COMP1710/6780

Web Development and Design

Week 2 27 February – 3 March 2023

Want to be a class representative? Nominate today!

Please nominate yourself to your course convener (sabrina.Caldwell@anu.edu.au).

You are free to nominate yourself whether you are currently on-campus or studying remotely.

We need at least two: One for COMP1710 and one for COMP6780

Time	Monday	Tuesday	Wednesday	Thursday	Friday
8am			LAB 01	LAB 05	
9am			Hanna Neumann_Bldg 145_Comp Lab 1.24 **David** **Yujia**	Hanna Neumann_Bldg 145_Comp Lab 1.24 **Rahul** **Xiaodi**	LAB 08 Hanna Neumann_Bldg 145_Comp Lab 1.23 **Cathy** **Xiaodi**
10am			LAB 02	LAB 06	
11am			Hanna Neumann_Bldg 145_Comp Lab 1.23 **Ishita** **Muhammad**	CSIT_Bldg 108_LINUX Lab_Rms N115/N116 **Yujia** **Yingnan**	LAB ONLINE ONLY 11am-1pm **Erika** **Joey**
12pm				LECTURE Physics_Bldg 39A_DNF Dunbar Lecture Theatre on campus	LAB 09 Hanna Neumann_Bldg 145_Comp Lab 1.23 **Cathy** **Erika**
1pm					
2pm			LAB 03		LAB 10
3pm		LECTURE Physics_Bldg 39A_DNF Dunbar Lecture Theatre on campus	Hanna Neumann_Bldg 145_Comp Lab 1.23 **Ishita** **Muhammad**	LAB 07 CSIT_Bldg 108_LINUX Lab_Rms N115/N116 **Erika (can shift)** **Yingnan**	Hanna Neumann_Bldg 145_Comp Lab 1.24 **Erika,** **Joey (1st six weeks)**
4pm			LAB 04		
5pm		TUTORS Mtg Online Zoom **5:30 – 6:30**	CSIT_Bldg 108_LINUX Lab_Rms N115/N116 **Manett,** **Rahul**	LAB ONLINE ONLY 5-7pm **Manett** **Adi**	
6pm					
7pm					

This year tutorials are either all in person or online; we do not have hybrid tutorials.

What to expect in the lab (this week)

The MOOC online learning for week 1 is still open this week.

MOOC online learning for week 2 is now open.

Don't forget to do the quizlets! They are due Sunday, 5th March by 11:55pm

In addition, you will be:

- learning about how to load your files to the web server we use in this course: Partch.

- getting going participating on Piazza

- working with digital images

- using a Chrome browser to read WWW resources

- producing some art

Just a quick note about web development as a career…

According to Randstad Australia (global employment company):

- One of the most popular and growing professions in Australia
- Median average annual salary $90,000; entry-level $75,000 to experienced $125,000
- Various types of web developer including: front end developer, backend developer, Wordpress developer, mobile web developer, web security developer

Web development refers in general to the **tasks associated with developing websites for hosting** via intranet or internet. The web development process includes **web design, web content development, client-side/server-side scripting** and **network security configuration**, among other tasks.

In a broader sense, web development encompasses all the actions, updates, and operations required to build, maintain and manage a website to ensure its performance, user experience, and speed are optimal.

Web development might also, but not necessarily, include all those **strategic actions needed to ensure its proper ranking on search engine results**. Usually, those tasks pertain to a different specialization, namely search engine optimization (SEO)

Web development is also known as website development, while the professionals that maintain a website are called web developers or (more commonly) web devs.

HTML ⟷ CSS

Hypertext Markup Language

Cascading Style Sheets

At its most basic, a website doesn't
need anything but HTML!
(But it will be very basic!

Cascading style sheets define how
your content is presented on the
user's browser.

Front end ⟷ Back end

What your website visitors
see on their desktop or device

What goes on behind the
scenes, especially data
management

Australian National University

The most beautiful, interactive, well-designed website in the world will not be visited by anyone if there is no interesting, necessary, or otherwise valuable content!
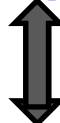
Who first said, "Content is King?"

The saying, "Content is King" was first coined by a man named Sumner Redstone in the mid 1990s.

