



Web Design: Colour theory

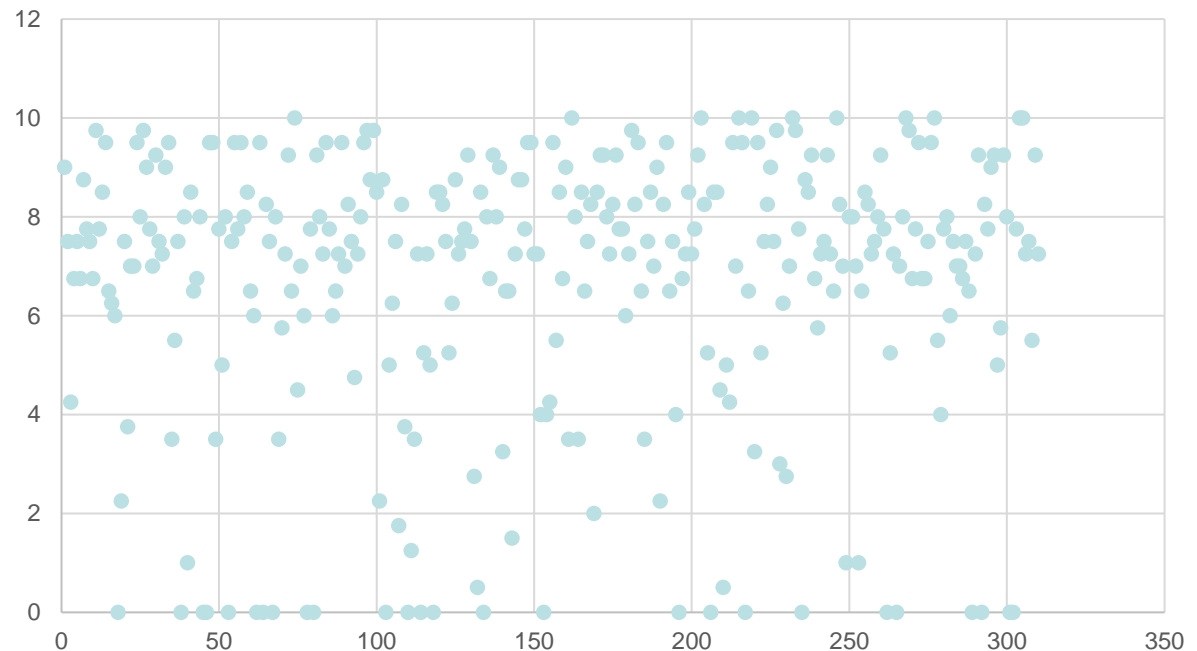
Accessibility

Assignment Pt 1 results

Assignment Pt 1 mean: 6.68

Assignment Pt 1 stdev: 2.77

COMP1710/6780 Assignment Pt1 Marks
Randomised



Forum post 1 average: 1.44

Forum post 2 average: 1.29

24% / 100%

Assessment items behind us, assessment items in front of us

Task		%	Due Date (AEST/AEDT)	Marks/Feedback Returned
Assignment (30%) INDIVIDUAL				
✓ Section 0: Topic Submission	Preferred topic	0%	End of Week 2 (Friday 12 August 5pm but there is leeway)	End of Week 4 (extended deadline to 21 August) Note that 'no news is good news'; we will only contact students with problematic topics
✓ Assignment 1: Website Submission	5 Webpages minimum	10%	Assignment Pt1 Due Monday 29 August 11:00am AEST	Second week of teaching break
Assignment 2: Website Submission	2 Webpages minimum	10%	Assignment Pt2 Due Monday 26 September 11:00am AEST	Week 9
Assignment 3: Website Submission	Complete Website	10%	Assignment Pt3 Due Monday 24 October 11:00am AEDT	Within fortnight following the end of course
Communication and Participation + Report (25%) INDIVIDUAL				
part ✓ Piazza forum posting + CI) contribution	4/6	6% posts; 4% CI	Posts as for Assign 1 and 2; CI as completed in 2 nd half semester	Posts as for Assign 1 and 2; CI as completed in 2 nd semester
Report		15%	Report due Sunday 30/10/2022 AEDT	Within fortnight following the end of course
Examined Material (45%) INDIVIDUAL				
part ✓ Online Quizlets	10/15	15%	End of every week	On submission
Final Exam		30%		

