CSIT128 / CSIT828

HTML

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HTML

is a markup language for describing web documents

     used to mark parts of documents to indicate
     how they should appear on a display

HTML stands for **H**yper **T**ext **M**arkup **L**anguage

HTML documents are described by **HTML tags**

Each HTML tag describes different document content

The first HTML document

```
<html>

<head>

<title>JT</title>

</head>

<body>

Hello World!

</body>

</html>
```

The first HTML document

```
<html>

<head>

<title>JT</title>

</head>

<body>

Hello World!

</body>

</html>
```
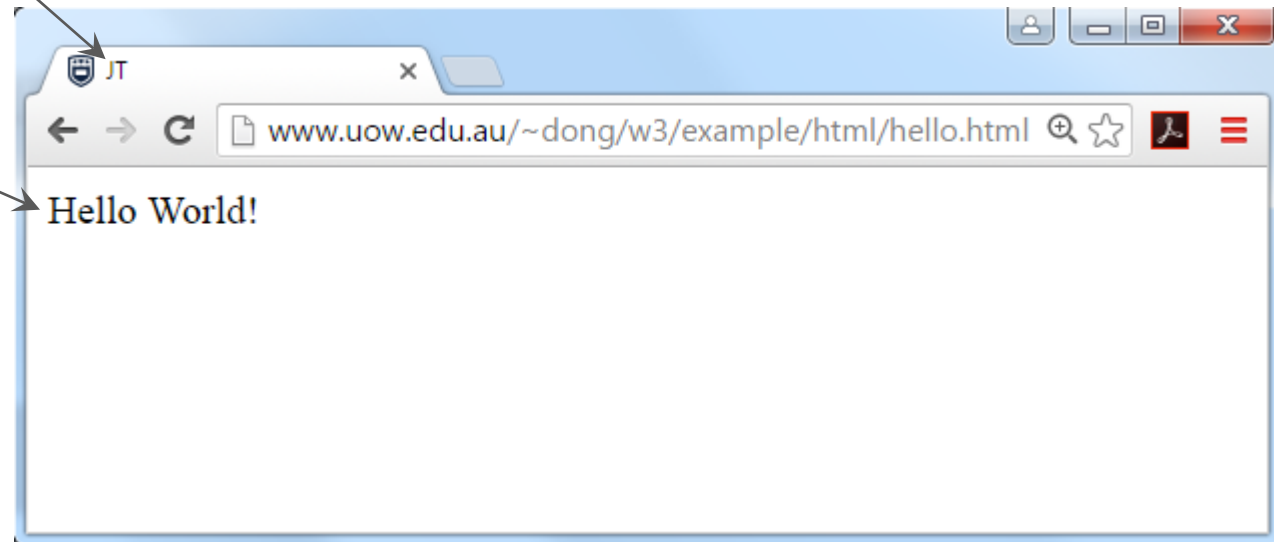
HTML document structure

```
<html>

   <head>

   <title>JT</title>

   </head>

   <body>

   Hello World!

   </body>

</html>
```
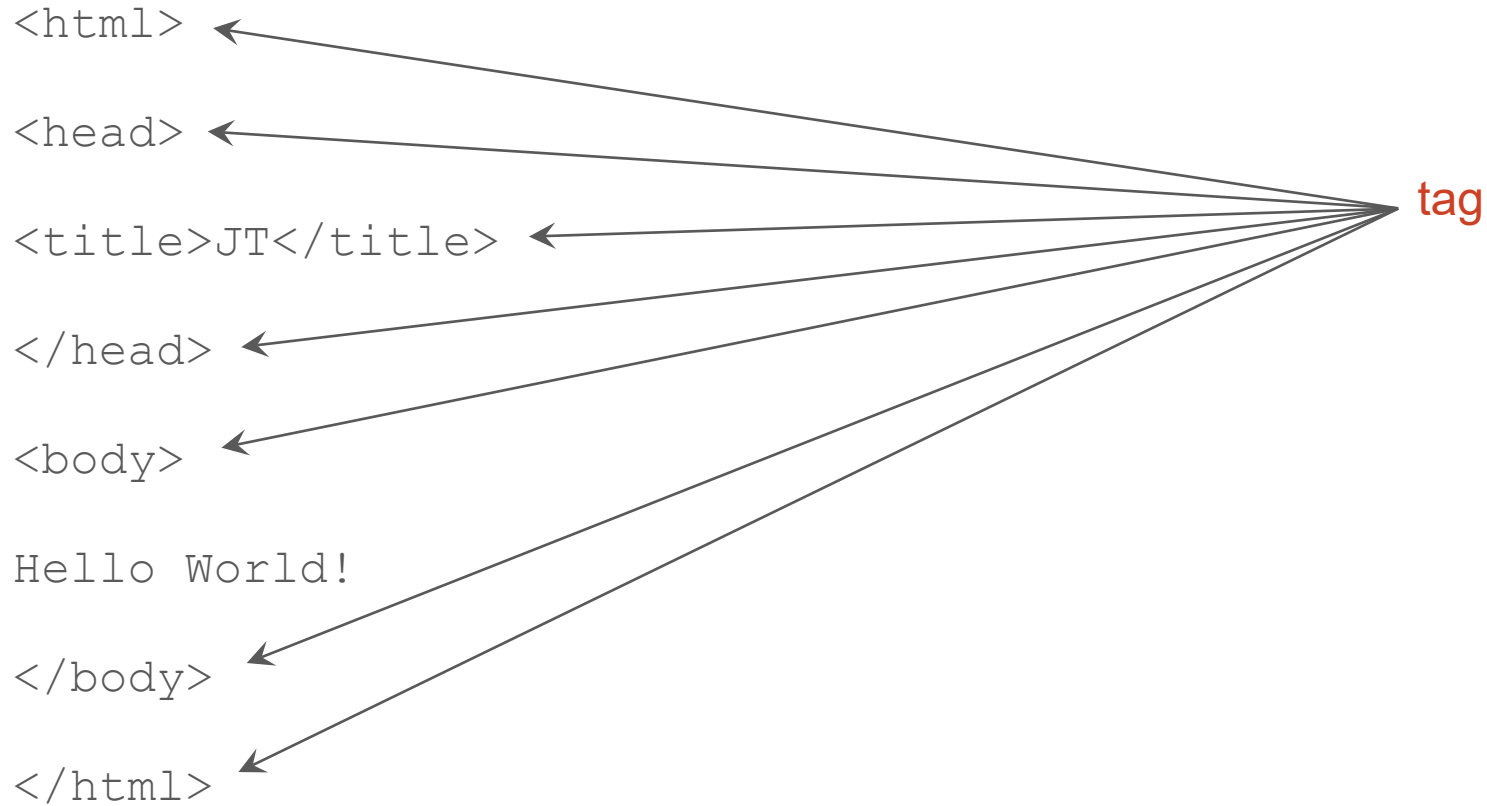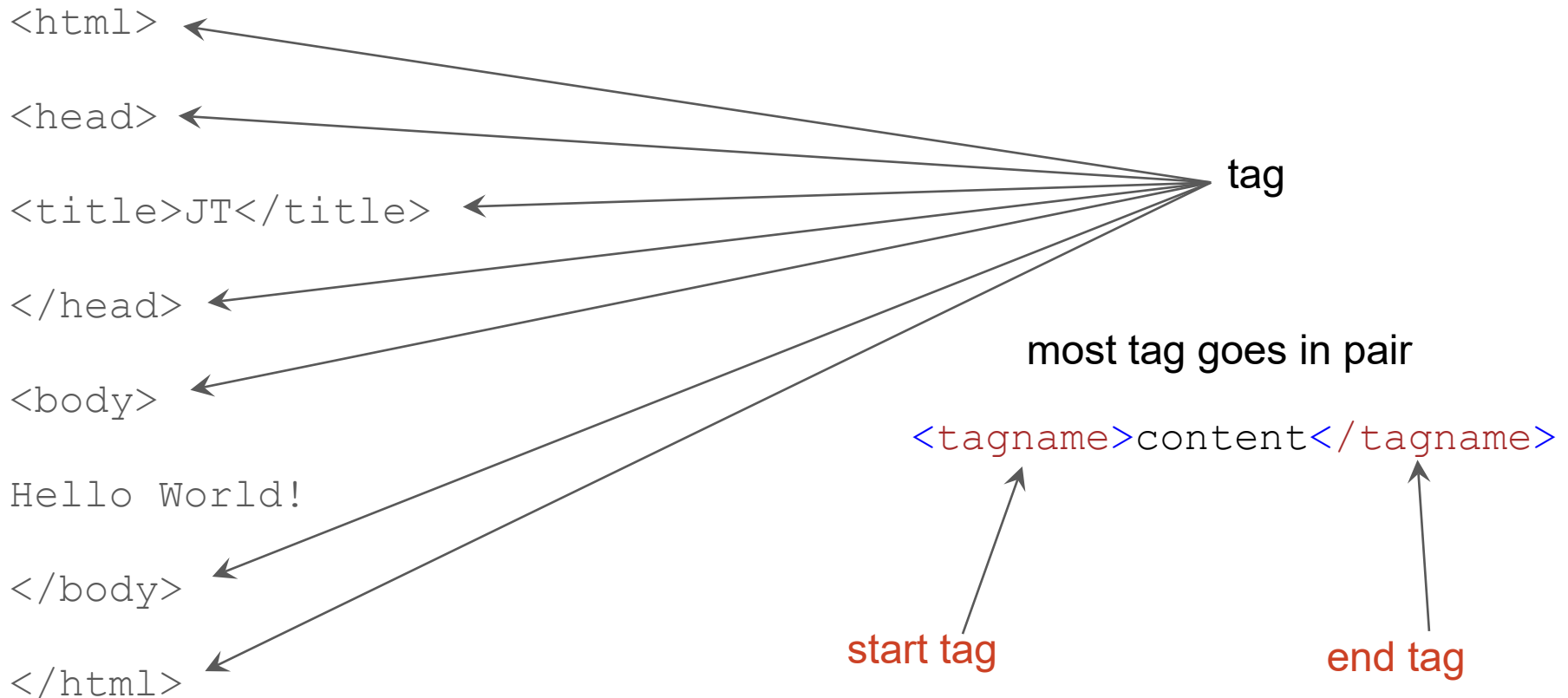
- A HTML document starts with **<html>** and ends with **</html>**

