A Few Introductory Topics in
Typography

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Overview

- I will talk about:

  - LaTeX and BibTeX

  - Some basic typographic terminology

  - Hints for good document design

- I will not say much about:

  - Getting started using LaTeX

- Further reading:

  - Robert Bringhurst. *Elements of Typographic Style*. Hartley & Marks. 2002. ISBN 0-88179-132-6.

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LaTeX

- History

    - TeX (Knuth) – typesetting engine, 1977

    - LaTeX (Lamport) – TeX plus lots of macros, 1984

- TeX commands describe structure of content

    - You can define your own macros

    - (The language is Turing-complete!)

- Where to find out more about LaTeX:

    - Cheat sheet – http://www.stdout.org/~winston/latex/latexsheet.pdf

    - Guidebook – http://www.ctan.org/tex-archive/info/lshort/english/lshort.pdf

    - Website – http://www.ctan.org/

LaTeX or Word?

- Separation of text composition from typesetting

- File size, portability

- Text-based source

    - Lends itself well to scripting
    - Can be used with command-line text processing tools

- Mathematical formulae

- Version issues (and lock-in)

- Coping with large documents

- Bibliographies

- *and more…*

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BibTeX

- A tool for formatting lists of references

- Separates bibliographic information from its presentation

  - Store information in a text file

  - Can compile with a LaTeX file, or to HTML, etc.

```
@article{dynmaps,
  author    = "Jonathan J. Davies and Alastair R. Beresford and Andy Hopper",
  title     = "Scalable, Distributed, Real-Time Map Generation",
  journal   = "{IEEE} Pervasive Computing",
  volume    = 5,
  number    = 4,
  month     = "Oct--Dec",
  year      = 2006,
  pages     = "47--54",
  publisher = "{IEEE}"
}
```

BibTeX

[1] Jonathan J. Davies, Alastair R. Beresford, and Andy Hopper. Scalable, distributed, real-time map generation. *IEEE Pervasive Computing*, 5(4):47–54, Oct–Dec 2006.

[1] DAVIES, J. J., BERESFORD, A. R., AND HOPPER, A. Scalable, distributed, real-time map generation. *IEEE Pervasive Computing 5*, 4 (Oct–Dec 2006), 47–54.

[DBH06] Jonathan J. Davies, Alastair R. Beresford, and Andy Hopper. Scalable, distributed, real-time map generation. *IEEE Pervasive Computing*, 5(4):47–54, Oct–Dec 2006.

Citing References

- Which is best?

  1. In [1], Davies et al. present work about generating maps. No
  2. Davies et al. [1] present work about generating maps. No
  3. Davies et al. present work [1] about generating maps. No
  4. Davies et al. present work about generating maps [1]. Yes

- Don't use the citation as a noun (as in style 1)

- Style 2 would be used to indicate that ref 1 is biographic

- Put the citation at the end of the first clause which summarises the content of the paper (as in style 4)

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Typography

- Typography exists to honour content

- Typography should perform these services for the reader:

  - invite the reader into the text;

  - reveal the tenor and the meaning of the text;

  - clarify the structure and the order of the text;

  - link the text with other existing elements;

