Australian National University

COMP1710/6780

Web Development and Design

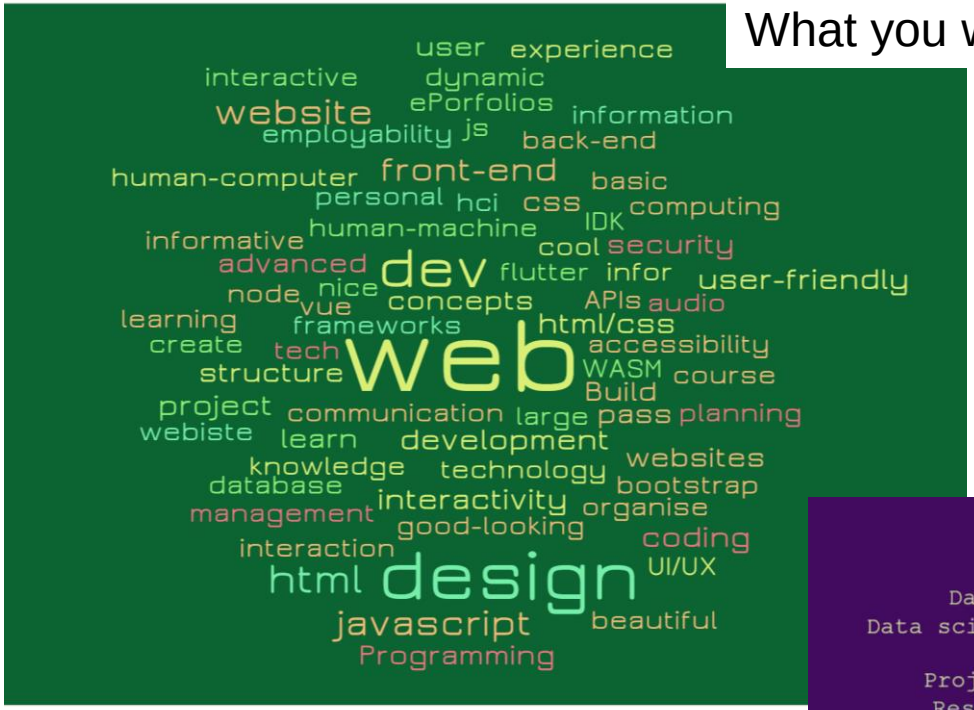
Course review and Final exam hints and tips

Image source: https://www.pinterest.com.au/pin/496029346431763023/

Course Overview: Learning Outcomes

Upon successful completion of the course, you will be able to:

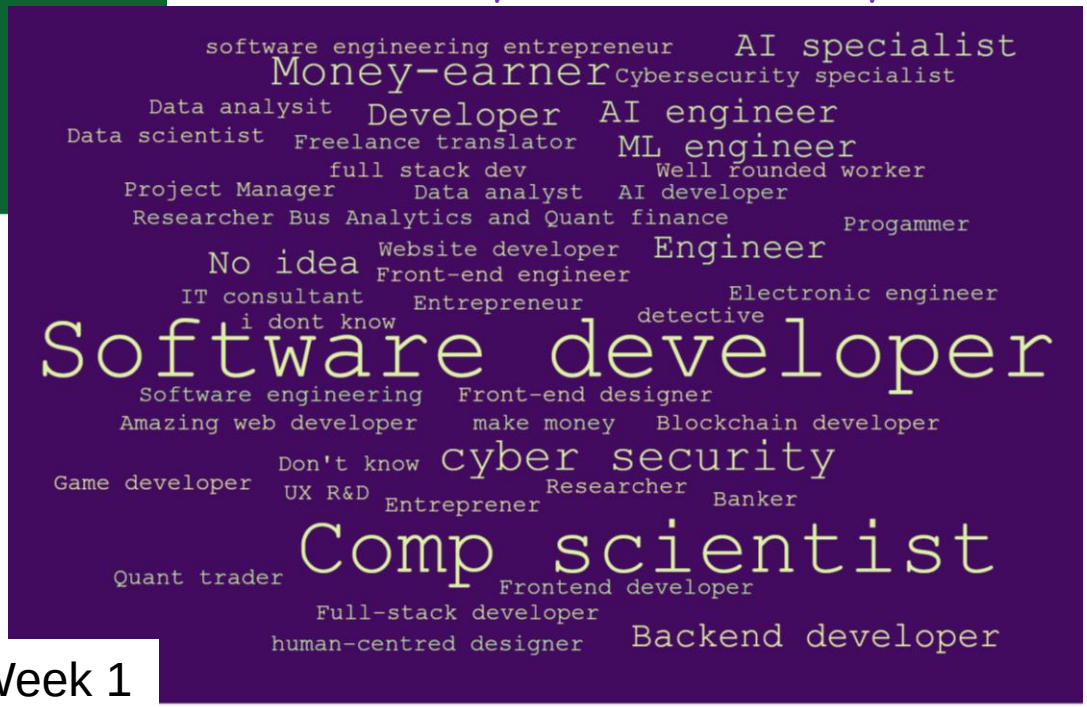
- Understand and be able to **develop and design interactive web sites** including multimedia content by applying current web design principles, guidelines and user-centered heuristics.
- Apply a **user-centred focus** to the design and development of web sites.
- Demonstrate **knowledge of accessibility**, compliance with standards, privacy concerns and personalisation for web sites.
- Understand and **be able to separately control the content, the appearance and the behaviour** of web sites.
- Understand and report on the **nature and practice of human-computer interaction research** in an ethical environment.



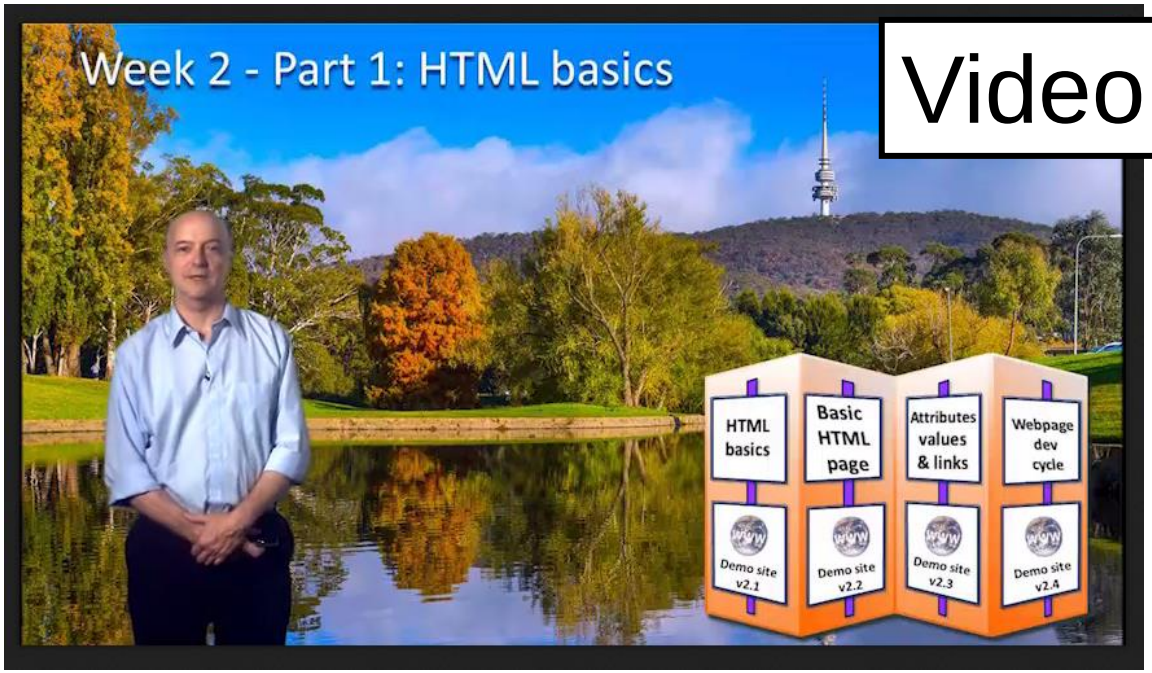
What you wanted to learn Week 1

Did you learn what you hoped?

Do you feel more ready to be a...?



