



Computer Science 1033 – Week 2

- WHAT IS MULTIMEDIA
- MULTIMEDIA HISTORY
- DESIGN TIPS
- FONT/TEXT TIPS

Fonts

"If the Force of Yoda's is so strong, construct a sentence with words in the proper order then why can't he? → *Unix Fortune*

Overview of Today's Topics

- A bit of a mishmash ☺
- Announcements
- Overview of multimedia in general
- A bit of the history of multimedia
- Break
- A little bit about monitors and display
- Design tips
- Usage of text on a website

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Announcements

- Labs started today! → YOU MUST ATTEND THE LAB YOU SIGNED UP FOR!
- You may NOT come with the lab already completed and just show it to your t.a., you must do the lab during the assigned 2 hours.
- Do not let your TA know if you have to miss a lab, your counsellor must email me. The TA (and I) can do nothing about it till I hear from a counsellor BUT REMEMBER YOU CAN MISS ONE LAB WITH NO EFFECT ON YOUR FINAL MARK, so you shouldn't need to see your counsellor.
- Don't forget, in Owl, to do your quiz before January 31.
- Assignment 1 will be posted soon

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Textbook Readings

- Introduction
 - All of it (it's not very long!)
- Graphics
 - What are Graphics?
 - Basics of Graphics
 - Design Principles and Considerations

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Big Ideas for Today

- Big Idea 1: First Impressions Matter!
 - Using senses to communicate
 - How do we spread ideas
 - Why use the Internet?
- Big Idea 2: What makes one design look better than another?
 - CRAP
- Big Idea 3: Monitors and Needlepoint!
- Big Idea 4: Fonts
 - Are you a font SAVANT?

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What is Multimedia? (term coined around 1962)

- Some definitions:
 - **Wikipedia** → "**Multimedia** is *media* and *content* that uses a combination of different *content forms*."
 - **Merriam Webster** → Their definition is **actually** a multimedia definition ☺ <http://www.merriam-webster.com/dictionary/multimedia>
 - **Cambridge Dictionary** → "using a combination of moving and still pictures, sound, music and words, especially in computers or entertainment"

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- All the definitions encompass different ways (more than one) of expressing something.
- How do we express ourselves?

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Exercise

- Find one or two other people in the room and take 2 minutes to introduce yourself
- Find out:
 - Their favourite movie(s)
 - Where they went to high school
 - Farthest country from London, Ontario that one of their grandparents is from
 - What one thing do they hope to learn in this class



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Making an Impression

- How long do you think you have before someone makes a judgement about you?

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Now consider after you first arrive at a website...

- How long does it take you to decide if you want to stay or if you want to leave this site?
- **QUESTION: What makes you want to leave a website rather than investing more time in it?**
 - <http://vandelaydesign.com/blog/design-process/why-visitors-leave/>



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How can we communicate?

- Via the five senses:
 - Sight
 - Smell
 - Sound
 - Touch
 - Taste
- **QUESTION: Which ones can we utilize for communication on the web?**
- **Multimedia application** → an application that can be used to present text, sound, video, images and animation (technical definition)...
<http://www.simworx.co.uk/dimensions-4d5d-effects-theatres/>

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Multimedia Uses

- To Inform:
 - <http://www.cbc.ca/radio/>
- To Educate:
 - [How to parallel park](#)
- To Sell and Run Businesses:
 - <http://www.chapters.ca>
 - <http://www.monster.ca>
 - <http://www.eharmony.ca>
- To Entertain:



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Why communicate via the web?

- **QUESTION:** What are the ways we can communicate or "spread a message" to other people? Can you name some ways? How did/does propaganda work? What did people used to do to spread a message?



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The World Wide Web is the: **Voice of Power!**

1. Which area do you think has the most people?

1. Africa,
2. Asia
3. Europe,
4. Latin American/Caribbean
5. Middle East,
6. North America
7. Oceania/Australia

2. Which area do you think has the most Internet users?

3. Which area is the smallest, has the least users?

Info from: <http://www.internetworldstats.com/stats.htm>

The Future → Are you ready?