  - induce a state of energetic repose, which is the ideal condition for reading.
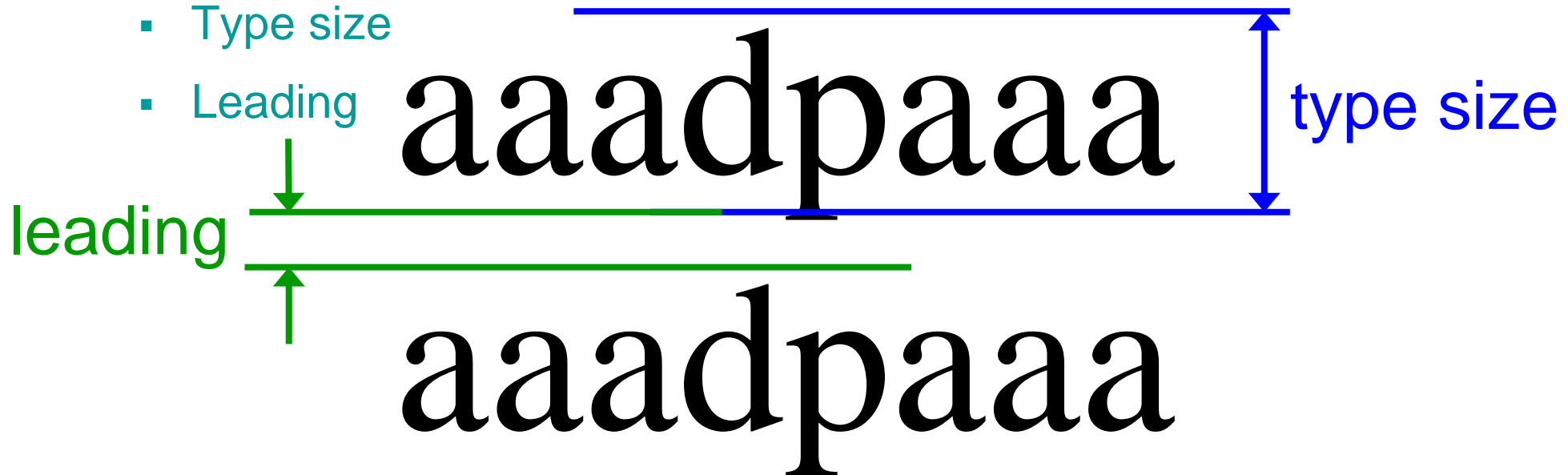
  [*Elements of Typographic Style* (2002) p24]

- Above all else, consistency is most important

- Parameters

  - Type size

  - Leading

  - Depth (height of all text on a page)

- Align lines on facing pages and sides of a leaf

  - Vertical space – use measured intervals

  - LaTeX does not attempt to do this

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- **Line length**
  - e.g. 45–75 chars, or 40–50 chars in multiple columns

- **Kerning**

BRAVO   BRAVO

unkerned   kerned

- Fonts define *kerning tables* indicating amount of overlap

- Beware if you plan to mix-and-match characters from different fonts!

- The font may use ligatures instead of character sequences:

Diffie-Hellman

Page Layout – Horizontal

- Justification vs ragged-right

  - Unserifed fonts and mono-spaced fonts tend to look better ragged-right

  - Justification implies hyphenation at line-ends

- Rules for line-end hyphenation   [*Elements of Typographic Style* (2002) p42–44]