Your career aspirations Week 1



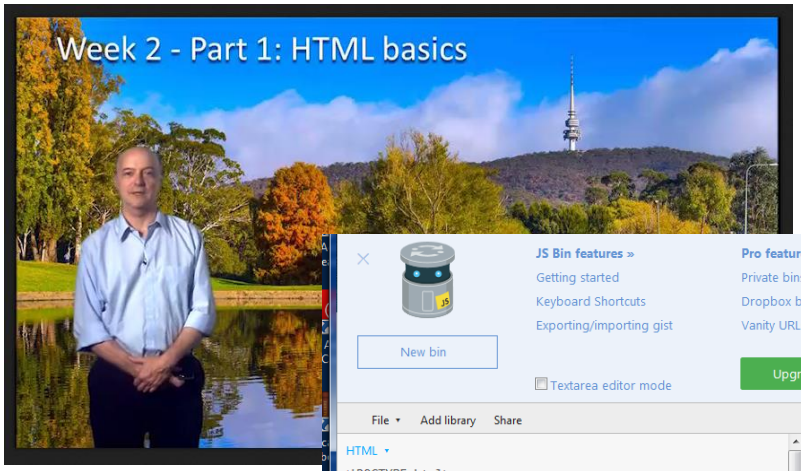
Video lessons

HTML and CSS

Associated lab activities

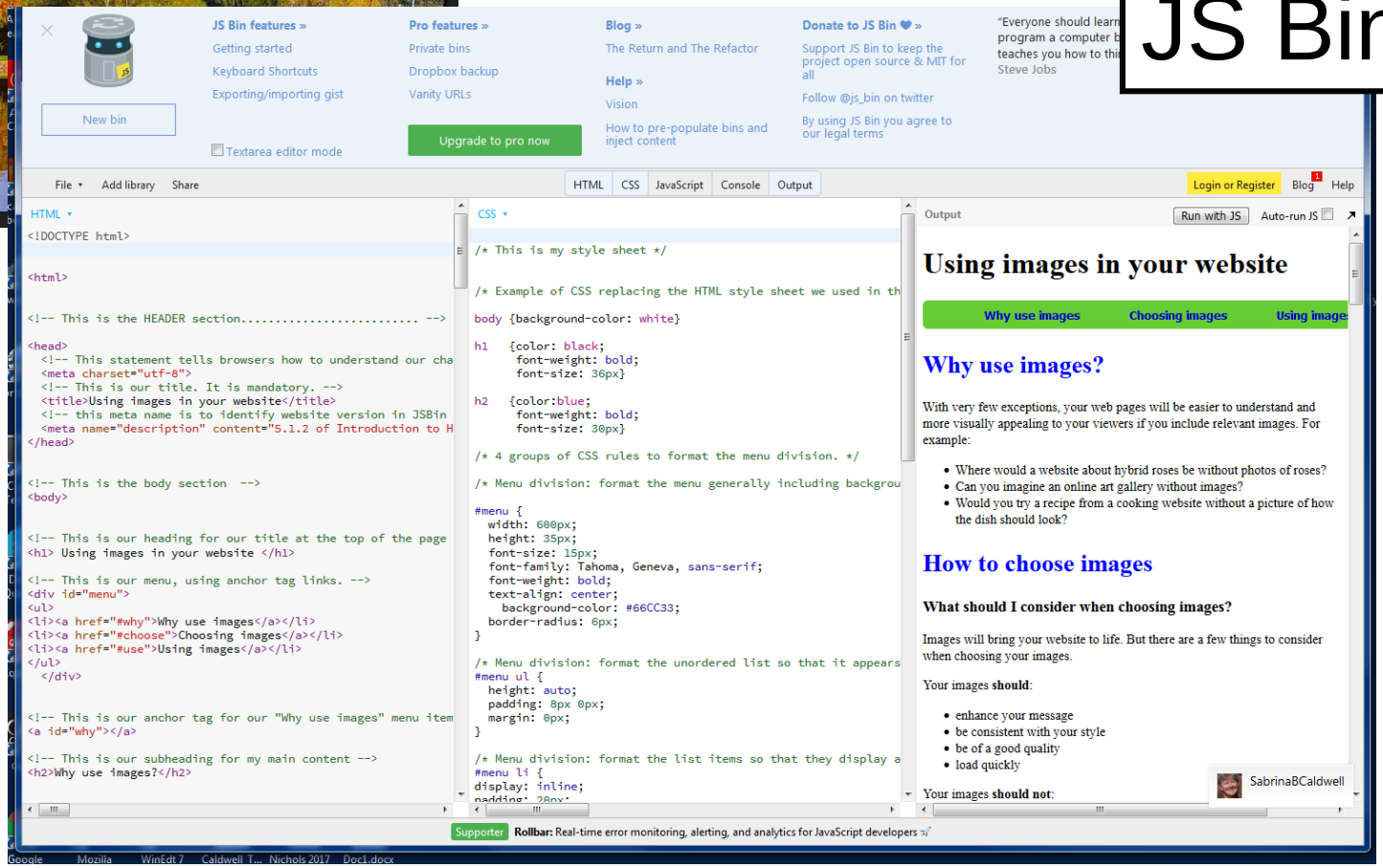
Lab activity (id:1.3)
Lab activity:

1	JS Bin	If you have never registered for JS Bin before, register now. Login and open the demo website for this part.
2	Text editor	Review the text editors discussed in the video lesson for this part, or others in which you may be interested, and choose your preferred text editor. Don't worry, you can change at any time. Familiarise yourself with the layout and functionality of your text editor



HTML and CSS

JS Bin



Website development lifecycle

Planning

Designing

Building

Installing

Maintaining

Discovery

Adoption

Steady state

Retirement

But… evergreen content, long tail

Life of a website on the internet

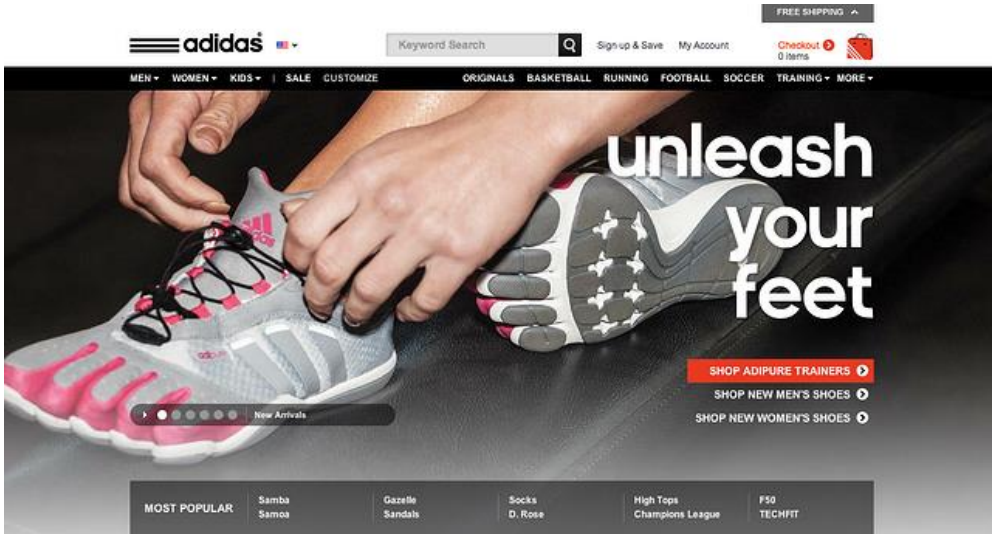
The well designed website

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**

https://www.aglobalreach.com/website-design-less-is-more/

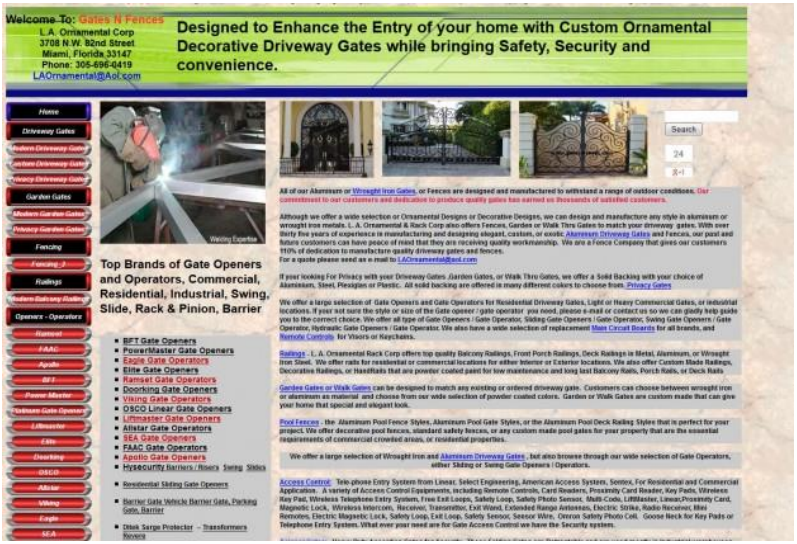
What is Web Design?

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?)



Adidas– instantly recognisable in both brand and product

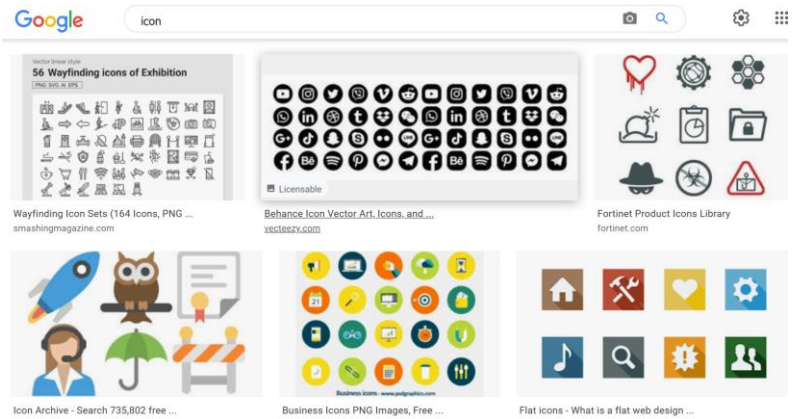
Gates N Fences website



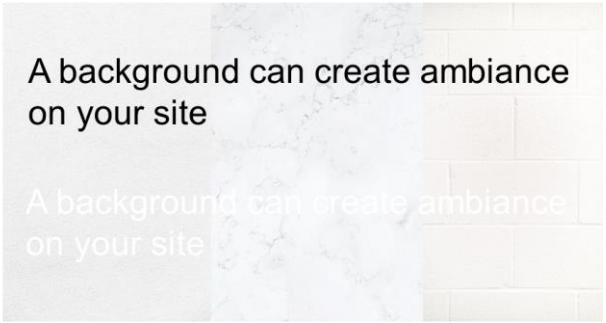
How long would you spend on this website?

Content Types

- Text
- Images
- Audio
- Video
- Animations
- Icons
- Decorative detail
- Backgrounds



Text

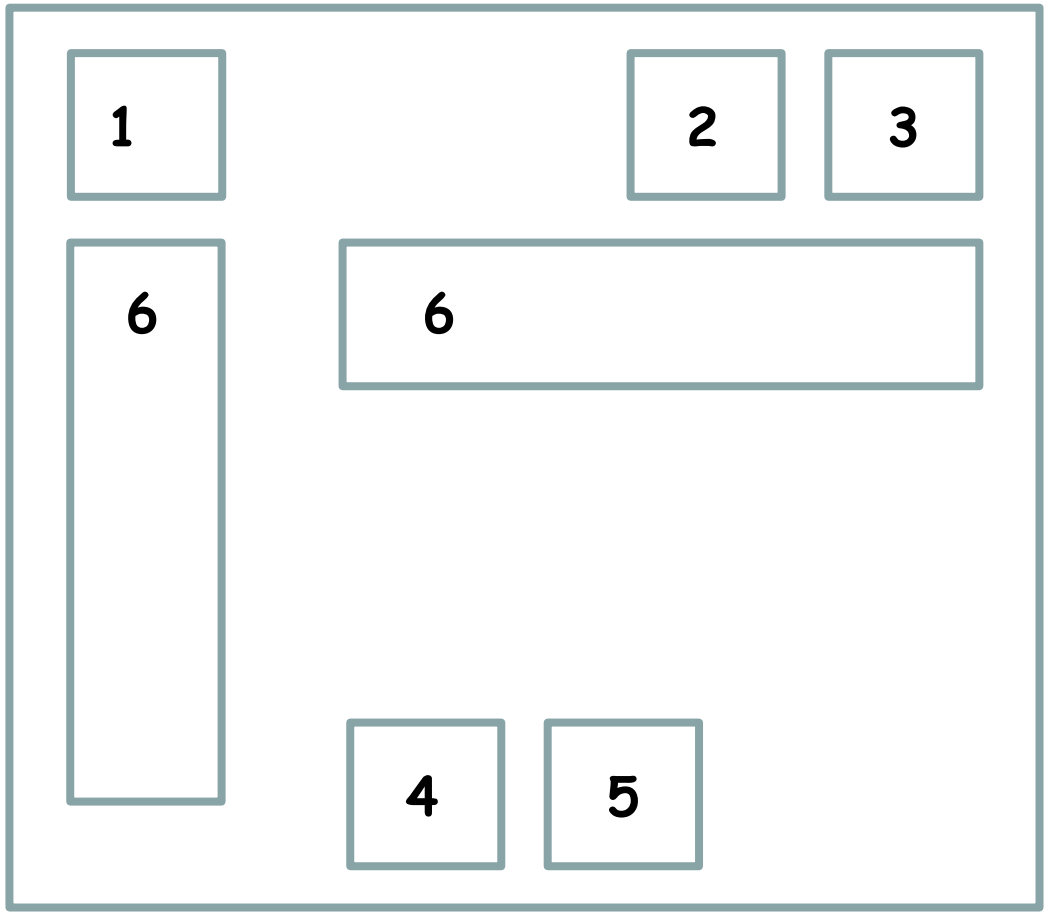


White texture backgrounds

Purple texture backgrounds

Visual Conventions

For example: where visitors to your site expect things to be



1. Logo, leading back to front door
2. Shopping cart, leading to check-out
3. Help
4. About us
5. Contact us
6. Site navigation bars

Learning Styles: VARK

V Visual

A Aural/auditory

R Read/write

K Kinesthetic

…. and multi-modal

User requirements

Q: What does the term ‘stakeholder’ mean?

