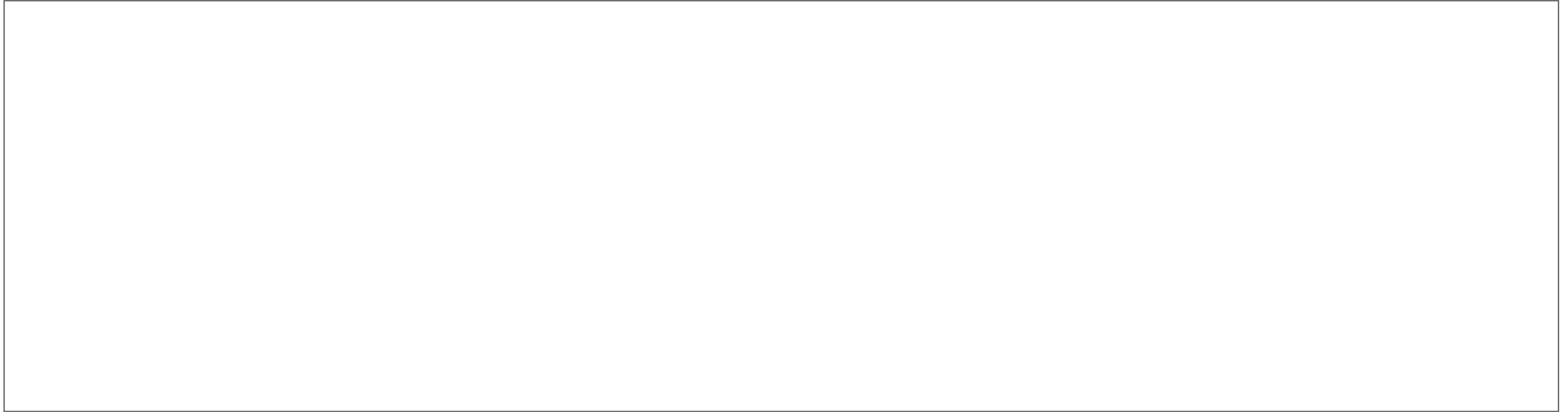
- Web pages contain **elements**
- Elements are defined using **tags**

Like this:

```
<tagname>Some content</tagname>
```

- Tags are written using the element name surrounded by angle brackets `<` and `>`
- **tagname** describes the type of content and how it should be handled by the browser
 - e.g. `Text` where the **b** tells the browser it should display Text in **bold**
 - Should be **lowercase**
- Tags usually come in pairs that mark the start and end of the content.
 - The end tag contains an extra `/` (forward slash) after the `<`

A simple webpage



https://jsfiddle.net/ian_knight_uofa/7b9gnzec/

Save as plain text in a file with a .html extension.

In more detail

<!DOCTYPE html> DOCTYPE declaration

What type of document is this (html), what version?

<html> root element

Highest level element in the document

<head> Document head

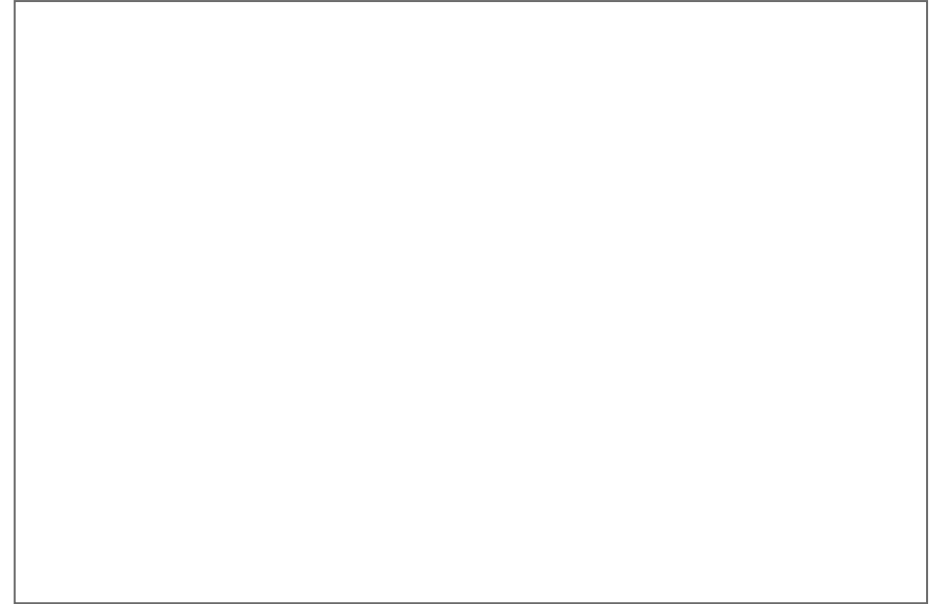
Contains metadata and configuration information

