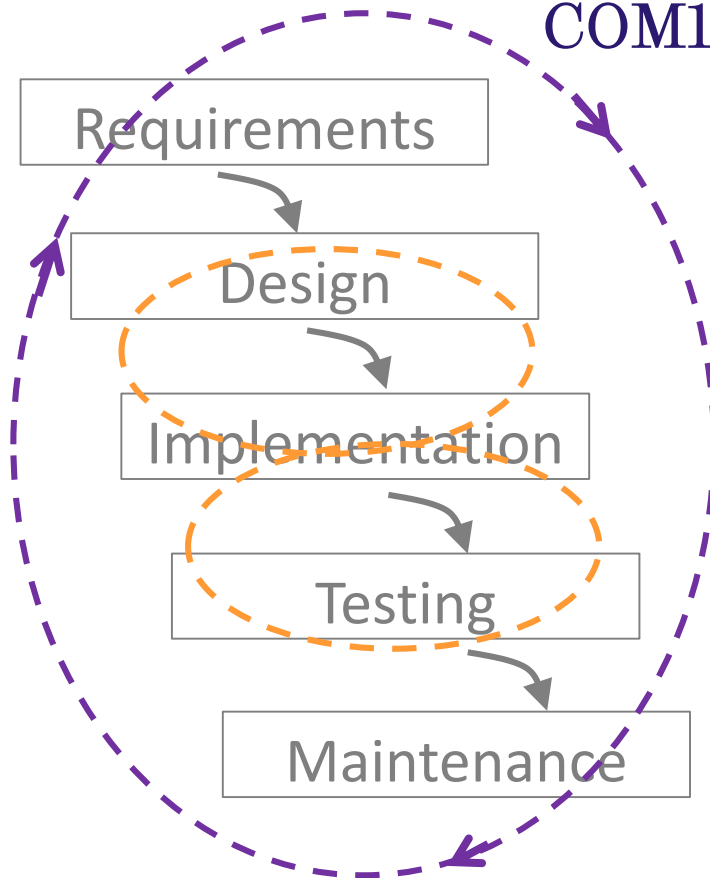




The
University
Of
Sheffield.

COM1004: Web and Internet Technology

Lecture 6: Web site development

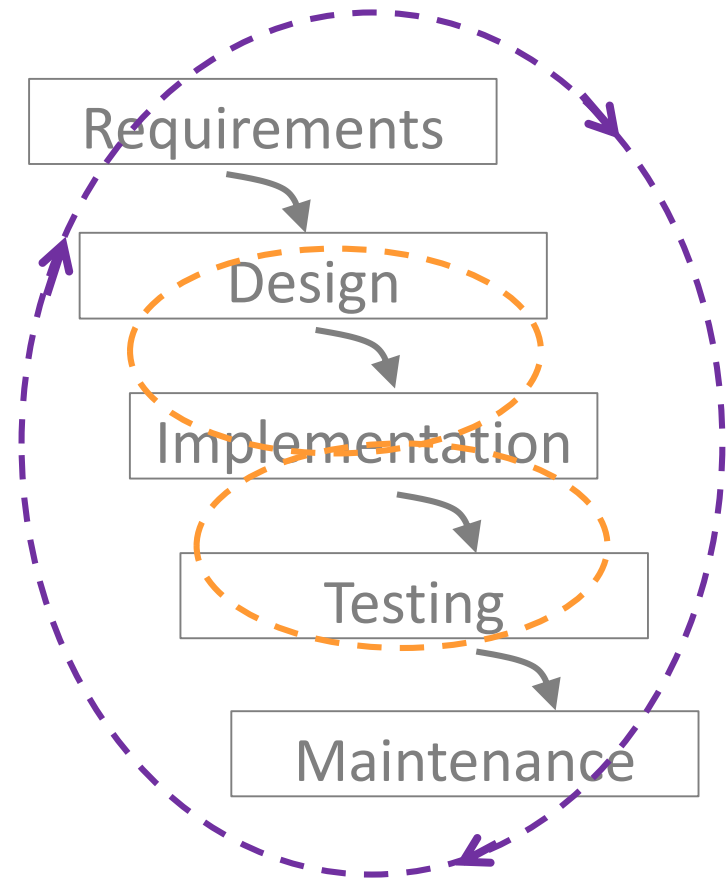


Dr. Steve Maddock

s.maddock@sheffield.ac.uk

1. Introduction

- We can consider the creation of web sites as similar to a waterfall approach to software engineering
- It involves a series of stages
 - Disagreement on how many stages
 - Disagreement in which stage a particular step is taken
 - Larger companies may use more stages
 - Smaller companies may compress the stages, e.g. planning, design, develop, delivery
- There is **iteration** between the stages



More likely there will be iteration
of stages

1.1 We'll consider the following stages:

- Requirements
 - Establish clients needs
 - Purpose
 - Target audience
 - Content
- Planning
- Design
- Development
- Testing
- Delivery
- Maintenance

2. Requirements: Gathering content

- *Example:* Creating a website to support a book.
- Start by listing required content, not structure

Home	Sample Web pages
Site info	Lecture slides
Accessibility statement	Answers to questions
Site map	Teaching notes
Contact	Interactive glossary
Evaluation copy request form	Sample material
About us	Table of contents for book
Links	Errata and updates
Code examples	FAQs

<http://webdesignbook.org> Chapman and Chapman, 2006, chapter 11

2. Requirements: Gathering content

- *Example:* Consider a website for a member of staff in the Dept
- Start by listing content, not structure

Personal profile/biography

Modules currently taught

Modules previously taught

Tutees

Dissertation project ideas

Dissertation project students

Research areas

Research project details

Funding

PhD students

Alumni

Research publications

Research resources

Administration jobs

Committees

Involvement in University-level activities

External activities

Private area

News

Contact details

2. Requirements: Purpose

- Example: Personal or corporate website?

Dr Steve Maddock
Senior Lecturer
BSc (Hons), PGCE, PGCEr, PhD

Home | Research | Publications | Research students | Teaching | Admin | Other | Contact details

Welcome

My main research area is character animation, specifically modelling and animating faces, although I have worked on projects in modelling, rendering, animation, visualisation and computer games over the last 20 years or so. I am Head of the Computer Graphics and Virtual Reality Research Group. I have over 60 refereed publications and am a member of both ACM SIGGRAPH and Eurographics. I also have a keen interest in education, and firmly support the University's stance on research-led teaching.

Selected papers

- Warburton, M. and S. Maddock. Creating Finite Element Models of Facial Soft Tissue. In Proc. WISCG 2013, Pilsen, Czech Republic, June 24-27, 2013. (accepted)
- Birdsback, A., S. Maddock, D. Romano (2009). "Serious Games for the Police: Opportunities and Challenges". Special Reports & Studies Series at the Research & Studies Center (Dubai Police Academy) 2009
- Ganito, M.N. and S.O. Maddock (2008). "Accurate Multi-Dimensional Poisson-Disc Sampling". ACM Transactions on Graphics, 29(1), December 2009. (Also presented at ACM SIGGRAPH 2010)
- Martinez Lazalde, O., S. Maddock, M. Meredith (2008). "A Constraint-Based approach to Visual Speech for a Mexican-Spanish Talking Head". International Journal of Computer Games Technology Volume 2008 (2008). Article ID 412956, 7 pages.