Directly involved:
- Originator
- Owner
- Sponsor
- Functional managers
- Contracts
- Suppliers
- Support companies
- Users
- Customers

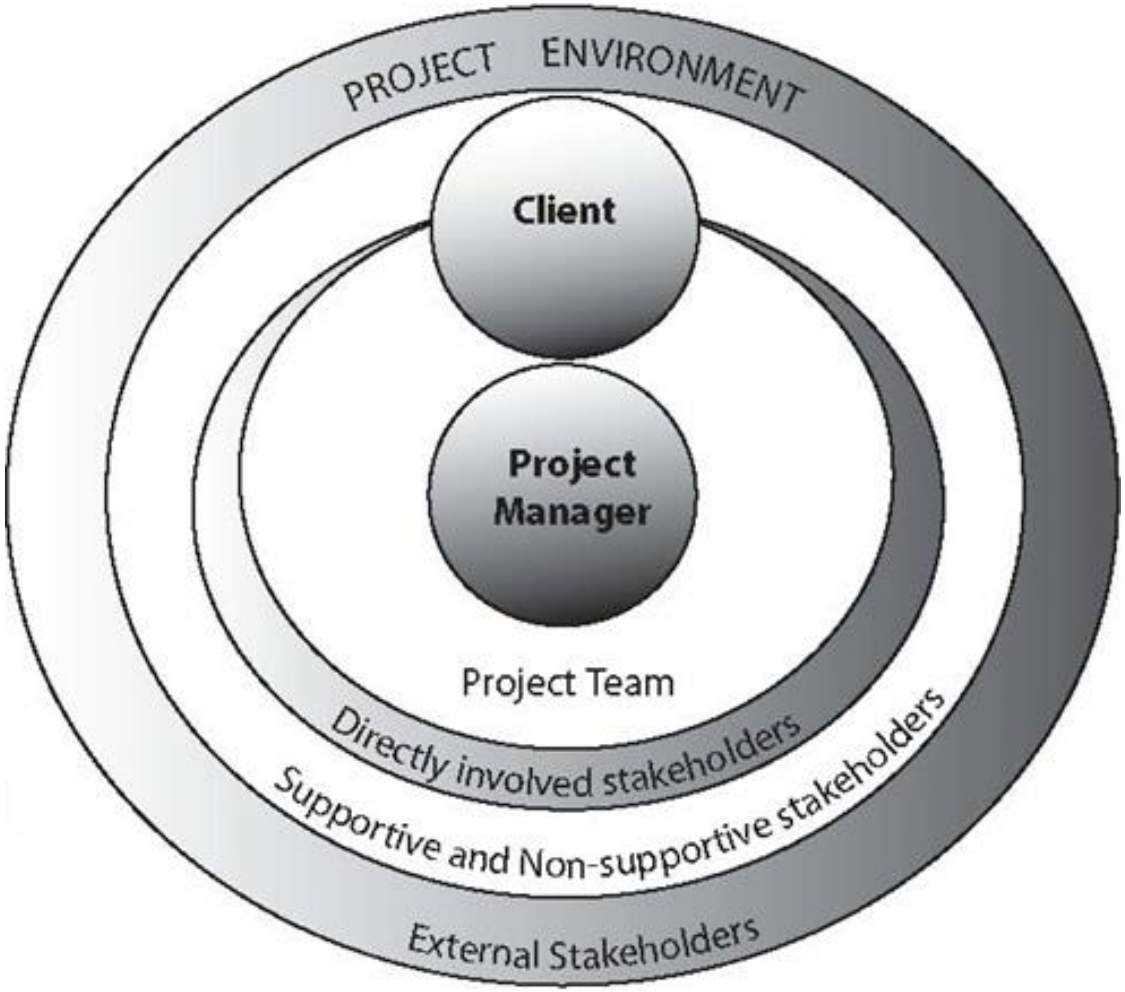
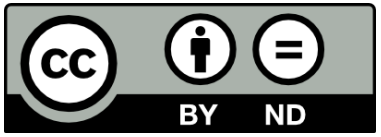


Image credibility and copyright

Caldwell, Sabrina. The Photogaphicalist. http://thephotographicalist.wordpress.com Image by Ryan McGuire, annotated by Sabrina Caldwell

Image credibility and copyright

CC-BY



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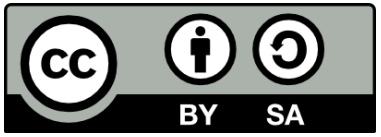

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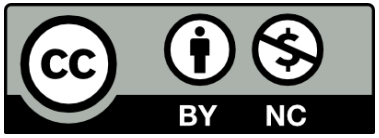

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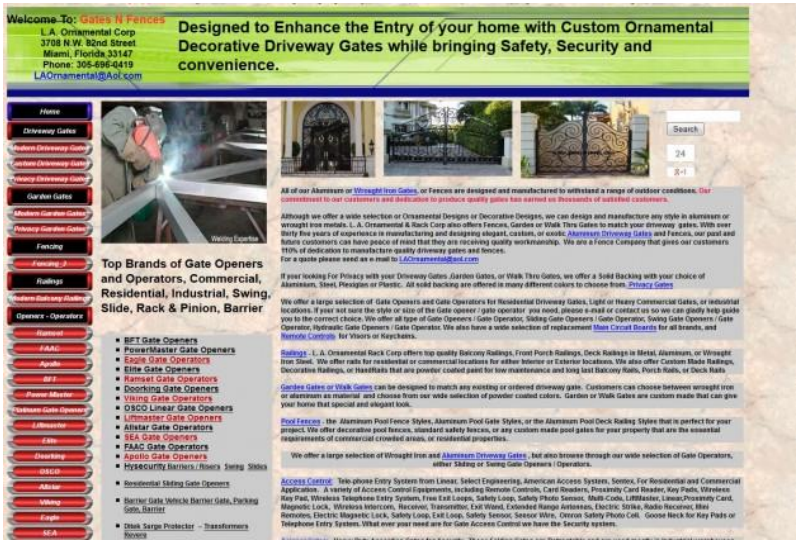
Good and Bad Website Design

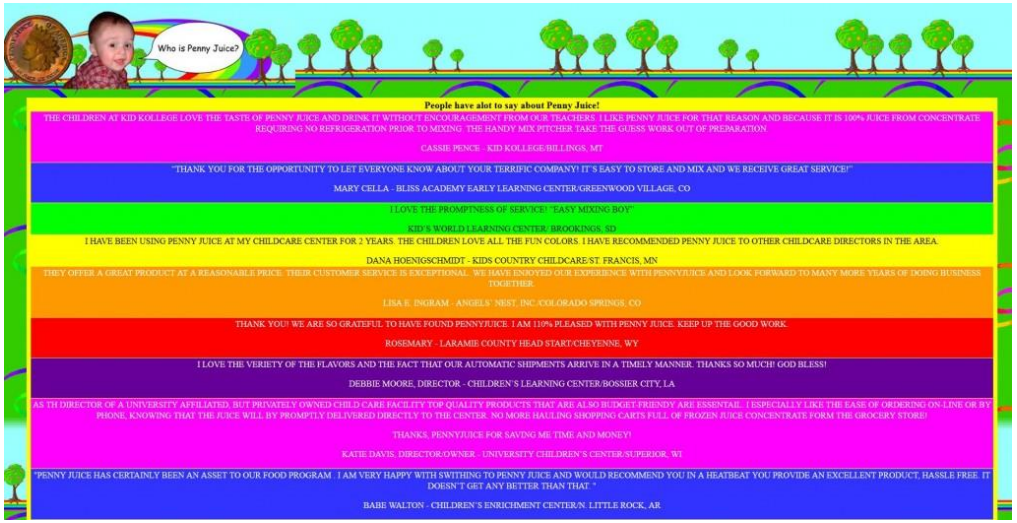
Well and not-so-well designed media

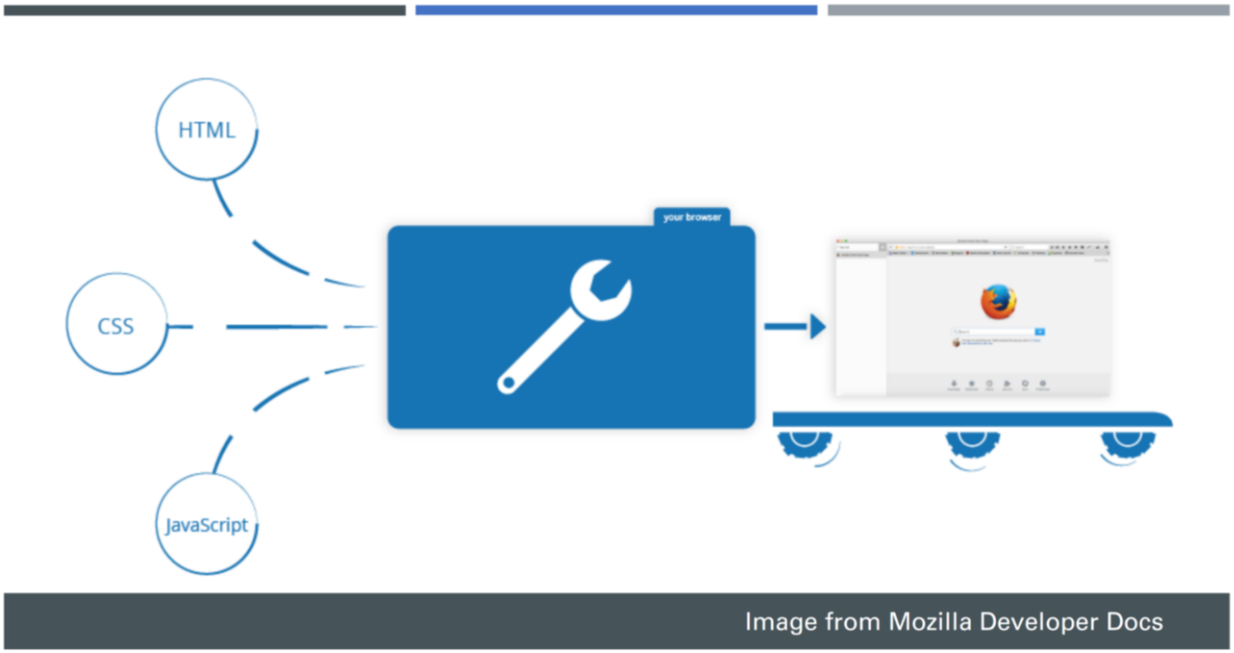
A useless (?) website: http://www.superbad.com/

Gates N Fences website



Penny Juice website





How it works:

- Web page loads in your browser
- Code runs (HTML, CSS and JavaScript) inside environment
- Code is executed in the order it appears on the page - JavaScript should be the final code loaded

Storyboarding

Why would storyboarding be important for video projects?