<meta charset="UTF-8"> metadata to assist browser

Tells browser we are using UTF-8 encoding

<title> contains title of webpage

Tells browser we are using UTF-8 encoding

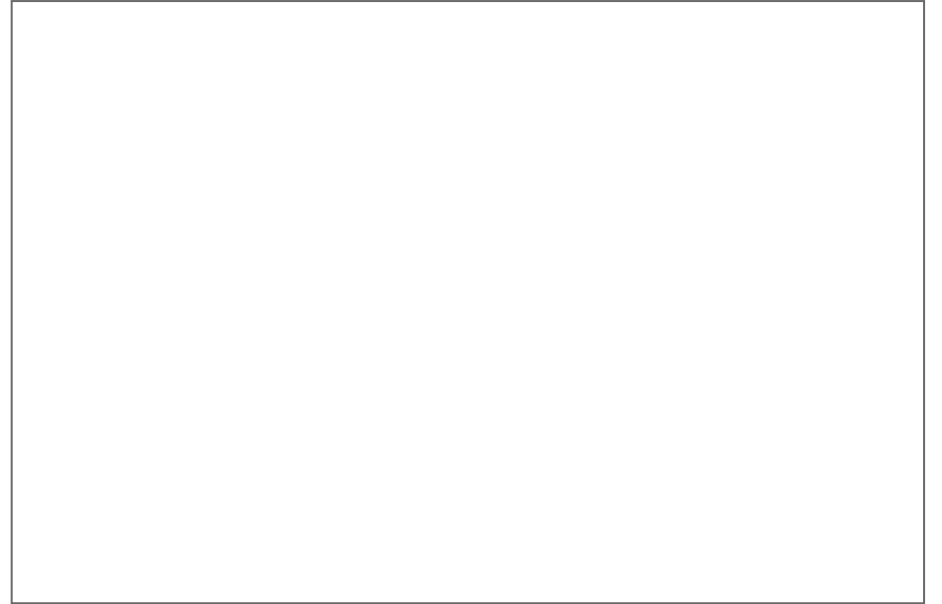


In more detail

`<body>` Document body
Contains content to be rendered by the browser

`<p>` Paragraph

`<!-- comment -->` Allows us to write comments



More on elements

Elements can be nested

Like this:

```
<b>Some <i>more</i> content</b>
```

*b tag is for **bold** text*

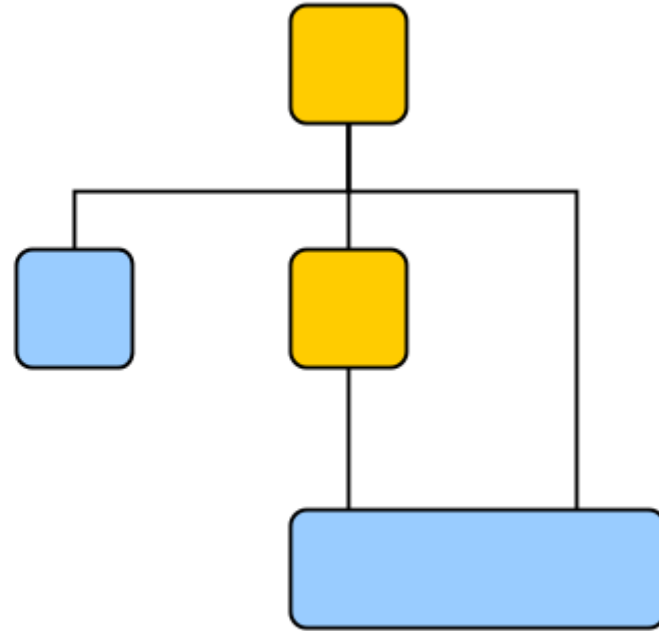
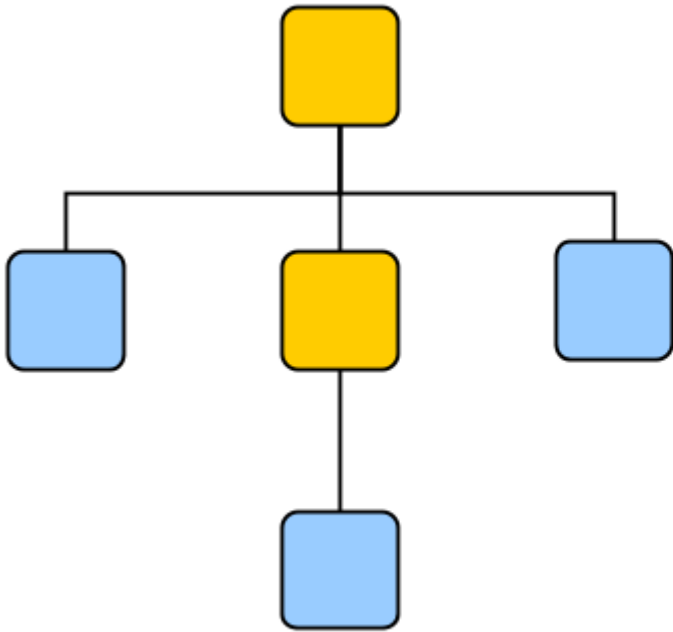
But not like this:

```
<b>Some <i>more</b> content</i>
```

