CHAPTER 1

HTML BASICS

INFOCUS

HTML is an acronym for ***Hypertext Markup Language***. It is a special language used to create documents for display on the World Wide Web. It uses a series of tags surrounding text to indicate what should be displayed on the page and how it should be displayed.

An HTML document can be created in a simple text editor such as Notepad. This text document is given the file extension ***.htm*** or ***.html*** so that your computer recognises the file as being a page suitable for displaying in an internet browser such as ***Microsoft Edge***.

In this session you will:

- ✓ understand the difference between the internet and the ***World Wide Web***
- ✓ understand the evolution of the ***HTML*** standard
- ✓ gain an understanding of basic ***HTML*** concepts
- ✓ learn how to start ***Notepad*** in ***Windows***
- ✓ learn how to create a simple ***HTML*** document
- ✓ learn how to view an ***HTML*** document
- ✓ learn how to edit an ***HTML*** document
- ✓ add a doctype declaration to an existing ***HTML*** document.

THE INTERNET AND THE WORLD WIDE WEB

Although often used interchangeably, the internet and the World Wide Web are not the same thing. The internet refers to the collection of interconnected computers across the world that supports online activity. The World Wide Web refers to the collection of web pages that display information and online applications on the internet. The World Wide Web is one part of the internet.

The Internet

The internet consists of many millions of computers around the world that are linked to each other via a network of telephone lines, cables and satellite connections. In order for computers to communicate with each other, everything must be structured and it must be explicitly defined how information is to be exchanged and what format it will be in. In order to do this a number of standard methods have been established by international agreement and these are known as ***protocols***. The internet uses a variety of protocols to exchange information between computers, some of which are listed below:

- HTTP (Hypertext Transfer Protocol) is used to transfer web pages
- SMTP (Simple Mail Transfer Protocol) is used to transfer emails
- FTP (File Transfer Protocol) is used to transfer files between a server and a client computer
- BitTorrent is a peer-to-peer protocol for transferring files without needing a central server

The World Wide Web

The World Wide Web (or the web as it is more commonly known) is the collection of web pages and applications that you can access on the internet. The web uses Hypertext Transfer Protocol to communicate (this is what the http in front of a web address such as http://www.google.com represents). Below are some examples of the World Wide Web:

- Web pages and blogs
- Discussion boards and online forums
- Social networking sites like Facebook and Twitter

HTML And The Web

Documents on the web are written in ***HTML***, which is an abbreviation of ***Hypertext Markup Language***. ***Hypertext*** is the method by which you can navigate around the web by clicking on links to display different pages. HTML is a ***markup language*** as it uses ***tags*** to describe how a document should be displayed on the web. Tags are simply keywords within a webpage (that do not display in a browser) that describe how relevant elements of the webpage (such as text or images) are displayed. Once you have used HTML to create and publish a web page it can be viewed by anyone connected to the internet.

A BRIEF HISTORY OF HTML

HTML was first created in 1989 by Sir Tim Berners-Lee as a way of allowing researchers across the world to easily share information through a system of cross-referencing known as hypertext. As the idea caught on, HTML was further developed and expanded to meet the increasing needs of users across the world, as well as increasingly powerful (and complicated) websites.

1989 Tim Berners-Lee invents the World Wide Web and HTML in order to facilitate the exchange of academic information. Based on the existing SGML standard, HTML allowed users to mark-up text based on structural elements, such as paragraphs and headings

1991 Open discussion of HTML takes place in online mailing lists

1993 The Lynx and Mosaic browsers are introduced

1994 The W3C – an international consortium dedicated to developing web standards – is formed

The Netscape Navigator browser is released

The specification for HTML 2.0 is released: as browsers start to develop their own tags for the HTML language, it is agreed that a standard specification for the language is required. HTML 2.0 is developed and approved by the wider internet community

1995 Throughout 1995 there is controversy over the introduction of new HTML tags that allow users to control formatting and design elements, such as colours and fonts. In addition, there is disagreement over how tables should be implemented in HTML. Later this year, style sheets (known as Cascading Style Sheets or CSS) will be proposed as a method for controlling the formatting of an HTML document

Microsoft's Internet Explorer browser is released

1996 Netscape submit their JavaScript web programming language to ECMA International for consideration as an industry standard and it is accepted in this year. From a somewhat frowned upon language in its early days, JavaScript has come to power most of the web today

