



Skills2Work

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The Internet, Email & Webpages

Workbook 3

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1.1 The Internet

The Internet is a global system of interconnected computer networks that use the standard Internet protocol suite (*TCP/IP*) to serve several billion users worldwide. It is a *network of networks* that consists of millions of private, public, academic, business, and government networks, of local to global scope, that are linked by a broad array of electronic, wireless and optical networking technologies.

Most traditional communications media including telephone, music, film, and television are being reshaped or redefined by the Internet, giving birth to new services such as voice over Internet Protocol (VoIP) and Internet Protocol television (IPTV). Newspaper, book and other print publishing are adapting to website technology, or are reshaped into blogging and web feeds. The Internet has enabled and accelerated new forms of human interactions through instant messaging, Internet forums, and social networking. Online shopping has boomed both for major retail outlets and small artisans and traders. Business-to-business and financial services on the Internet affect supply chains across entire industries.

1.2 Webpages

Websites are made up of webpages and can be viewed using a piece of software called a browser.

The major web browsers are Google **Chrome**, Mozilla **Firefox**, Microsoft **Internet Explorer**, **Opera**, and **Safari**.

A web browser (commonly referred to as a browser) is a software application for retrieving, presenting and traversing information resources on the World Wide Web. An information resource is identified by a Uniform Resource Identifier (URI/URL) and may be a web page, image, video or other piece of content. Hyperlinks present in resources enable users easily to navigate their browsers to related resources.

Although browsers are primarily intended to use the World Wide Web, they can also be used to access information provided by web servers in private networks or files in file systems.

The major web browsers are Google Chrome, Mozilla Firefox, Microsoft Internet Explorer, Opera, and Safari.

1.3 Using Email

Electronic mail, most commonly referred to as email or e-mail is a method of exchanging digital messages from an author to one or more recipients. Modern email operates across the Internet or other computer networks.

An Internet email message consists of three components: the message envelope, the message header, and the message body. The message header contains control information, including, minimally, an originator's email address and one or more recipient addresses.

Traditionally email would be used within an email application installed on your computer. Microsoft Outlook for example allows you to keep a record of all your received and sent emails on your local computer. This also has the advantage of allowing you to read through received emails and write new emails without being connected to the internet. You can then send and receive your emails as soon as you have access to an internet connection (whether wireless or fixed line).

There are now many free email providers (such as Google's Gmail) which allow you to manage your emails within a web browser. You will of course need a permanent connection to the internet to make use of these services. Your email archives are stored on the providers' servers and you can access the information you require via a browser in much the same way as a normal webpage.

Most of the free email provider services are made available under the understanding that you will also be served advertising banners and links which some people find intrusive.

2.1 Creating Webpages

The easiest way to create a website is to create some files on your computer which you can open in a browser (like Internet Explorer). The simplest file type for this purpose is an HTML file (Hypertext mark-up Language).

Did you know you can make a simple HTML just by typing some text into notepad and saving the file as an HTML file!

An HTML file is made up of 'tags' which define the layout of a page. Tags should have an opening and a closing tag as you'll see in this simple example:

```
<!DOCTYPE html>
<html>
  <head>
    <title>This is a title</title>
  </head>
  <body>
    <p>Hello world!</p>
  </body>
</html>
```

The page content sits between the <body> tags. The <p> tag defines a new paragraph. You can copy this code into **notepad** and save the file as **page1.html** somewhere on your computer.

To open the page in your browser, you can open the file directly from your local computer. For example, select **Ctrl 'O'** in Internet Explorer and then browse to the

HTML file you have just created. You can now open it and view what you have created.

2.2 Creating Links

A website will usually have a homepage and other pages. To link between them you can use a hyper link as below:

```
<!DOCTYPE html>
<html>
  <head>
    <title>This is a title</title>
  </head>
  <body>
    <p>Hello world!</p>
    <p>
      <a href="page2.html">This is a link to Page 2</a>
    </p>
  </body>
</html>
```

Once you have experimented with making html pages on your local computer you can move on to uploading them to a server which is available on the web so that anyone can find your webpages on the internet. This can be done using any freely available FTP (File Transfer Protocol) program.