Recent funded projects

- Physically-based facial modelling and animation (workstation), EPSRC Upgrading Small Scale Equipment Base for Early Career Researchers, £2,570, Viceconti (P) et al inc. Maddock, 1 Nov 2012 - 31 March 2013
- "Computer Love" (virtual gallery), University of She. Maddock (Computer Science), Bax (Humanists)
- RECITE (Rethinking a City's Theatres, Digital Cre. Cross-cutting Director of Research and Innovation Ping (P) and Samuel (Architecture), Maddock a Babbage (English), Sep 2010-Sep 2013.
- "Visual Speech for Technology Enhanced Learning" Maddock (P), Computer Science), Nicolson (P) 2011, PhD student: Priya Day

Professor Guy J. Brown | Home Page

Speech and Hearing Research Group
Department of Computer Science
University of Sheffield

Research Projects Resources Teaching PhD students Administration Contact

Research

My main research interest is Computational Auditory Scene Analysis (CASA), which aims to build machine systems that mimic the ability of human listeners to segregate complex mixtures of sound. I also have interests in reverberation-robust automatic speech recognition, hearing impairment and music technology.

The following book gives an overview of the field:

DeLiang Wang and Guy J. Brown (editors), *Computational auditory scene analysis: Principles, Algorithms, and Applications*. IEEE Press/Wiley-Interscience, 2006

You can get more information from amazon.co.uk or amazon.com, or go to the [web site](http://web.site) that accompanies the book.

Selected recent publications:



Department of Computer Science

Home > Computer Science > People > Academic Staff > Guy Brown

Professor Guy Brown



Professor of Computer Science
Deputy Head of Department

Department of Computer Science
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211 Portland
Sheffield
S1 4DP
UK

Tel: +44 (0) 114 222 1821

Fax: +44 (0) 114 222 1810

Email: g.j.brown@sheffield.ac.uk

Personal Home Page: staffwww.dcs.shef.ac.uk/people/G.Brown/

Profile

Professor Brown obtained a BSc (Hons) Applied Science from Sheffield City Polytechnic in 1984 and a PhD in Computer Science from the University of Sheffield in 1992. He was appointed to a lectureship in the Department of Computer Science, University of Sheffield in 1992. He also obtained the Mid in Teaching and Learning from the University of Sheffield in 1997. He has held visiting appointments at UMIST-CHRS (France), Ohio State University (USA), Helsinki University of Technology (Finland) and ATR (Japan). He was appointed to a Chair of Computer Science in 2013. He is currently Acting Head of Department.

Other Professional Activities and achievements

- Recipient of a University of Sheffield Senate Award for Sustained Excellence in Learning and Teaching, 2014.
- Recipient (with Dr Gordon Fraser) of a Microsoft Software Engineering Innovation Foundation Award in 2013.
- Guest editor of the IEEE Transactions on Audio, Speech and Language Processing special issue on blind signal processing for speech and audio applications, 2007.



School of English

Home > English > Staff > Babbage

Dr Frances Babbage

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Fax: +44 (0)114-222-8481

email: f.babbage@sheffield.ac.uk

Overview

I joined the School of English at Sheffield University in 2007, having previously taught at Leeds University and the University of Northampton.

I have always been curious about the diversity of ways in which theatrical performance can be generated, an interest I have pursued in various forms for more than 20 years. I have trained with numerous companies including Forced Entertainment, Welfare State International, the Polish physical theatre company Song of the Goat, Station House Opera and Told by an Idiot, and these methods have influenced my teaching and creative work, as well as my research and writing.

During my Masters studies at Leeds University I developed an interest in practices of theatrical adaptation and rewriting, a research area I pursued at doctoral level: my PhD (at the University of Warwick) addressed the treatment of gender themes in theatrical reworkings of myth and fairytale. This research fed into my most recent monograph, *Re-visioning Myth: Modern and Contemporary Drama by Women* (Manchester University Press, 2011).

I have long been inspired by the work of the radical Brazilian practitioner Augusto Boal, who sadly died in 2008. After training with Boal, I applied his techniques of participatory practice in a range of community contexts. My first monograph *Augusto Boal: a study of Boal's theatre theory and practice*, was published by Routledge in 2004. I had previously edited a special issue of *Contemporary Theatre Review* looking at the ways these kinds of techniques are being used. *What We Know Without Boal: Perspectives and Possibilities in the Theatre of the Oppressed* (1000's a move



Jon Barker
Department of Computer Science,
University of Sheffield



Home Research Publications Teaching Contact

About me

I am a Reader in Computer Science at the University of Sheffield, and a member of the Speech and Hearing Research Group.

My research interests include speech recognition by humans and machines, audio-visual speech processing, machine listening and the application of machine learning to audio processing.

News

- CHIME 2013 workshop proceedings available
- 2nd CHIME challenge results released
- Enhancement demos online

Research

- PhD applicants welcome!
- The 2nd CHIME: Speech separation and recognition challenge
- INSPIRE: Investigating Speech in Realistic Environments
- The CHIME Machine Listening project
- CFP: Comp. Speech and Lang. Special Issue on Speech Separation and Recognition in Multisource Environments
- Recent Publications
 - Camrona, J.L., Barker, J., Gomez, A.M. and Ma, N. (2013) Speech Spectral Envelope Enhancement by HMM-based Analysis/Resynthesis, *IEEE Signal Processing Letters*, 20(3): 563-566 doi:10.1109/LSP.2013.2255125 (DEMO)
 - Ma, N., Barker, J., Christensen, H., Green P. (2013) A hearing-inspired approach for distant-microphone speech recognition in the presence of multiple sources. *Computer Speech and Language* 27(3): 820-836

he PASCAL CHIME Speech Separation and
21-633 doi:10.1016/j.csl.2012.10.004
(J) MMSE-based missing-feature reconstruction with
ons on Audio, Speech and Language Processing