Improves narrative flow and storytelling

Facilitates organisation

Decreases costs

Helps avoid failure of project

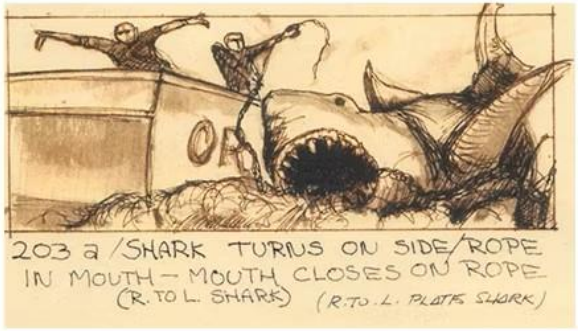
Easy to refine ideas

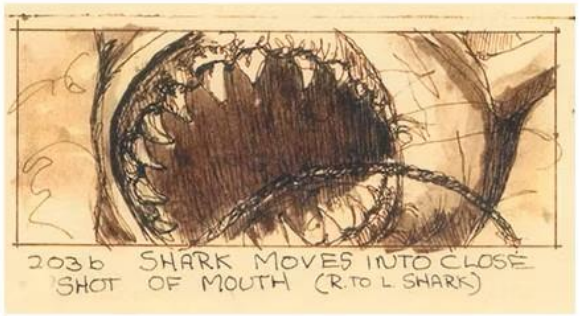
Enables resourcing and supply

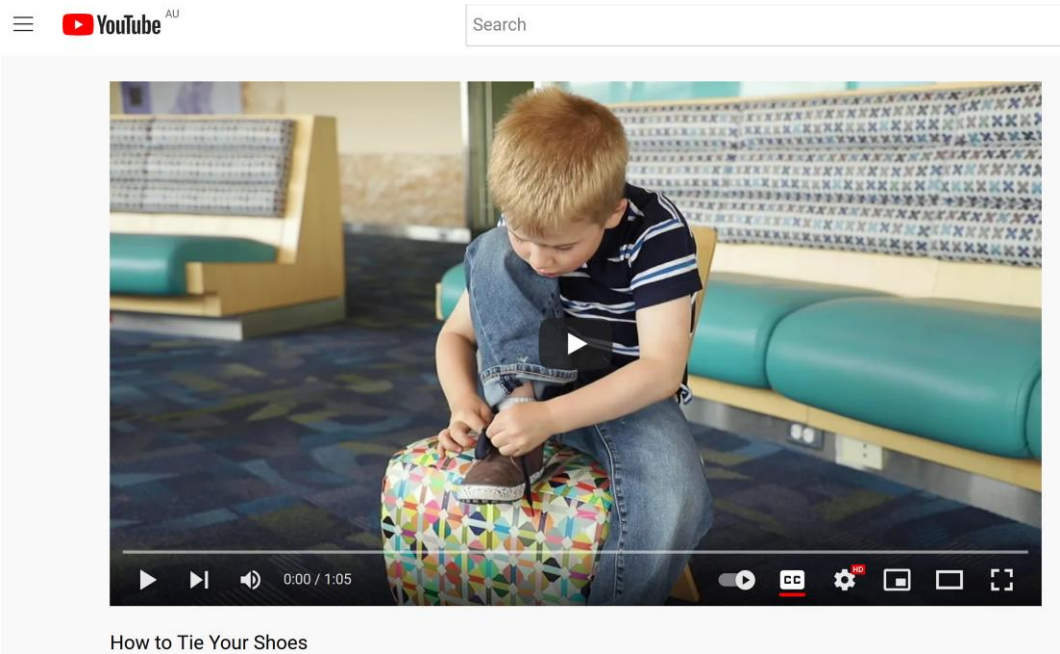
Decreases time needed

Identify and solve problems in advance

Jaws







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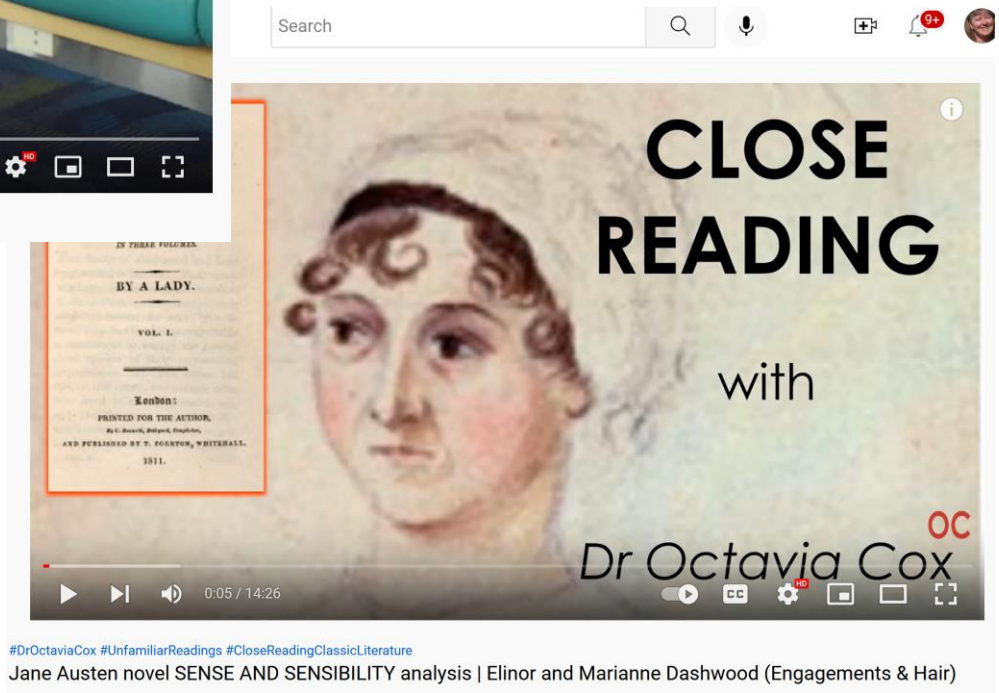
Tip: Look online for videos on your topic and check how long they are.

How long should online videos be?



Length: 14:26

Human Computer Interaction

‘Computer’

- Large scale computing systems
- Tablets,
- PCs,
- Smart phone
- Embedded computers

Interaction

- Mission: transactions, information searches
- Technique: interface devices (mouse, electronic pencil, fingerprint, voice commands, hand gestures)
- … and much much more!

Human

- Individuals
- Groups (In-person, virtual, hybrid)

Human Computer Interaction

Usability as seen through the HCI lens:

- Easy to learn to use
- Easy to remember how to use
- Effective to use
- Efficient to use
- Safe to use
- Enjoyable to use

If your website doesn't meet these usability criteria, your visitors may be few and seldom.

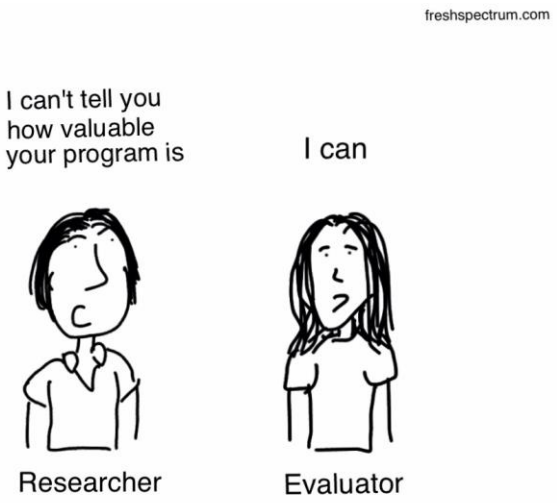
Human Computer Interaction (HCI)

'Evaluation' in its broadest sense refers to any systematic process to judge merit, worth or significance by combining evidence and values.

You are only one person, with your own pre-existing assumptions.

To learn if your website works for others, you need to evaluate it.

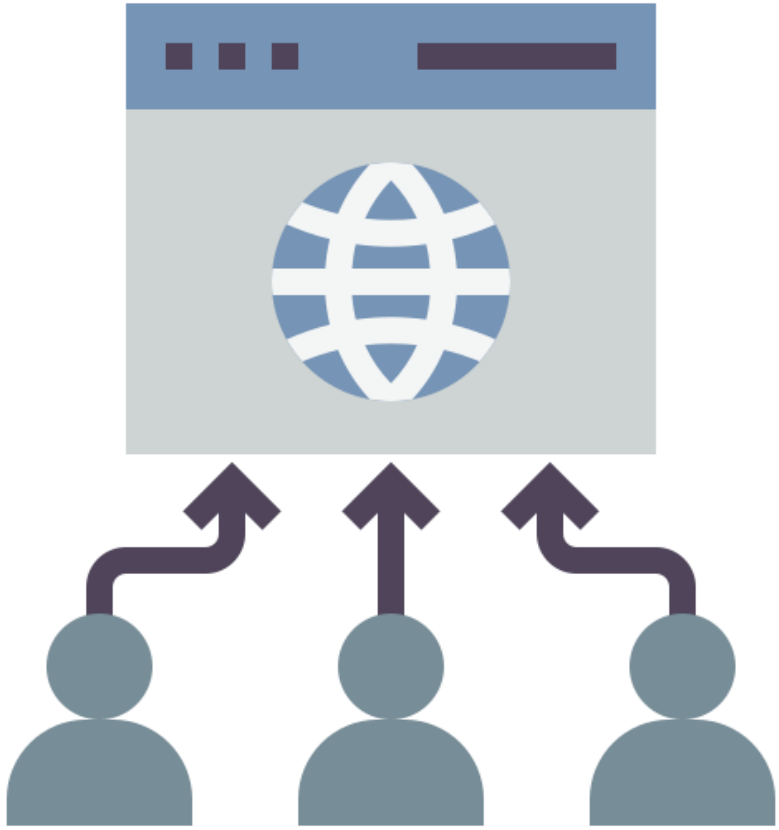
- When you gather requirements you can summarise what you think the requirements are and present them back to your target users, using words, pictures, storyboards, mockups, early-stage prototypes.
- You can build simple prototypes of parts of those requirements and let your target users experience what they had said they wanted.