What Sumner meant when he said that "content is king" is that the distribution channels change, but the need for content remains.

Australian
National
University

socrative
CALDWELL8573

Did you know…

Planning

↓

Designing

↕

Building

↕

Installing

↕
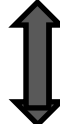
Maintaining

Planning – some indicative questions to consider

- What is the topic?
- Scope
- Interest (who will care and why?)
- How will my site be different?
- Name / domain name
- What content elements will I use?
- What functionality will I implement?

Designing – some indicative questions to consider

- Visual design – what will the 'look and feel' be like?

- Navigation

- How will I organize the content and interaction?

- What will my file structure look like?

- Usability

- 'Stickiness' – how do I make the experience so enjoyable/valuable that visitors will return?

- What technologies shall I incorporate (for example basic forms, animations, galleries, more)

Building – some indicative questions to consider

- Prepare your ~~ingredients~~ elements (images video, text, decorative elements, etc.)
- Understand how to correctly link to files in different folders
- Consider how long pages will take to load
- Do I need a site map? (Probably, for you and your visitors)
- Evaluating and testing

MEASURE TWIC
CUT ONCE

Installing – some indicative questions to consider

- Where will I host this site? (In this course it is in the private ANU space – Partch)

- Have I ensured that there is an index.html to 'start' the website so a browser can load it?
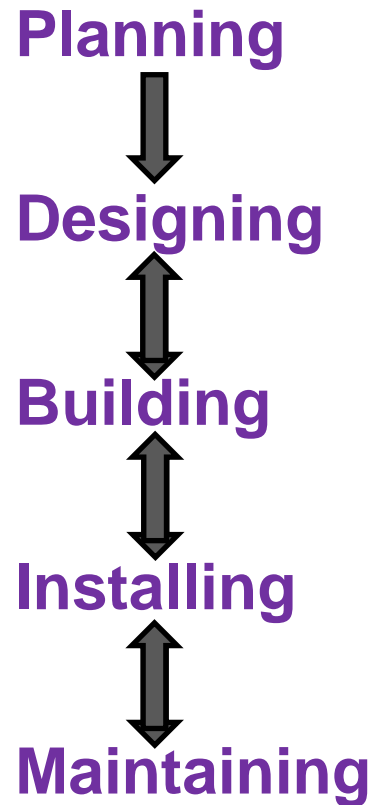
- Have I ensured I unzipped my zipped file?

Maintaining – **some indicative questions to consider**

- Monitor your site – who is visiting? how many? how long do they stay?

- Consider Search Engine Optimization (SEO)

- Fix problems

- Keep fresh

A note about SEO "According to our research, 24 website characteristics came up as factors affecting any website's [Google] ranking, with the most references mentioning quality and quantity of backlinks, social media support, keyword in title tag, website structure, website size, loading time, domain age, and keyword density."

Ziakis, C.; Vlachopoulou, M.; Kyrkoudis, T.; Karagkiozidou, M. Important Factors for Improving Google Search Rank. *Future Internet* **2019**, *11*, 32. https://doi.org/10.3390/fi11020032

Then incrementally elevate your website by doing it all again!

Planning

↓

Designing

↕

Building

↕

Installing

↕

Maintaining

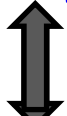Life of a website on the internet

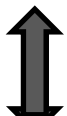**Discovery**

↓

Adoption

↕

Steady state

↕

Retirement

↕

But… evergreen content, long tail

Discovery – some indicative questions to consider

- Is my website discoverable?

- How can I use 'word of mouth'?

- How can I improve my results on SERPs (Search Engine Results Pages)

- Attending to your early visitors

Visitors adopt your site

- Content
- Content
- Calls to action
- Being looked after – offer contact, but don't abuse the privilege
- Visitor engagement – conversations, puzzles, competitions
- Social media networking
- SEO
- Did I mention content?

Australian
National
University

Steady state – some indicative questions to consider

- Risks (competition, your interest, success, succession)
- Community
- Achievement of desired results
- Can't 'rest on your own laurels' – don't get complacent

Average lifespan of a website is 2.7 years.