- A HTML document has a **head** and a **body**

- The visible part of the HTML document is between **<body>** and **</body>**

HTML tags

```
<html>

<head>

<title>JT</title>

</head>

<body>

Hello World!

</body>

</html>
```

tag

HTML tags

tags are **NOT** case sensitive

```
<html>

<head>

<title>JT</title>

</head>

<body>

Hello World!

</body>

</html>
```

tag

most tag goes in pair

`<tagname>content</tagname>`

start tag   end tag

HTML **documents** are made up by HTML **elements**.

The HTML **element** is everything *from the start tag to the end tag*.

Heading tags

```
<body>

<h1>Heading 1</h1>

<h2>Heading 2</h2>

<h3>Heading 3</h3>

<h6>Heading 6</h6>

Normal text...

</body>
```

Heading tags: **`<h1>`**, **`<h2>`,...,** **`<h6>`**

`<h1>` the most important heading

`<h6>` the least important heading

Paragraph tag <p>

```
<body>

<p>This   is a paragraph</p>

<p>Another

paragraph</p>

<p>yet      another


paragraph</p>

</body>
```
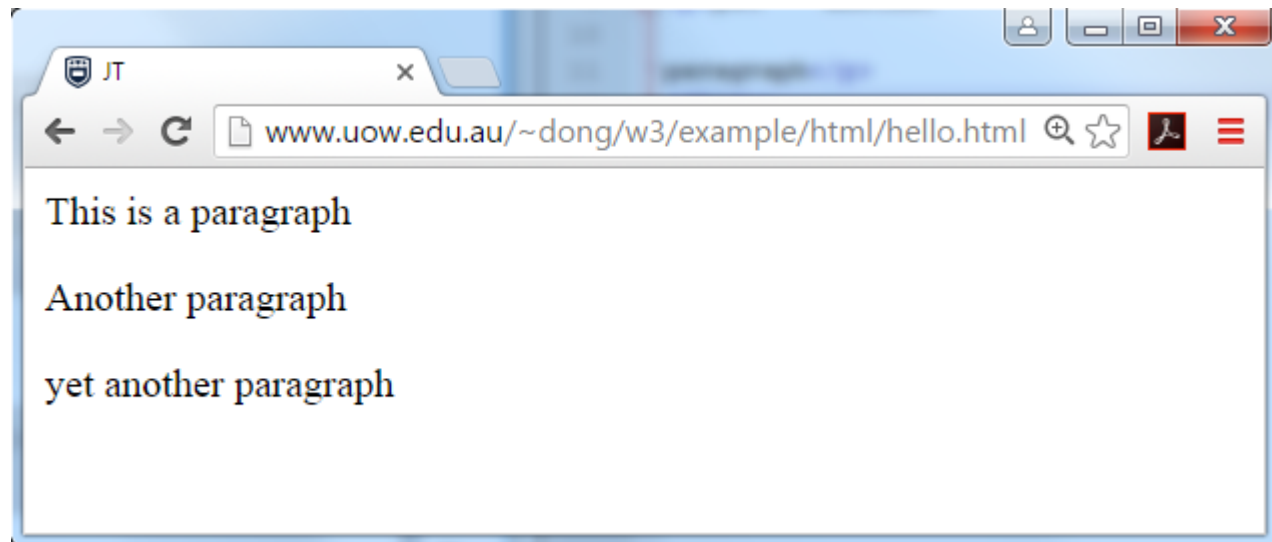
Extra spaces and **lines** will NOT be displayed in paragraph

This is a paragraph

Another paragraph

yet another paragraph

Line break

```
<body>

<p>This   is a paragraph</p>

<p>Another <br />

paragraph</p>

<p>yet     another <br />

<br />

paragraph</p>

</body>
```
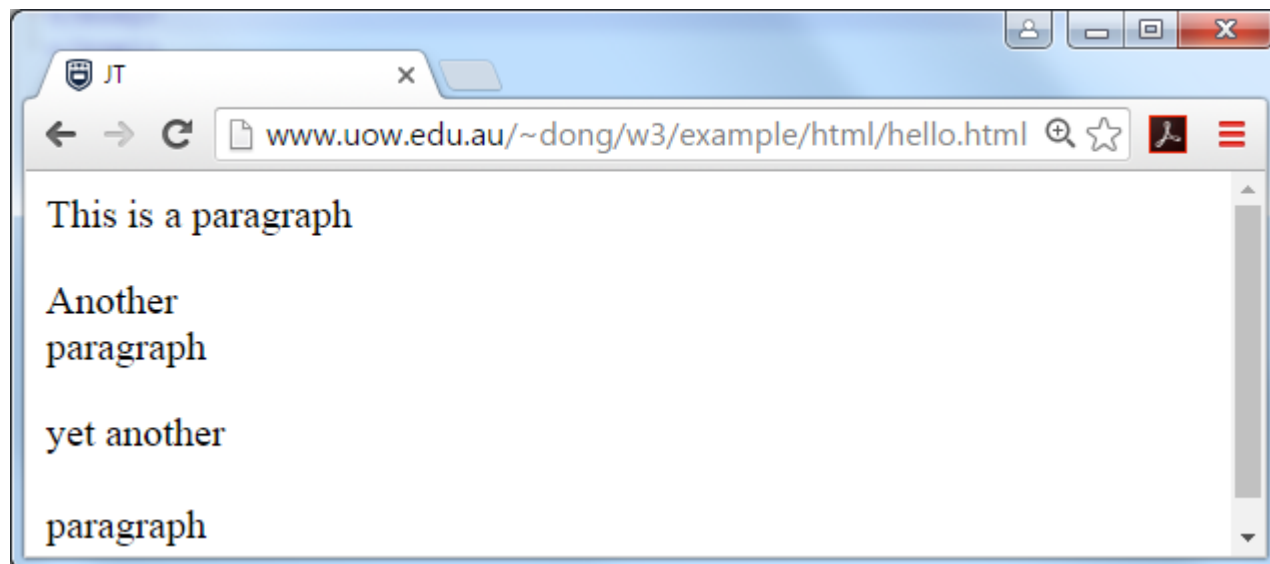
**
** tag defines a **line break**

