SAMPLE KPM MASTER

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Colour is easy to appreciate, difficult to measure . . . impossible to understand!

As delivered in MSc Session 2011-2012.

Showing some of the capability of the `framed` environment to denote a passage of text.

A very long todonote that certainly will fill more than a single line in the list of todos. Just to make sure let's add some more text . . .

Todo list

This document shows some of there capabilities of the *tufts-latex* class and acts as a template for my documents.[1]

[1] Hideo Umeki. The `geometry` package. `http://ctan.org/pkg/geometry`, December 2008

Formatting

Lists

Here is an *enumerated* list:

1. compare common files in the two projects (green)
2. add minimal working code to new files in `OpenGLStage2_KM` (red).

Code Listing

Here is some sample code from *OpenGLStage_KM*:

```
/* Localized versions of Info.plist keys */

CFBundleName = "OpenGLStage_KM";
NSHumanReadableCopyright = "©" __MyCompanyName__, 2007";
```

`English.lproj > InfoPList.strings`

Quotations

Here is Apple's definition of an *Xcode* project as an example of a `quotation`:

> An Xcode project is a repository for all the files, resources, and information required to build one or more software products. A project contains all the elements used to build your products and maintains the relationships between those elements. It contains one or more targets, which specify how to build products. A project defines default build settings for all the targets in the project (each target can also specify its own build settings, which override the project build settings).

Figures and Tables

This lecture is divided into the following sections (shows the use of multiple references).[2]

HERE IS THE WAY that a new thought is expressed in the *tufte-latex* class.

[2] Edward R. Tufte. *Beautiful Evidence*. Graphics Press, LLC, first edition, May 2006. ISBN 0-9613921-7-7; Edward R. Tufte. *The Visual Display of Quantitative Information*. Graphics Press, Cheshire, Connecticut, 2001. ISBN 0-9613921-4-2; and Edward R. Tufte. *Envisioning Information*. Graphics Press, Cheshire, Connecticut, 1990. ISBN 0-9613921-1-8

Full page width figure (TikZ)

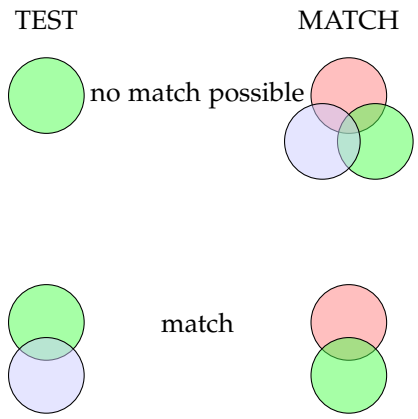


Figure 1: Extension of the definition of mixing. 'Negative' mixing in that adding blue to the spot on the left is equivalent to adding *'negative'* blue on the right

Full page width table

Here is an example. Note also the use of the `textcolor` command both in the main text and in the `marginnote`. Captions and references to the Table (`label`) are also shown.

The new project is created in *XCode4* from `File > New > Project...` and is named `OpenGLStage2_KM`. A comparison of the file structure of the two projects is shown in Table 1 (green = common; red = unique).

Here is an example of the `marginnote` command (**without** superscript number) and which allows text styling.

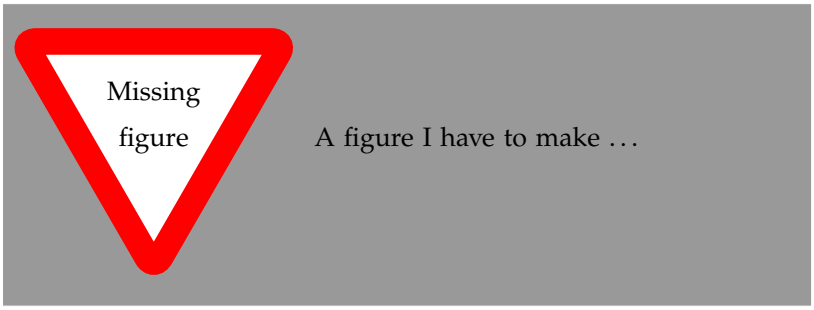
Q. Significance of `MainMenu~.nib` files?