1997 The HTML 3.2 specification is declared the official standard in January

The HTML 4.0 specification is declared the official standard in December

1998 CSS 2 is released as the W3C recommendation with more support for positioning elements

1999 HTML 4.01 is declared the official standard

2001 The Apple Safari browser is released

2004 The Firefox browser is released

2007 The Apple iPhone is released, bundled with a mobile version of the Safari browser that will introduce millions of people to the mobile web

2008 The HTML 5.0 specification is introduced as a working draft

Google's Chrome Browser is released

2011 CSS 2.1 becomes the W3C recommendation

2012 CSS 3.0 becomes the W3C recommendation

2014 HTML5 becomes the W3C recommendation

2015 Windows 10 is released with Microsoft Edge as its default browser, replacing Internet Explorer

2017 HTML5.2 becomes the W3C recommendation

BASIC HTML CONCEPTS

HTML consists of a defined set of ***tags*** used to mark-up text so that a page can be interpreted by a web browser. Being a language, HTML has a set of rules which must be followed to achieve the results you want. This page examines the different types of tags in HTML and how they are used along with ***attributes*** and ***values*** to create web pages.

Tags

Tags, also known as ***elements***, come in two basic types and are always enclosed by angled brackets. The first type, called a ***container tag***, involves an opening tag and a closing tag. For example:

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

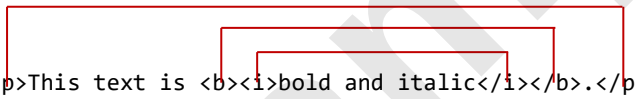
The tag ** ** is used to indicate the start of a paragraph, and ** ** the end of the paragraph. The text ***This is a paragraph*** is the text that will be displayed on the web page. The second type of tag or element does not use a separate closing tag and is known as an ***empty*** tag. Empty tags are opened and closed within one set of brackets. For example:

```
<p>This is a paragraph.<br />
And this is the second line of the paragraph.</p>
```

In this case the tag **
** indicates a line break. It does not require a separate closing tag because the beginning and end happen in the same position. Another example is **<img />** which is used to place images on an HTML page.

Placement Order of Tags

HTML documents are structured documents, which means that the order in which container tags are placed is very important. HTML follows the first in, last out principle – in other words, the first tag to be used should be the last tag to be closed. For example:



```
<p>This text is <b><i>bold and italic</i></b>.</p>
```

In this example, the first container tag used is ** ** for paragraph, then **** for bold, and **** for italics. It is essential that you then close the tags in the reverse order to which you applied them – italics first , then bold , then paragraph . If you cross tags over, you are likely to end up with strange and unpredictable results. If you are used to programming terminology, you can think of this as nesting a set of tags within another set. You cannot work on the next tag until you close the innermost set of tags.

Attributes and Values

Tags have ***attributes,*** or features, that can be set. For example:

```
<p id="overview">This paragraph provides a brief overview of the page.</p>
```

In this example, the attribute is id and the attribute value is overview. Attribute values must be contained in single or double quotes.

Some attributes apply only to certain types of tags, while others – known as ***global attributes*** – apply to all elements. Some of these global attributes are the ***id*** attribute, which gives a tag a unique identifier, the ***class*** attribute which groups a tag with other tags of the same class, and the ***style*** attribute which you can use to change the appearance of a tag's contents.

Case Sensitivity

Tags and attributes in HTML may be written in lower or upper case, although it's considered good practice to keep them lowercase. There are a few exceptions to this guideline which you may see throughout this course.

STARTING NOTEPAD IN WINDOWS 10

You can use any text editor to create and edit an HTML document, from the simple programs that come with your PC to complicated (and often expensive) programs built specifically for web programming. ***Notepad*** comes installed with Windows and is perfect for learning. The following instructions show how to open Notepad in Windows 10 but the process is similar in other versions.

Try This Yourself:

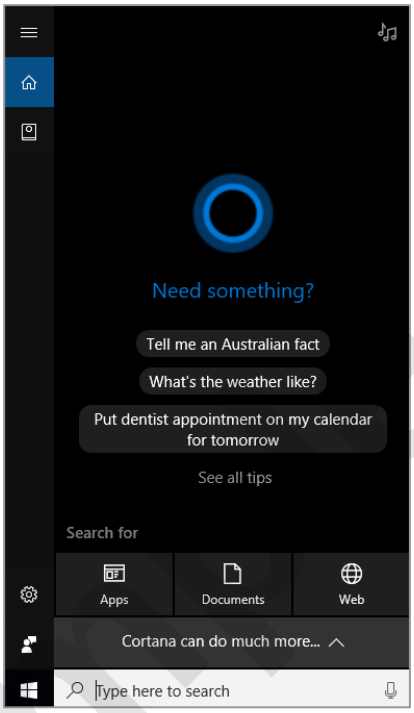
Open File

Before starting this exercise you MUST ensure the computer is switched on and the Windows desktop is displayed…