Aesthetics



Usability

“...aesthetics refers to the emotional components”

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

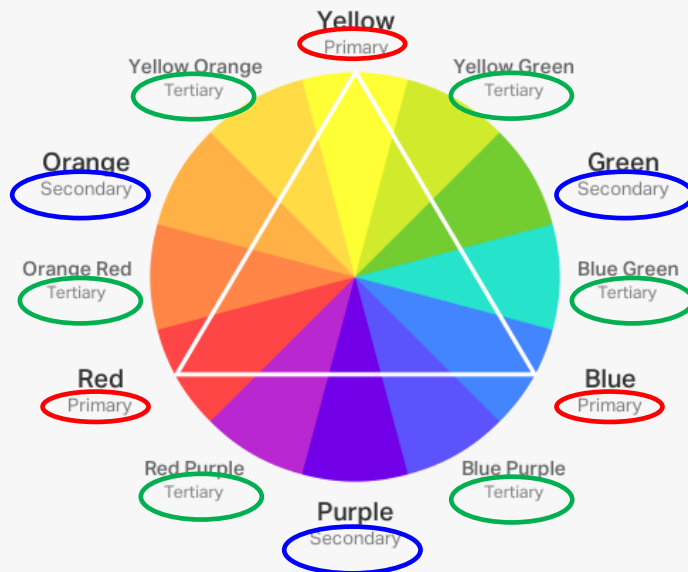
“... by understanding how design factors affect users, it is possible to build systems targeted to certain effects and outcomes.”

Note: We discussed content types, Good/Bad web design, and VARK learning methods in detail in Weeks 3&4



Colour has its own theory!

Sir Isaac Newton experimenting with a prism. Engraving after a picture by J.A. Houston, ca. 1870. Courtesy of The Granger Collection, New York



Primary colours

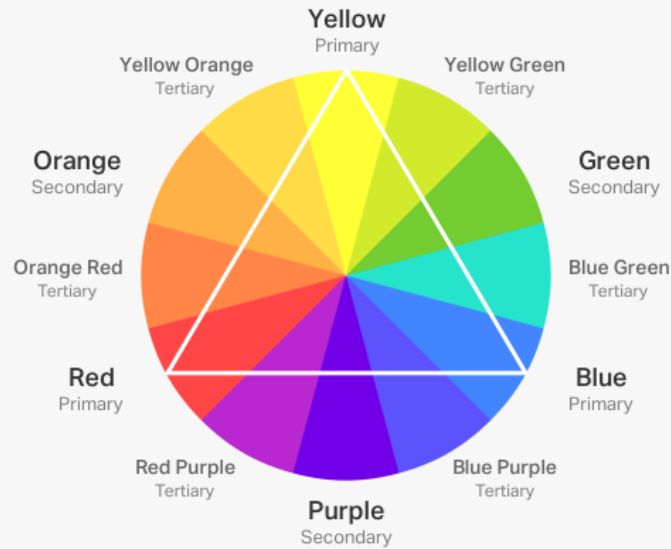
There are three primary colours: yellow, red and blue (though we tend to see them as magenta, cyan and yellow)

Secondary colours

When we merge the primary colours we get secondary colours: orange, purple, green

Tertiary colours

When we merge the primary colours we get secondary colours: orange, purple, green



Complementary is great for high contrast
Analogous is great for continuous colour