Forbes

Retirement – some indicative questions to consider

- Retiring old site in favour of new?
- Digital cliff
- Graceful departure

Evergreen content and 'the long tail of the Internet'

Evergreen content is your website content that doesn't age, or at least ages slowly. Can you think of some types of content that would last the distance?

If you site has evergreen content, your site will age gracefully and always be relevant. Evergreen content is not usually enough on its own, but it really helps.

"The Long Tail theory suggests that, as the Internet makes distribution easier — and uses state-of-the-art recommendation systems that allows consumers to become aware of more obscure products — demand will shift from the most popular products at the "head" of a demand curve — as charted on an xy axis — to the aggregate power of a long "tail" made up of demand for many different niche products."

Let's talk about Web design

Australian
National
University

The well designed website

1. **Lets the users accomplish their goals**
2. **Makes its purpose clear**
3. **Follows conventions**
4. **Loads and updates quickly**
5. **Displays well in different environments**
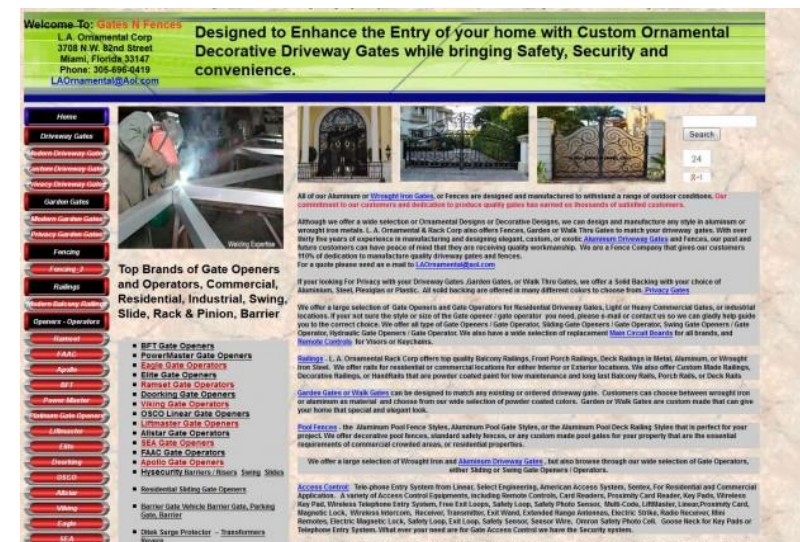6. **Has some style**

Web design is about how your content is presented. It is about the 'look and feel', which is created by your design choices: colour palette, fonts, backgrounds, etc. It also about how your visitor can interact with your website, and their WIFM (What's in it for me?)

Gates N Fences website
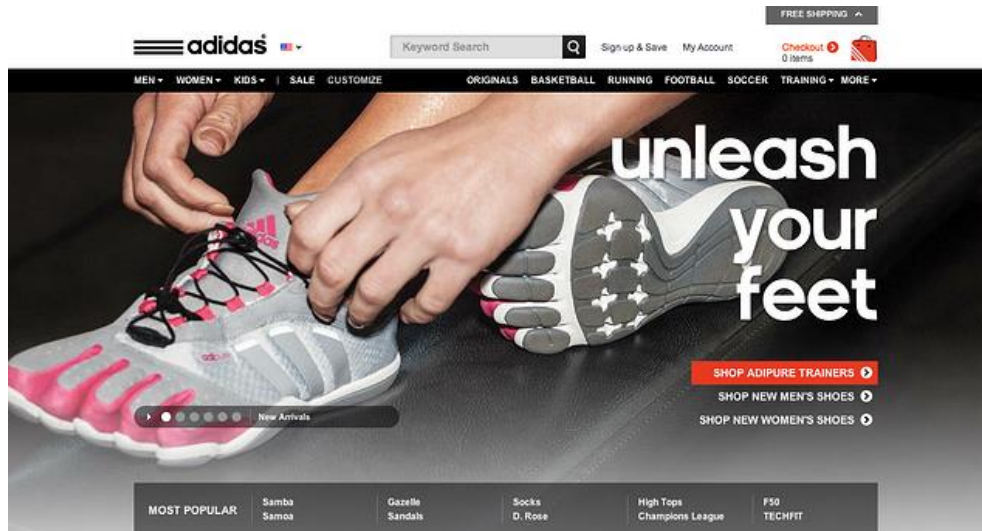
Adidas– instantly recognisable in both brand and product

How long would you spend on this website?

