

Spreadsheet Design

- Using color
- C.R.A.P.
- Fonts and font effects

Color: Properly Used

- When used sparingly color can draw attention to important information.

Stock	Open	Close	Change
HAL	255	256	1.00
HAM	256	255	-1.00
FOO	12	13	1.00
TAM	12.25	12.5	0.25
BAR	1001	989	-12.00
BOO	17	16.5	-0.50
WOW	1	177	176.00
GEM	45	50.00	5.00
DUD	12	10.00	-2.00
AAA	10	10.5	0.50
XYZ	12.5	11	-1.50
ZOO	55	56	1.00
FIZ	17.5	17.25	-0.25
BRK	128	64	-64.00

- This is an especially valuable tool when there is a large amount of information.
 - The information may be “all there” but don’t make it any harder than it has to be for the viewer to find it.

Color Misused

Date	Description	IN	OUT	BALANCE
January 1 2013	Balance from 2012	2023.4		2023.4
January 7 2013	Electricity		223	1800.40
January 9 2013	House		910	890.40
January 10 2013	From savings	1280		2170.40
January 13 2013	Gas		110	2060.40
January 15 2013	Cash		20	2040.40
January 31 2014	Interest	2.29		2042.69

- The overuse of color:
 - Reduces it's ability to make information stand out.
 - Makes it harder to understand what information is mapped to a particular color e.g. using different colors to represent faculty and grades

utility	
house	
From savings	
Cash	
Salary	
Pay credit	
Interest	

Rule Of Thumb For Color: Make It Subtle

- We have all seen the use of 'loud' and clashing colors that can make text very hard to read.

Ingredients Sugar, lactose, fructose, corn syrup, glucose...lots of carbohydrates	JT: I've actually seen green-red color combinations on listings of food ingredients
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Rule Of Thumb For Color: Subtle But Not Near-Invisible

- The “flip side”, lack of contrast between foreground can also be problematic.

Ingredients

Sugar, lactose,
fructose, corn syrup,
glucose...lots of
carbohydrates

Rule Of Thumb For Color

- Balance the use of color between noticeability and subtlety
 - Make it as subtle as possible while still conveying the necessary information using color

Additional Issues Associated With Color

- Color blindness affects a portion of the population:
 - The majority of people who are color blind are red-green color blind so using only these colors to represent information should be avoided e.g. traffic lights
- Field size
 - The larger the area to be color coded, the more easily that colors can be

This course has been significantly changed from the versions run in previous semesters (including fall 2014). While thinking and programming, for example, you won't just learn programming for the sake of writing a program (in reference to the old "Alice" and "Jython" sections of the course). Consequently two new assignments have been added: programming in Visual Basic for Applications (MS-Word) and web page design. Assignments have been reduced in scope to accommodate the new material. Also the quiz component has been dropped.

Lecture and important assignment information

Day/Time:	L01: TR 12:30 - 13:45 (ST135)	L02: TR 9:30 - 10:45 (MS319)
Contact Information:	James Tam	
	Office: ICT707	
	Office hours: T 11 - 11:50 AM, R 14:00 - 14:50 (if I'm a bit late I could be just finishing off answering questions in the previous lecture)	

Larger areas:
colors can be
more subtle

Smaller areas:
colors may have
to employ greater
contrast

Additional Issues Associated With Color (2)

- When objects are small (text or small graphics) and color is used to distinguish information use highly saturated colors.

This is
important
information!

This is
important
information!

Fonts And Font Effects

- Example fonts:
 - Ariel
 - Calibri
 - Helvetica
 - Times New Roman
- Font effects:
 - Italics
 - Bold
 - Underline
 - Normal
- Font sizes

Fonts And Font Effects (2)

- As a rule of thumb use no more than 3 sizes and font effects / font sizes in a particular document.
 - Similar to color, their overuse reduces their effectiveness and makes it harder to interpret meaning.
- Also if you don't know much about fonts just stick to the common or default ones provided (Arial, Calibri, Helvetica, Times New Roman)
 - If you're not sure if a font is a good one for a particular situation then it probably isn't:
 - Extreme example "Wing dings": ♦)(■)♣ ♠)(■)♣♦
 - But the use of "extreme fonts" are the only pitfall: printing problems, web browser issues, operating system font-issues

C.R.A.P.¹

- Simple design principles that can be applied in a variety of situations
- **C**ontrast
- **R**epetition
- **A**lignment
- **P**roximity

¹ From "The non-designers type book" by Robin Williams (Peach Pit express)

Contrast & Repetition

- Contrast:
 - Make different things **look significantly different**
- Repetition (Consistency):
 - Repeat conventions (e.g. fonts, font effects, alignment, colors used) throughout the interface to tie elements together

Example: No Contrast

Student ID	Faculty	A1	A2	A3	Midterm	Final	Term Percentage
111	Science	95	90	88	75	66	76.2
112	Social Sciences	80	80	75	70	75	74.5
113	Social Sciences	78	80	85	75	65	72.8
114	Management	100	90	85	80	75	81.5
115	Management	100	95	90	90	95	93.5
116	Management	75	70	75	50	30	49
117	Humanities	65	80	75	70	80	75

Example: Weak Contrast

Student ID	Faculty	A1	A2	A3	Midterm	Final	Term Percentage
111	Science	95	90	88	75	66	76.2
112	Social Sciences	80	80	75	70	75	74.5
113	Social Sciences	78	80	85	75	65	72.8
114	Management	100	90	85	80	75	81.5
115	Management	100	95	90	90	95	93.5
116	Management	75	70	75	50	30	49
117	Humanities	65	80	75	70	80	75

Example: Headings Stand Out

- Good contrast:
 - If contrast is not (or weakly) employed for a small set of data it may not be a large issue.
 - But for larger data sets (“real data”) it may make it more work than is necessary.

