

LECTURE 4

THE USES OF TEXT IN MULTIMEDIA

Objective

- ❑ **Media Types**
- ❑ **What text is**
- ❑ **How text is created and stored in the computer**
- ❑ **How text is used in Multimedia Systems**
- ❑ **Advantages and Disadvantages of using texts**

Temporal & Non Temporal Media

Media

- Refer to Multimedia elements.
- Two Media types: **Temporal** and **Non-Temporal**

Temporal Media

- The media has an associated time aspect. Example: its view changes with respect to time.
- Examples: Audio, video, animation, music etc.

Temporal & Non Temporal Media

Non-Temporal Media

- Also known as a static media. It has the same representation regardless of time
- Examples: texts, graphics, paintings, book etc
- Multimedia applications are typically composed of both media

What is Text

- Basic media for many multimedia systems
- Texts in the form of words, sentences and paragraphs is used to communicate thoughts, ideas and facts in nearly every aspect of our lives.
- Multimedia products depends on text for many things:
 - to explain how the application work
 - to guide the user in navigating through the application
 - deliver the information for which the application was designed

What is Text

- Minimize the texts in multimedia application
- Texts consists of two structures:
 - **Linear**
 - **Non-Linear**

Text Technology

- Based on creating letters, numbers and special characters.
- Text elements can be categories into:
 - Alphabet characters : A - Z
 - Numbers : 0 - 9
 - Special characters : **Punctuation** [. , ; ' ...] , **Sign or Symbols** [* & ^ % \$ £ ! ^ ~ # @]
 - Also known **Character Sets**
- May also include special **icon** or **drawing symbols**, **mathematical symbols**, **Greek Letter** etc.

Typefaces, Fonts and Points

Typefaces

- The graphic representations of the alphabet, numbers and special character.
- Usually vary by type sizes and styles.

Fonts

- Particular size of typefaces
- Usually vary by type sizes and styles.
- The sizes are measured in **points**
 - One point is $1/72$ " or 0.0138 inc"
 - Measuring distance from the top of a capital letters (e.g. 'A or P') to the bottom of a descenders (e.g. 'y , 'p' , 'q').

Fonts Effects

- A numbers of effects that are useful for bringing viewer's attention to content:
 - Case: UPPER and lower letter
 - **Bold**, *Italic*, Underline, ^{superscript} or _{subscript}
 - **Embossed** or Shadow
 - **Colours**
 - ~~Strikethrough~~

Types of Fonts

- Two classes of fonts: **Serif** or **Sans Serif**
- **Serif** fonts use decorative tips or flags at the ends of a letter strokes
- **Sans Serif** fonts don't have these features
- Serif fonts are usually used for documents or screens that have large quantities of text
 - This is because the serif helps guide the reader's eye along the text

Types of Fonts

- For computer displays, **Sans Serif** fonts considered better because of the sharper contrast.