**
** is an empty element (i.e. it is a tag with no content), it combines the start and end tags together

Horizontal line <hr />

<body>

<p>This   is a paragraph</p>

<p>Another **
**

paragraph</p>

<hr />

<p>yet   another **
**

**
**

paragraph</p>

</body>

similarly, we have the horizontal line tag <hr /> with no content
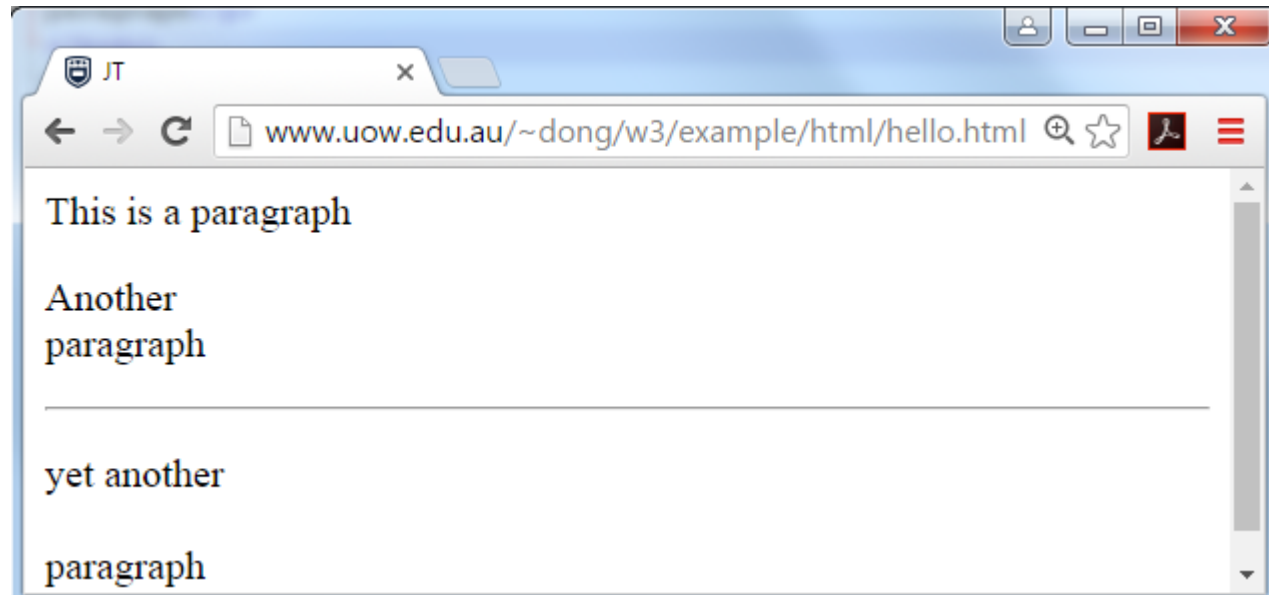
Non-breaking space

```
<body>

<p>This  is a
paragraph</p>

<p>Another <br />

paragraph</p>

<hr />

<p>yet    another <br />

<br />

paragraph</p>

</body>
```

**use ** for non-breaking space

this is an example of **character entities**

Character entity

- Some characters are reserved in HTML.

- Reserved characters in HTML must be replaced with character entities.

Character	Entity	Meaning
(non-breaking space)	` `	Non-breaking space
<	`<`	Is less than
>	`>`	Is greater than
&	`&`	Ampersand
"	`"`	Double quote
'	`'`	Single quote (apostrophe)
o	`°`	Degree
©	`©`	Copyright

Character entity

```
<body>

A HTML document starts with
&lt;html&gt; and ends with
&lt;/html&gt;

</body>
```

```
<body>
A HTML document starts with
<html> and ends with </html>
</body>
```
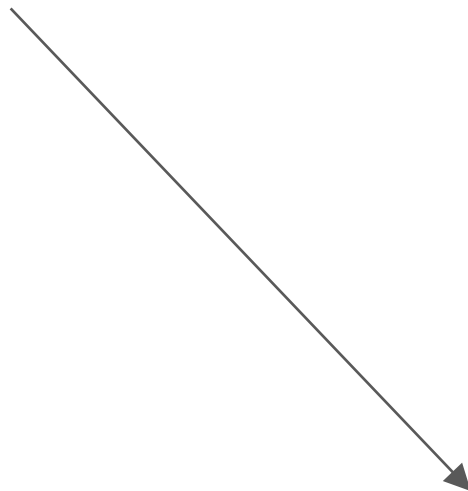
A HTML document starts with <html> and ends with </html>

Block quotations <blockquote>

```
<body>

<p>normal paragraph</p>

<blockquote>

<p>a paragraph in blockquote</p>

<p>another paragraph in blockquote</p>

</blockquote>

see the difference?

</body>
```
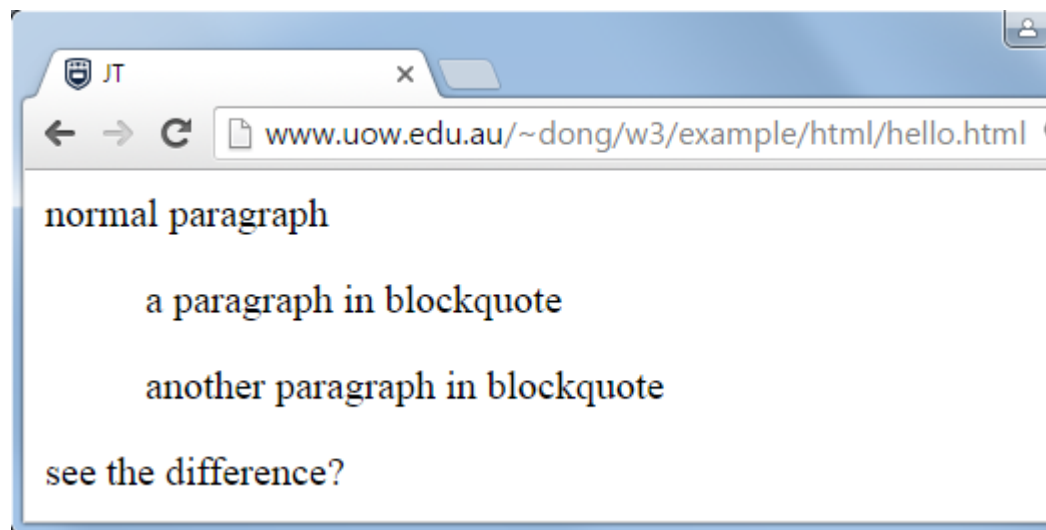
Formatting text

```
<body>

<i>italic text</i> <br />

<b>bold text</b> <br />

<mark>highlighted text</mark> <br />

<del>deleted text</del> <br />

<ins>inserted text</ins> <br />

</body>
```
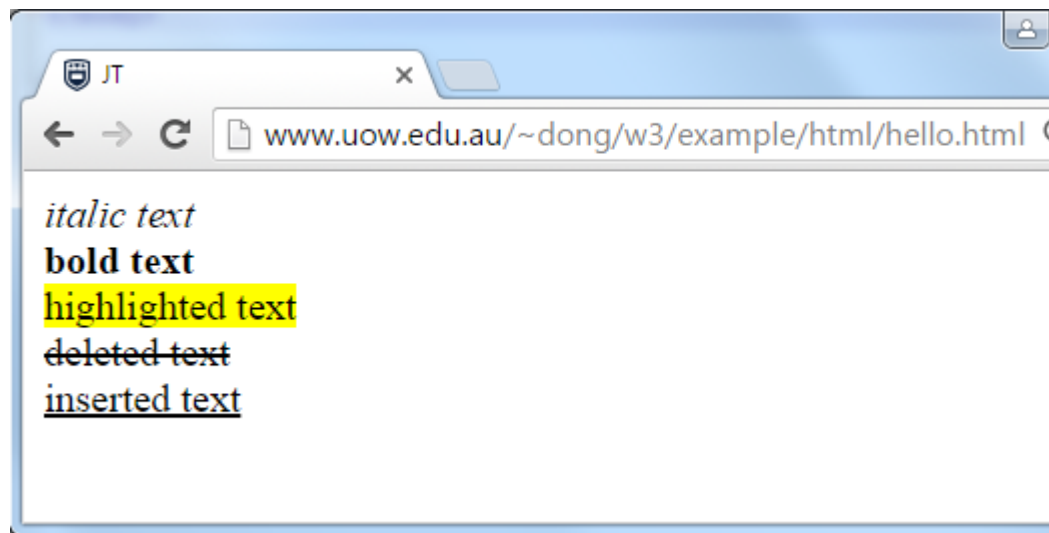
Formatting text

```
<body>

<h1>HTML <small>Small</small> Formatting</h1>

HTML <small>Small</small> Formatting



</body>
```