Colour schemes - 4 main types

Monochrome – different saturations of the same colour

Complementary – Two colours from opposite sides of the colour wheel

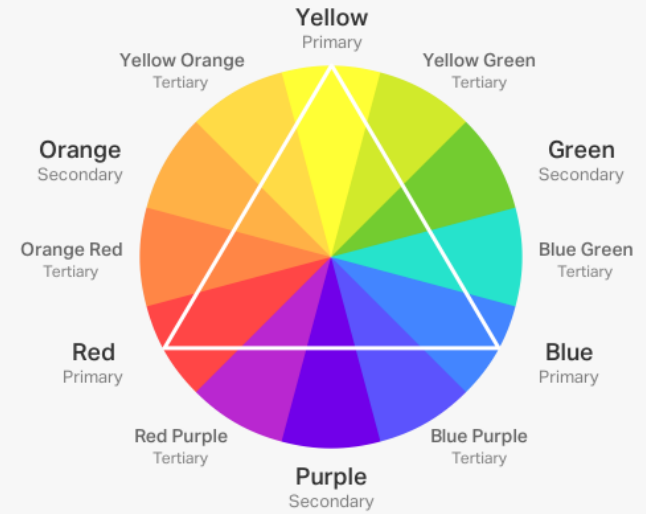
Analogous – three colours next to each other on the colour wheel

Triadic – three colours at points of a triangle drawn in the wheel

Why should I care?

Why should you care?

- Colour has a huge effect on your visitors and sets the context of your content
- If your development is big, you will have a designer who selects the colours and tells you what they are
- If your development is small, you will have to select the colours
- Knowing what colours (including the specific code) will make your life a lot easier.



This colour **patented** by a catfood manufacturer, hex colour is 751A80
RGB is 117,26,96

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.

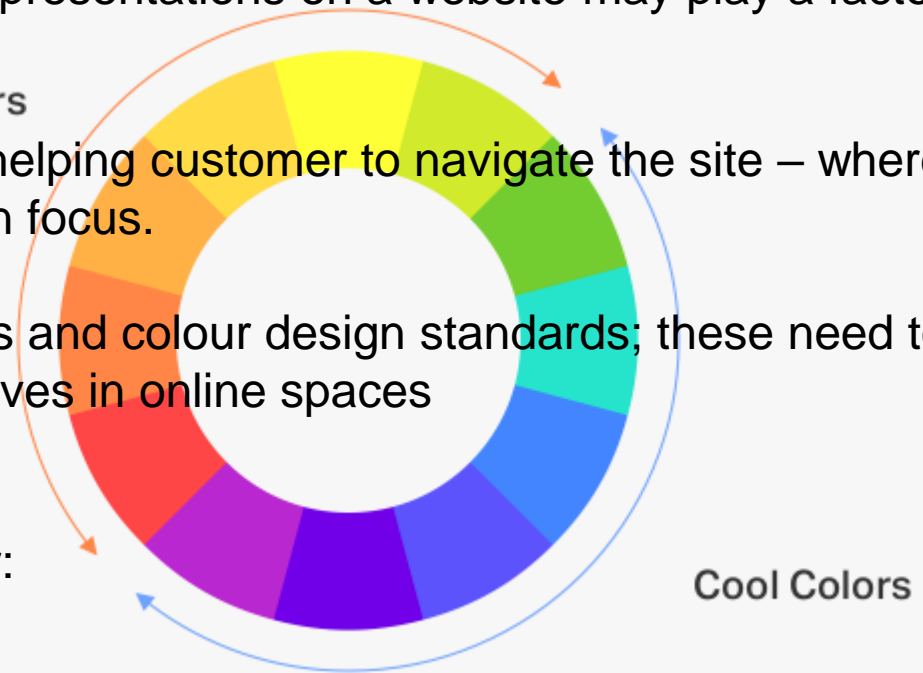
Warm Colors

- 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:

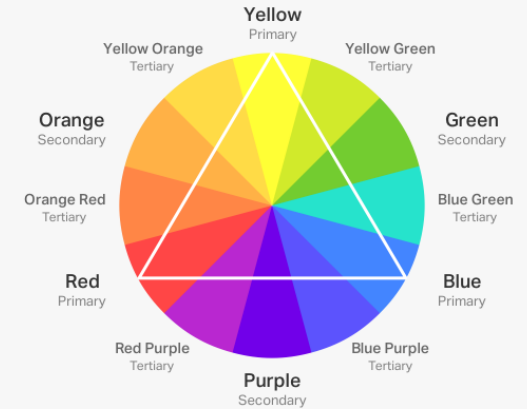
Contrast – emphasizes key point

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.