Requirements

Planning

- Content
- Site map
- Accessibility
- Technical details
- Wireframes

Design

Development

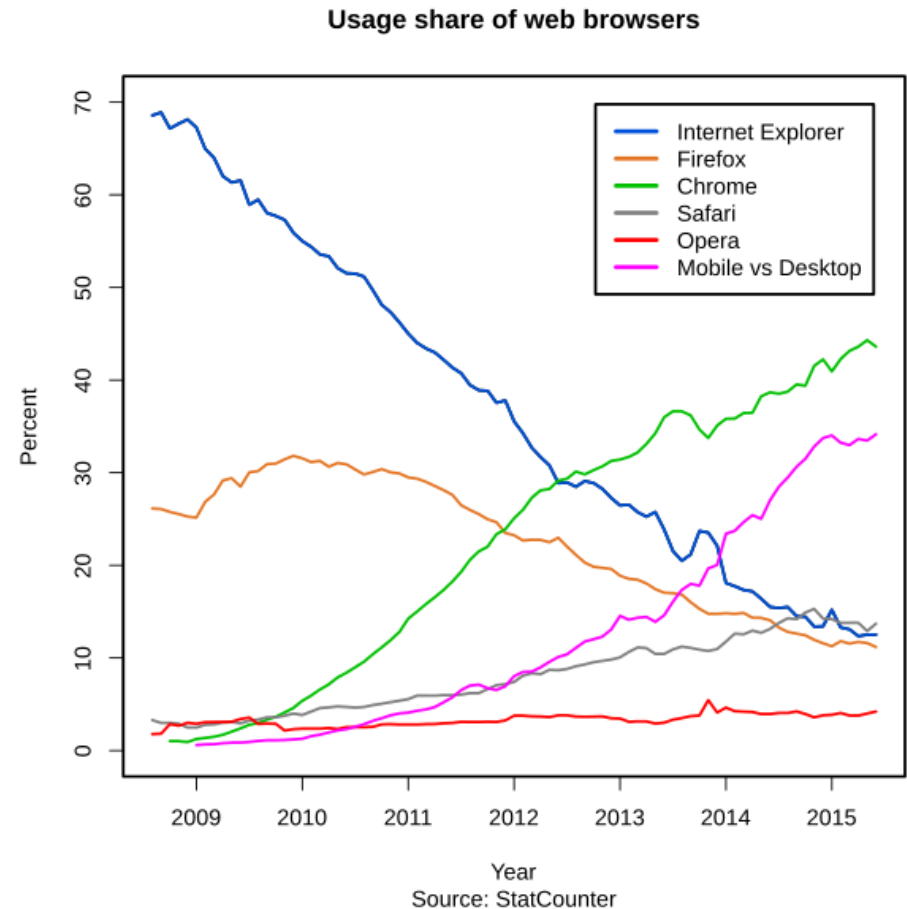
Testing

Delivery

Maintenance

3. Planning

- Identify content
- Create a site map
 - Structure and organisation of the site
- Consider accessibility
- Consider technical details
 - Which browsers will be targeted?
 - Which screen resolutions?
- Prepare wireframes showing proposed general layout(s) of pages



By Usage share of web browsers (Source Net Applications).svg: arichnad, Daniel.Cardenas, Litehacker (Own work) [CC BY 3.0 (<http://creativecommons.org/licenses/by/3.0/>)], via Wikimedia Commons

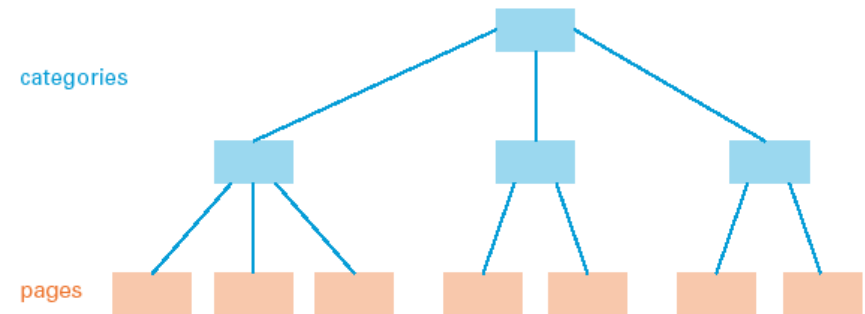
4. Website Structure/organisation

- Site map
 - A list of all the pages on the Web site
 - Organised hierarchically
 - Possibly included as part of the Web site itself
- Site index also used, but more A-Z
- Structures to consider:
 - Logical – relationship between pages
 - URL – relationships between URLs of pages, reflects way they are stored on server
 - Navigational structure – connections between pages
- Data structures: sequence, tree, graph

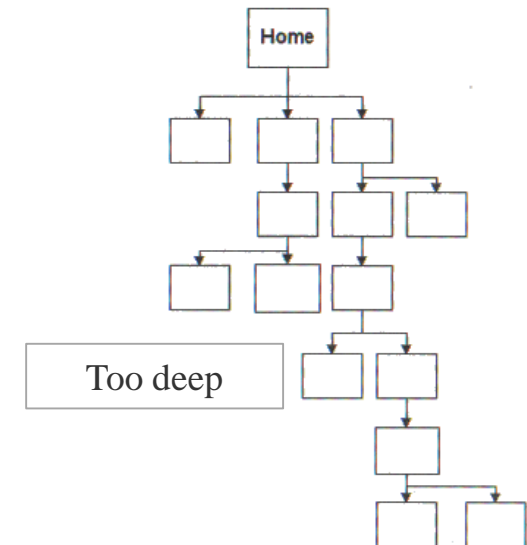
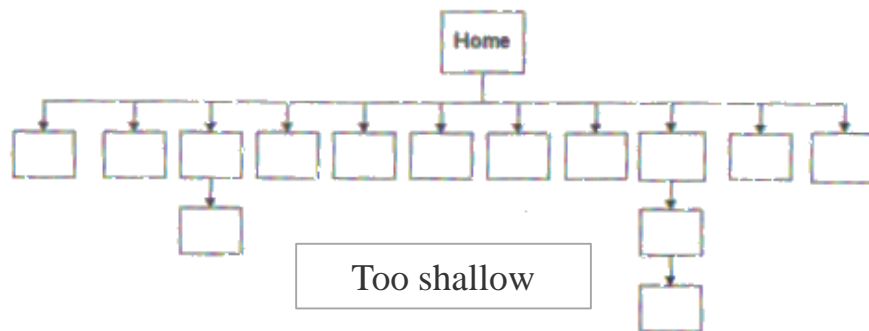
<u>Advanced Projects</u>			
TEACHING AND LEARNING RESOURCES			
<u>Home Page: Introduction to the Teaching</u>			
Lecture Slides			
<u>Overview</u>	<u>Chapter 1</u>	<u>Chapter 5</u>	<u>Chapter 11</u>
<u>Chapter 10</u>	<u>Chapter 6</u>	<u>Chapter 7</u>	<u>Chapter 11</u>
Teaching Notes			
<u>Overview</u>	<u>Chapter 1</u>	<u>Chapter 5</u>	<u>Chapter 11</u>
<u>Chapter 10</u>	<u>Chapter 6</u>	<u>Chapter 7</u>	<u>Chapter 11</u>
Answers and Hints to the Exercises			
<u>Overview</u>	<u>Chapter 1</u>	<u>Chapter 5</u>	<u>Chapter 11</u>
<u>Chapter 10</u>	<u>Chapter 6</u>	<u>Chapter 7</u>	<u>Chapter 11</u>
Examples			
<u>Overview</u>	<u>Chapter 1</u>	<u>Chapter 5</u>	<u>Chapter 11</u>
<u>Chapter 10</u>	<u>Chapter 6</u>	<u>Chapter 7</u>	<u>Chapter 11</u>
References			
<u>Overview</u>	<u>Chapter 1</u>	<u>Chapter 5</u>	<u>Chapter 11</u>
<u>Chapter 10</u>	<u>Chapter 6</u>	<u>Chapter 7</u>	<u>Chapter 11</u>
Errata			
<u>Overview</u>	<u>Chapter 3</u>	<u>Chapter 6</u>	<u>Chapter 7</u>
<u>Chapter 6</u>	<u>Chapter 7</u>	<u>Chapter 11</u>	<u>Chapter 11</u>
<u>Services for Lecturers</u>			

4.1 Logical structure

- Relationship between pages
- A hierarchy groups pages into categories
- “Three-click rule”
 - http://en.wikipedia.org/wiki/Three-click_rule