Formatting text

```
<body>

Some math

x<sub>1</sub><sup>n</sup> +
x<sub>2</sub><sup>n</sup> =
y<sub>1</sub><sup>n</sup> +
y<sub>2</sub><sup>n</sup>

</body>
```

www.uow.edu.au/~dong/w3/example/html/hello.html

Some math $x_1^n + x_2^n = y_1^n + y_2^n$
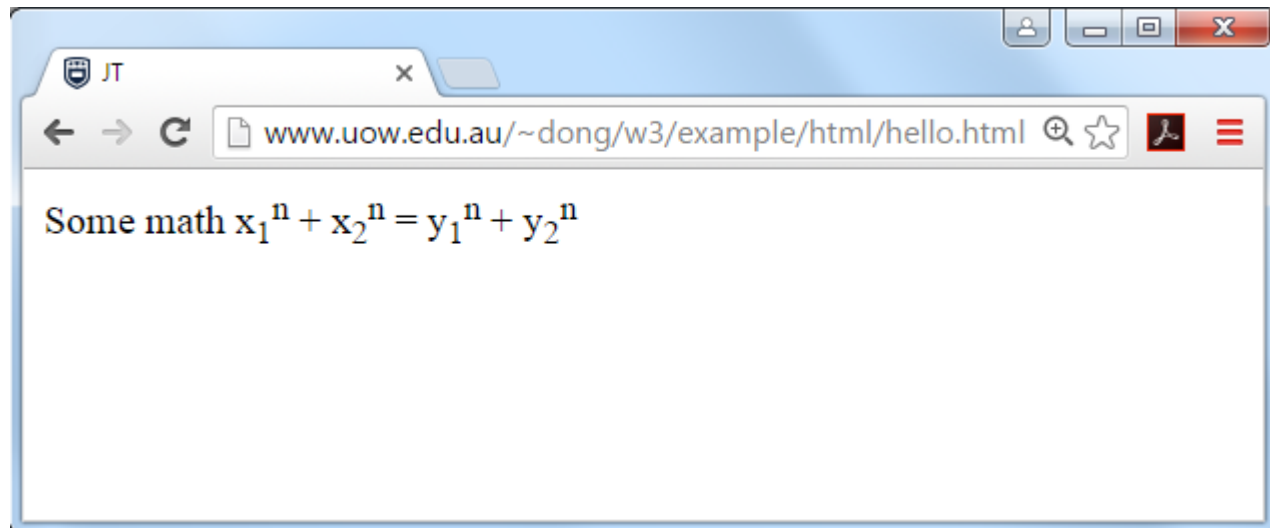
Preformatted text <pre>

```
<body>

<pre>

Mary

    had   a

       little

          lamb

</pre>

</body>
```

pre element is shown in monospace

it preserves the character and line spacing

```
Mary
   had   a
      little
         lamb
```