Australian
National
University

New Media design principles – are they all that new?
"Form ever follows function"

"It is the pervading law of all things organic and inorganic, of all things physical and metaphysical, of all things human, and all things super-human, of all true manifestations of the head, of the heart, of the soul, that the life is recognizable in its expression, that form ever follows function. *This is the law."* (italics in original)
                    Lewis Sullivan (1856-1924) Architect

Rawsthorn, Alice (2009) NY Times https://www.nytimes.com/2009/06/01/arts/01iht-DESIGN1.html

Australian National University

Aesthetics ⟷ Usability

"…aesthetics refers to the emotional components"

"The usability of an interface refers to its capacity to support task completion."

"… by understanding how design factors affect users, it is possible to build systems targeted to certain effects and outcomes."

Design thinking…

"Design thinking is a human-centred approach to innovation that draws from the designer's toolkit to integrate the needs of people, the possibilities of technology, and the requirements for business success."

Tim Brown, president and CEO, IDEO

Some elements of Design for New Media

How the Information is presented / organized

- What buttons and functions are available to the user and when they are available to be used

- What the underlying behaviour of the system is

- What information and controls are available to other users, such as the admin. staff, super-users, supervisors, executive overview, editorial correspondent etc

Some elements of Design for New Media

How the Information is presented/organized (user side / internal organisation)

Don't forget hardcopies!

The content and layout of standard printouts
available from the system

The printed material accompanying the system
(e.g. printed website, printable eBooks, CD covers)

Branding and design of hardcopy materials should harmonise with web design

Why bother with careful, creative design?

Because common sense is not always shared and because it saves money.
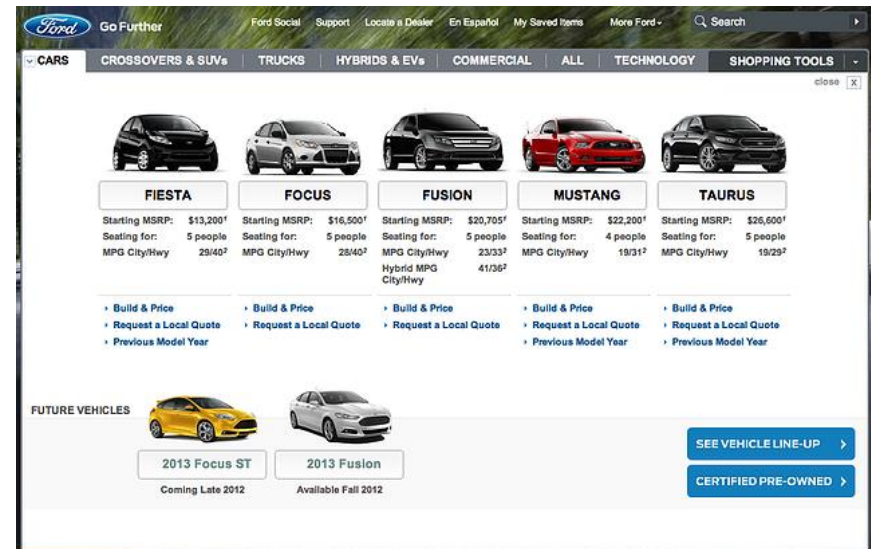
In Production

- It is good to know your client to satisfy their need
  - (NB. at least some of them!)
- Detailed Requirement Specification phase: so you know what you have to do
- Adaptation to and accommodation of future development

Why bother with careful, creative design?