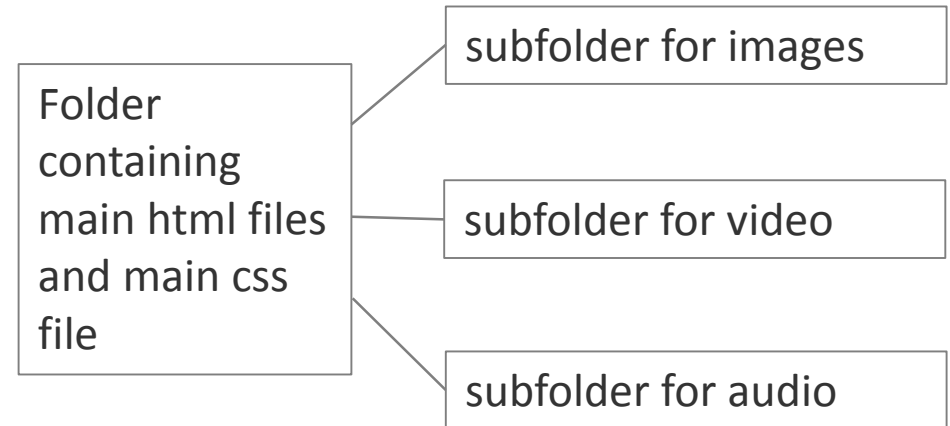


A pure hierarchy



4.2 URL structure

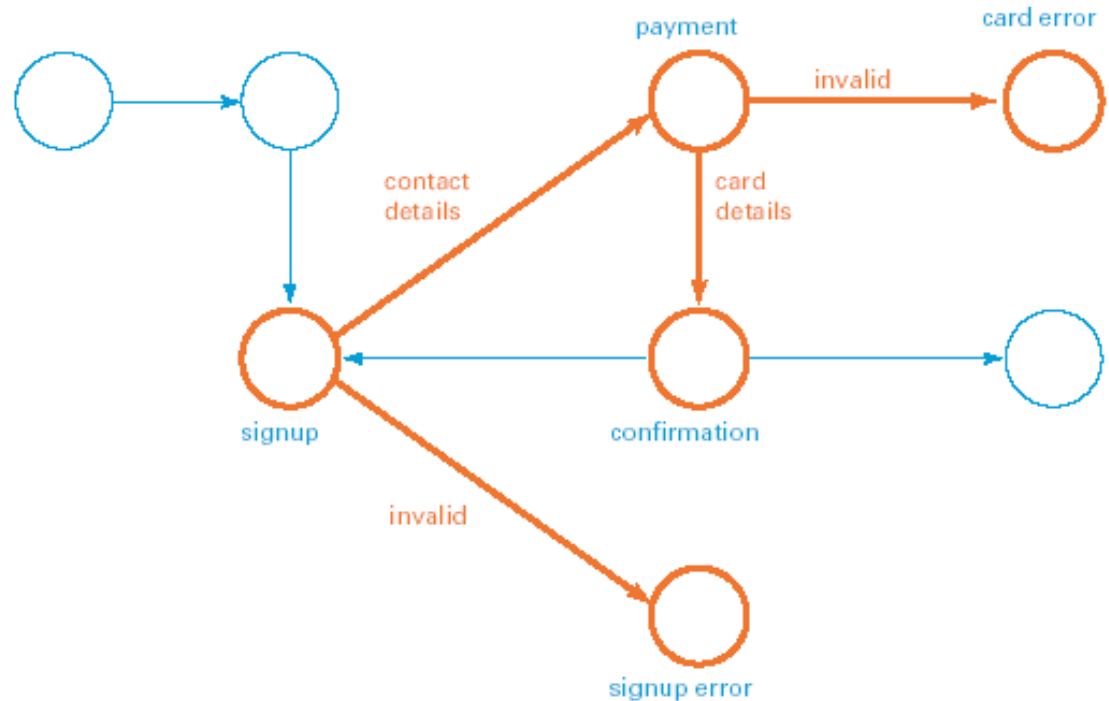
- Relationships between URLs of pages
- Reflects the way pages are stored on server
- Choosing URLs that do not alter over time is necessary to avoid bookmarks and links becoming invalid
- Design for maintenance



4.3 Navigational structure

Chapman and Chapman, 2006

- Connections between pages
- The navigational structure of the Web can be modelled as a directed graph
 - nodes represent pages - states of the browser
 - links represent HTTP requests



Additional transitions caused by erroneous input

- Example: paying for goods at Web site
 - (often accompanied by a roadmap to orient user)

amazon.co.uk

WELCOME ADDRESS ITEMS WRAP DISPATCH PAY CONFIRM

5. Accessibility

- Assistive technologies provide alternative forms of input and output for people who cannot use the conventional mouse, keyboard and screen

	Typical conditions	Problems with Web access	Assistive technology
Vision	Blindness, low vision, colour defects	Extreme difficulties with seeing and reading, ...	Screen readers, braille displays, screen magnifiers, browser options, ...
Hearing	Deafness	Any sound information	Signing avatars
Movement	Repetitive strain injuries, limb injuries, ...	Inability to use pointing devices and/or keyboard	Alternative devices to simulate keyboard input, voice input
Cognition	Dyslexia, attention deficit disorder, lack of sleep, ...	Text difficulties, concentration, ...	Screen readers
Age-related	Presbyopia, coordination, memory loss	Small text, selection, orientation	Browser option to increase text size

5.1 Technology

- Screen magnifiers mean only part of a page is displayed
 - Compare with mobile screens and zoom?
- Screen readers can only use the `alt` attribute for an image
 - Is a page understandable without images?
- RSI sufferers may not be able to use a mouse
 - “Blackberry thumb”, “iPad shoulder”



Prank gift box,

<http://www.prankpack.com/buy/iarm-prank-pack-fake-gift-box-3370.html>

5.2 Legal requirements / standards / codes of practice

- In some countries there are legal requirements to make Web sites accessible, e.g. Australia
- UK: “The Equality Act 2010 does not refer explicitly to website accessibility, but makes it illegal to discriminate against people with disabilities.” (https://en.wikipedia.org/wiki/Web_accessibility)
- Dec 2010: BSI (British Standards Institute) released the standard BS 8878:2010 Web accessibility. *Code of practice*.
 - Guidance on how to meet requirements of The Equality Act 2010 (<http://www.bsigroup.com/bs8878>)
- W3C’s Web Accessibility Initiative develops guidelines for maximizing accessibility (WCAG – web content accessibility guidelines)
- RNIB: “...the RNIB Surf Right standard” [which is similar to WCAG 2.0 AA] (<http://www.rnib.org.uk/about-rnib/web-accessibility-statement>)

5.3 W3C Web Content Accessibility Guidelines

- The W3C's Web Accessibility Initiative develops guidelines for maximizing accessibility
- "The WCAG documents explain how to make web content more accessible to people with disabilities."

(www.w3.org/WAI/intro/wcag)

- WCAG 2:
4 principles;
12 guidelines

Perceivable

- Provide **text alternatives** for non-text content.
- Provide **captions and other alternatives** for multimedia.
- Create content that can be **presented in different ways**, including by assistive technologies, without losing meaning.
- Make it easier for users to **see and hear content**.

Operable

- Make all functionality available from a **keyboard**.
- Give users **enough time** to read and use content.
- Do not use content that causes **seizures**.
- Help users **navigate and find content**.

Understandable

- Make text **readable and understandable**.
- Make content appear and operate in **predictable** ways.
- Help users **avoid and correct mistakes**.