WEBDEVELOPMENT STATS

Traffic sources

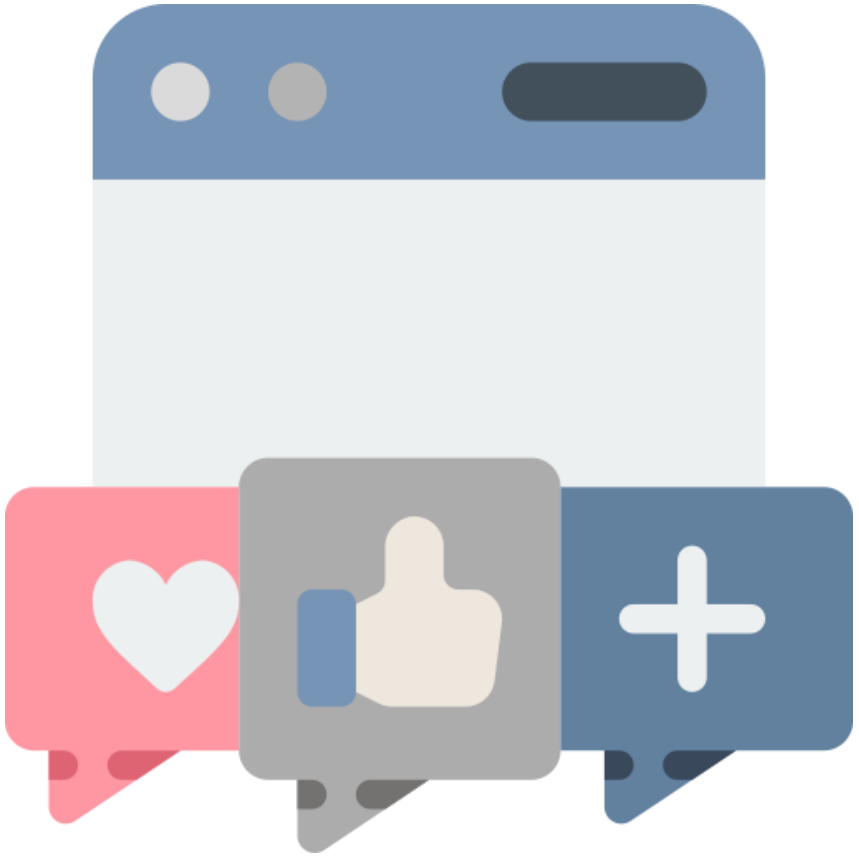
- Search
- Websites
- Social media
- Direct link



WEBDEVELOPMENT STATS

Engagement

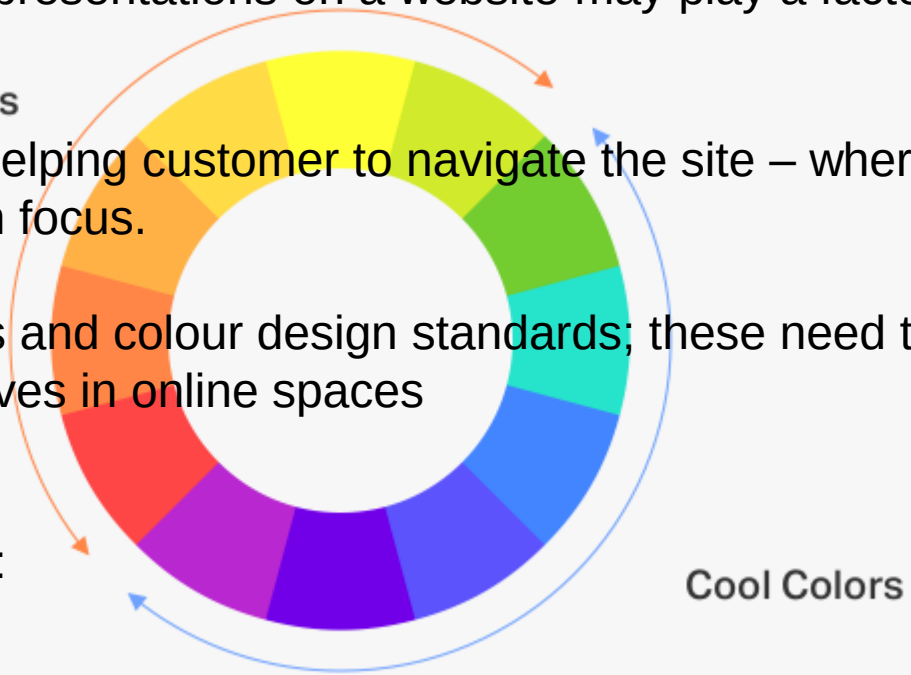
- Returning visits
- Visit length
- Downloads
- Clicks
- Page-scrolls



Colour theory

Commercial sites need to pay attention to colour

•Research shows that the visual representations on a website may play a factor in up to 96% of purchase decision.



• Colour plays a significant role in helping customer to navigate the site – where to visit next, buttons to push, attention focus.

• Branding – companies have logos and colour design standards; these need to be used to help visitors orient themselves in online spaces

Other aspects of colour to consider:

Contrast – emphasizes key point
Warm vs *Cool* – creates moods. Warm is comforting / happy but can be too energetic in reds especially. Cool is peaceful but can become too formal or cold. Colours can be *shaded* by adding black and *lightened* by adding white but remain within your colour palette.

Accessibility

Hearing

Vision

Cognitive processing

Manual dexterity

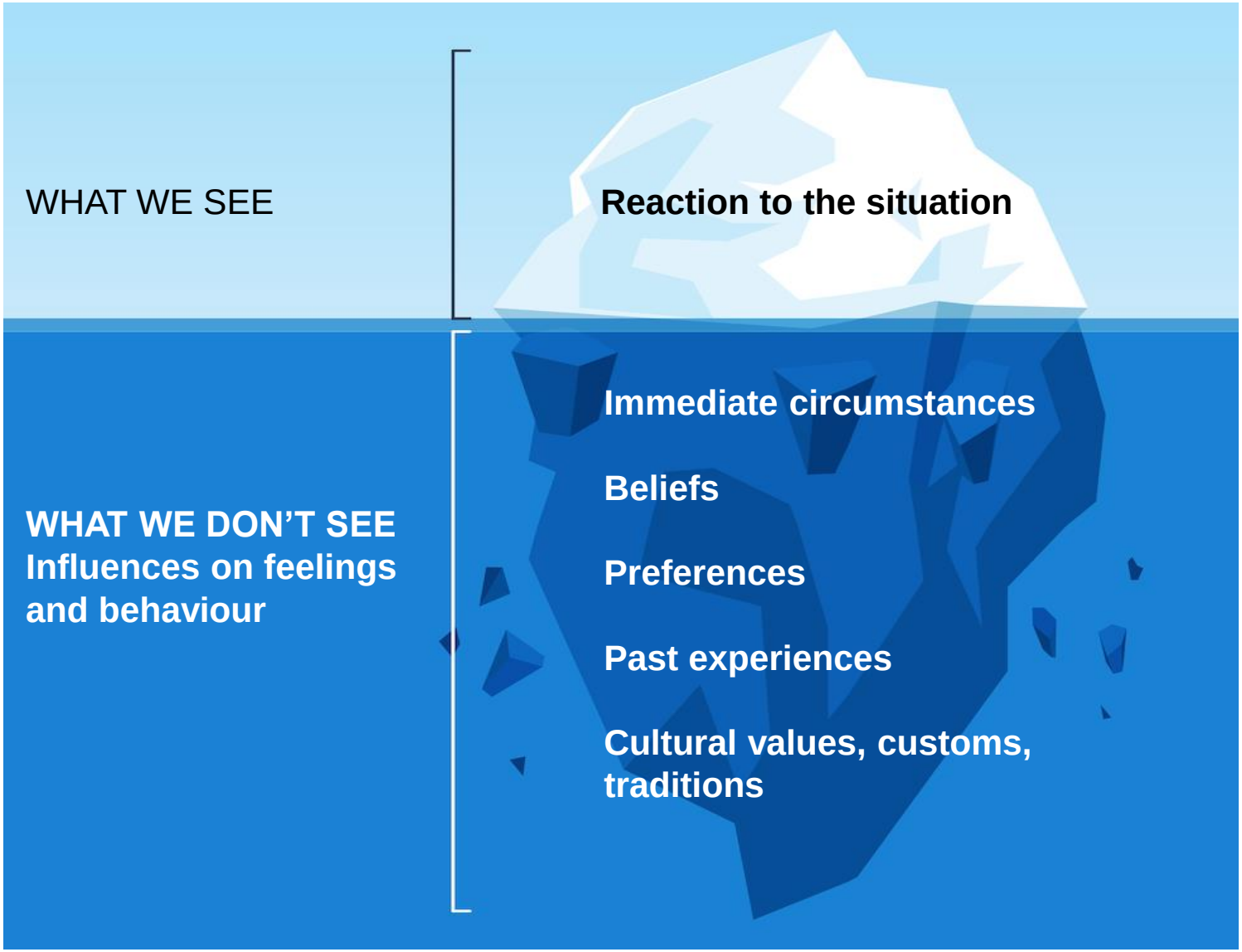
Images and quote source: https://www.w3.org/WAI/media/av/users-orgs/

What is perspective taking?

Broadly speaking, perspective taking is understanding and accommodating the perspectives of others, not just ourselves.