- <https://www.youtube.com/watch?v=Y9FOyoS3Fag>
- **QUESTION:** Does anyone know what is the difference between the *World Wide Web* and the *Internet*?

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15,000 -13,000 BC → Prehistoric humans paint images on the walls of their caves Grotte de Lascaux, France

Great Moments in Multimedia History Before the 1800s

Also...

- **1041 AD** → Bi Sheng invents movable type in China using clay letters.
- **1450** → Johann Gutenberg introduces movable type (with steel letters), to Europe allowing mass production of books.
- **1702** → England's first daily newspaper starts publishing

Great Moments in Multimedia History between 1800 and 1900



1895 → Louis and Auguste Lumiere make *La Sortie ouvriers de l'usine Lumiere*, considered the first motion picture

Also...

- **1814** → Joseph Nicéphore Niépce achieves the first photographic image.
- **1837** → Louis Daguerre invents the first practical form of photographic reproduction.
- **1858** → Europe and North America are linked via a transatlantic telegraph cable. By 1866, news that had once taken months to travel, now took seconds
- **1877** → Thomas Edison invents the phonograph
- **1877** → Eadweard Muybridge invents *high speed photography* - creating first moving pictures that captured motion.

Great Moments in Multimedia History between 1900 and 1940



1940 → Dorothy Kunhardt's *Pat The Bunny* is published. First book to have multimedia and interactivity: We pat the soft fur of the bunny, play peek-a-boo, look in the mirror, and then do it all over again.

Also...

- **1914** → Animation created by *tracing live action films (rotoscoping)*
- **1926** → First practical television system demonstrated
- **1927** → *The Jazz Singer* is the first film to feature spoken dialogue in sync with the movie.
- **1928** → Walt Disney debuts *Steamboat Willie*, first cartoon to use synchronized sound.
- **1939** → *The Wizard of Oz* memorably shows the difference between the colour and black and white cinematography.

Great Moments in Multimedia History between 1940 and 1993

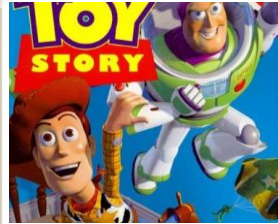


1991 → Tim Berners Lee invents the World Wide Web.

Also...

- 1962 → Telstar, first communications satellite is launched into orbit.
- 1969 → **ARPANET** (eventually the Internet) is established by the U.S. Department of Defence (more on this later)
- 1971 → First email sent, @ picked as symbol to indicate address
- 1983 → Internet is created when TCP/IP is adopted by all ARPANET users
- 1991 → **Tim Berners Lee has finished developing the World Wide Web (http) and html and URL. World Wide Web makes its debut**
- 1993 → Mosaic, first graphical web browser is released

Great Moments in Multimedia History between 1994 and 2001



1995 → Disney releases Toy Story, first feature length computer generated movie: 77 minutes, 4 years to make, 800,000 machine hours to render.

Also...

- 1994 → The Rolling Stones become first major band to broadcast live over the internet.
- 1996 → Affordable digital cameras become widely available
- 1999 → Napster debuts
- 2001 → Apple introduces iTunes and the iPod
- 2005 → YouTube.com launches
- 2006 → First twitter message sent
- 2007 → Search engine giant Google surpasses Microsoft as "the most valuable global brand," and also is the most visited Web site

Information and dates from:
http://www.wikipedia.com/quick_ref/outline.asp
<http://writing.stomichr.unl.com/moments.htm>

Good Design Principles

- <https://cheezburger.com/635909/funny-memes-images-that-prove-design-isnt-for-everybody>
- What can we do to make our websites (or any marketing material) look a bit more professional?
- Remember design is all about CRAP!
- Most of this information and some of the examples are taken from an EXCELLENT book called:
 - *The Non-Designer's Design Book* by Robin Williams



Box A

Good Design Is As Easy as 1-2-3

1. Learn the principles.
They're simpler than you might think
2. Recognize when you're not using them.
Put it into words – name the problem.
3. Apply the principles.
You'll be amazed.