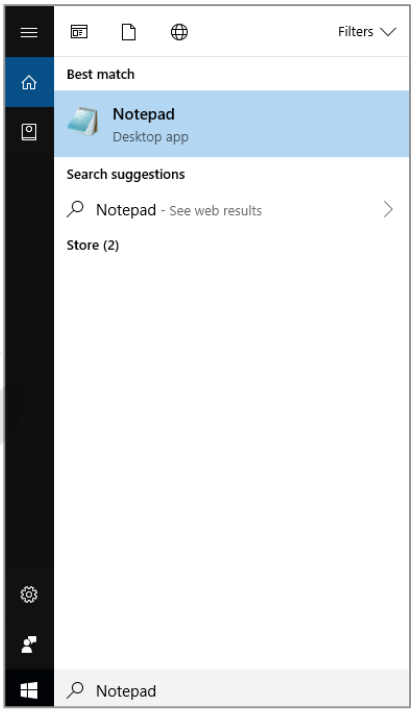
1. If there is no ***Notepad*** icon in the taskbar at the bottom of the screen, click in ***Type here to search***
2. Type ***Notepad*** to display the search results
3. Click on ***Notepad*** to open ***Notepad***

   Notice the Notepad icon appears in the taskbar when Notepad is open…
4. Right-click on the ***Notepad*** icon in the taskbar to display a menu of options, as shown, then select **Pin to taskbar**

   This allows you to open Notepad from the desktop by clicking on the icon on the taskbar…
5. In the ***Notepad*** window, click on ***File*** > ***Exit*** to close the program
6. Click on the ***Notepad*** icon in the taskbar to open ***Notepad*** again

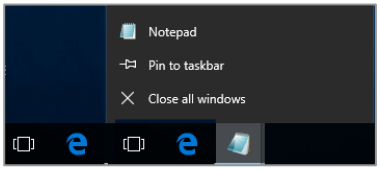


1



2

3



4

For Your Reference…

To ***add*** a ***Notepad icon*** to the ***taskbar***:

1. Click on ***Type here to search*** in the taskbar then type ***Notepad***
2. Click on ***Notepad***
2. Right-click on the ***Notepad*** icon in the taskbar, then select **Pin to taskbar**

Handy to Know…

- Pressing ⊞ will display the ***Start*** menu.

CREATING A SIMPLE HTML DOCUMENT

The simplest HTML document generally makes use of four tags. The ***<html>*** and ***</html>*** tags indicate the beginning and end of an HTML document. The ***<head>*** tag contains information about the document. The ***<title>*** tag contains the name or title of the document, used by browsers and indexing software, and the ***<body>*** tag contains the body of the document.

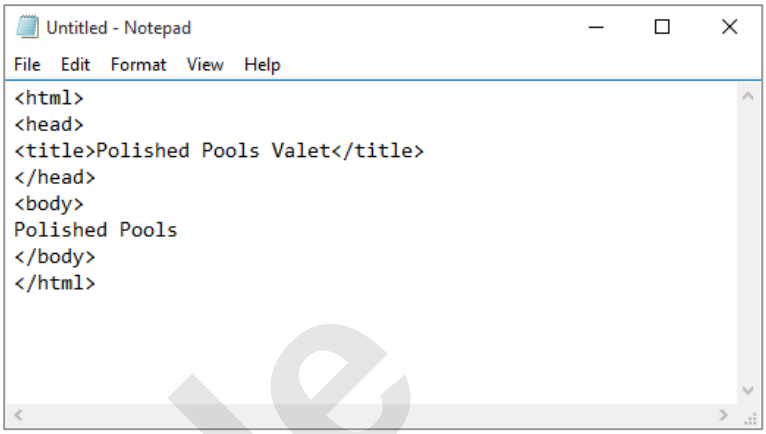
Try This Yourself:

Before starting this exercise ensure that Notepad has started...