*i tag is for **italic** text*

More on elements

- Your document is structured as a tree and incorrect nesting violates that structure



Closing tags

All opening/start tags must have a accompanying closing tag

Like this:

```
<p>Some <span>more</span> content</p>
```

But not like this:

```
<p>Some <span>more content</p>
```

Closing tags

but there are exceptions

Some elements do not contain content.

In these cases you can combine the start and end tags

Like this (preferred):

```
<br />
```

*br tag is for line break
(newline)*

Also like this:

```
<hr>
```

*hr tag is for horizontal rule
(line across page)*

Some common basic elements

Heading elements

The **h1** - **h6** elements are used to define different levels of heading used throughout a webpage.

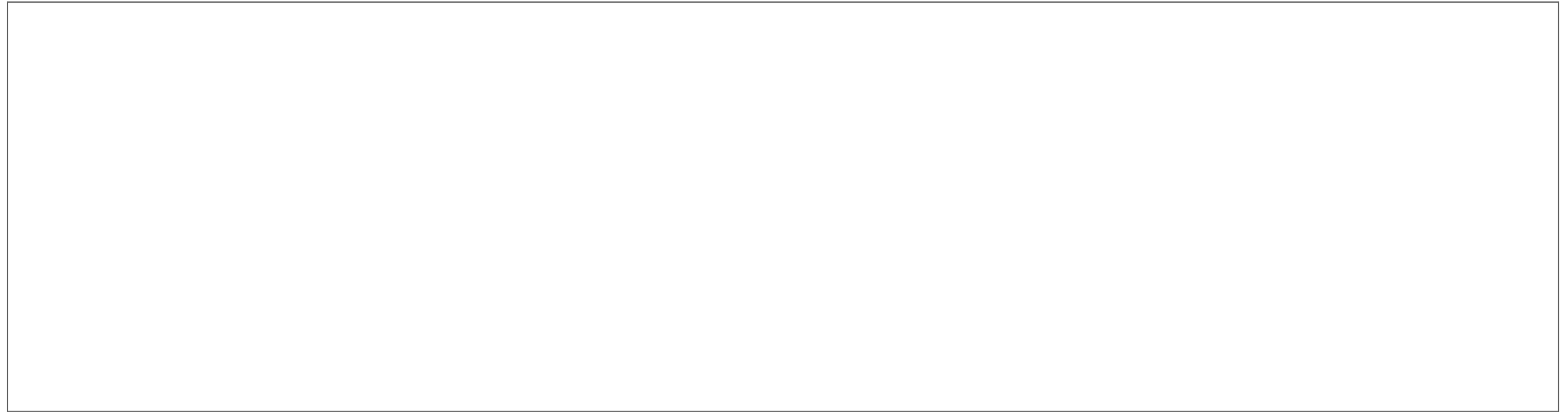
- h1 is the largest (and most important) heading
- h6 is the smallest (and least important) heading

https://jsfiddle.net/ian_knight_uofa/2taLbh9e/

Paragraph text

The **p** element is used to define a paragraph of text.