Box B

Good Design is as easy as ...

- 1 Learn the principles.
They're simpler than you might think
- 2 Recognize when you're not using them.
Put it into words – name the problem.
- 3 Apply the principles.
You'll be amazed.

Both boxes above say the same thing.

QUESTION: Which design do you like better: A or B?

QUESTION: Can you put your finger on what makes one "Better" than the other.

Element

Overview

- **C**ontrast
 - **R**epetition
 - **A**lignment
 - **P**roximity
- Avoid making 2 elements just similar, either make them the same (same font, colour, etc...) or make them VERY different.
 - Repeat some aspect of the design throughout the entire design i.e. Bold font, thick rule, bullet, colors, font types
 - Items are aligned - creates stronger cohesive unit
 - Group related items together

When designing a webpage think about CRAP!

Contrast

Cool Quotes

- See everything, overlook a great deal, improve a little.
- Between two evil, choose neither; between two good, choose both.
- Give with no strings attached, and you will receive in the same manner

COOL QUOTES

- S**ee everything, overlook a great deal, improve a little.
- B**etween two evil, choose neither; between two good, choose both.
- G**ive with no strings attached, and you will receive in the same manner

Contrast: Another Example

- General Rule: **Don't be wimpy, go bold or go home!**



Examples from: "The Non-Designer's Design Book by Robin Williams

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- This:

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Repetition

- Repetition of
 - Bullet type
 - Spacing
 - Light text
 - Heavy text
 - Alignment
 - Indentation

Brad Pitt

Movies

- ❖ Thelma and Louise
- ❖ Legends of the Fall
- ❖ Oceans Eleven

Relationships

- ❖ Gwyneth Paltrow
- ❖ Jennifer Aniston
- ❖ Angelina Jolie

Childhood

- ❖ Birthday: December 18, 1963
- ❖ Born: Shawnee, Oklahoma

References available upon request

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Repetition: Another Example

- QUESTION: What repeated elements can you find in this webpage?



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Alignment

Fun Things for a Professor to do the First Day of Classes:

Ask students to call you "Tinkerbell" or "Surfin' Bird".

Growl constantly and address students as "matey".

Show a video on medieval torture implements to your calculus class. Giggle throughout it.

Sneeze on students in the front row and wipe your nose on your tie.

by Alan Meiss

This is okay ☹

Fun Things for a Professor to do the First Day of Classes:

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by Alan Meiss

But this looks better! ☺

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Alignment: Another Example

HOW 'BOUT IT, PARDNER?

How if you like to ...
wake up with the sun, pour yourself a cup of coffee, and gaze out upon the open, rugged Texas the dogs of your imagination?

Can you imagine ...
spending the day outside, beneath a cloudless sky, putting in a hard day's work—working close to the land?

What if you could ...
work on horseback, with your horse as your closest companion and steady co-worker?

How would it be ...
to see the best of Texas you've ever had at the end of a full day of riding, roping, and hunting?

Would you like to ...
live the kind of life most people have only seen in the movies?

It's all possible.
Live the life you've dreamed about!

Be a cowboy!

For more info on how to saddle up and start your new career as a cowboy, contact us right away! phone: 1-800-555-5555
Bessie@bessiecowboy.com

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Examples from: "The Non-Designer's Design Book by Robin Williams

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Proximity

The Menu

Eggs Benedict
Pecan Crusted Trout
Steak and Kidney Pie
Apple Crisp
Cheese Fondue
Macaroni and Cheese
Strawberry Cheesecake
Lemon Mousse
Caesar Salad
Roast Chicken

The Menu

Eggs Benedict
Pecan Crusted Trout
Steak and Kidney Pie
Apple Crisp
Cheese Fondue
Macaroni and Cheese
Strawberry Cheesecake

Lemon Mousse
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- **QUESTION:** What do you think when you look at the second box compared to the first box?
- Remember → Physically grouping things together implies a relationship

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Proximity: Another Example

Examples from: "The Non-Designer's Design Book" by Robin Williams

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Poster Finalist From 2007

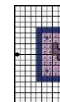
- **QUESTION:** Can you see examples of the four principles that worked well in this poster and what didn't work well?