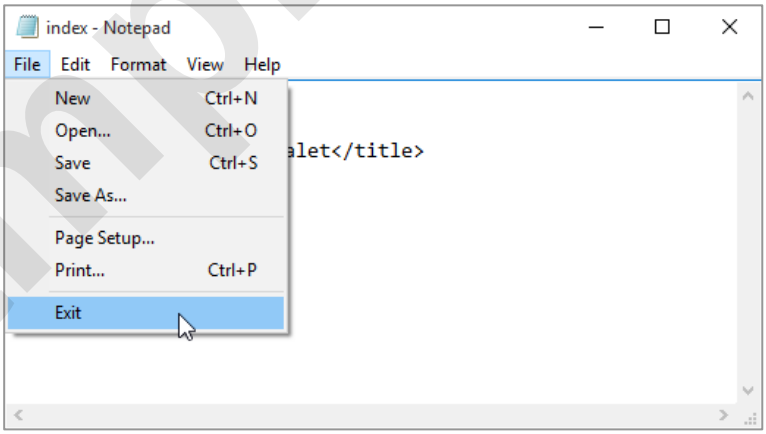
1. Type the text in the ***Notepad*** window exactly as shown, pressing Enter at the end of each line
2. Select **File** > ***Save*** to display the ***Save As*** dialog box
3. Ensure that the folder is set to the course files folder
4. Type **Index.html** in ***File name***
5. Click on **[Save]**

   The name of the document will appear in the title bar of the Notepad window…
6. Select ***File*** > ***Exit*** to close ***Notepad***

1



6



For Your Reference…

To ***create*** a ***simple HTML document***:

1. Type text in the ***Notepad*** window
2. Select **File** > **Save**
3. Type a name in ***File name***
4. Click on **[Save]**

Handy to Know…

- The name ***index.html*** or ***default.html*** is used to indicate the default or home page of a web site. You should only have one of index.html or default.html file within any folder on your website.

VIEWING A HTML DOCUMENT IN A BROWSER

HTML documents can be viewed in two ways. The first way is to view the ***source code***, which is the HTML code used to create the document. This can be examined using a ***text editor*** such as Notepad. The second way is to open a ***browser*** such as ***Microsoft Edge*** or ***Google Chrome*** which will show you how the document will appear when you open it as a web page.

Try This Yourself:

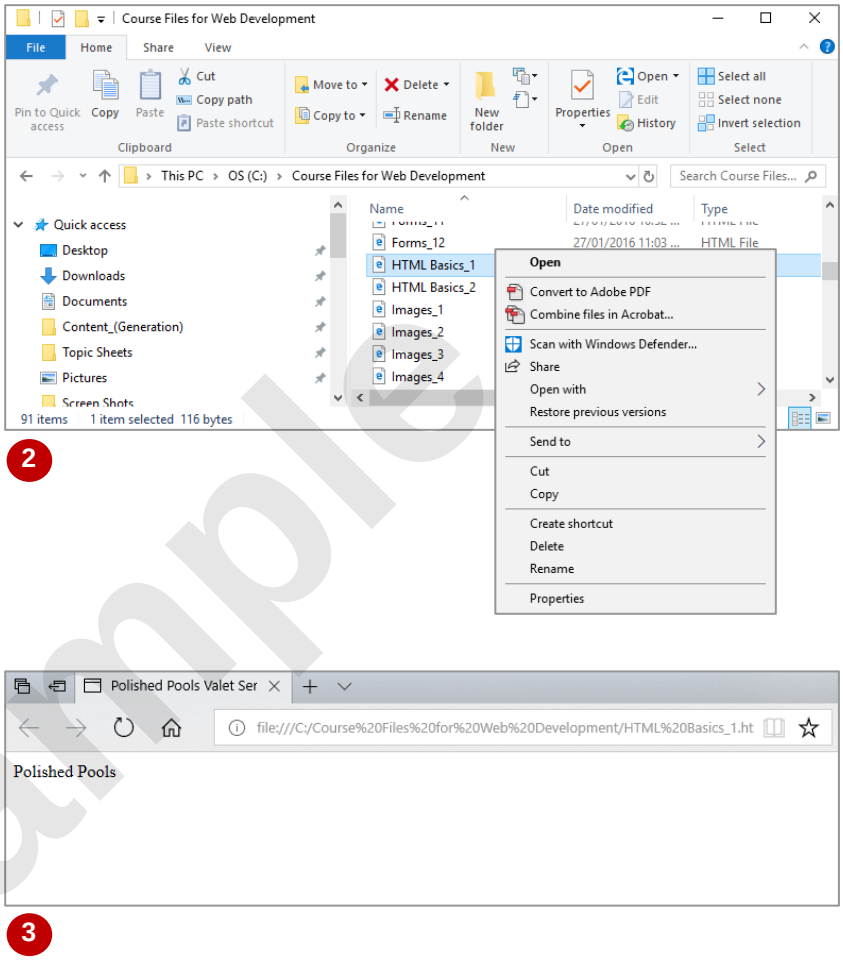
Same File

Before starting this exercise ensure that you have an active internet connection and File Explorer is open...

