

Design and Create HTML5 Documents

Part 1 - Introduction

Four Layers of Web Development.

Thinking in terms of layers when designing a web site allows you to keep the content separate from the structure. In turn, the structure is kept separate from the presentation and the presentation is kept separate from the behaviour of the pages and the web site. All of these layers can be kept in separate files with distinct file types and locations.

Data Layer

The Data Layer is the most important part of your site. The data layer is the raw data you are presenting on a page. This raw data could be pictures, text, video clips, sound and so on.

The Data Layer is not the HTML (**H**yper **T**ext **M**arkup **L**anguage) page. However, the data is given a structure using HTML.

Structural Layer.

The Structural Layer, or content, is the HTML (**H**yper **T**ext **M**arkup **L**anguage) page. It is here that HTML5 comes into play and in particular HTML5. The job of HTML5 is to take the data it receives from the data layer and add structure to the data. This structure is created with the use of specific elements. I will explain the structure elements later.

Design Layer

In this layer you define the looks or presentation of the data. HTML is too limited for the use of the design. A well developed and layed out Structural Layer is essential for a good presentation of the data. We will be using CSS (**C**ascading **S**tyle **S**heets) for the design.

Behavioural Layer

In a way the Behavioural Layer or interaction is not as important as the other layers. A well designed interactive or Behavioural Layer can be a powerful addition to the presentation of your data. However, if poorly done it will distract from the user from the intention of the data.



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Client (browser) based language JavaScript is to add the Behaviour Layer. Access of your data should not be dependent on the programs written in JavaScript.

Before Designing the Data Layer

If you look at the diagram on the next page you will see I included two major boxes and processes you have to consider before starting on your design.

These are:

- Task / Job
- Stakeholders

Task / Job

You have to make sure you really understand the job at hand. Consider issue like:

- Purpose of the site
- Size of the site
- Location and demographics of the site
- Maintenance requirements
- Hosting requirements
- Bandwidth

There might be many other issues to consider but they will be determined by the type of job at hand.

Stakeholders

The owner of the site is not the only stakeholder and might be at times one with little experience of web design.

From the owner's and your point of view the potential visitors are your most important stakeholders. The success of the site greatly depends on understanding the needs of the stakeholders.

For example:

- For local use only such as doctor's appointments
- Local mechanic – what information does the visitor need
- Community centre
- Site for gamers

The nature of the stakeholders will determine issues what the data



for the site has to be. It will also determine design features such as colours and types of fonts.