Times New Roman
Bookman
Rockwell Light
Courier New
Century

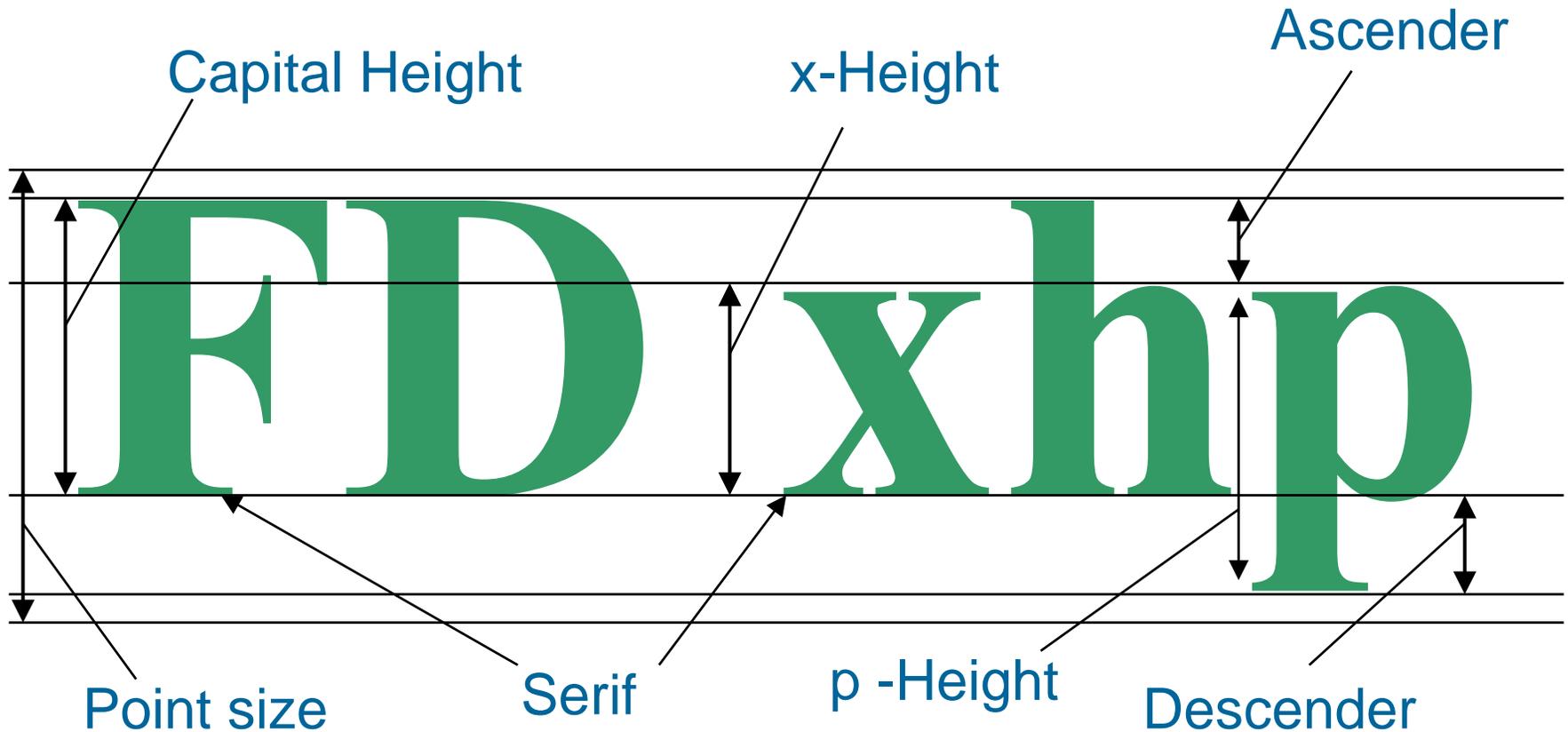
Examples of Serif fonts

Examples of San Serif fonts

Century Gothic
Arial
Comic Sans MS
Impact
Tahoma

Text Characteristics

This example shows the Times New Roman font



Tracking, Kerning and Leading

Tight
tracking

Loose
tracking

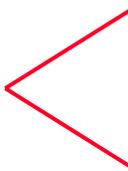
A V

Unkerned

A V

Kerned

Tracking, Kerning and Leading

Leading  **Reading Line One**
Reading Line One

- ❑ **Ascender** : an upstroke on a character
- ❑ **Descender** : the down stroke below the baseline of a character
- ❑ **Leading** : spacing above and below a font or Line spacing
- ❑ **Tracking** : spacing between characters
- ❑ **Kerning** : space between pairs of characters, usually as an overlap for improvement appearance