> "The ability to understand how a situation appears to another person and how that person is reacting cognitively and emotionally to the situation."
>
> – *Gehlbach, 2004*

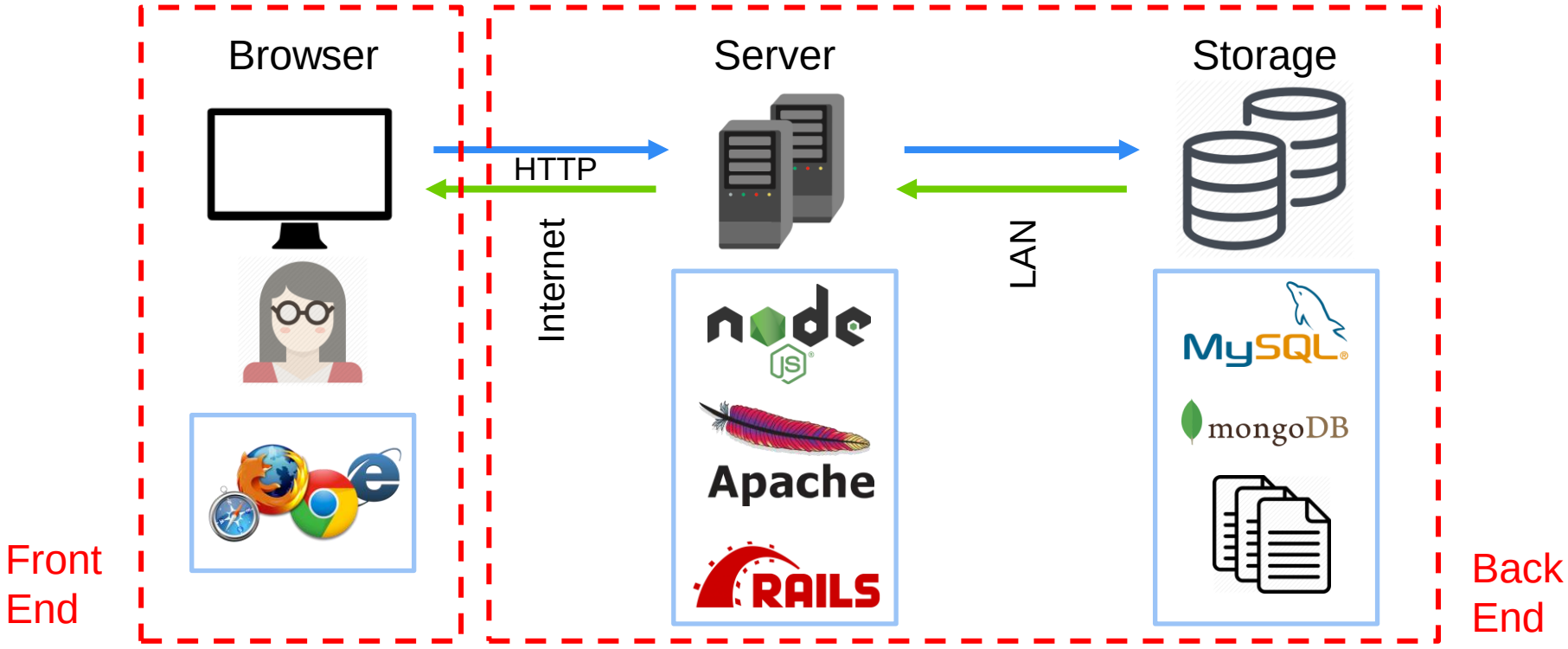
Perspective Taking



Empatico: https://empatico.org

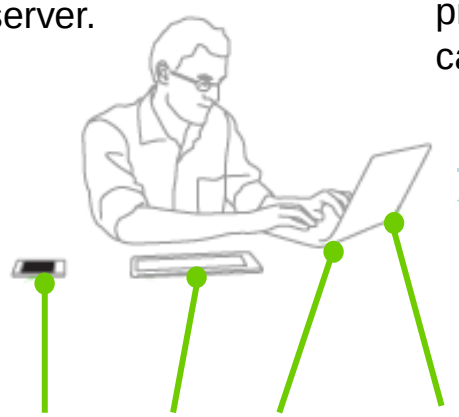
Full stack – front end

Full Stack Web Application Architecture



Front End Development

1 A site is loaded in a browser from the server.



Responsive design allows a site to adapt to different devices.

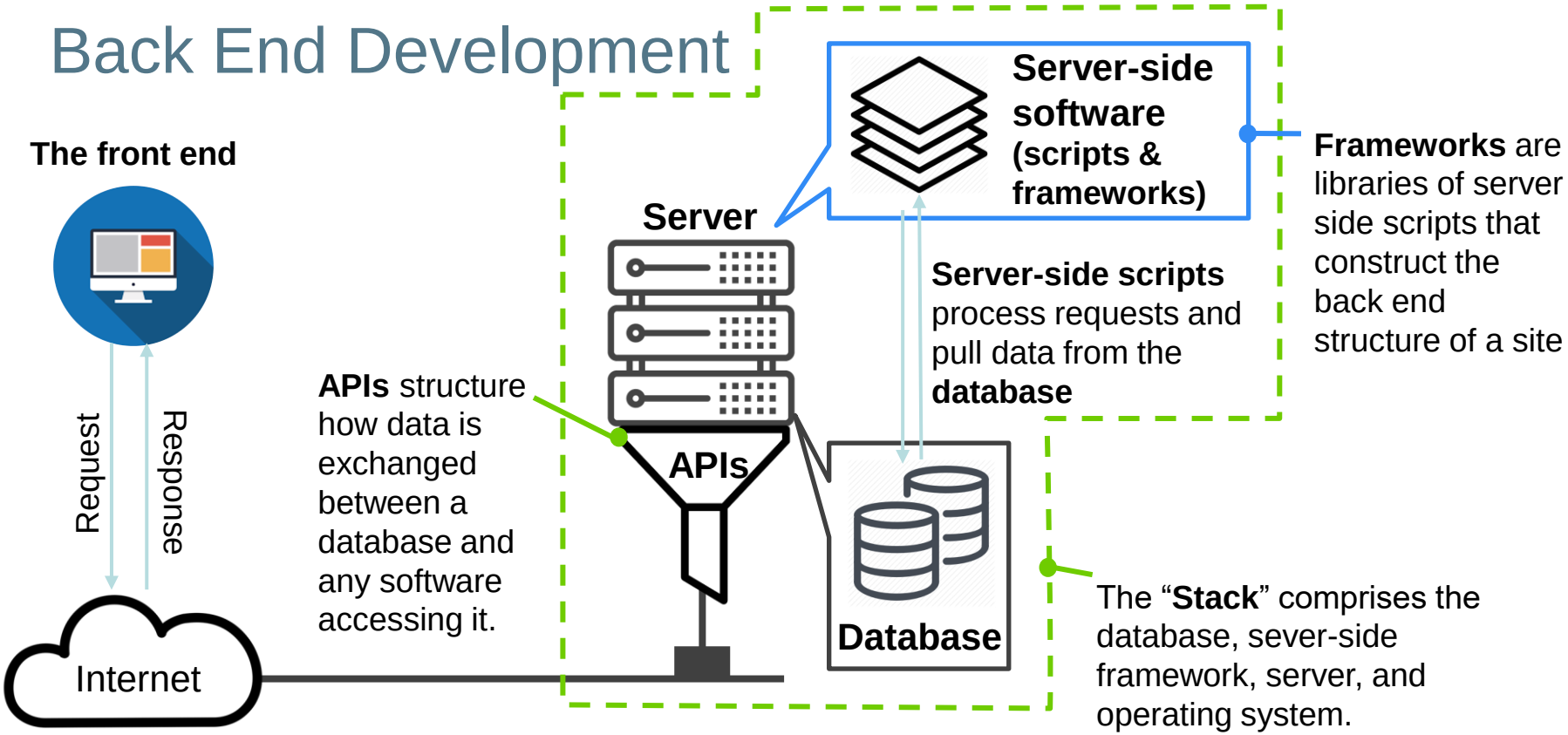
2 **Client-site scripts** Run in the browser and process requests without call-backs to the server

Everything a user sees in the browser is a mix of **HTML, CSS, and Javascript**.

3 When a call to database is required, scripts send requests to the back end.

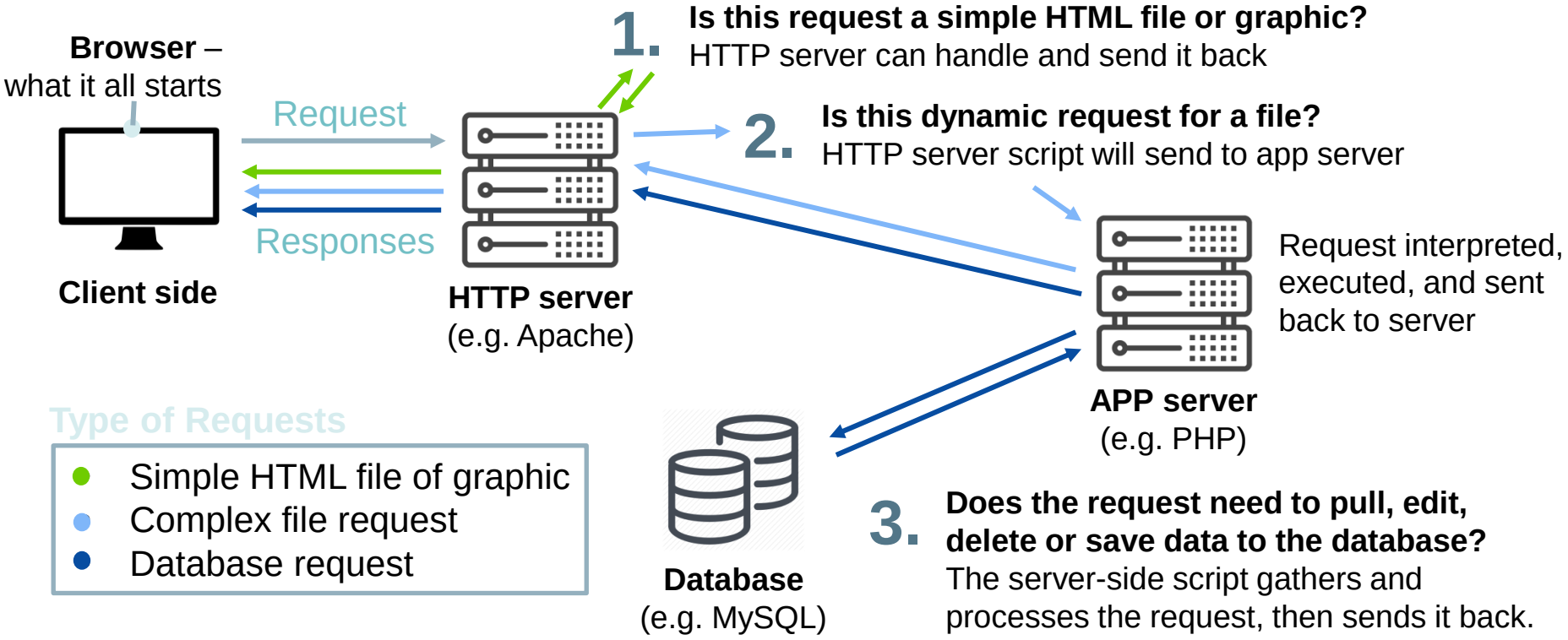
4 The **back-end server-side scripts** process the request, pull out data from database and send it back.

