CHAPTER
5. Text

COM 205
MULTIMEDIA APPLICATIONS

CHAPTER HIGHLIGHTS

- Text tradition.

- Codes for computer text.

- Font technologies.

- Multimedia text.

- Guidelines for use of text in multimedia.

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POWERS OF TEXT

- Multimedia developers value text for:
  - Universality
  - Clarity
  - Efficiency
  - Powers of abstraction, engagement, and suggestion

- Developers can explore new uses for text in a media-rich environment.

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TEXT TRADITION – TYPEFACES

- Text properties are grounded in the print tradition.
- Typeface is a family of characters sharing a common design.
  - Arial
  - Chicago
  - New York
  - Palatino

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TEXT TRADITION – TYPEFACE CATEGORIES

T Serif Typefaces
characters have a slight
decoration at the ends of
each letter

Ex: Times New Roman

T Script Typefaces
Simulate handwriting or
calligraphy

Ex: Edwardian Script

T Sans Serif Typefaces
characters do not have any
decoration
Ex: Arial

❄ Symbol Typefaces
characters are symbols
rather than normal text
Ex: Webdings, Wingdings

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TEXT TRADITION – SIZE & STYLE

- Style: appearance of characters such as:
  - **Bold**
  - *Italic*
  - Underline

- Point size: measure of type size.
  - 1 Point = 1/72 of an inch
  - 1 Pica = 12 points
  - 6 picas = 1 inch

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TEXT TRADITION - FONTS

- Font - Complete set of characters of a particular typeface, style, and size.
  - `Monospaced fonts:` same width assigned to each character.
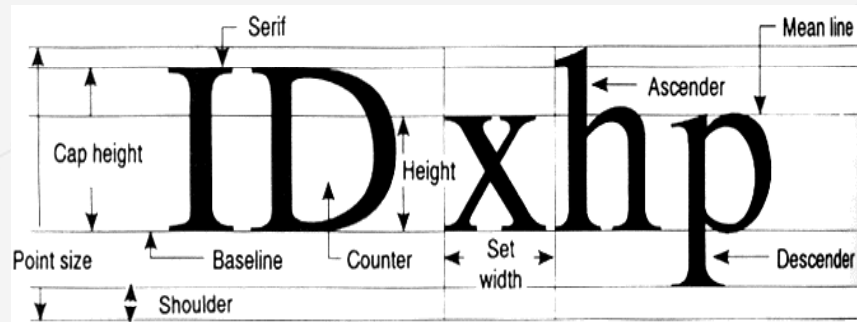 - Proportional fonts: adjust width based on shape.

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TEXT TRADITION - CASE

- When type was set by hand, the type for a font was kept in a drawer or case

- The upper drawer held the capital letters, and the lower drawer held the smaller letters

- From this we get the terms uppercase and lowercase

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TEXT TRADITION – CHARACTER METRICS

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TEXT TRADITION – TYPOGRAPHIC TERMS

- **Weight**
  Line thickness of the typeface.

  Helvetica Neue Thin
  Helvetica Neue Medium
  Helvetica Neue Black

- **Kerning**
  Spacing between specific letters.

  Av Av
  Kerned   UnKerned

- **Tracking**
  Spacing between all characters.

  Tighter Tracking Example

  Looser Tracking Example

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TEXT TRADITION – TYPOGRAPHIC TERMS

- Condensed/extended text
  Narrow width of text / widen width of text.

  Helvetica Nueue Condensed

  Helvetica Nueue Extended

- Leading
  Spacing between lines.

  This paragraph has a small amout of leading.
  The lines are closer together

  This paragraph has a standard amount of
  leading. The lines are not as close.

- Alignment & Justification
  – Alignment positions text relative to
    document's margins.
  – Justification adjusts line length to produce
    straight edges on left and right margins.

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COMPUTER TEXT

FROM PRINTED CHARACTERS TO
DIGITAL TEXT.

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FONT TECHNOLOGIES

- Two techniques for displaying text on computer
  - Bitmapped fonts
  - Outline fonts

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BITMAPPED FONTS

- Pixels that make the letter are described by a binary code, or a "mapping" of the character.
  - Every character is stored as a bitmapped letter, number, or symbol.
  - Require large memory and storage capacity.

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BITMAPPED FONTS

- Advantages
  - Precise control over letter appearance.
  - Letters can be edited at pixel level.

- Disadvantages
  - Letters can't be easily scaled.
  - Requires separate bitmaps for each typeface, style, and point size to be used.
  - Requires large storage capacities.
  - Limits flexibility in use of text fonts to those stored on the computer.

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OUTLINE FONTS

- Store a description of the character to be displayed.
  - Description is a series of commands to create the letter on the computer display.

- Outline font technology:
  - Adobe Postscript
  - TrueType

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OUTLINE FONTS

- Advantages
  - Fonts are easily scaled.
  - Requires smaller storage capacity.

- Disadvantages
  - Commands can't be edited to create unique characters.
  - Font families are controlled through license of Postscript and TrueType fonts.

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JAGGIES and TEXT

- Text is displayed on a monitor as a pattern of pixels.
  - Pixels are generally very small squares.
  - Squares can display straight lines with smooth edges.
  - Squares that display curved or diagonal lines produce a stair-stepped effect called JAGGIES.

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ANTI-ALIASING THE JAGGIES

- Jaggies produce an alias of the true character.

- Anti-aliasing creates a smooth edge by blending the color of the text with the color of the background.

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INSTALLED FONTS — THE PROBLEM

- ASCII and Unicode are standard.

- Fonts are not standardized across computer platforms.
  - If the font is not available, it will substitute one that is.
  - The result may not be acceptable.

- Solution
  - Use only widely available fonts. (Cross Browser Font List)
  - Package the unique font with the application.

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MULTIMEDIA TEXT

- Two main forms:
  - Editable: text produced by word processors or text editors.
    - Easy to alter content.
    - Can search and spell check.

  - Graphics: image of text that can be manipulated to produce a wide range of artistic effects.
    - Make original word picture.
    - Solves problem of installed fonts.

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MULTIMEDIA TEXT & SOUND

- Speech recognition: software analyzes human speech and converts words to editable text.
  - Requires specialized "intelligent" software.
  - Accuracy may depend on training and speaker's voice.

- Speech synthesis: software analyzes text and reproduces it as spoken words.

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ADDING TEXT TO MULTIMEDIA APPS

Several methods to incorporate text in an authoring application.

- Direct entry in a text box or text field.

- Copy and paste from existing text source.

- File import for large text files.

- Scan text with OCR application for text that exists only in print media.

  - Optical Character Recognition accuracy will vary based on fonts and quality of source material.

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GUIDELINES for TEXT in Multimedia Apps

- Be selective.

- Be brief.

- Make text readable.

- Be consistent.

- Be careful

- Be respectful.

- Combine text with other media.

- Make text interactive.

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WRAP UP

- Traditional text features.

- Computer text codes.

- Font technologies.

- Multimedia text.

- Adding text to multimedia applications.

- Guidelines for using text.

- The Elements of Typographic Style Applied to the Web

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