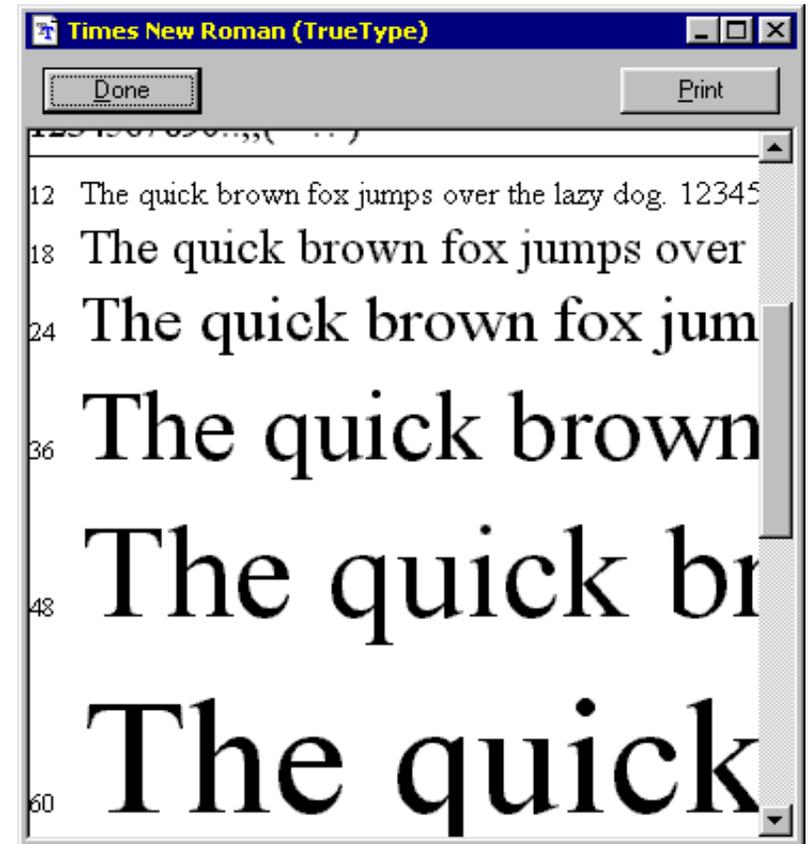
Bitmapped and vector fonts

- Fonts can either be stored as **bitmapped** or **vector** graphics
- Bitmaps font depend to the size and the pixel numbers
 - File size increases as more sizes are added
- Vector fonts can draw any size by scaling the vector drawing primitives mathematically
 - File size is much smaller than bitmaps
 - **TrueType** and **PostScript** are vector font formats

Bitmapped and vector fonts



A bitmapped font



A vector font

Jaggies and Antialiasing

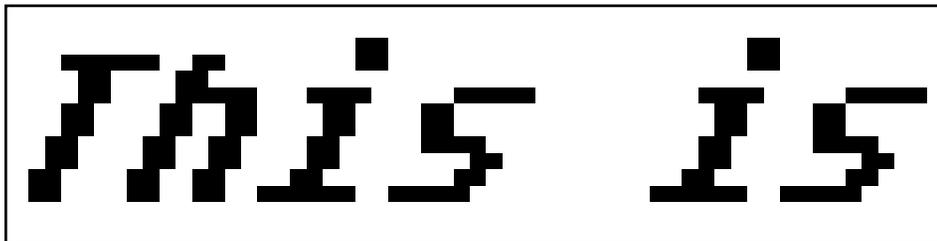
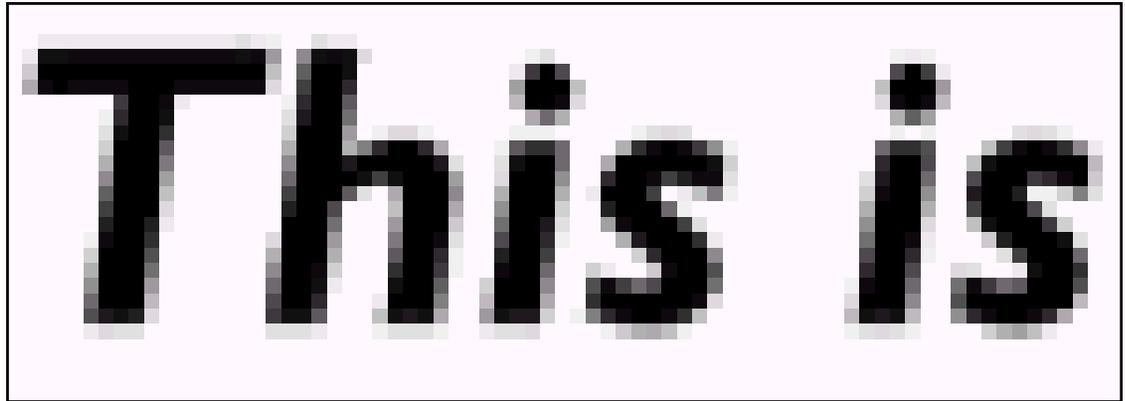
- **Jaggies** are the jagged edges you see when a bitmapped image is resized
- It is a consequence of the underlying array of pixels from which the image is composed
- **Antialiasing** is a technique that can be used to eliminate jagged edges
- It substitutes additional pixels in other colours to fool the brain into thinking it is seeing continuous lines