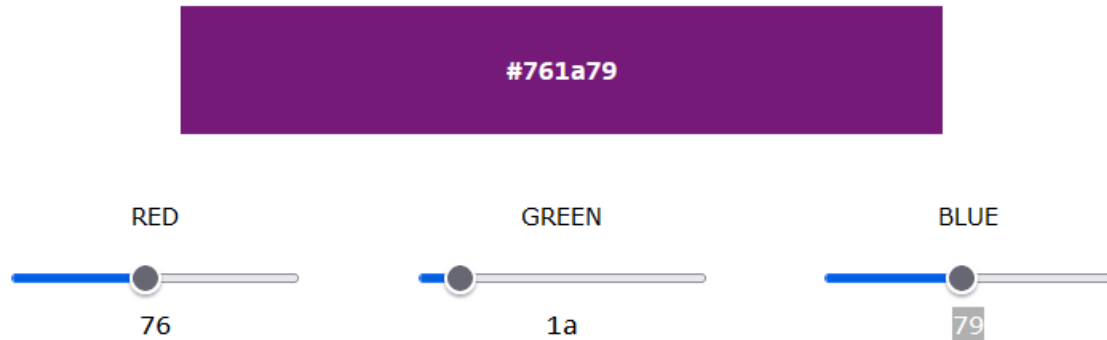


HTML

color: #f751A80;



You might like
to try this W3
Schools tool



(This hex code closest
W3 tool allows to 751A80)

https://www.w3schools.com/css/css_colors_hex.asp

But of course usually you'll use CSS, and rgb colour is a bit more intuitive

CSS

rgb(red, green, blue) OR
rgba(*red, green, blue, alpha*)

```
rgba(11,156,49,0.2)
```

```
rgba(11,156,49,0.4)
```

```
rgba(11,156,49,0.6)
```

```
rgba(11,156,49,0.8)
```

```
rgba(11,156,49,1)
```

alpha = opacity

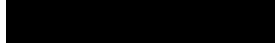












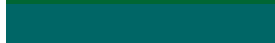
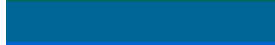









Websafe colors

This is a standard palette of colours that will display consistently across most browsers (even obscure ones).

Named colours

There are 147 named colours – you can type in the name in and browsers will understand.

AliceBlue, AntiqueWhite, Aqua, Aquamarine, Azure, Beige, Bisque, Black, BlanchedAlmond, Blue, BlueViolet, Brown, BurlyWood, CadetBlue, Charteuse, Chocolate, Coral, CornflowerBlue, Cornsilk, Crimson, Cyan, DarkBlue, DarkCyan, DarkGoldenRod, DarkGrey, DarkGreen, DarkKhaki, DarkMagenta, DarkOliveGreen, DarkOrange, DarkOrchid, DarkRed, Dark Salmon, DarkSeaGreen, DarkSlateBlue, DarkSlateGrey, DarkTurquoise, DarkViolet, DeepPink, DeepSkyBlue, DimGray, DodgerBlue, FireBrick, FloralWhite, ForestGreen, Fuchsia, Gainsboro, GhostWhite...