Full stack – back end



Full stack – back end

Server: Behind the Scenes



EPUB

Electronic **Pub**lication

XML Extensible Markup Language

XML transfers data

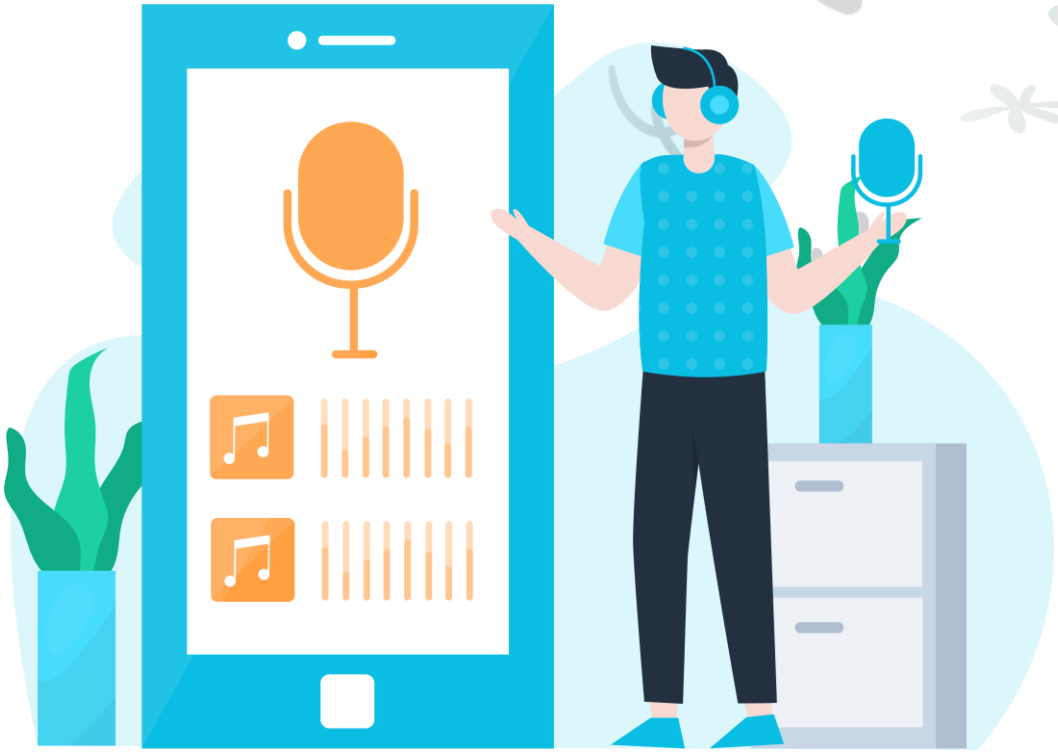
- Container
  - Multiple files/different file types
- Open standard for e-books
  - Semantics
  - Structure
  - Containerisation
  - Media overlays

.epub file

Webdevelopment Perspective

Podcasts

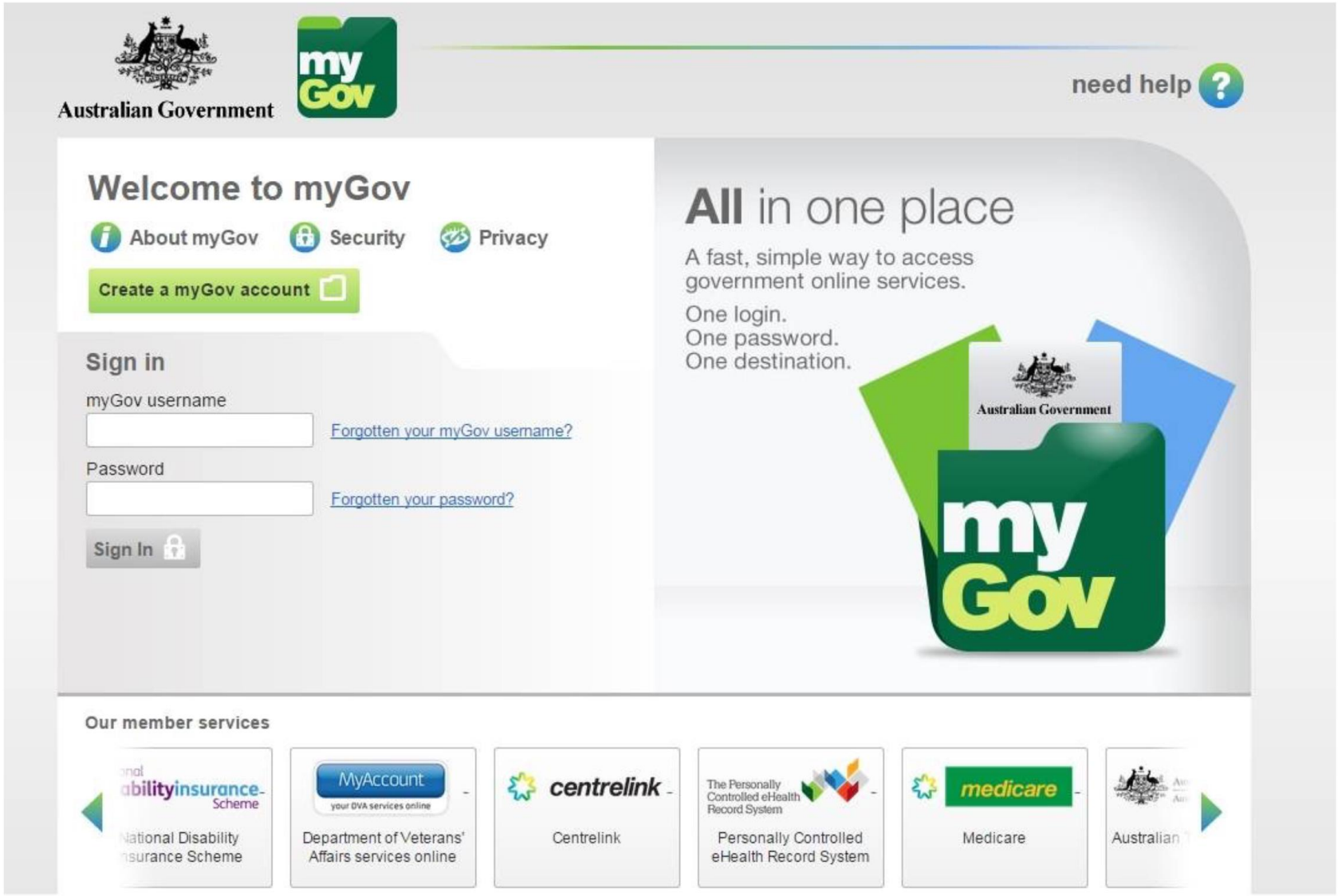
A podcast is a series of audio recordings about a specific topic that users can subscribe to.



These audio files are called episodes.

Developing for CMS

Web development case study



Lecture on Cybersecurity by ANU CISO Suthagar Seevaratnam

BY THE END OF THIS LECTURE, YOU SHOULD BE ABLE TO:

01	Understand the importance of a security mindset
02	Apply a security mindset to the software development life cycle
03	Understand different classes of threat actor
04	Understand the importance of threat modelling
05	Follow the basics of modelling threats using STRIDE
06	Understand the importance of the OWASP 10 framework to mitigate vulnerabilities

Phishing, trackers and botnets

What is Phishing?

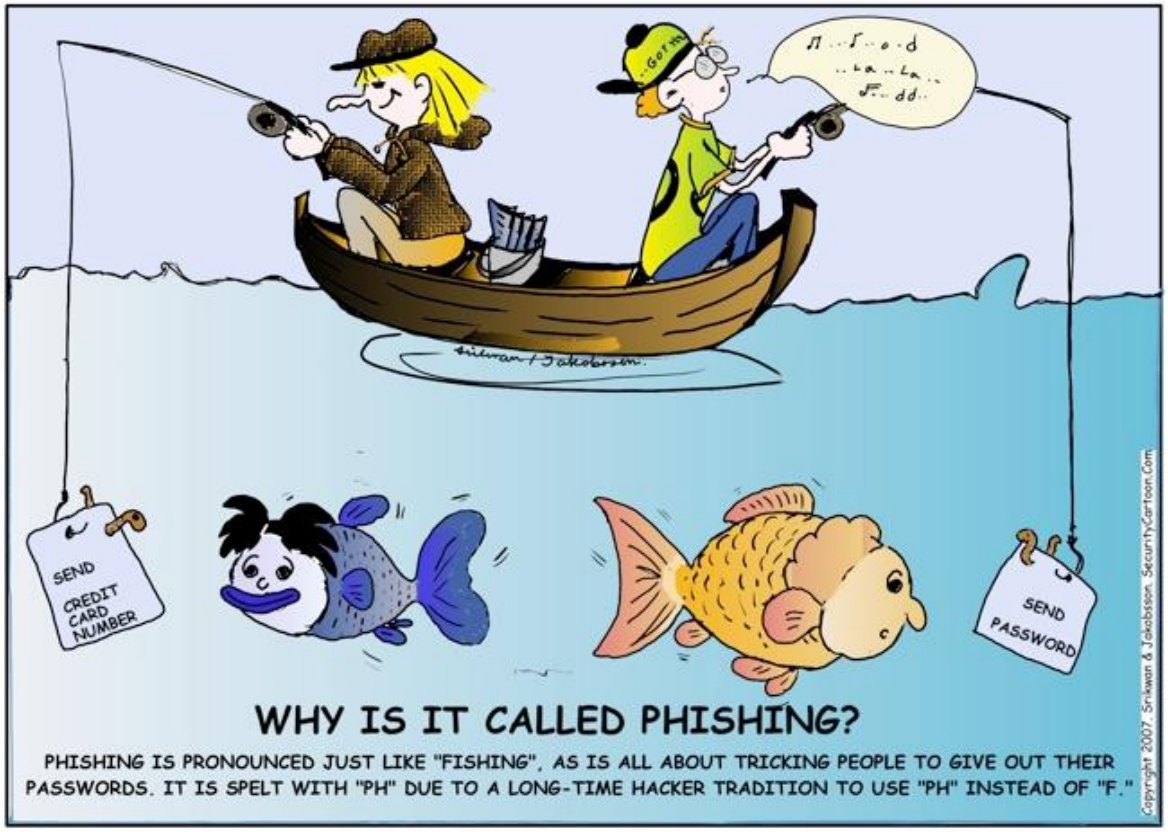
Phishing attacks use both social engineering and technical subterfuge to steal consumers' personal identity data and financial account credentials

Anti-phishing Working Group

The total number of phishing attacks in **2016** was **1,220,523**, a 65% increase over 2015.

In **2019** phishing in social media ***doubled***.

In the second quarter of 2022,there were 1,097,811 attacks observed, so est. **~4 million** phishing attacks for **2022**



Phishing, trackers and botnets

Spear Phishing

- Highly sophisticated
- Very targeted at certain people / organisations
- Much more difficult to spot

Example:
Phisher gets an e-mail address of an administrator or colleague
Spoofed e-mail asks employees to log on to a corporate network
A key-logger application records passwords
Phisher can access corporate information!