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Which poster design do you think achieves the most CRAP principles?

Before we begin, let's see how a monitor displays things visually!

- A monitor is just a rectangular area (the screen) broken down into very small pieces or dots where each piece/dot can take on a particular colour.
- Very similar to Obama and C



More on monitors

- **Question:** What are the dots/pieces on a monitor/screen called?
- We can use pixels (dots, thread) to represent ANYTHING (images, text, drawing) that we want to display visually on the screen (paper, fabric).



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More on monitors

- **QUESTION:** On a 17 inch monitor, we could have 800 pixels (width) by 600 pixels (height) OR 1024 pixels by 768 pixels. Think about the size of the dots/pixels for a minute in **BOTH** cases.
 - What is the terminology for the number of pixels across by the number of pixels down?
 - Which resolution will have the bigger pixels?
 - If we displayed this "E", on which screen would it look bigger: the 800by600 resolution or the 1024by768 resolution?



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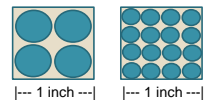
More on monitors (and printers)

- A pixel is displayed using light on a monitor to create images or text.
- When **printing** text or images, we use ink to create the pixel but in printing, the pixels are called **dots**.
- Dots (in printing), are just like pixels in that:
 - They can take on different colours
 - They can be big, creating big images, or small, creating smaller images.

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More on monitors and printers

- **QUESTION:** Which one will have bigger dots → 72dpi or 300dpi (where dpi means dots per inch)? Think about 4 dpi vs. 16dpi.



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300 PPI

72PPI



QUESTION: Can any one guess the problem with bigger dots/pixels?



Break

- **HOW TO SURPRISE OPRAH**
 - Something to watch during the break → watch Oprah's face as she eventually figures out what is going on!

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Now that we have a basic understanding of ANYTHING is drawn on a monitor or on a piece of paper by a printer (just broken down into dots)

LET'S SEE HOW TO REPRESENT TEXT

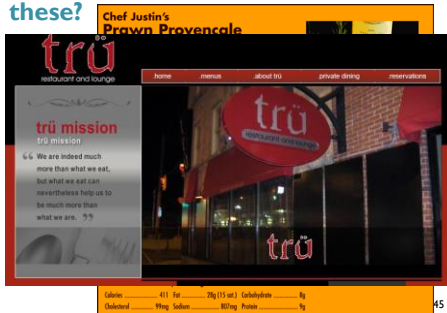
The Use of Text on a Website

- What do you need to know? Remember:
 - Text can be used to serve two purposes:
 1. It conveys information
 2. It can be used as a graphical element of the page (i.e. it doesn't have to be ugly or boring! 😊)
- You may have a cool font on your machine, but the person viewing your website might not have that font! [Here are some "Websafe Fonts"](#)
- **QUESTION: What can you do if you really want to use an unusual font on your website? [Choice 1](#) or [Choice 2](#)**

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Text can set a mood

- **QUESTION: What type of restaurants are these?**



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Make your style of text choices based on:

- **Your audience:**
 - **QUESTION: What do you need to think about for each of the following groups?**
 - Children (what age group?)
 - Teens
 - Young Adults
 - Older People
- **The type of application:**
 - Educational?
 - Entertainment?
 - Business?

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Text can set a mood

United Nations Poster showing the power of text!