Student ID	Faculty	A1	A2	A3	Midterm	Final	Term Percentage
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113	Social Sciences	78	80	85	75	65	72.8
114	Management	100	90	85	80	75	81.5
115	Management	100	95	90	90	95	93.5
116	Management	75	70	75	50	30	49
117	Humanities	65	80	75	70	80	75

- Repetition:
 - Same fonts, font sizes and font effects used in the headings vs. the data.
 - Makes it easier to see and understand the structure

Alignment

- It can be used to structure a document (represents hierarchical relationships).

- Heading
 - Sub heading
 - Sub heading
- Heading
 - Sub heading
 - Sub heading
 - Sub heading
- Heading

Alignment And Repetition

- Consistent alignment (left or right and not center) can be used to represent relationships.
 - All the data in a column are consistently aligned to signify they belong a group
- Example: movie credits

The Kung Fu master James “The Bullet” Tam
 Arch villain James (Evil dude) Tam
 Kung Fu student #1 Eager Tam1
 Kung Fu student #2 Eager Tam2
 Thug #1 Cannon-fodder Tam #1
 Thug #2 Cannon-fodder Tam #2
 Damsel in distress Jamie Tametta

Center Alignment

Chapter 1:

Computer fundamentals

Example technical specifications from an actual computer system (paraphrased from www.bestbuy.ca
 June 2015

- 3.6GHz 4th generation Intel Core i7-4790 processor
 - 8GB RAM
 - 1TB hard drive
 - USB 3.0 ports
 - HDMI output

When buying a computer today the typical consumer is often overwhelmed with a daunting list of technical specifications. These specifications often assume that the reader has certain background knowledge. However unlike some books that may seem to discuss technical details just for their own sake this chapter was written specifically to only introduce the necessary basics so as not to overwhelm beginners. The drawback is however that you will have to consult additional sources if you want to investigate non-core topics (such as current processor models produced by Intel or AMD or the technical details of graphics hardware).

Chapter overview

- Types of computers and computing devices from tablets to traditional desktop computers. What is the difference between them and some of their pros and cons.
- Commonly used technical specifications: deciphering some of ‘techno-babble’ that you may see in some computer advertisements.
- Specifications for computer hardware that probably doesn’t make any difference in a typical person’s use of the computer but may be beneficial to know for certain groups (e.g. graphic designers) or situations (e.g. gaming).

Centre Alignment (2)

- Don't use it for hierarchical documents because it removes or hides the organization.
 - In a document that contains structure center alignment can look unorganized (the center alignment appears as no alignment, disorganized)
- **At most:** sparing use can be used to provide contrast e.g., slide titles vs. content.
- Because it removes a common method for structuring a document it can make reading text more difficult.
- At most use it as an exceptional case to make an item stand out.

Center Alignment

- Again: while sparing use of center alignment can be used to provide contrast it should NEVER be used as the default in documents such as spreadsheets.

Chapter 1:

Computer fundamentals

Example technical specifications from an actual computer system (paraphrased from www.bestbuy.ca)
June 2015

- 3.60GHz 4th generation Intel Core i7-4790 processor
- 8GB RAM
- 1TB hard drive
- USB 3.0 ports
- HDMI output

When buying a computer today the typical consumer is often overwhelmed with a daunting list of technical specifications. These specifications often assume that the reader has certain background knowledge. However unlike some books that may seem to discuss technical details just for their own sake this chapter was written specifically to only introduce the necessary basics so as not to overwhelm beginners. The drawback is however that you will have to consult additional sources if you want to investigate non-core topics (such as current processor models produced by Intel or AMD or the technical details of graphics hardware).

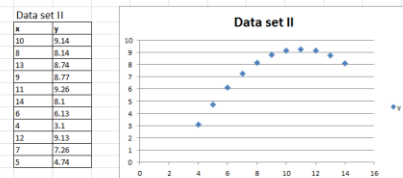
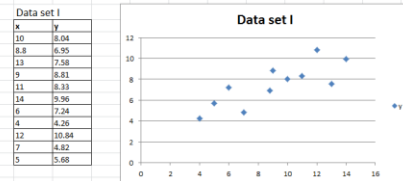
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	A	B	C	D	E	F	G	H
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11	117	Humanities	65	80	75	70	80	75
12	118	Social Sciences	80	70	80	55	40	55.5
13	119	Management	100	60	80	69	70	72.7
14	120	Management	100	90	85	80	75	81.5
15	121	Physical Education	100	95	90	90	95	93.5
16	122	Management		80	70	70	50	56
17	123	Management	100	95	90	90	95	93.5
18	124	Humanities	75	70	75	56	30	49
19	125	Science	65	80	75	70	80	75
20	126	Social Sciences	100	90	0	80	70	71
21	127	Social Sciences	87	60	80	69	70	71.4

Proximity

- Related items are in close proximity
- Unrelated items are separated



After This Section You Should Now Know

- Rules for using and not misusing color as well issues associated with color: color blindness and field size
- Rules of thumb for using fonts and font effects
- C.R.A.P.
 - What does each part mean
 - How it can be used for effective graphic design

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