Robust

- Maximize **compatibility** with current and future user tools.

5.3 W3C Web Content Accessibility Guidelines

- **Example: Text Alternatives:**

- “Guideline 1.1: Provide text alternatives for any non-text content so that it can be changed into other forms people need, such as large print, braille, speech, symbols or simpler language”

(<http://www.w3.org/WAI/WCAG20/quickref/#text-equiv>)

- More specific: (<http://www.w3.org/TR/2010/NOTE-WCAG20-TECHS-20101014/H37.html>)

- H37: Using `alt` attributes on `img` elements:
- An image on a Website provides a link to a free newsletter.

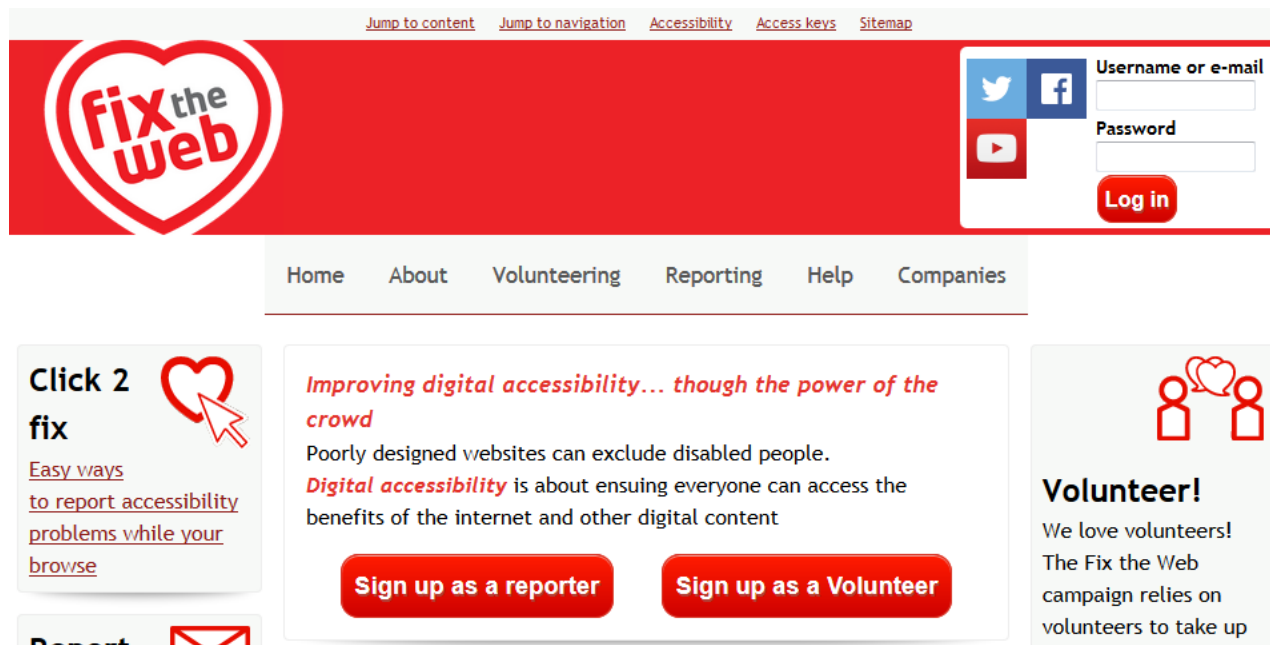
```

```


- RNIB: “.. use *alt text* where an image conveys essential information for the meaning of the page...Where an image is purely decorative we don't add alt text as this is superfluous information, and extra 'noise' that someone using a screenreader ...”

5.4 More on accessibility

- W3C list of Web accessibility evaluation tools:
 - “software programs or online services that *help* determine if a Web site meets accessibility guidelines” (<http://www.w3.org/WAI/RC/tools/>)
- <http://www.fixtheweb.net>



5.5 University's accessibility statement



The University Of Sheffield.

Accessibility

Home > Accessibility > Web site accessibility statement

Contact us

Connect

A WORLD
TOP 100
UNIVERSITY

Main menu

Access keys on this web site

Web site accessibility statement →

Web site accessibility statement

The University of Sheffield is fully committed to making its web pages accessible to all.

The Worldwide Web Consortium (W3C) has produced guidelines for making web content accessible to people with disabilities. Pages within our Content Management System are designed to meet a general standard of AA compliance with these guidelines. However, we have made some informed deviations from W3C guidelines based on the advice of bodies such as the Royal National Institute of the Blind (RNIB) and the Disability Rights Commission (which has now been absorbed into the Equality and Human Rights Commission), for example appropriately tagged tables are used in this site for layout purposes. Visual layout is achieved primarily through style sheets, so users can apply their own styles to the site as needed.

Should any user have difficulty in accessing the content of this site, please contact the Web Team and we will provide assistance or information in an alternative format.

email : webteam@sheffield.ac.uk

Feedback

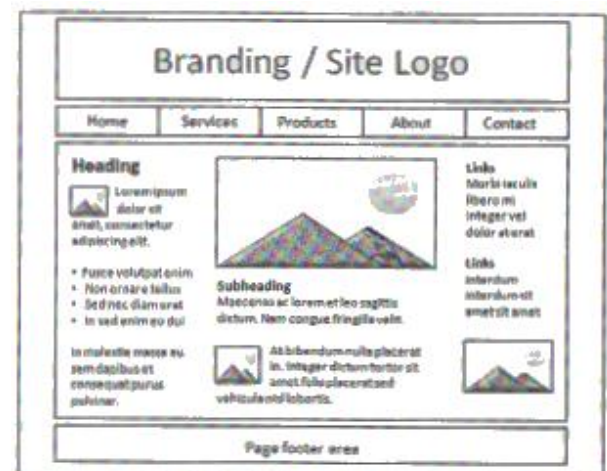
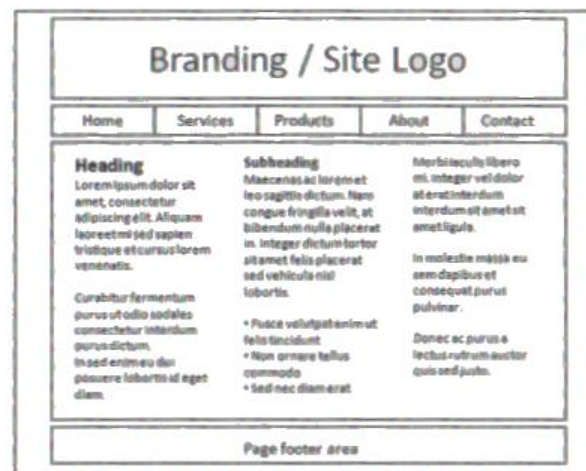
Privacy

FOI

Accessibility

6. Wireframes

- A sketch or blueprint – structure of basic page elements (not detailed design) (http://en.wikipedia.org/wiki/Website_wireframe)
- Basis for communication amongst project members
 - functionality, behaviour, priority of content
- Tools: Balsamiq Mockups, Mockingbird, Mockflow, etc.