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Some Examples From Print



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Some Terminology

- **Font Type** (or **Typeface** or sometimes just **Font**)
 - Characters that have a common design are grouped into families called Font Types
 - **QUESTION: Can you name two Font types?**

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Some Funky Fonts



Examples from: "The Non-Designer's Design Book" by Robin Williams

Try out these websites → <http://www.flamingtext.com/Font-Baby-Kruffy>

Free fonts from Google → <http://www.google.com/webfonts> (remind me to show you how you can use all these cool fonts!)

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- Most typefaces or fonts are divided into one of two categories: *Serif* or *San Serif*
 - **Serif**: has a fine line added to finish a letter stroke
 - Always use serif fonts for large paragraphs of text. The human eye finds them easier to read!
 - Examples: *Times New Roman*, *Courier*
 - **San Serif**: no line added
 - Best for headlines and headings
 - Examples: *Comic*, *Arial*
- <https://www.youtube.com/watch?v=Y50Dmh3SWys>
- (NOTE: the above video is just to get you thinking about fonts! Because Arial and Times Roman are standard on both Macs and Windows...it is FINE to use them ☺)



Sans Serif

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Style

- Variations in the appearance that allows the writer to emphasize parts of the text.
- Some examples
 - **Bold Times New Roman**
 - *Italics Times New Roman*
 - Underline Times New Roman
 - **Bold Comic**
 - *Italics Comic*
 - Underline Comic

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Case

- Why does case matter?

- **QUESTION: What does this say?**



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Case

- In general it is **much** easier to read mixed case than all uppercase. Save uppercase for headlines.



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• Kerning



INSTITUTION Slide 55 of 78

Rainfish

I N C O R P O R A T E D

HEY, SHE'S CALLING YOU A LITTLE

WIMP

Decide on the typographic element that you want seen as a focus.
Emphasize it with contrasts.

Examples from: "The Non-Designer's Design Book by Robin Williams

• Leading (pronounced Ledding)

- Amount of vertical space between lines of text
- As the length of a line increases, it is harder for the reader to jump to the next line, thus wide columns require greater leading.
- Tracking and leading are also related, see the next example:

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Leading Examples

Loose Track More Leading

Okay, that might be a bit subjective but lots of Western students, including computer science students say that one of the factors that made them decide to come to Western to study was seeing the campus.

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Leading Examples

Tight Track More Leading

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• Monospaced Fonts vs. Proportional Fonts

- **QUESTION:** *Courier* is *Monospaced* and *Times New Roman* is *Proportional*, can you see the difference?

WWWWMM ← Courier
IIIIII

WWWWMM ← Times New Roman
IIIIII

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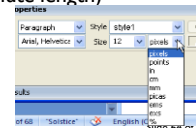
Review

- Typography

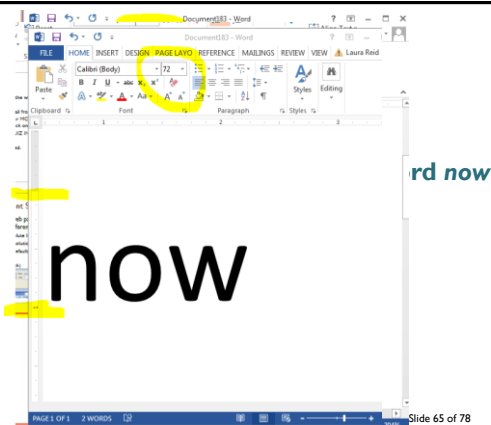
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Font Size

- Font size can be measured in several different units:
 - *points*, *picas* (as in MS Word, absolute length)
 - *pixels* (relative to the screens resolution)
 - *percentage*, *ems* (relative to the default browser font)
 - *inches*, *centimetres* (absolute length)



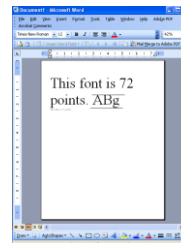
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Points (Absolute length)

- Commonly text is 12 points, this is 1/6 of an inch.



NOTE: A point size of 72, will always give you a font that is one inch high **when printed**.