1. Navigate to the course files folder in ***File Explorer***
2. Scroll to and right-click on ***HTML Basics_1.html*** to display a menu of options
3. Point to ***Open With*** and select a browser

   We have chosen Microsoft Edge.

   The document will be displayed, showing the title in the title bar, and the body text on the page…
4. Close the browser window



For Your Reference…

To ***open*** an ***HTML file*** in a ***browser window***:

1. Open ***File Explorer***
2. Right-click on the required file
3. Point to ***Open With*** and select a browser option

Handy to Know…

- You can also open an HTML file in a browser by double-clicking on the filename in the file list in ***File Explorer***. Your computer will automatically launch the default browser assuming that you want to view the file rather than edit it.

EDITING A HTML DOCUMENT

If you want to modify the HTML code in an HTML document, you must open the file in a text editor such as ***Notepad*** and make the required changes. In this example, we will add a line break and some additional text to the body of the document. The tag **
** is used to create a line break. You must save the file and then refresh the browser window to see the effect of the changes.

Try This Yourself:

Same File

Before starting this exercise you must ensure that Notepad has started ...

1. In Notepad, select **File** > **Open** to display the ***Open*** dialog box
2. Ensure that the folder is set to the course files folder
3. Click on the drop arrow for ***Files of type*** and select **All Files**
4. Click on ***HTML Basics_1.html***, then click on **[Open]**

   The HTML document will open displaying the HTML code…
5. Click at the end of the line that reads ***Polished Pools***
6. Type **
, press Enter then type **Providing a Complete Pool and Spa Valet Service

   The changed lines are outlined in the screenshot…
7. Select **File** > **Save** to save the changes
8. Display the file in a browser window

6

8

For Your Reference…

To ***open*** an ***HTML document*** in ***Notepad***:

1. Open **Notepad**
2. Select **File > Open**
3. Change ***Files of Type*** to **All Files**
4. Locate the file, then double-click on it

Handy to Know…

- The **
** tag opens and closes in the same set of brackets. It is used to create a line break – i.e. to force the following text to appear on the next line.
- You can access the source code of a web page in a web browser by right clicking on the page and selecting View Source.

ADDING A DOCTYPE DECLARATION

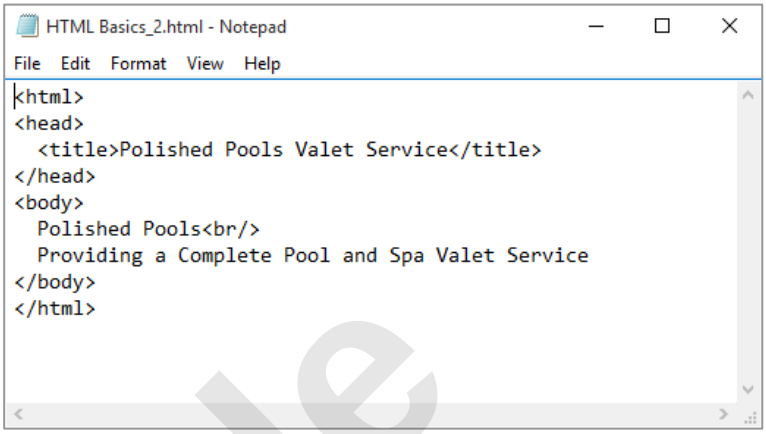
A ***doctype declaration*** adds information about the type and language of the document in which it is included. It can provide information for the browser about how to appropriately display the document and is also used by code validating tools to define what standard the code should be validated against. It is a required element in a well-formed HTML file.

Try This Yourself:

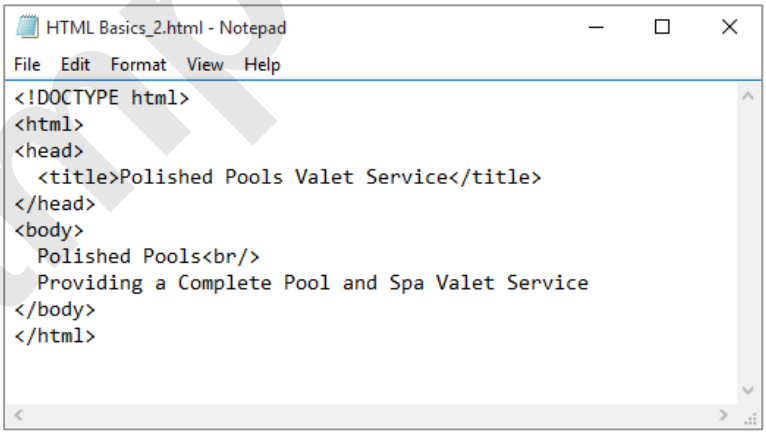
Same File

Continue using the previous file with this exercise, or open the file HTML Basics_2.html...