- Whitespace is **ignored**
- Paragraph text is grouped together



https://jsfiddle.net/ian_knight_uofa/tmckx0a4/

Preformatted text

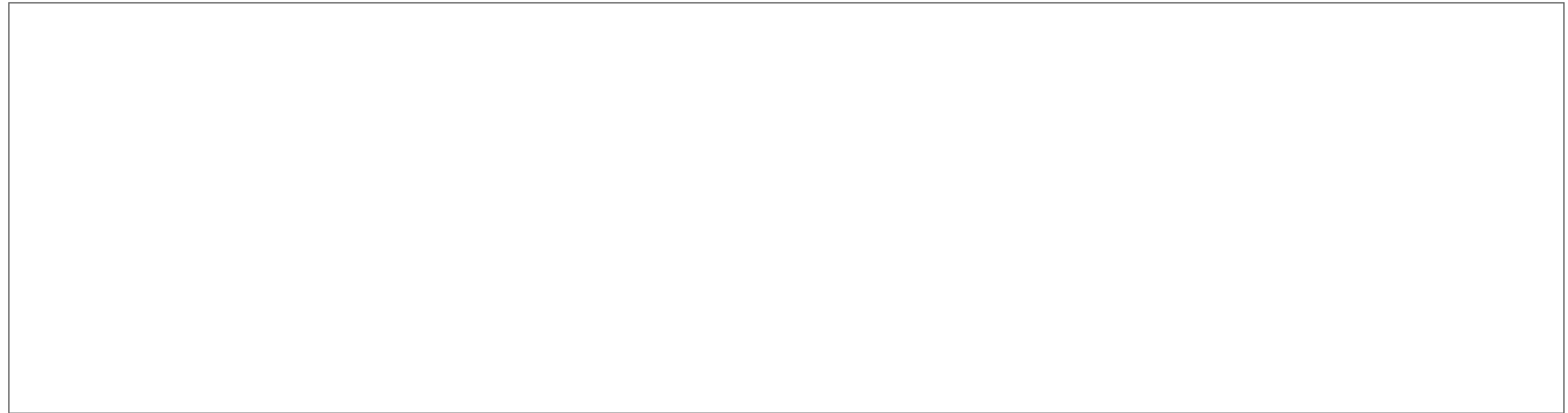
The `pre` element is used to preserve whitespace.

https://jsfiddle.net/ian_knight_uofa/Ljnw0a1/1/

Lists

The `ul` `ol` and `li` elements are used to create lists.

- `ul` (unordered list) will create a dot-point list
- `ol` (ordered list) will create a numbered list
- `li` tags are the individual items in the list



https://jsfiddle.net/ian_knight_uofa/jnacbhr/

See <https://www.w3schools.com/tags/> for a detailed list of all tags

Attributes

Elements can have **attributes**, properties that affect how they behave.

Like this:

```
<tagname attribute="value">Some content</tagname>
```

- Attributes belong in the starting tag.
- Usually have a value, but not always.
- Value must be in quotes if not a number.
- You can use single or double quotes.
- Some tags require certain attributes and some attributes are restricted to certain tags.

Some common elements that require attributes

Anchor elements

The **a** element is used to create hyperlinks.

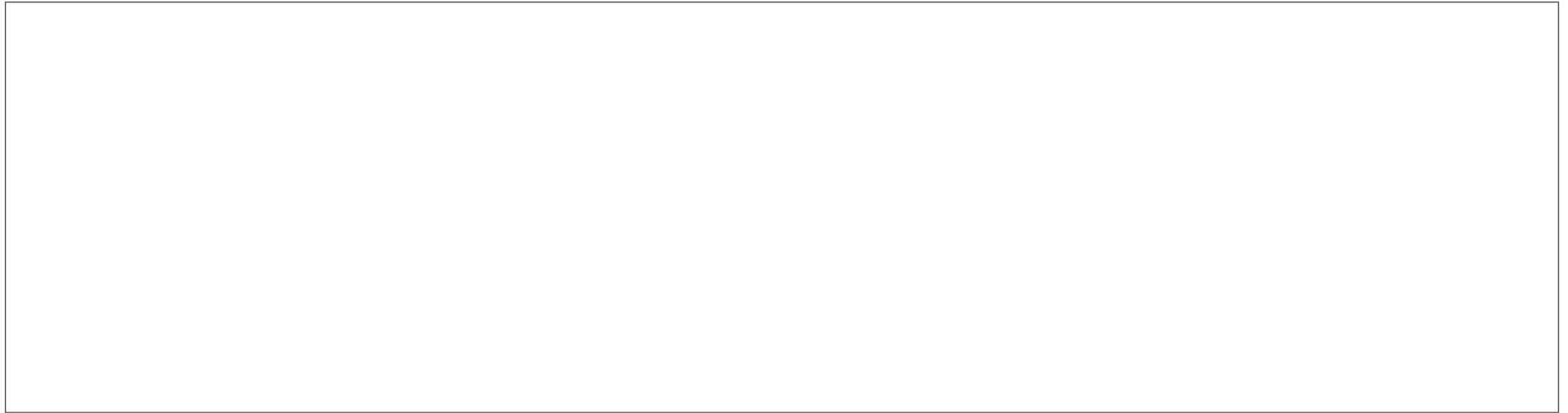
- Takes a **href** attribute whose value is the link location
- Content is the text visible to the user
- Other attributes tell the browser how to behave when following the link e.g. **target**