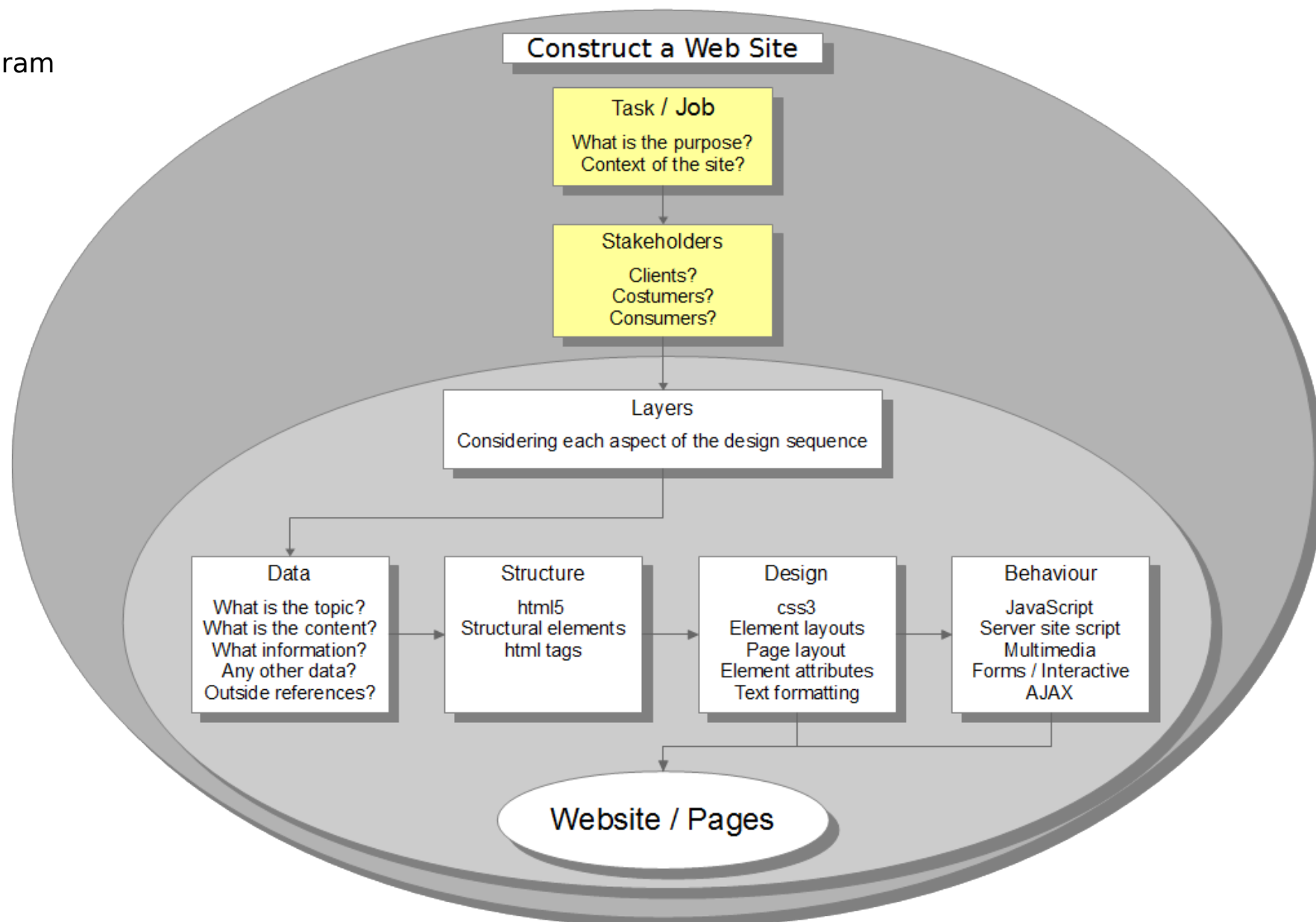
Behavioural features are also determined such as shopping baskets, contact options, contact management and interactive forums.

The list is not exhaustive and you as a designer have to make sure you fully understand all these issues and stakeholders.



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Diagram



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Part 2 - Data Layer

Data Layer

Refer to the diagram on the last page for the Design Flow for a Web Site. The yellow boxes are the concepts dealt with in this Part 2.

Designing the Data Layer is the first part of your page design. It is important not to confuse this part with the layout or interactivity of your web pages.

For example if you are designing a professional personal page you should make a list of all the information you want on that page.

The distinction between the Data Layer and the Structural Layer might be difficult and hard to separate at times. However, as you start designing your first page it is useful to only consider the content, information or data that you would like to be in your first page.

Purpose and Content

Assume we are to design the first page for an IT Consultant Firm. They specialise in networking design, installation and maintenance.

At this point in time worrying about the structure or layout is a waste of your efforts. As designers we have to have a clear idea of the purpose of the Home Page.

Stakeholders

Who are the stakeholders? Of course your client who contracted you to design their Web Site is one of your stakeholders. However, the owner of the Web Site wants the site to enhance their business.

As an ethical web designer you have an obligation to make sure you design a site that will attract the core customers of the business. You also have to make sure that you really understand the type and needs of all the stakeholders.

Customers' requirements might be:

- Easy access to contact information.
- Simple menu - not too many mouse clicks.
- Easy to read instructions.
- Services offered.