1. Ensure that your cursor is positioned at the beginning of the document, as shown
2. Add the document declaration **<!DOCTYPE html>**, then press Enter
3. Select **File** > **Save**



1



2

For Your Reference…

To ***add*** a ***doctype declaration***:

1. Type ***<!DOCTYPE html>*** at the start of the document
2. Select **File** > **Save**

Handy to Know…

- The doctype declaration must be typed accurately in order to have the desired effect.

NOTES:

CHAPTER 2

INFOCUS

BASIC TEXT FORMATTING

Text is one of the main means of communication on a web page. You can add text as headings to help users navigate around your site, or you can add it as a paragraph to explain an idea or concept. You can add text as comments within an HTML document that never appear in the browser but that may be useful to anyone who reads the HTML code. You can add simple formatting features such as bold and italics, and use lines to separate areas of text.

All of these features can be achieved using simple HTML tags.

In this session you will:

- ✓ learn how to create headings
- ✓ learn how to create simple paragraphs
- ✓ learn how to apply bold and italics
- ✓ learn how to create horizontal lines
- ✓ learn how to use special characters
- ✓ learn how to create comments in ***HTML*** code.

CREATING HEADINGS

Headings in HTML are created using the tags <h1>, <h2>, <h3>, <h4>, <h5>, and <h6>, where <h1> is the largest and <h6> the smallest. The heading tags cause the browser to display the heading text differently so that it is clearly identifiable as a heading. The font size will vary depending on the heading level used and the heading will appear on its own line.

Try This Yourself:

Open File

Before starting this exercise you MUST open the file Formatting Text_1.html in the text editor...

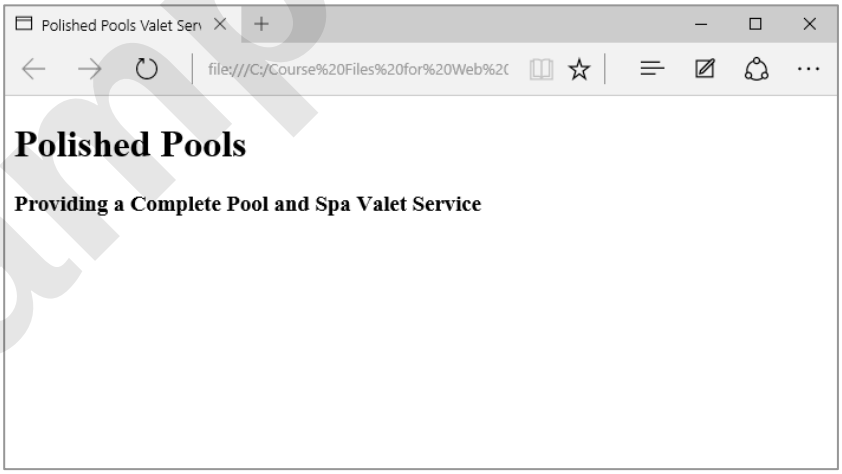
1. Make the changes to the code as shown, adding heading codes and removing the line break code ***
*** at the end of the first line of the body text
2. Save the changes to the file

   If you don't save the changes, they will not be displayed in your web browser when you view the page…
3. Open the file in your web browser and examine the format of the heading

   The h1 heading appears larger than h3 heading below it

```
<!DOCTYPE html>
<html>
<head>
  <title>Polished Pools Valet Service</title>
</head>
<body>
  <h1>Polished Pools</h1>
  <h3>Providing a Complete Pool and Spa Valet Service</h3>
</body>
</html>
```

1



3

For Your Reference…

To ***create headings***:

1. Add the opening heading tag ***<h1>, <h2>, <h3>*** or so on for the heading level you require
2. Add the heading text
3. Add the closing heading tag ***</h1>, </h2>, </h3>*** or so on

Handy to Know…

- Each browser determines a default way to interpret (display) a tag, which can be overridden in a stylesheet.