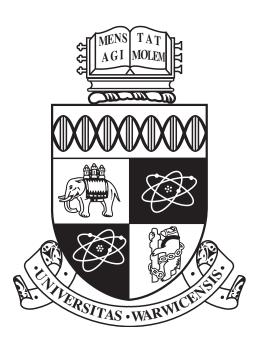University of Warwick
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CS139

Web Development Technologies

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1 HTML

1.1 Syntax

HTML stands for HyperText Markup Language and is semantic. This means that it describes the structure of the document and not the content. It is intended to modify the appearance of HTML elements and can be in fact frustrating to use for page layouts.

A lot of HTML is done with the $<>$ brackets. For example,

```
<h1>Welcome to CS139</h1>
```

Listing 1: Heading

This would set the header tag to the text "Welcome to CS139". For this module, we will be using JSFiddle, that is available online.

1.1.1 Doctypes

Every HTML documents should have a doctype definition on top. In particular, HTML5 uses

```
<!DOCTYPE html>
```

Listing 2: DOCTYPE

It helps the browser to know what to expect.

1.1.2 Example HTML5 Document

```
<!DOCTYPE html>
<html>

  <head>
    <meta charset="UTF-8">
    <title>Title for Hello World </title> // Title that is seen at the top of the browser
  </head>
  <body>
    <h1>Hello world</h1> // Biggest header for the website
  </body>
</html>
```

Listing 3: Example Document

1.1.3 Head tag

This tag is used by the browser, web-crawlers and bots. IT includes meta-tags required by these applications and includes location of supporting documents e.g. JavaScript and CSS.

1.1.4 Text-encoding

Familiar with ASCII, but that is only 128 characters. In particular, UTF-8 has 107000 characters and is denoted with

```
<meta>
```

Listing 4: Text-encoding

1.1.5 Body tag

This is the tag where main information goes into that the user gets to read. Its syntax is

```
15  <body>
16  </body>
```

Listing 5: Body

1.1.6 Syntax

```
17  <a href="google.com">Google search</a>
```

Listing 6: Syntax

In the code above, a is the element name. The hyperlink in href is called the *Attribute*. The content is the *Google search* text. However, there are also empty tags e.g.

```
18  <meta charset="utf-8">
```

Listing 7: Empty Tag

1.1.7 Nesting Definitions

Definition 1.1. Child and parent

A syntax is a child if and only if there exists a tag that is at a lower level than the upper tag.

```
19  <body>
20    <p>
21    This is some text
22    </p>
23  </body>
```

Listing 8: Parent Child

In particular, $< body >$ is the parent of $< p >$ and $< p >$ is the child of $< body >$.

Definition 1.2. Sibling

Sibling is when the tag is on the same level. For example,

```
24  <body>
25    <p>
26    This is some text
27    </p>
28    <p>
29    Another text
30    </p>
31  </body>
```

Listing 9: Sibling

In here, the p are siblings.

Similarly, the term descendants would be group of tags of in comparison to a tag that is a parent of all.

1.1.8 Lists

There are 3 types of lists:

- Ordered lists denoted with $< ol >$ and then listed items with $< li >$

- Unordered lists denoted with $< ul >$ and then listed items with $< li >$

- Description list would list terms and then list descriptions. In particular, the tags that are used are $< dl >$, $< dt >$ and $< dd >$ which are list, item and description respectively.You can also created nested list if you simply begin another list inside a list.

For example

```
32  <ul>
33    <li> shopping </li>
34    <ol>
35      <li> eggs </li>
36      <li> bread </li>
37    </ol>
38    <li> cooking </li>
39  </ul>
```

Listing 10: Lists

1.1.9 Hyperlinks

Hyperlinks are listing websites to a specific piece of text. For example

```
40  <a href="www.google.com"> This is google hyperlink </a>
```

Listing 11: Hyperlink

You can also hyperlink inside the website using ids. For example,

```
41  <body>
42  <h1> Links </h1>
43  <p id = "#top">
44    This is some paragraph text
45  </p>
46  <a href="#top"> Go to top </a>
```

Listing 12: IDs

1.1.10 Images

You can also include images with a singular tag that use the src and alt attributes. For example,

```
47  <img src="http://warwick.ac.uk/logo.gif" alt="Warwick Logo" title="Warwick Logo" width=200
       height=60 />
```

Listing 13: Image embed

1.1.11 Character entities

```
48    //Nonbreakable space
49  &lt; //<
50  &gt; //>
51  &copy; //Copyright symbol
52  &trade; //Trademark symbol
```

Listing 14: Character entities

1.1.12 Break Line

You can get a new line or break a line using the tag

```
53    <br>
```

Listing 15: Break

1.2 Semantic Mark-up

Some semantics include but are not limited to

```
54    <abbr>
55    <cite>
56    <time>
57    <span>
58    <div>
```

Listing 16: Semantics

That is, these do not change the looks but are important regardless.

1.3 Validation

You can make sure that your HTML is valid using a validation tool provided by W3C. The website is http://validator.w3.org