Next ... a margin todo note.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetuer id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

OpenGLStage_KM	OpenGLStage2_KM
build *folder*	—
Controller.h	—
Controller.m	—
DrawingFunctions.h	—
—	~~OpenGLStage2_KM > AppDelegate.h~~
—	~~OpenGLStage2_KM > AppDelegate.m~~
—	OpenGLStage2_KM > en.lproj > Credits.rtf
English.lproj > InfoPlist.strings	OpenGLStage2_KM > en.lproj > InfoPlist.strings
English.lproj > MainMenu.nib	OpenGLStage2_KM > en.lproj > MainMenu.xib
English.lproj > MainMenu~.nib	—
GLView.h	—
GLView.m	—
Help > index.html	—
Info.plist	OpenGLStage2_KM > OpenGLStage2_KM-Info.plist
main.m	OpenGLStage2_KM > main.m
OpenGLStage_KM_Prefix.pch	OpenGLStage2_KM > OpenGLStage2_KM-Prefix.pch
OpenGLStage_KM.xcode.proj	OpenGLStage2_KM.xcodeproj
version.plist	—

Table 1: File listing subset `OpenGLStage_KM` and `OpenGLStage2_KM`



For more details see `www.ucl.ac.uk/~ucftkpm`

Normal figure

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

We consider colour vision, adaptation and constancy (see figure 2) and continue with the colour response of rods and cones (figure 3). The features of the CIE system are described including distribution curves, tristimulus values and chromaticity values.

This is a margin note.

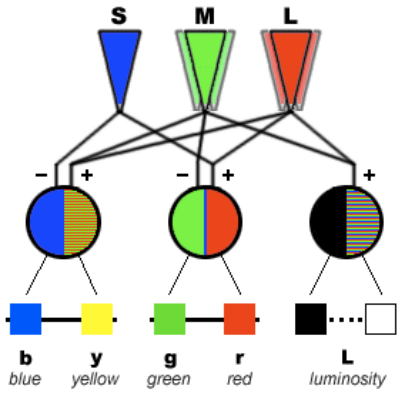


Figure 2: Generic colour appearance model (`www.handprint.com/HP/WCL/color2.html`)

Margin figure

The diagram is further developed in the CIE uniform chromaticity scale (UCS) *uv* and *u'v'* diagram.

Nulla malesuada porttitor diam. Donec felis erat, congue non, volutpat at, tincidunt tristique, libero. Vivamus viverra fermentum felis. Donec nonummy pellentesque ante. Phasellus adipiscing semper elit. Proin fermentum massa ac quam. Sed diam turpis, molestie vitae, placerat a, molestie nec, leo. Maecenas lacinia. Nam ipsum ligula, eleifend at, accumsan nec, suscipit a, ipsum. Morbi blandit ligula feugiat magna. Nunc eleifend consequat lorem. Sed lacinia nulla vitae enim. Pellentesque tincidunt purus vel magna. Integer non enim. Praesent euismod nunc eu purus. Donec bibendum quam in tellus. Nullam cursus pulvinar lectus. Donec et mi. Nam vulputate metus eu enim. Vestibulum pellentesque felis eu massa.

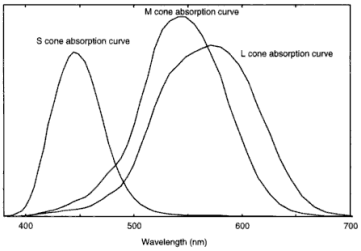


Figure 3: Cone absorption curves (Sangwine S and Home R. *The Colour Image Processing Handbook*. Springer (1998) p12)

Full width, normal and margin tables

Here is the same table shown in a variety of formats.

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

Table 2 shows the CIE system.

$$(C) \equiv x(X) + y(Y) + z(Z)$$
where
$$x = \frac{X}{(X+Y+Z)}$$
$$y = \frac{Y}{(X+Y+Z)}$$
$$z = \frac{Z}{(X+Y+Z)}$$
and hence
$$x + y + z = 1$$

Table 2: CIE system

Another version is shown in Table 3 and a final version in Table 4.

$$(C) \equiv x(X) + y(Y) + z(Z)$$
where
$$x = \frac{X}{(X+Y+Z)}$$
$$y = \frac{Y}{(X+Y+Z)}$$
$$z = \frac{Z}{(X+Y+Z)}$$
and hence
$$x + y + z = 1$$

Table 3: CIE system

Fusce mauris. Vestibulum luctus nibh at lectus. Sed bibendum, nulla a faucibus semper, leo velit ultricies tellus, ac venenatis arcu wisi vel nisl. Vestibulum diam. Aliquam pellentesque, augue quis sagittis posuere, turpis lacus congue quam, in hendrerit risus eros eget felis. Maecenas eget erat in sapien mattis porttitor. Vestibulum porttitor. Nulla facilisi. Sed a turpis eu lacus commodo facilisis. Morbi fringilla, wisi in dignissim interdum, justo lectus sagittis dui, et vehicula libero dui cursus dui. Mauris tempor ligula sed lacus. Duis cursus enim ut augue. Cras ac magna. Cras nulla. Nulla egestas. Curabitur a leo. Quisque egestas wisi eget nunc. Nam feugiat lacus vel est. Curabitur consectetuer.