  - Leave at least two characters behind, take three forward

  - Avoid a partial word being the last line of a paragraph

  - Avoid more than three consecutive hyphenated lines

  - Avoid hyphenating proper nouns

  - Avoid hyphenated breaks where text is interrupted

- In LaTeX, use `\hyphenation{…}`

  - e.g. `\hyphenation{op-tical net-works data-bases}`

Fonts

- Italics
  - For contrast with roman
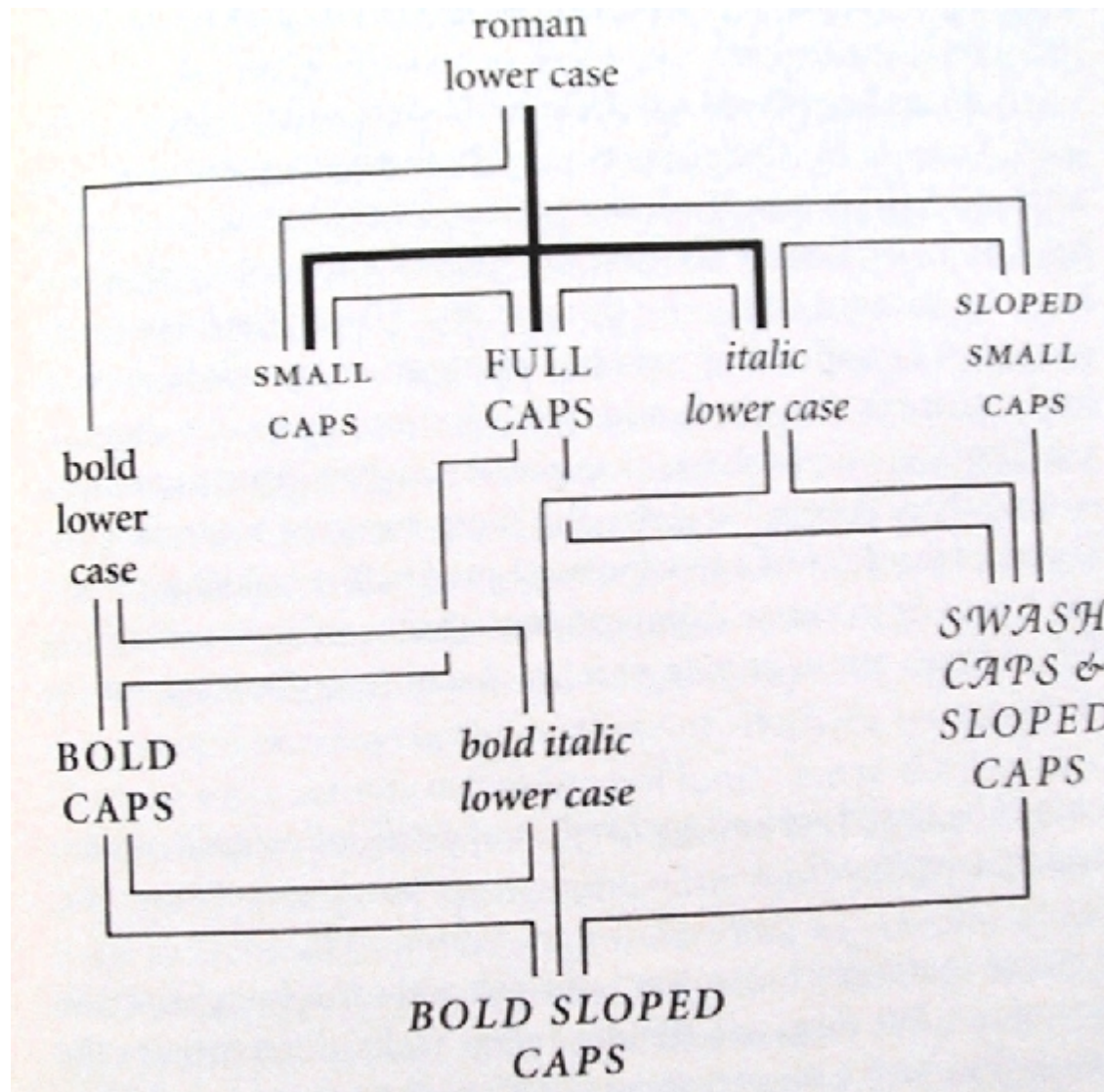 - May be 'sloped roman' (oblique) or have a completely different structure

	roman	italic
Times New Roman	f	*f*
Helvetica	f	*f*

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Fonts

[*Elements of Typographic Style* (2002) p55]

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Numerals

- **Lower-case and upper-case Roman numerals**
  - Part iii, act vi, scene ix
  - LXXVIII GRAN PREMIO D'ITALIA

- **Lower-case and upper-case Arabic numerals**
  - I am 67 years old.
  - THE 1812 OVERTURE
  - Known as 'text figures' and 'titling figures', respectively
    - The date is 23 August 1832, and it is 3:00 AM; the price is £28,300.
  - In LaTeX, `\usepackage{textcomp}` and `\textNoldstyle`

[*Elements of Typographic Style* (2002) p46]

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Acronyms and Abbreviations

- **Initials**   [*Elements of Typographic Style* (2002) p30]

  - use little or no space after intermediate dots
  - use normal word-space after last dot
  - e.g. C.A.R. Hoare

- **Acronyms**   [*Elements of Typographic Style* (2002) p48]

  - use small caps (in the midst of normal text)
  - … except geographical and personal acronyms
  - e.g. NATO; HMS Cambridge; JFK; Sydney, NSW

- **Abbreviations**   [*Elements of Typographic Style* (2002) p88]

  - use a dot if the abbreviation ends with wrong letter
  - e.g. Prof. Hopper; Dr Harle; Mr Cottingham

Dashes and Hyphens

- em-dash: as wide as the type size

- en-dash: ½ width of em-dash

  - Use with spaces either side to set off phrases
  - Use without spaces in a range (in place of the word 'to')

- hyphen: (usually) ¼ width of em-dash

  - Use at line-end
  - Use between words to indicate grouping
  - e.g. 'twenty one night stands' is ambiguous
  - e.g. 'low power sensor networks' is ambiguous

[*Elements of Typographic Style* (2002) p80–81]

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