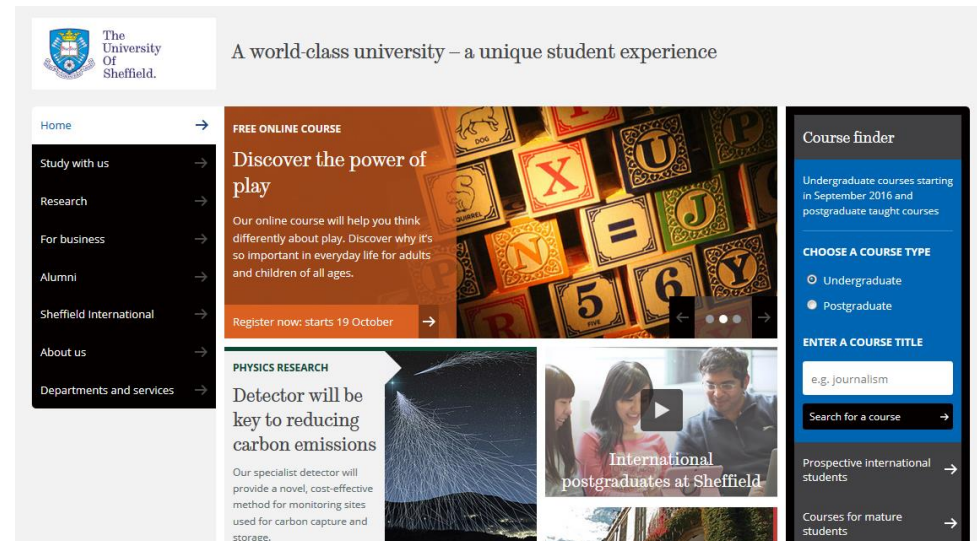
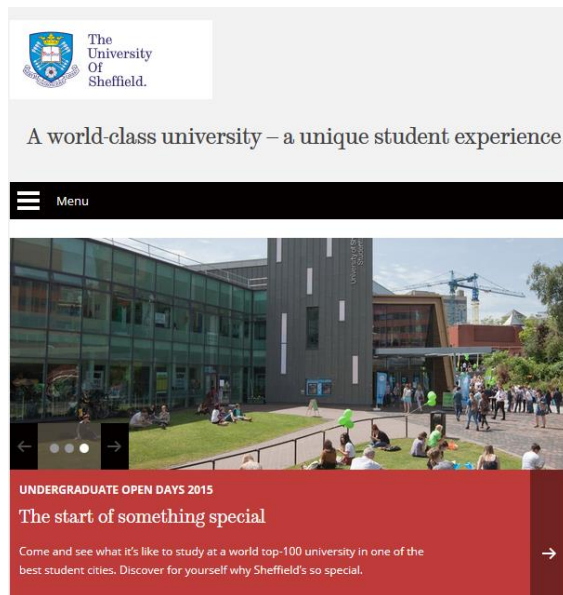


Balsamiq

Felke-Morris, Web Development and Design Foundations with XHTML, Pearson, 2010
Web site: <http://webdevfoundations.net/>

7. Home page

- Is the home page 'special' in some way
- Often different to other pages, e.g. a 'splash' page



Requirements

Planning

Design

- Wireframes
- Page mockups
- Design for target audience

Development

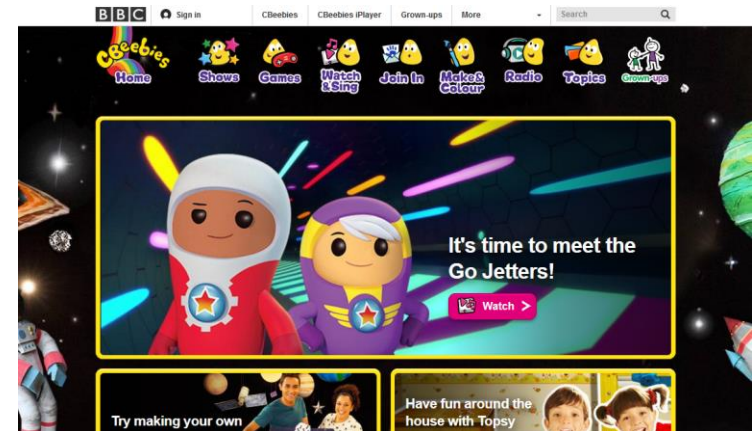
Testing

Delivery

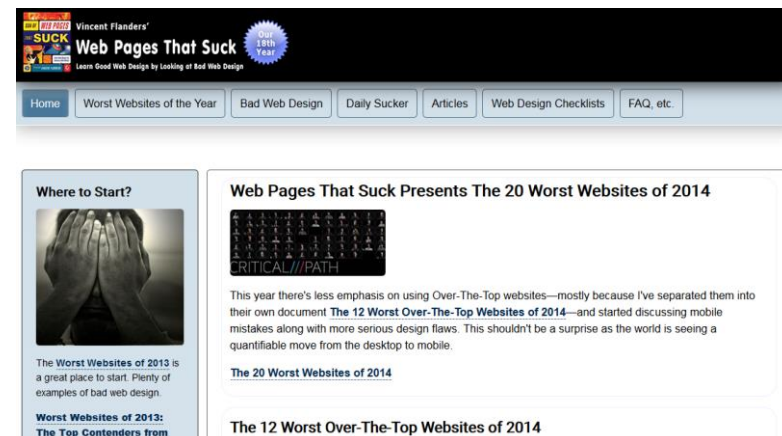
Maintenance

8. Design

- Look-and-feel
 - Colours, shapes, layouts, typefaces, dynamic behaviour, etc.
 - The target audience can help guide the Web page look-and-feel
- Use of design experience
 - Use general design experience for other media, e.g. magazines
 - Web design inspiration websites: <http://mashable.com/2013/10/09/web-design-inspiration-2>
 - Bad design examples: www.webpagesthatsuck.com →
 - Discussions of best practice: <http://webdevfoundations.net/6e/chapter5.html>



<http://www.bbc.co.uk/cbeebies/>



8.1 Photoshop mock-up

- Mock-ups can be used to test ideas out
- Develop page using digital imaging software (e.g. Adobe Photoshop)
- Examples:
<http://sixrevisions.com/photoshop/25-web-design-layout-tutorials/>
- Then convert to HTML and CSS



<http://css-tricks.com/video-screencasts/1-converting-a-photoshop-mockup-part-1-of-3/>

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8.2 Principles

Repetition	Repeat visual elements to help unify a design
Contrast	Good contrast between background colour and text
Proximity	Group related items, and provide adequate separation between unrelated items
Alignment	Align elements to create visual unity

Felke-Morris, Web Development and Design Foundations with XHTML, Pearson, 2010

Web site: <http://webdevfoundations.net/>

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ut aliquip ex ea commodo consequat.