If you sent this MS Word Document to a printer and measured between the lines, it would be one inch. For print it doesn't matter if you print from a Windows machine or a Mac, a 72 point font size on paper is always one inch high.

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Pixels, ems, % (Relative length)

- When text is displayed in *pixels*, *ems*, *%*, it is relative to the default font size for the browser and to the screen resolution.
- 1 **em** is equal to the width of an **M** in the default font type and size of the browser
 - E.g. Firefox → Times New Roman, Fontsize 16 pixels



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Experiment with Font Size

- If you are on your laptop go to: <http://www.csd.uwo.ca/~lreid/cs033/FontTest1.html>
- Then try the following:
 - Set the resolution to be the lowest: 800 pixels by 600 pixels
 - Set the resolution to be the highest.
 - View the page in IE and then pick View>Text Size and pick some of the different sizes. Notice the absolute fonts don't change, the relative ones do.
 - View the page in Mozilla Firefox, then pick Tools>Options then the Content Tab and change the Font Size.
 - Hold down the CTRL key and use the scroll button on your mouse

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Which Unit of Measurement to Use

- In general, don't use **points**, it is for printing.
- If you are worried about:
 - **Accessibility** → use *ems* or *%* since they are relative to the browsers default font and the user can make the text more readable
 - **Control** → if you want the layout to be precise, use pixels.

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Font Colour

- **Colour**
 - If you look at the underlying html on a webpage you will see the colour for text is encoded in a strange way:
 - <http://www.csd.uwo.ca/~lreid/cs1033/fontcolours.html>
 - Hexadecimal representation
 - Digits are: 0,1,2,3,4,5,6,7,8,9,A,B,C,D,E,F
 - Must start with #
 - Need 2 digits for Red, 2 digits for Green and 2 digits for Blue → RRGGBB
 - Thus really red is **#FF0000**

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• QUESTION

- How would you represent yellow?
- What colour do you think this is #222222?
- What colour do you think this is #CCCCCC?

• Answers:



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Things to remember when using text:

- **Is text the best choice?**
 - Use text when it is the best way to convey information
- **Make sure it is readable**
 - Use a dark background with light text or a light background with dark text
 - Don't make the font too small
 - Make sure the font is readable (be careful with weird fonts)
 - Don't use too many fonts (2 or 3 different styles is enough)
 - Don't crowd your text, have some white space
 - Paragraphs are easier to read in serif, sans serif for headings

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More tips...

- **Use text sparingly**
 - Remember it is sometimes hard to read on a computer screen
 - Use bullets
 - Break text up into sections
 - Don't be too wordy
- **Be consistent**
 - Pick a colour, size, and style of font you like and stick with it on all the pages
- **Spell check** → there is NO excuse for spelling mistakes!

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More tips...

- **Avoid offending**
 - Don't use swear words or disrespectful language
- **Set a mood**
 - Try to pick a font that goes with the tone of your site (for example **comic font** is great for kids)
 - Make sure it coordinates/complements your images/graphics
- **NEVER EVER use underlining on a webpage → WHY?**
- <https://www.lynda.com/Higher-Education-tutorials/Legibility/193717/514906-4.html?autoplay=true>

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A Great Design Review in 50 Seconds!

- <http://mattgreenwood.tv/ELEMENTS-OF-DESIGN>

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Next Week

- Introduction to Graphics
- How to hand in your Poster Assignment
- Lab this week → Transferring files
- Lab next week → Photoshop Introduction
- NOW LET'S REVIEW:

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Let's Review

- What year was HTML/World Wide Web created?
- What does CRAP stand for?
- Give 2 reasons why selling via the World Wide Web is a great idea?
- What type (Serif or San Serif) of font is this:
 - **Hello World**
- Is this font Monospaced or Proportional?
- https://youtu.be/1MXyab-_Zs8?t=97
- Think of one thing you will take away from today's lecture!
- Can you leave now?
- YES

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