Color	Hex code#RR GGBB	Decimal code(R,G,B)	HTML / CSS color name
	#000000	rgb(0,0,0)	black
	#000033	rgb(0,0,51)	
	#000066	rgb(0,0,102)	
	#000099	rgb(0,0,153)	
	#0000CC	rgb(0,0,204)	
	#0000FF	rgb(0,0,255)	blue
	#003300	rgb(0,51,0)	
	#003333	rgb(0,51,51)	
	#003366	rgb(0,51,102)	
	#003399	rgb(0,51,153)	
	#0033CC	rgb(0,51,204)	
	#0033FF	rgb(0,51,255)	
	#006600	rgb(0,102,0)	
	#006633	rgb(0,102,51)	
	#006666	rgb(0,102,102)	
	#006699	rgb(0,102,153)	
	#0066CC	rgb(0,102,204)	
	#0066FF	rgb(0,102,255)	
	#009900	rgb(0,153,0)	
	#009933	rgb(0,153,51)	
	#009966	rgb(0,153,102)	
	#009999	rgb(0,153,153)	
	#0099CC	rgb(0,153,204)	
	#0099FF	rgb(0,153,255)	

Accessibility



There are many issues to be considered in accessibility!

Some issues: coding web apps, auditing web pages for accessibility, designing interfaces to meet the needs of people with disabilities, convincing and reporting to website owners, advocating for accessibility.

BTW, you can do a free online course in accessibility 16-20 hours at <https://www.w3.org/WAI/courses/foundations-course/> but we'll just touch on a few accessibility issues today.



Hearing



Vision



Cognitive
processing



Manual
dexterity

Deaf and hard-of-hearing

Textual alternatives are needed –
captioning of videos, transcripts for
audio content

Text simplification to overcome
language deprivation

Visual representations of audio
material – graphs, figures



Image demonstrating how to wear
masks and hearing aid

430 million people worldwide have disabling hearing problems

<https://www.who.int/en/news-room/fact-sheets/detail/deafness-and-hearing-loss>

Red-green colour blindness affects up to 8% of males (0.4% females)

Normal vision vs. protanopia



Other vision conditions: blindness, difficulty focussing, low-level vision

How to assist in your webdev practices:

Provide alternative text for any important visual elements (including images)

← e.g. `src=https://imagesite/imageofsurfboards.png alt="Image of surfboards lined up on a sidewalk in full colour and altered colour to show how a person with red-green blindness might see them."`

Understand screenreaders (some built in screen readers are *VoiceOver* for Macs, *Narrator* for Windows, *TalkBack* for Android but there are many others)

Your visitors may also use screen magnifiers, which may reduce their coverage of your content, especially around the edges

WHO estimates that **285 million people worldwide are estimated to be blind or have low vision.**

<https://www.who.int/en/news-room/fact-sheets/detail/blindness-and-visual-impairment>

Cognitive impairments

Intellectual disabilities, age-related thinking and remembering
Mental health problems including depression
Dyslexia
ADHD
...and more



Cognitive accessibility

- Multiple modes of delivering content: text-to-speech, video
- Plain language text
- Prioritising content
- Minimise distractions
- Use mainstream interaction conventions like double-click to open, changing link colour when already visited etc.
- Give extra attention to website authentication
- Make forms easy to use
- Error capture and management

Manual dexterity problems

Some people can have temporary or permanent manual dexterity disabilities: arthritis, amputation, broken hands/wrists, tremors, etc.

Keyboard functions are important for this group (but be careful of shortcut keys to avoid conflicts with assistive device shortcuts)

Logical tab orders in forms will help people using speech to text



Accessibility should be **built into the design from the start**, not something to do when you get to it.

This is particularly true if your content targets these audiences!!!

You may find yourself working on a website (especially corporate and government websites) that is legally required to meet accessibility regulations.

A commonly used standard is WCAG 2.0 AA

Remember As W3C notes,
“Accessible media is **essential for people with disabilities**, and is **useful for everyone**.”

Don't forget tomorrow your Assignment Pt 2 is due at 5pm. This includes your third forum post link.

Next Tuesday is ANZAC Day, which is a public holiday in Australia, and there are no lectures in this course. See you on Thursday!

ANZAC stands for Australian and New Zealand Army Corps. The soldiers in those forces became known as ANZACs. Anzac Day is a commemoration of the anniversary of the landing of Australian and New Zealand troops at Gallipoli, Turkey on 25 April in 1915.