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The above list is not exclusive and will be different according to your stakeholders for whom you have to design the website.

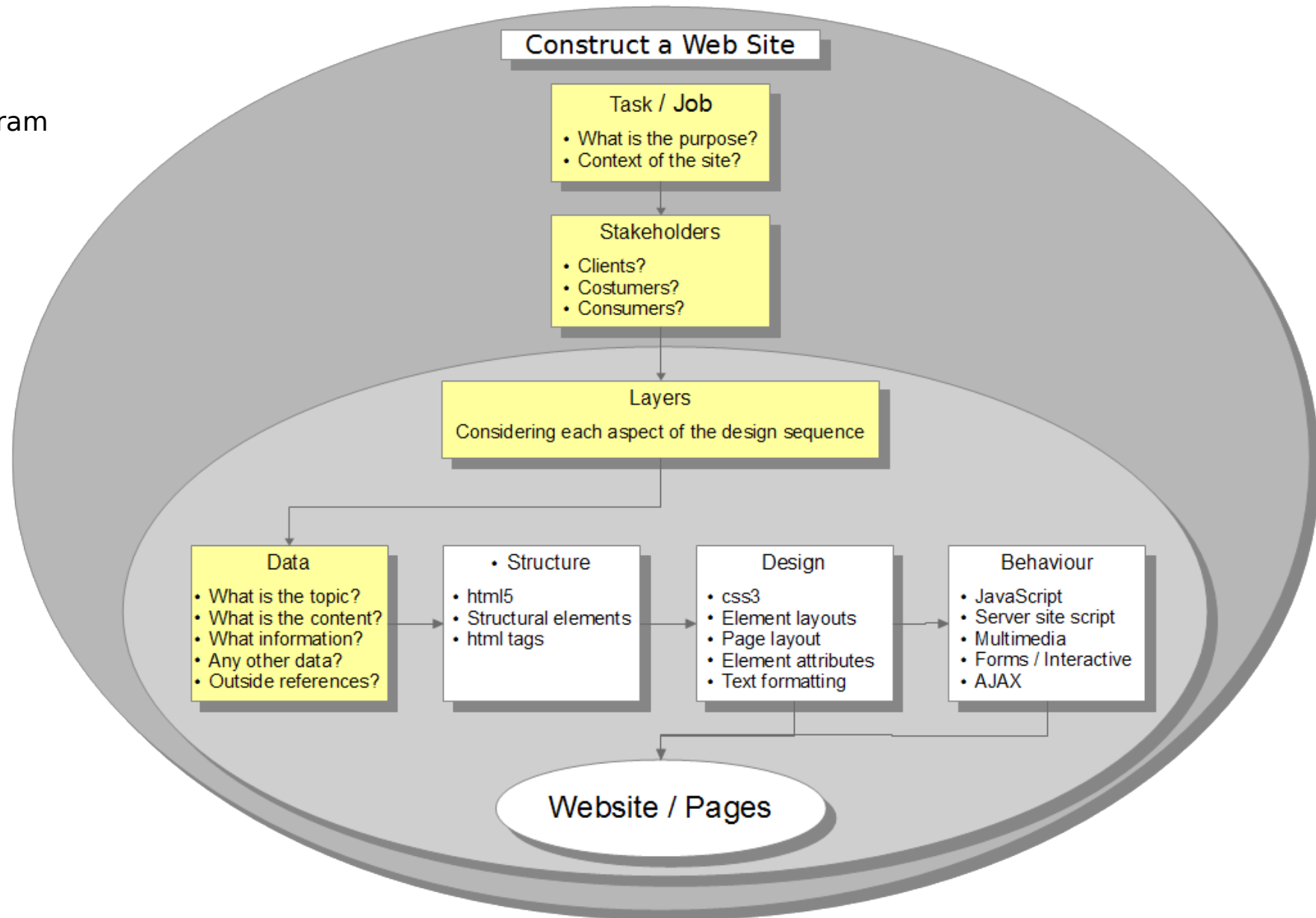
Make sure your content for the Data Layer is very detailed and reflects as much as possible the final content for the web pages.