The effect of varying the vertical space between paragraphs
(Chapman and Chapman, 2006)

Use of dummy text:

"In publishing and graphic design, lorem ipsum is placeholder text (filler text) ..."
http://en.wikipedia.org/wiki/Lorem_ipsum

8.2 Principles

Repetition	Repeat visual elements to help unify a design
Contrast	Good contrast between background colour and text
Proximity	Group related items, and provide adequate separation between unrelated items
Alignment	Align elements to create visual unity

Felke-Morris, Web Development and Design Foundations with XHTML, Pearson, 2010
Web site: <http://webdevfoundations.net/>



http://en.wikipedia.org/wiki/Grid_%28graphic_design%29

http://sixrevisions.com/web_design/a-brief-look-at-grid-based-layouts-in-web-design/

8.3 What works...

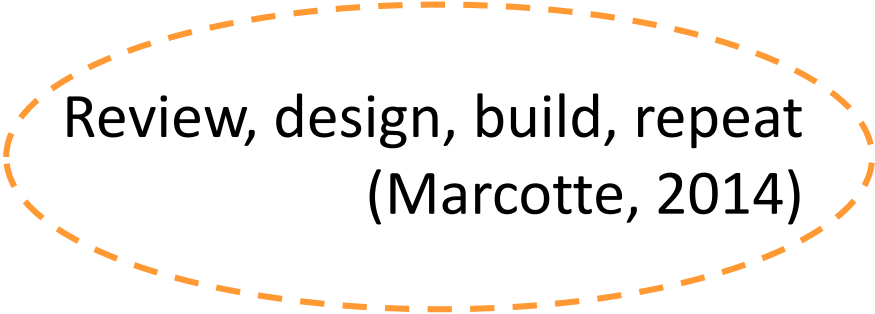
- K.I.S.S.
 - Keep it simple and lightweight
 - Clean layout, legible fonts
 - If they want flashing lights, they'll go to a disco

By Sarah from Brizzzzzle, UK (Disco ball in blue
Uploaded by TheCuriousGnome) [CC-BY-2.0
(<http://creativecommons.org/licenses/by/2.0>)], via
Wikimedia Commons

Requirements

Planning

Design



Review, design, build, repeat
(Marcotte, 2014)

Development / Implementation

- HTML templates and CSS (using RWD)
- JavaScript
- Practical considerations: optimisation
- Fallback strategies: new features, legacy browsers
- Debugging: W3C tools – HTML and CSS validation; Browser specific tools, e.g. Firefox Web developer tools

Testing

Delivery

Maintenance

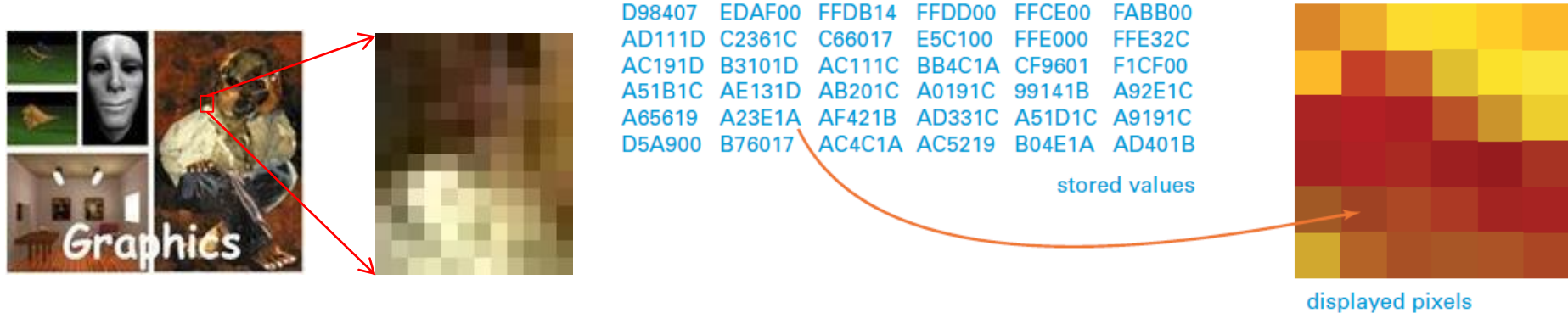
Marcotte, E., Responsive Web Design, 2nd
edition, A Book Apart, 2014



<http://www.gimp.org>

9.1 Practical considerations

- Optimise file size to improve load times
 - E.g. Image files – create smaller versions
 - (See <https://developers.google.com/web/fundamentals/performance/optimizing-content-efficiency/image-optimization#selecting-the-right-image-format>)
 - Tools to compress images: <http://www.creativebloq.com/design/image-compression-tools-1132865>



Chapman and Chapman, 2006

9.1 Practical considerations

- Firefox Web Developer tools, 'Network' option:

The screenshot shows a web browser displaying a personal website for Dr Steve Maddock, Senior Lecturer at The University of Sheffield. The website includes a header with his name, title, and contact information, a navigation menu, and a 'Welcome' section. Below the welcome message, there is a 'Selected papers' section listing two publications. To the right of the text, there is a diagram of a face with labels for various wrinkles and a small image of a face with wrinkles.

The Firefox Web Developer Tools Network tab is open, showing a list of network requests. The table below represents the data shown in the Network tab:

✓	Method	File	Domain	Type	Transferred	Size	0 ms	1.37 min	2.73 min
302	GET	search?q=site+map&ie=utf-8&o...	www.google.com	html	86.58 KB	0 KB	— 63 ms		
200	GET	search?q=site+map&ie=utf-8&o...	www.google.co.uk	html	86.58 KB	0 KB	— 1088 ms		
200	GET	nav_logo231.png	www.google.co.uk	png	cached	0 KB			
200	GET	il_1967ca6a.png	ssl.gstatic.com	png	cached	0 KB			
200	GET	rs=ACT90oGylwCuVjzvdMGH-Sr...	www.google.co.uk	js	cached	0 KB			
200	GET	rs=ACT90oEcKo8EH2BNeaow1HL...	www.google.co.uk	js	39.99 KB	0 KB	— 36 ms		
200	GET	tia.png	www.google.com	png	cached	0 KB			
204	GET	gen_204?atyp=i&ct=phandle&ca...	www.google.co.uk	html	—	0 KB	— 66 ms		
200	GET	rs=AA2YrTt_vXZp4LRTML6svzCC...	www.gstatic.com	js	cached	0 KB			
204	GET	gen_204?atyp=i&ct=phandle&ca...	www.google.co.uk	html	—	0 KB	— 55 ms		
200	GET	gfl.gif	www.google.co.uk	gif	cached	0 KB			

At the bottom of the Network tab, it shows a summary: 246 requests, 257.85 KB, 2,827.81 s. There is a search bar and a 'Clear' button.

Requirements

Planning

Design

Development

Testing

- Turn off features: Images, Style sheet, JavaScript
- Validation: W3C HTML and CSS validators
- Performance testing: page load times
- Different browsers; Different devices
- Accessibility
- Testing usability with real users

Delivery

Maintenance



10.1 Cross-browser testing

- <http://www.smashingmagazine.com/2011/08/07/a-dozen-cross-browser-testing-tools/>

Browser Compatibility Test

Web Design Gallery

Icon Search Engine

Enter URL Here:

Submit

Linux

Windows

Mac







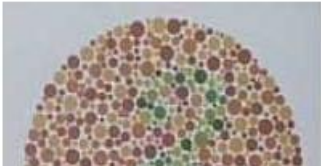
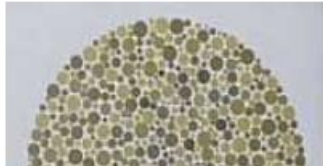
BSD