COMP1710/6780

Exam hints and tips

<a href="https://www.freepik.com/vectors/designer-desk">Designer desk vector created by macrovector - www.freepik.com</a>

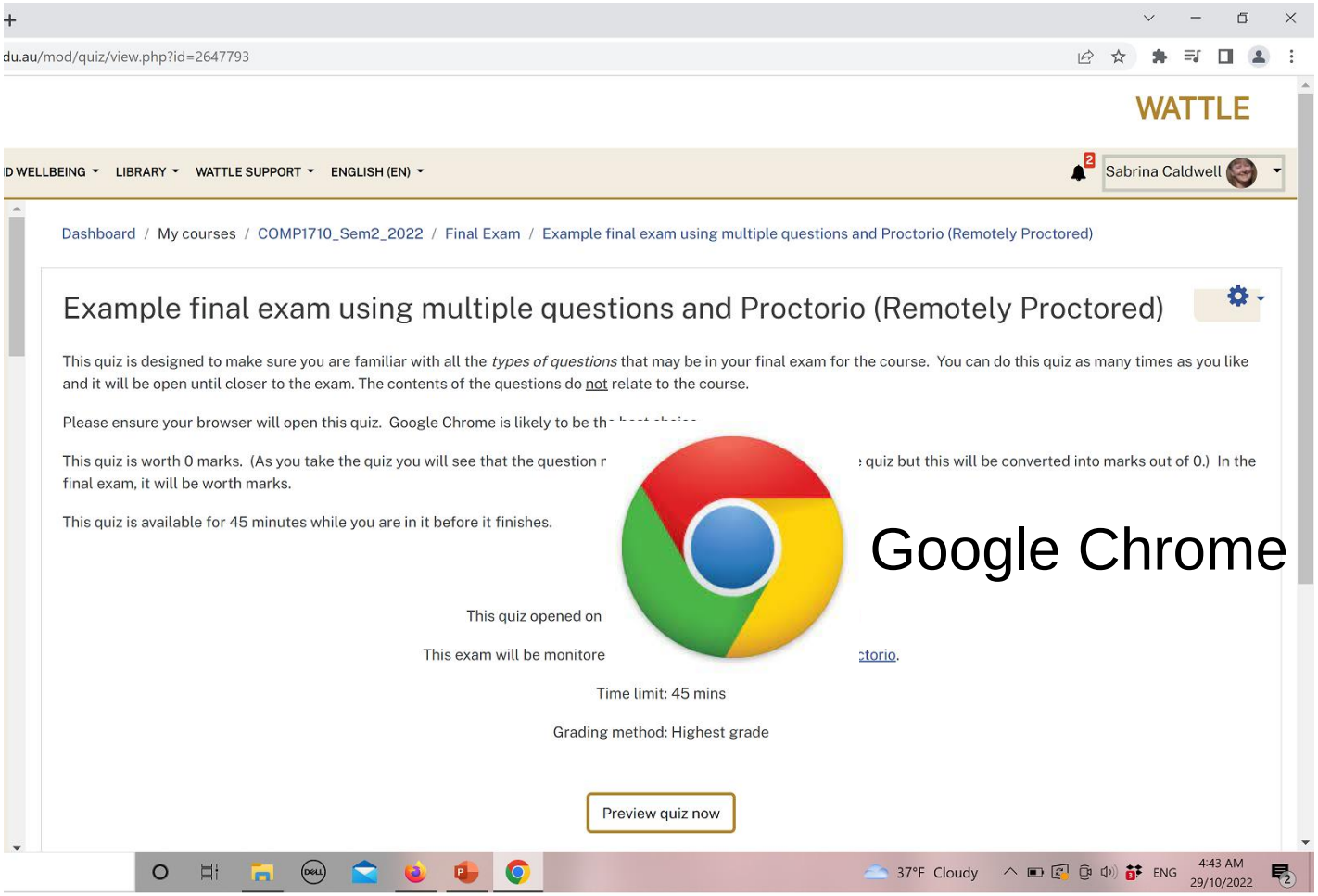
Exam hints and tips

Final exam preparation

Wattle offers online approaches for all the types of questions that we will ask in the midterm quiz.

We will be using Wattle to deliver our final exam, with Proctorio Secure Exam Proctor

Try Proctorio with example quiz…



You can find this quiz near the top of our Wattle page

Proctorio

Browser: Google Chrome is the only browser ANU supports for Proctorio at present

Connection type: We do not recommend using a mobile hotspot/unreliable Wi-Fi connection while attempting the Proctorio exam. During the exam, we encourage students to use a high-speed Internet connection (preferably a wired connection) to have a smooth experience.

Proctorio password is automatic!: For any student queries about needing a password to attempt their Proctorio assessment, please be informed that this is because the student didn't wait for Proctorio to load all its settings before they click the "Attempt Quiz" button. Students should wait until they see the message "This exam will be monitored by Proctorio. Learn more about Proctorio." Once this message appears on the screen, then they can click the "Attempt Quiz" button to start their assessment. If the message won't appear after waiting for a long time, this is often caused by the slowness of their internet speed, or bad browser cache. Students should check their internet connection and clear their browser cache.

Technical difficulties: If you are experiencing any technical difficulties with Proctorio exams, you can seek help via the Proctorio agent in the exam (Available 24/7), call the ITS Service Desk 6125 2222, or log a ticket via the ITS Service Desk or email Wattle.support@anu.edu.au.

ANU Timetabling has our final scheduled for:

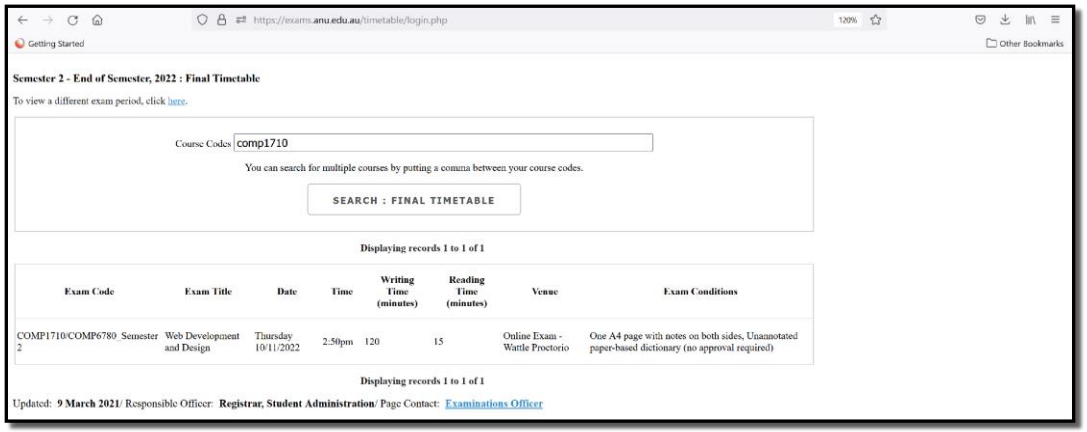
Currently (as of 23 May 2023) the final exam is scheduled for **Wednesday 14 June 2023**

15 minutes reading,120 minutes writing time. You can write during your reading time, but **we recommend you don't** – you will do better if you read your exam through before you begin.

Allowed to bring:

- A4 page with notes on both sides
- Unannotated paper based dictionary

Please remember it is YOUR responsibility to ensure you check the details in the ANU examinations schedule website (though we'll definitely try to help)



https://exams.anu.edu.au/timetable/login.php

Getting Started

Other Bookmarks

Semester 2 - End of Semester, 2022 : Final Timetable

To view a different exam period, click here.

Course Codes: comp1710

You can search for multiple courses by putting a comma between your course codes.

SEARCH : FINAL TIMETABLE

Displaying records 1 to 1 of 1

Exam Code	Exam Title	Date	Time	Writing Time (minutes)	Reading Time (minutes)	Venue	Exam Conditions
COMP1710/COMP6780 Semester 2	Web Development and Design	Thursday 10/11/2022	2:50pm	120	15	Online Exam - Wattle Proctorio	One A4 page with notes on both sides, Unannotated paper-based dictionary (no approval required)

Displaying records 1 to 1 of 1

Updated: **9 March 2021**/ Responsible Officer: **Registrar, Student Administration**/ Page Contact: Examinations Officer

Formative vs Summative Assessment

Formative – enables you to learn by you testing your knowledge multiple times until you get it right. Our **quizzes** were **formative** assessments.

Summative – enables us to understand how much you have learned. One try only. Our **final exam** is **summative**.

Proctorio

Other helpful links

Relevant contacts: https://services.anu.edu.au/information-technology/software-systems/proctorio

The Proctorio User Guide for Students

Proctorio FAQs: https://www.anu.edu.au/covid-19-advice/student-life/academic-adjustments/proctorio-faqs

ANU Exams Conduct page: https://www.anu.edu.au/students/program-administration/assessments-exams/examination-conduct

Special consideration:https://www.anu.edu.au/students/program-administration/assessments-exams/special-assessment-consideration

Deferred examinations:https://www.anu.edu.au/students/program-administration/assessments-exams/deferred-examinations

Proctorio practice Wattle course: https://wattlecourses.anu.edu.au/course/view.php?id=32488

Overall timing and marking

- **There will not be enough time to be getting all your answers out of your notes**.

- Be careful of overuse of your notes. Irrelevant statements taken from your notes to pad answers will detract from your good answers.

- Some marks are auto-marked by Wattle, but all written answer questions (including short answer) will be marked by your tutors and I together.

Just a note: We sometimes find that some students will borrow someone else's 2-sided A4 exam notes. We often find they get the same answers wrong in the same pattern – this is how we know.

The preparation of the notes helps you learn; that is the goal. For that reason, we recommend you prepare your own notes!

Exam hints and tips

Important to remember!

- We **MUST** be able to read your writing (in this case – typing)
- For written responses, your English expression should be:
  - Coherent, fluent and appropriate for academic purpose, as well as grammatically correct
  - Appropriately and logically structured
- Your answers should be **concise**
- Stick to the facts - long, rambling answers are more likely to lose marks than to gain them

The difference between
Comp1710 and Comp6780 exams

Some questions will be different.

and

We will hold Comp6780 students to a higher standard

Image: https://www.notsowimpyteacher.com/2016/09/5-hands-on-ways-to-teach-multiplication.html

Exam hints and tips

While we will not focus on obscure content or try to trick you,

we reserve the right to draw on ALL course content for the exam questions.

Exam hints and tips

Web development and design is a multi-skilled task! Please consider how these different aspects interact

Your users: User requirements, stakeholders

The Media: Content types, purpose of materials

} **HCI, Accessibility, Artefacts (for example ePubs, reports)**

Your Creativity: Good and bad web design, Colour theory

Integrity: Giving credit for other people's work (referencing, licensing such as creative commons), Image/information credibility

Security: cybersecurity

Basic technical knowledge: HTML, CSS, linking between pages

More advanced technical knowledge: Frontend/backend, Javascript*, Integrating (or starting with!) webdev tools

We know you can all do very well on this exam!

Our Course Representatives

Laiken Tuadles Jun Cheng Zhang Zhen Wang
Yuxiang Man Si Chen Yisuan Zhan

Thank you!