www.uow.edu.au/~dong/w3/example/html/hello.html
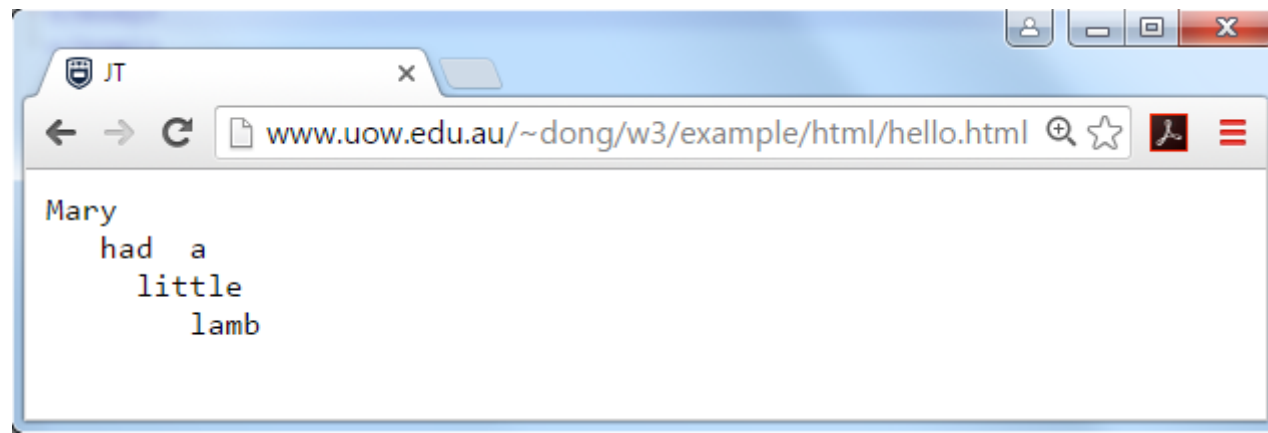
Computer code

```
<body>

<pre>

<code>

a = 0;

b = 3;

c = 2;

sum = a + b + c;

</code>

</pre>

</body>
```
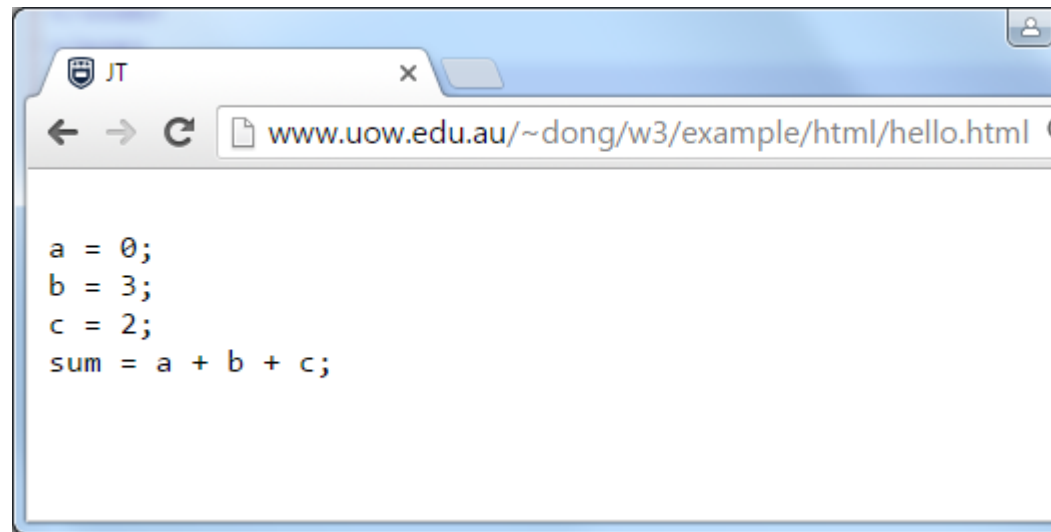

what would happen if we use <code> ... </code> without <pre> ?

Computer code

```
<body>
<pre>
<code>
#include &lt;iostream&gt;

void main( ) {
    cout &lt;&lt; &quot;Hello World!&quot; &lt;&lt; endl;
}
</code>
</pre>
</body>
```

```
#include <iostream>

void main( ) {
    cout << "Hello World!" << endl;
}
```

Image

```
<body>

<img src="uow-logo.png" height="300" width="200"

alt="logo of UOW" />

</body>
```

Attribute	Description

src	URL of an image, for example
	`src="uow-logo.png"`
	`src="images/uow-logo.png"`
	`src="http://www.mycom.au/staff.png"`

alt	alternate text for an image
height width	optional. Specifies height, width for image in pixels, or in percentage

Image alt

```
<body>

<img src="uow-logo.png" height="300" width="200"

alt="logo of UOW" />

</body>
```

- If a browser cannot find an image, it will display the `alt` text.

- Sometimes, to save bandwidth, user can disable image display, in this case, the `alt` text will be display.

- A screen reader is a software program that can read what is displayed on a screen which is very useful to people who are blind or visually impaired. Screen readers can read the `alt` text.

Image src

The URL of an image can be
- an **absolute** URL points to another website
- or a **relative** URL points to an image file within a website

Absolute URL

`src="`**`http://`**`www.mycom.au/staff.png"`

Relative URL

`src="uow-logo.png"` : the image file is in the same directory as the current html file

`src="`**`images/`**`uow-logo.png"` : the image file is in the subdirectory called **`images`** located at the same directory as the current html file

`src="`**`images/logo/`**`uow-logo.png"`

`src="`**`/../f1/`**`bird.png"`

Tag attributes

```
<body>

<img src="uow-logo.png" height="300" width="200"

alt="logo of UOW" />

</body>
```

HTML elements can have **attributes**

Attributes provide **additional information** about an element

Attributes are always specified in **the start tag**

Attributes come in name/value pairs like: **name="value"**

Example: img has the following attributes: src, height, width, alt

Link

```
<body>

<a href="http://www.uow.edu.au" target="_blank">Visit UOW</a>


<a href="contact.html">Contact us</a>


<a href="http://www.uow.edu.au" target="_blank">

<img src="uow-logo.png" alt="visit UOW"/></a>


</body>
```

Link

`<a **href**="http://www.uow.edu.au" **target**="_blank">Visit UOW</a>`

The **href** in this example is an **absolute** URL.

If user clicks on this link, `http://www.uow.edu.au` will be opened in a new tab

target	description
_blank	open the link in a new window or tab
_self	open the link in the same frame (this is default)

Link

`<a **href**="contact.html">Contact us</a>`

The **href** in this example is a **relative** URL.

It is similar to the `src` attribute of the `img` tag:

href`="contact.html"`

href`="assignment/a1.html"`

href`="../handout/note5.html"`

Link

```
<a href="http://www.uow.edu.au" target="_blank">

<img src="uow-logo.png" alt="visit UOW"/></a>
```

Within the link tag `<a href...> </a>`, we can put any text or image.

In the above example, it displays an image as a link to the address `http://www.uow.edu.au`

Link - target within document

Within the html document we can use the attribute **id** to mark a specific location

```
<a href="#Proofs">1 Proofs</a>
<a href="#See_also">2 See also</a>
<a href="#Notes">3 Notes</a>
<a href="#References">4 References</a>
<a href="#External_links">5 External links</a>

<h3 id="Proofs">Proofs</h3>
…

<h3 id="See_also">See also</h3>
…

<h3 id="Notes">Notes</h3>
…

<h3 id="References">References</h3>
…

<h3 id="External_links">External links</h3>
…
```

Euler's theorem

Contents
1 Proofs
2 See also
3 Notes
4 References
5 External links

Proofs

• • • •

See also

• • • •

Notes

• • • •

References

• • • •

External links

• • • •

Link - target within document

Within the html document we can use the attribute **id** to mark a specific location

```
<a href="#Proofs">1 Proofs</a>
<a href="#See_also">2 See also</a>
<a href="#Notes">3 Notes</a>
<a href="#References">4 References</a>
<a href="#External_links">5 External links</a>

<h3 id="Proofs">Proofs</h3>
…
```

The id value must be unique and must contain at least one character.
The id value must not contain any space characters.