3 Uploading Webpages

- 3.1 **Domain names:** First you will need to register a domain name. For example www.yourname.com
- 3.2 **File Transfer:** Once you have registered a domain with an Internet Service Provider, they will provide the FTP login details which will enable you to upload your newly created webpages to your new domain using an FTP program.

How do I get an FTP program to upload my files?

You search for any free FTP application on the web. Commonly used FTP applications include Ws FTP and FileZilla.

Login to the hosting account you set up with your Internet Service Provider and upload your files to the space they have allocated for your site.

Your webpages are now available for the whole world to find at your registered domain name / website address.

3.3 Style Sheets

As you begin to experiment with some of the HTML tags that allow you to make up a webpage you will be interested in how to change the appearance of the text and images according to categories. For example you may wish to assign all headings a certain font size and colour and all links another font size and colour.

This can be done by making a separate file called a style sheet which is referred to in your HTML file.

A simple css (cascading style sheet) file will look something like this:

```
<style>
h1 {color:#000000; font-family:arial; font-size:14px; font-weight:bold;}
a {color:#cccccc; font-family:arial; font-size:11px;}
</style>
```

If this style sheet was included in your page1.html file that you created earlier you would ensure that all headings (assigned the 'h1' tag) would be black, arial font, size 14px, and would be bold. Likewise all links (starting with the anchor 'a' tag, would be grey, arial font size 11px.)

4 Working with Computers

If you are hoping to find a career working with computers there are different routes you can take. At the most basic level you can learn to use programmes that are frequently used in working environments.

4.1 Office and Admin Tools

Tools for writing letters, compiling presentations, calculating accounting reports, storing data and interfacing with database applications are all essential office environment programs and are provided by Microsoft (in their Microsoft Office suite of programs) and by other software providers such as Google (in their Google docs range of products).

The first version of Ms Office contained Microsoft Word, Microsoft Excel, and Microsoft PowerPoint. Over the years, MS Office applications have grown substantially closer with shared features such as a data integration and Microsoft Visual Basic for Applications scripting language. Microsoft also positions Office as a development platform for line-of-business software under the Office Business Applications brand. Office is reported to now be used by over a billion people worldwide.

Data capturers, admin clerks and bookkeeping assistants will all make use of these or similar programs. Moreover, almost any form of employment will require you to have a basic knowledge of these essential tools whether they be part of the Microsoft suite of tools or part of another software package.

4.2 Specialised Computer Software Skills

Beyond these office operations you may be more interested to pursue a career in a specialised field such Graphic Design, Web design (which is different to web development) or CAD operation.

The layout and design of print and online media requires a good knowledge of graphics programmes such as Photoshop, InDesign or Corel Draw. There are also WYSIWYG (What you see is what you get) programmes such as Dreamweaver which allow you to create webpages by dragging entities around while the program creates the HTML mark-up code in the background. You can then save the created file as a webpage.

Note that this is not the same as web development, which requires you to understand a little bit more about the actual code in addition to other scripting and programming languages which allow you to create webpages which interact with user input and back-end database information.

4.3 Computer programming

Computer programming (often shortened to programming) is the comprehensive process that leads to an executable programs.

It involves activities such as analysis, understanding, and generically solving such problems By implementation (or coding) a solution to in a target programming language. Also testing, debugging, and maintaining the source code, implementation of the build system and management of derived artefacts such as machine code of computer programs.

Source code is written in one or more programming languages (such as C++, C#, Java, Python, Smalltalk, JavaScript, etc.). The purpose of programming is to find a sequence of instructions that will automate performing a specific task or solve a given problem. The process of programming thus often requires expertise in many different subjects, including knowledge of the application domain, specialized algorithms and formal logic.

Within software engineering, programming (the implementation) is regarded as one phase in a software development process.