https://jsfiddle.net/ian_knight_uofa/xeLzwd3p/1/

Image elements

The `img` element is used to display images.

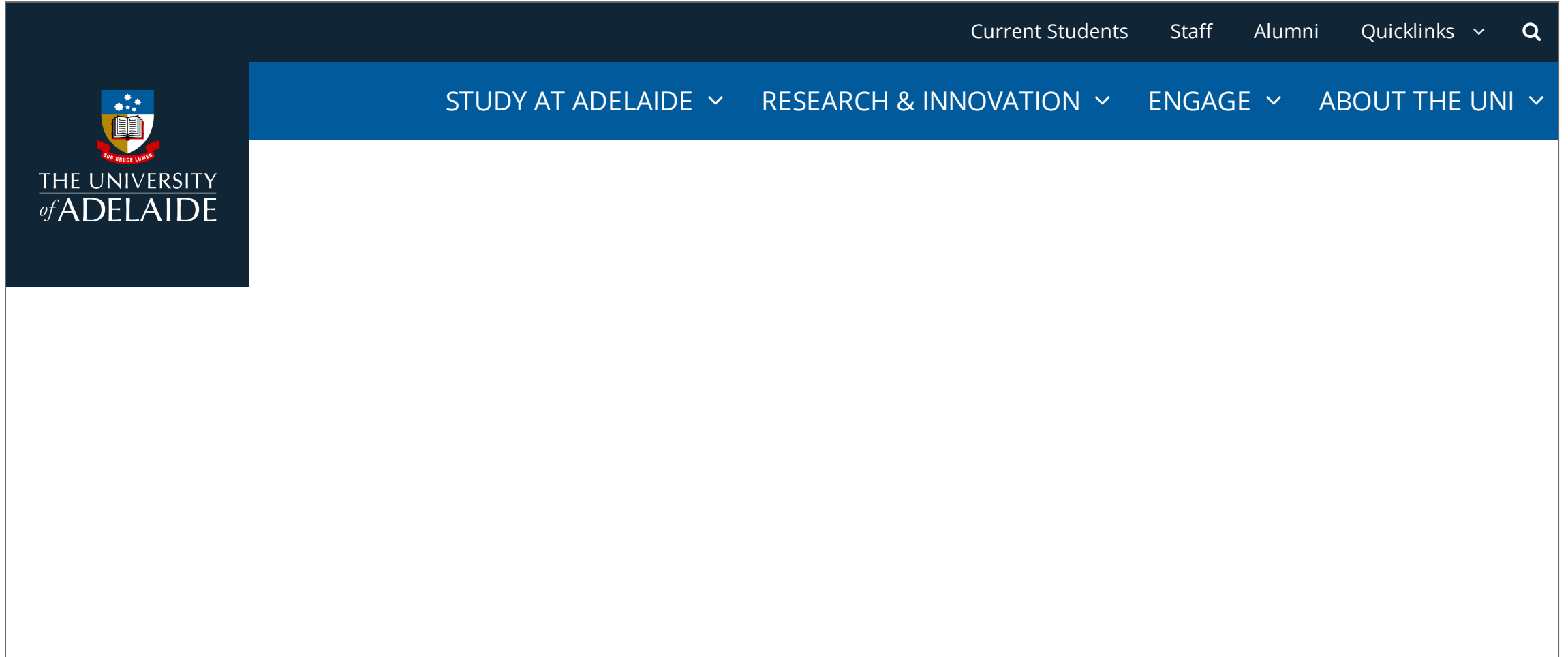
- `src` is the location of the image, either on the local machine or somewhere else on the internet.
- `alt` is the text to display if the image cannot load.



https://jsfiddle.net/ian_knight_uofa/qk85htw4/2/

See <https://www.w3schools.com/tags/> for a detailed list of all tags

More complicated webpages





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