I will deal with the Structural Layer in Part 3.



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Diagram



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Part 3 – Structural Layer

Components of an HTML5 page

We have to consider at least three components or parts to a page. The html code is a set of instructions using elements. Each element has an opening and a closing tag. The text in between opening and closing tags gives the document an overall structure.

Global Structure

```
<!doctype html>
<html lang="en-au" dir="ltr">
<head>
  <title> "Title of the Page here" </title>
  <meta charset="utf-8">
  <meta name="description" content="This is your first page">
  <meta name="keywords" content="html5, css3, javascript">
  <meta name="author" content="Dirk Koudstaal">
</head>
<body>

</body>
</html>
```

Browsers can open many different types of files. The first line of your document identifies to the browser that your file has to be rendered as a html file and in this case a html5 file.

The next element is the `<html>` `</html>` opening and closing tags. Further instructions can be given with the use of attributes defined in the opening tag of the element. In our case we define a language attribute and the direction of the sentences

```
<html lang="en-au" dir="ltr">.
```

More information can be given to the browser inside the

`<head>` `</head>` tags.

The `<meta>` tags in the above document define the character set for the browser to use. The next two `<meta>` tags give more information about the document and can be used by search engines.

Also note that the `<meta>` tag does not have a closing tag in html5.

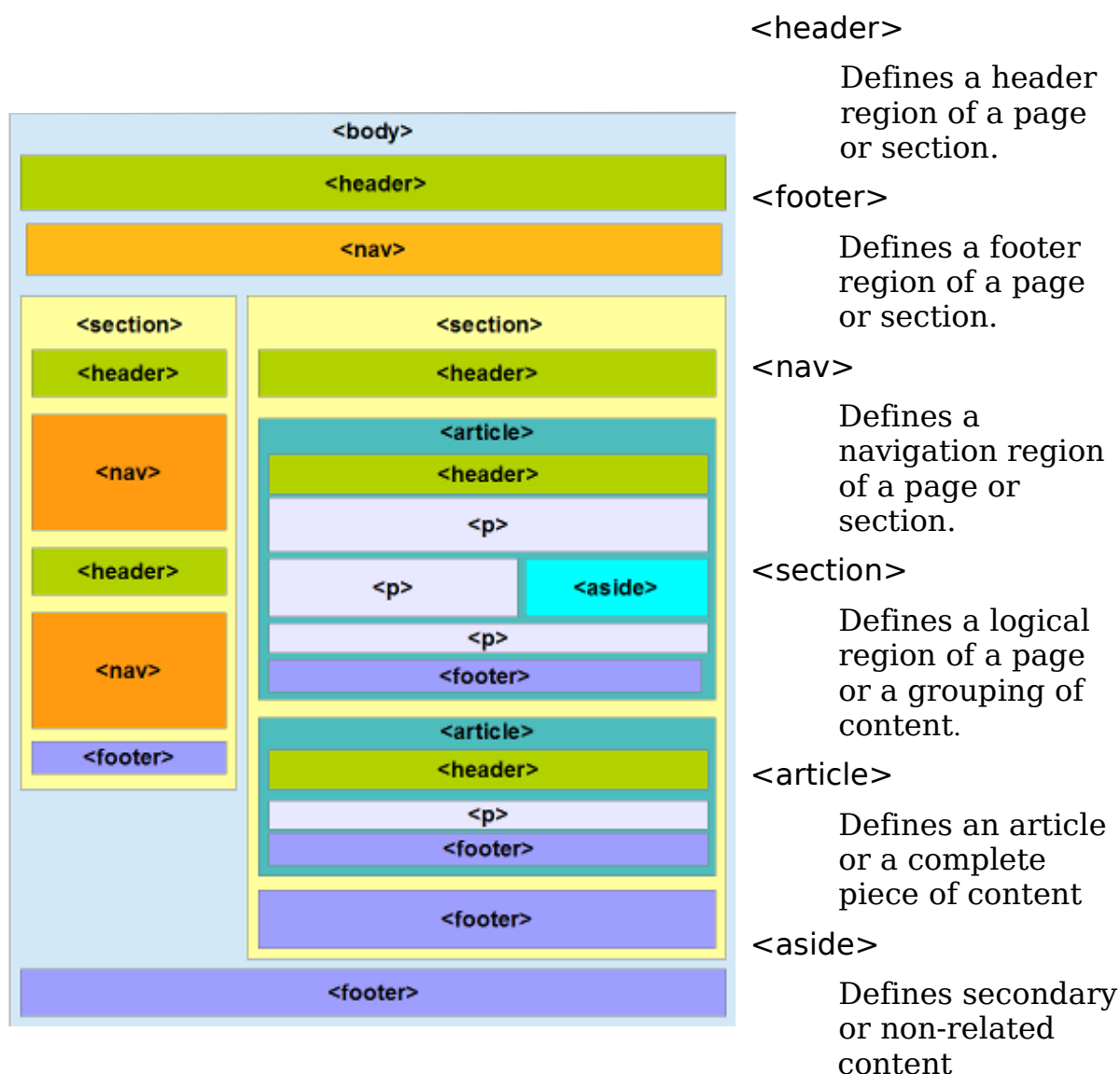
All the information in the `<head>` `</head>` tags cannot be seen by the user.