Link - target within document

We can create a link to a specific location within a html page

For example:

```
<a href="https://en.wikipedia.org/wiki/Euler%27s_theorem#Proofs">
Proof of the Euler theorem</a>
```

Unordered List

```
My timetable:

<ul>

<li>MATH222: Mon 8:30-10:30 lecture</li>

<li>CSCI204: Tue 9:30-11:30 lab</li>

<li>ISIT206: Wed 8:30-10:30 lecture</li>

</ul>
```

My timetable:

- MATH222: Mon 8:30-10:30 lecture

- CSCI204: Tue 9:30-11:30 lab

- ISIT206: Wed 8:30-10:30 lecture

Ordered List

```
My timetable:

<ol>

<li>MATH222: Mon 8:30-10:30 lecture</li>

<li>CSCI204: Tue 9:30-11:30 lab</li>

<li>ISIT206: Wed 8:30-10:30 lecture</li>

</ol>
```

My timetable:

1. MATH222: Mon 8:30-10:30 lecture

2. CSCI204: Tue 9:30-11:30 lab

3. ISIT206: Wed 8:30-10:30 lecture

Definition List

My timetable:

```
<dl>

<dt>MATH222</dt>

<dd>Mon 8:30-10:30 lecture</dd>

<dt>CSCI204</dt>

<dd>Tue 9:30-11:30 lab</dd>

<dt>ISIT206</dt>

<dd>Wed 8:30-10:30 lecture</dd>

</dl>
```

My timetable:

MATH222
    Mon 8:30-10:30 lecture

CSCI204
    Tue 9:30-11:30 lab

ISIT206
    Wed 8:30-10:30 lecture

Table

```html
<table border="1">
  <tr>
    <th>Username</th>
    <th>First name</th>
    <th>Last name</th>
  </tr>
  <tr>
    <td>jsmith</td>
    <td>John</td>
    <td>Smith</td>
  </tr>
  <tr>
    <td>mlee</td>
    <td>Mary</td>
    <td>Lee</td>
  </tr>
</table>
```

Username	First name	Last name
jsmith	John	Smith
mlee	Mary	Lee

border="0"

Username	First name	Last name
jsmith	John	Smith
mlee	Mary	Lee

Table

```html
<table border="1" width="50%">
  <caption>User information</caption>
  <tr>
    <th width="20%">Username</th>
    <th width="40%">First name</th>
    <th width="40%">Last name</th>
  </tr>
  <tr>
    <td align="center">jsmith</td>
    <td align="right">John</td>
    <td align="right">Smith</td>
  </tr>
  <tr>
    <td align="center">mlee</td>
    <td align="right">Mary</td>
    <td align="right">Lee</td>
  </tr>
</table>
```

User information

Username	First name	Last name
jsmith	John	Smith
mlee	Mary	Lee

Table

```html
<table border="1" width="40%">
  <tr>
    <td colspan="2">STUDENT DETAILS</td>
  </tr>
  <tr>
    <td width="30%">STUDENT NAME</td>
      <td>John Lee</td>
  </tr>
  <tr>
    <td>STUDENT NUMBER</td>
      <td>1234567</td>
  </tr>
  <tr>
    <td>UOW EMAIL</td>
      <td>jlee@uowmail.edu.au</td>
  </tr>
</table>
```
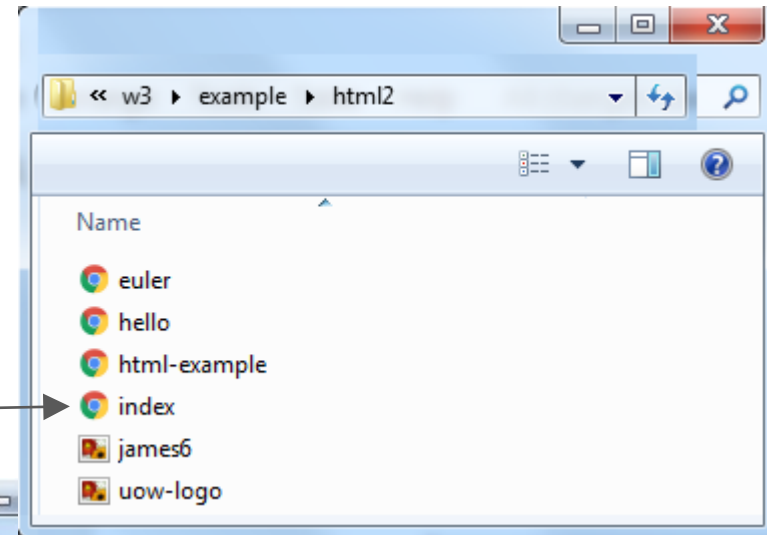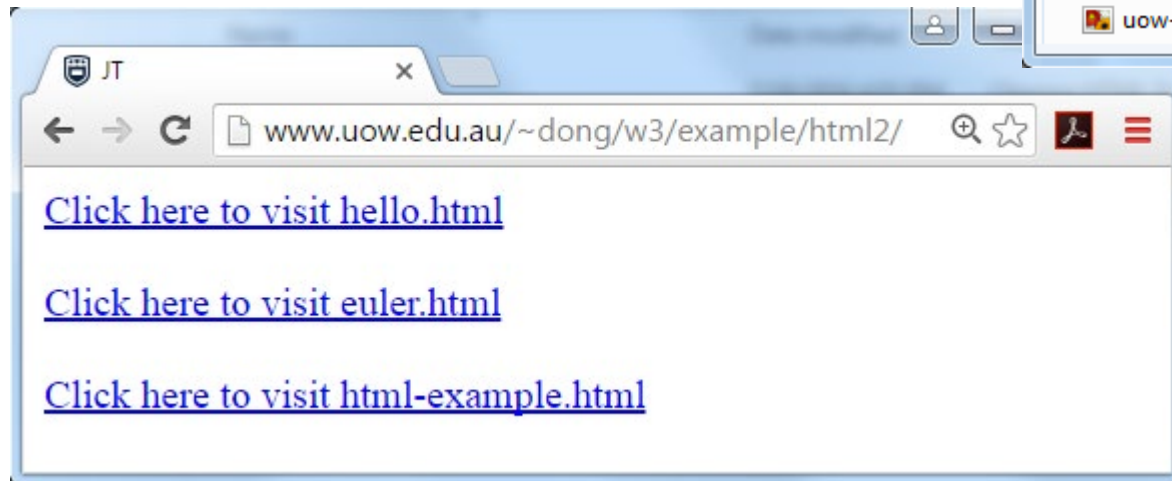
STUDENT DETAILS	
STUDENT NAME	John Lee
STUDENT NUMBER	1234567
UOW EMAIL	jlee@uowmail.edu.au