Here is a short section of text where we want multiple references. The best overview of colour is by Kuehni[3]. Simons and Bean[4] provide useful computational techniques and a full discussion of different colour metrics is given in Guo and Houser.[5]

$$(C) \equiv x(X) + y(Y) + z(Z)$$
where
$$x = \frac{X}{(X+Y+Z)}$$
$$y = \frac{Y}{(X+Y+Z)}$$
$$z = \frac{Z}{(X+Y+Z)}$$
and hence
$$x + y + z = 1$$

Table 4: CIE system

[3] Edward R. Tufte. *Beautiful Evidence*. Graphics Press, LLC, first edition, May 2006. ISBN 0-9613921-7-7

[4] Edward R. Tufte. *The Visual Display of Quantitative Information*. Graphics Press, Cheshire, Connecticut, 2001. ISBN 0-9613921-4-2

[5] Edward R. Tufte. *Envisioning Information*. Graphics Press, Cheshire, Connecticut, 1990. ISBN 0-9613921-1-8

Miscellaneous TikZ Examples

Some interesting TikZ examples from a variety of sources. A full width graph example is shown in figure 4.

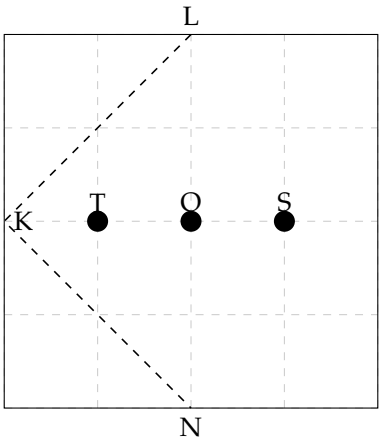


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Figure 4: A graph example.

Here is another small TikZ example (see figure 5).

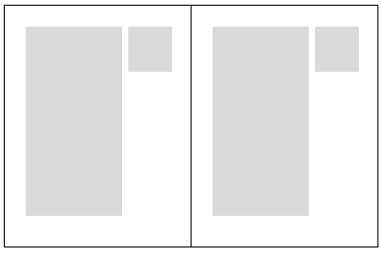


Figure 5: A small example.

Finally a small margin figure in TikZ (see figure 6).

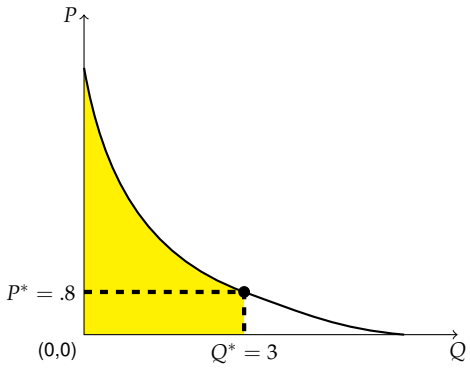
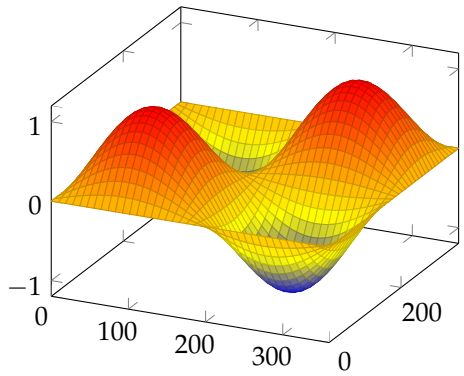


Figure 6: An economics graph.

pgfplot

An example pgfplot



An example of pgfplotstable

dof	error1	info
4	0.25	48
16	$6.25 \cdot 10^{-2}$	25
64	$1.56 \cdot 10^{-2}$	41

Now to consider a simple referencing style.[6]

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

[6] Edward R. Tufte. *Visual Explanations*. Graphics Press, Cheshire, Connecticut, 1997. ISBN 0-9613921-2-6

Bibliography example. Suggest that this article[7] be consulted.

Next ... still missing *knitr* capabilities.

[7] R. Ihaka and R. Gentleman. R: A language for data analysis and graphics. *Journal of Computational and Graphical Statistics*, 5:299–314, 1996

References

R. Ihaka and R. Gentleman. R: A language for data analysis and graphics. *Journal of Computational and Graphical Statistics*, 5:299–314, 1996.

Edward R. Tufte. *Envisioning Information*. Graphics Press, Cheshire, Connecticut, 1990. ISBN 0-9613921-1-8.

Edward R. Tufte. *Visual Explanations*. Graphics Press, Cheshire, Connecticut, 1997. ISBN 0-9613921-2-6.

Edward R. Tufte. *The Visual Display of Quantitative Information*. Graphics Press, Cheshire, Connecticut, 2001. ISBN 0-9613921-4-2.

Edward R. Tufte. *Beautiful Evidence*. Graphics Press, LLC, first edition, May 2006. ISBN 0-9613921-7-7.

Hideo Umeki. The `geometry` package. `http://ctan.org/pkg/geometry`, December 2008.