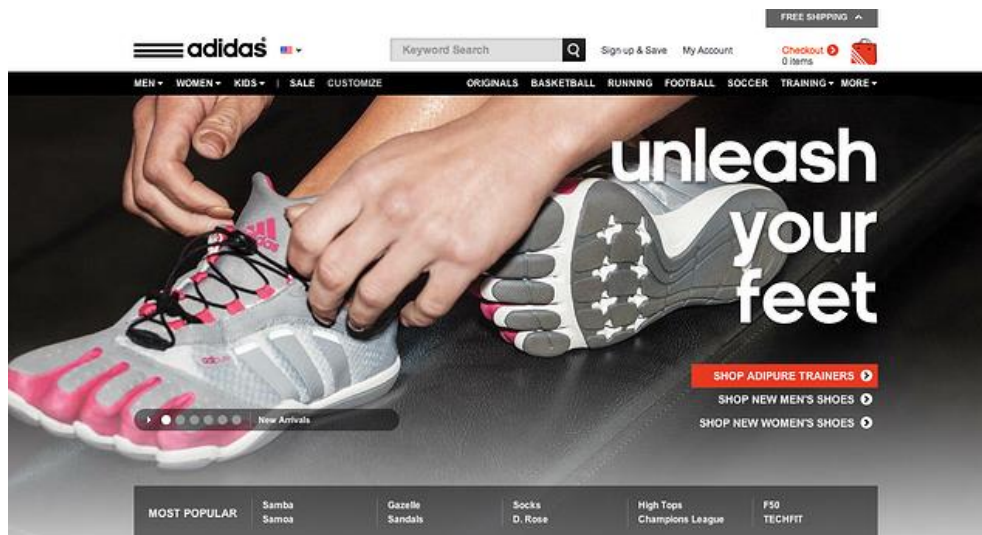*Because common sense is not always shared and because it saves money.*

In Marketing

- Quicker Adoption by users (e.g. Shareware)
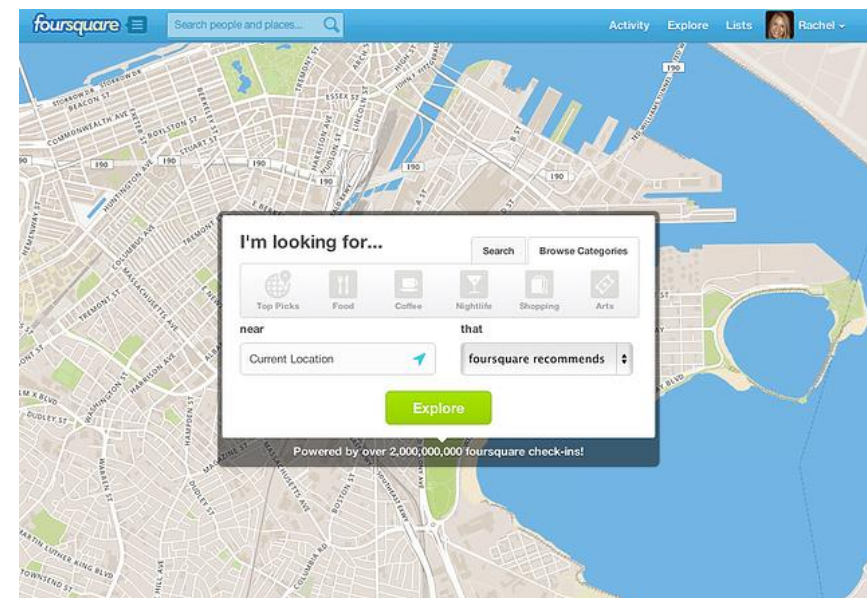- Source of differentiation from competitors

https://blog.hubspot.com/blog/tabid/6307/bid/33367/10-brands-with-website-designs-that-nail-both-form-and-function.aspx

Why bother with careful, creative design?

Adidas– instantly recognisable in both brand and product

Foursquare - NOT instantly recognisable, but function is obvious

Why bother with careful, creative design?

In Use

- Less support (Courses, Help Desks, etc)
  - N.B.: some companies make money from support / Real cost of a system
- More efficiency
- Fewer errors or undo-able interaction
- Improved Safety (submitting mail, booking plane)
- Make them return
  - Sticky web sites: users stay longer and return more frequently (!)

Have fun in the labs and…

Don't get too stressed. There is a lot to learn but there is plenty of time to learn it, and you will definitely learn by doing.

Remember to submit your topic

Start assembling the content you think you'll want to use

Don't forget to complete MOOC 1&2 in the labs or in your own time but do complete them and remember the quizlets are part of your marks – they close on 5th March 11:55pm