index.html

- is a default page for a directory

In this example, I have a file **index.html**
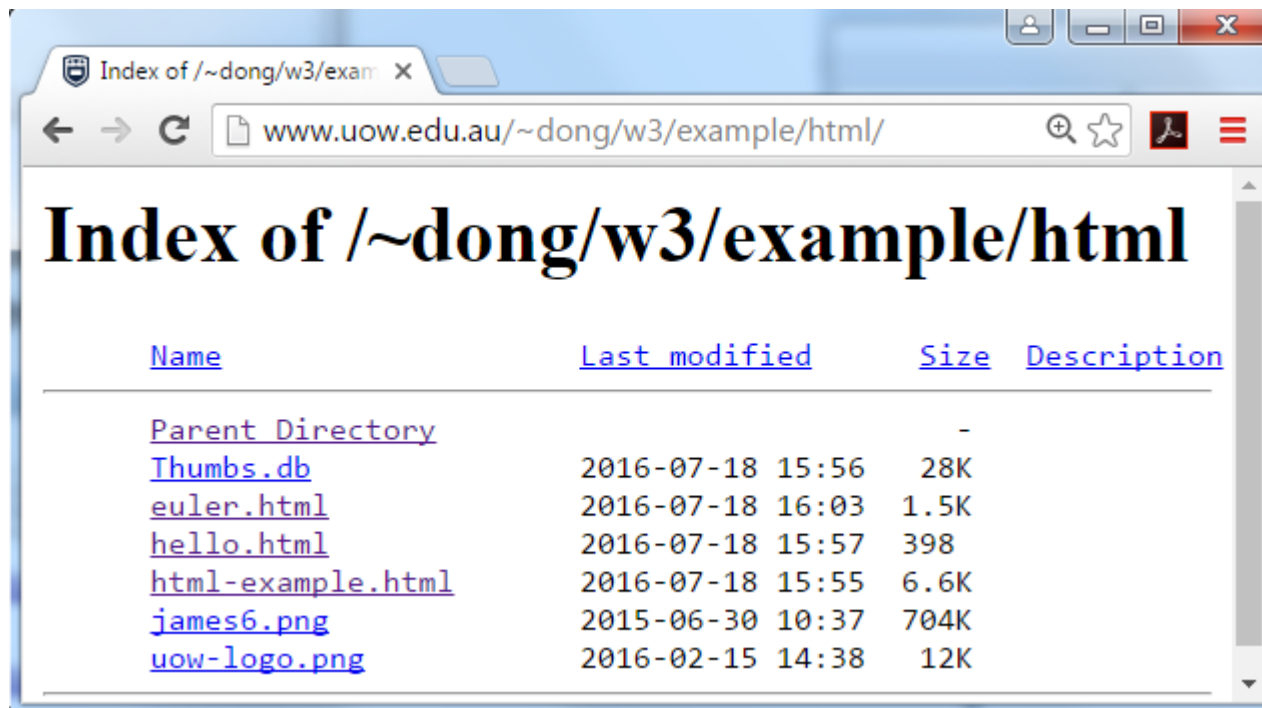in the directory **html2**


```
« w3 ▸ example ▸ html2
Name
  euler
  hello
  html-example
  index
  james6
  uow-logo
```



```
JT                        ×
← → C   www.uow.edu.au/~dong/w3/example/html2/

Click here to visit hello.html

Click here to visit euler.html

Click here to visit html-example.html
```

When we go to http://www.uow.edu.au/~dong/w3/example/html2

it automatically display the page
http://www.uow.edu.au/~dong/w3/example/html2/**index.html**

index.html

- For security reason, it is better to have index.html for every directory

- It stops people from knowing the content and structure of your website

I don't have index.html for the directory html, that is why everybody can see the content of my directory
http://www.uow.edu.au/~dong/w3/example/html

- Using a Default File Name Like index.html is a Security Feature as Well

- Most web servers start out with the directory structure visible when someone comes to a directory without a default file. This shows them information about the website that would otherwise be hidden, such as directories and other files in that folder. This can be helpful during a site's development, but once a site is live, allowing for directory viewing can be a security vulnerability that you will want to avoid.

- If you don't put in an index.html file in a directory, by default most web servers will display a file listing of all the files in that directory. While this can be disabled at the server level, it means that you need to involve the server admin in order to make it work. If you are pressed for time and want to control this on your own, an easy workaround is to simply write a default web page and name it index.html. Uploading that file to your directory will help close that potential security hole. Additionally, it is also a good idea to also contact your hosting provider and ask for directory viewing to be disabled.

Comments

```
<body>

<!-- this is

a long comment

it will not be displayed on the web page

-->


</body>
```

References

http://www.w3schools.com/html

http://developer.mozilla.org/en-US/docs/Web/HTML