<input type="checkbox"/> Arora 0.1	<input checked="" type="checkbox"/> Firefox 38.0	<input checked="" type="checkbox"/> Chrome 10.0	<input checked="" type="checkbox"/> Firefox 4.0	<input checked="" type="checkbox"/> Firefox 28.0	<input type="button" value="Contribute"/>	<input type="button" value="Contribute"/>
<input checked="" type="checkbox"/> Arora 0.11	<input checked="" type="checkbox"/> Firefox 39.0	<input checked="" type="checkbox"/> Chrome 11.0	<input checked="" type="checkbox"/> Firefox 5.0	<input checked="" type="checkbox"/> Firefox 29.0		
<input checked="" type="checkbox"/> Chrome 27.0	<input checked="" type="checkbox"/> Firefox 40.0	<input checked="" type="checkbox"/> Chrome 17.0	<input checked="" type="checkbox"/> Firefox 6.0	<input checked="" type="checkbox"/> Firefox 30.0		
<input checked="" type="checkbox"/> Chrome 31.0	<input checked="" type="checkbox"/> Firefox 41.0	<input checked="" type="checkbox"/> Chrome 18.0	<input checked="" type="checkbox"/> Firefox 7.0	<input checked="" type="checkbox"/> Firefox 31.0		
<input checked="" type="checkbox"/> Chrome 41.0	<input type="checkbox"/> Iceape 2.0	<input checked="" type="checkbox"/> Chrome 19.0	<input checked="" type="checkbox"/> Firefox 8.0	<input checked="" type="checkbox"/> Firefox 32.0		
<input checked="" type="checkbox"/> Chrome 44.0	<input checked="" type="checkbox"/> Iceape 2.7	<input checked="" type="checkbox"/> Chrome 20.0	<input checked="" type="checkbox"/> Firefox 9.0	<input checked="" type="checkbox"/> Firefox 33.0		
<input checked="" type="checkbox"/> Chrome 45.0	<input checked="" type="checkbox"/> Icedweasel 17.0	<input checked="" type="checkbox"/> Chrome 21.0	<input checked="" type="checkbox"/> Firefox 10.0	<input checked="" type="checkbox"/> Firefox 34.0		
<input checked="" type="checkbox"/> Dillo 3.0	<input checked="" type="checkbox"/> Icedweasel 24.3	<input checked="" type="checkbox"/> Chrome 22.0	<input checked="" type="checkbox"/> Firefox 11.0	<input checked="" type="checkbox"/> Firefox 35.0		
<input type="checkbox"/> Epiphany 3.1	<input checked="" type="checkbox"/> Konqueror 4.13	<input checked="" type="checkbox"/> Chrome 23.0	<input checked="" type="checkbox"/> Firefox 12.0	<input checked="" type="checkbox"/> Firefox 36.0		
<input type="checkbox"/> Epiphany 3.4	<input checked="" type="checkbox"/> Konqueror 4.4	<input checked="" type="checkbox"/> Chrome 24.0	<input checked="" type="checkbox"/> Firefox 13.0	<input checked="" type="checkbox"/> Firefox 37.0		
<input checked="" type="checkbox"/> Epiphany 3.4			<input checked="" type="checkbox"/> Firefox 14.0	<input checked="" type="checkbox"/> Firefox 38.0		

10.2 Accessibility

Examples:

- **html2txt**
<http://www.w3.org/services/html2txt>
- **Simulator for colour blindness:**
www.vischeck.com/vischeck
- **males more prone to red-green colour blindness than females**

<p>The world.</p> 	<p>How the world looks to a person with a red/green color deficit (deuteranopia).</p> 	<p>How the world looks to a person with a blue/yellow color deficit (tritanopia).</p> 
<p>Some colorful hats.</p> 	<p>As seen by a person with deuteranopia.</p> 	<p>As seen by a person with protanopia, another form of red/green deficit.</p> 
<p>This is an Ishihara plate commonly used to check for red/green color blindness</p> 		<p>This is what a red/green color-blind person might see. Note that the digit (3) is practically invisible.</p> 

Requirements

Planning

Design

Development

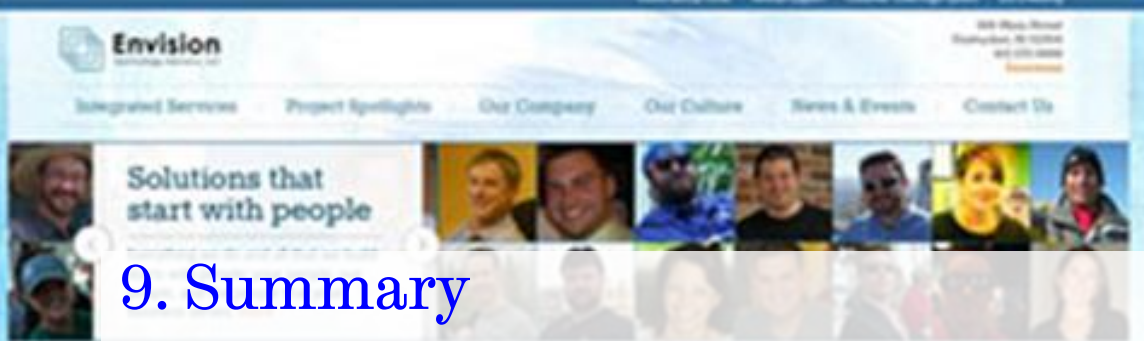
Testing

Delivery

- ftp to upload to server
- Domain name registration, Web hosting service
- Search Engine Optimisation (SEO)

Maintenance

- ...and ongoing support, e.g. new content



9. Summary

- Establish client's needs
- Establish content
- Consider structures
- Use mock-ups
- Use templates
- (Use Responsive Web Design – mobile first and progressive enhancement)
- Test regularly
- Consider accessibility and usability at all stages

Review, design, build, repeat
(Marcotte, 2014)



The “extreme” versions of the new website design
Building A Better Responsive Website by Jeremy Girard

<http://www.smashingmagazine.com/2013/03/building-a-better-responsive-website/>

Appendix A. A search box

- Search facility



```
<div id="search">
  <form method="get" action="http://www.google.com/search">
    <input type="text" name="q" size="31" maxlength="255" value="" />
    <input type="submit" value="Google Search" /><br />
    <input type="radio" name="sitesearch" value="" />The Web
    <input type="radio" name="sitesearch"
      value="staffwww.dcs.shef.ac.uk/people/S.Maddock" checked />
      Local search<br />
  </form>
</div>
```

Appendix B. Accessibility

B.1 The title attribute for an anchor element

- Additional information about links can be added using the **title** attribute of the anchor element

```
<a href="http://www.shef.ac.uk/dcs/" title="Department  
of Computer Science">DCS</a>
```

- When the user hovers over the item, the text in the title attribute will appear in a box

A.2 Access keys

- Use of keyboard to allow user to jump to a specific part of the web page
 - Pointing device not needed
- Accessibility statement should include a list of available keys and their function
 - Example: University pages:

Use of standard access key mappings

As of 2004, a standard emerged using numbers, which promotes consistency across different sites. These include, for example, 1 to go to the homepage, 4 for popular sites such as ft.com and bbc.co.uk , as well as being built into pc

UK Government recommendation for access keys

- S - Skip navigation
- 1 - Home page
- 2 - What's new
- 3 - Site map
- 4 - Search
- 5 - Frequently Asked Questions (FAQ)
- 6 - Help
- 7 - Complaints procedure
- 8 - Terms and conditions
- 9 - Feedback form
- 0 - Access key details

http://en.wikipedia.org/wiki/Access_key

Feedback

Privacy

FOI

Accessibility