Body Structure

The structure between the `<body>` `</body>` tags is the visible part of your html5 document.

You now have to give your data or information an overall outline structure with the following new elements in html5:



It is important to realise that you can use footers and headers in the article blocks as well as in the section blocks. Actually this feature applies to most semantic elements.

Deep Inside the Body Structure

More new structural elements in html5 are:

`<figure>` and `<figcaption>`

Defines information such as illustrations, pictures, videos, etc. `<figcaption>` the caption of the the `<figure>` element

`<details>` and `<summary>`

Used to display additional information when requested by the user. The `<details>` elements declares the tool and inside this the `<summary>` element declares the title of the tool

`<hgroup>`

Only used to group `<h>` tags for example `<h1>` and `<h2>` title and subtitle

At this point in time you should only work with the `<figure>` and `<figcaption>` tags.

The tags `<details>` `<summary>` and `<hgroup>` are for advance use only.

More Elements

This course is a basic introduction to html5. The tags listed below might be useful but are for advanced use:

`<mark>`

`<small>`

`<cite>`

`<address>`

`<wbr>`

`<time>`

`<data>`

For those of you who want to become a web designer you should have a look at the descriptions and functions of the above tags.

There are also some multimedia tags but they belong more in the design or behaviour layer.

Older Browsers

Most browser will support these new structural tags. Internet Explorer version of 8 and less will not support these tags. You have to use JavaScript to define these tags in IE (see below).



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```
<!doctype html>
<html lang = "en-au" dir = "ltr">
<head>
  <meta charset = "utf-8">
  <title> "Title of the Page here" </title>
  <script src = "../external.js">
  <!--[if lt IE 9]>
  <script type = "text/javascript">
    document.createElement("nav");
    document.createElement("header");
    document.createElement("footer");
    document.createElement("section");
    document.createElement("aside");
    document.createElement("article");
  </script>
  <![endif]-->
</head>
<body>

</body>
</html>
```

Layers

If you now look at the diagram on the next page you will notice that we have progressed to the Structural Layer.

You now should be able to give your Data Layer a structure using the structural elements described in this document.

We also call these elements semantic elements. Semantics is about the meaning and the relation of different parts. The use of semantic tags gives a document and its various part meaning and structure.

Part 4 will deal with the Design Layer.



Diagram