Jaggies and Antialiasing

- The technique is used to blend the font into the background by transitioning the colour from the font colour to background.
- This technique minimizes the jagged edges making for a smoother overall appearance.

Jaggies and Antialiasing

*This is a
vector font.
It has been
antialiased.*



*This is a
bitmapped font.
It has jagged
edges.*

Text Data Files

- The common data encoding schemes for text are:
 - **Plain text** (ASCII) is text in an electronic format that can be read and interpreted by humans
 - **Rich text** is similar but it also embeds special control characters into the text to provide additional features
 - **Hypertext** is an advance on rich text which allows the reader to jump to different sections within the document or even jump to a new document

Text Data Files

Plain text

This is plain text. It is readable by humans. It can contains numbers (01234) and punctuation (.,#@*&) since it uses the ASCII character set.

Rich text

This is **rich text**.
It is also readable by humans but contains additional tags which control the presentation of the text.

Hypertext

This is [hypertext](http://www.w3c.org/). It uses the rich text format shown above but adds the ability to hyperlink to other documents.



Working With Text

- Considerations and guidelines when we are working with text:
 - Be Concise
 - Use the appropriate typefaces and fonts
 - Make it readable
 - Consider type styles and colors
 - Use restraint and be consistent

How text can be used effectively

- Communicating Data
 - Customer names and address
 - Pricing information of products
- Explaining concepts and ideas
 - A company mission statement
 - A comparison of medical procedures
- Clarifying other media
 - Labels on button, icons and screens
 - Captions and callouts for graphics

Advantages and Disadvantages of using texts

□ Advantages

- Is relatively inexpensive to produce
- Present abstract ideas effectively
- Clarifies other media
- Provides confidentiality
- Is easily changed or updated

□ Disadvantages

- Is less memorable than other visual media
- Requires more attention from the user than other media
- Can be cumbersome

Summary

- ❑ Multimedia applications and presentations invariably rely to some extent on the use of text to convey their message to users
- ❑ Text has many characteristics that the developer can modify to enhance the user experience
 - size, weight, typeface, style, colour, kerning, tracking, etc.
- ❑ Antialiasing is a technique that can be used to improve the readability of text

Next lecture...

We will looking at **images**

- The different types of image
- How we capture images
- Generating and editing images

QUESTION

1. Symbolic representation of objects and processes common to the graphical user interfaces of many computer operating systems are called _____
2. WYSIWYG stands for _____
3. The little decoration at the end of a letter stroke is a _____
4. _____ blends the colors along the edges of the letter (called dithering) to create a soft transition between the letter and its background.
5. _____ is a term that applies to the spacing between characters of texts.
6. We pages are coded using _____
7. _____ provides a system for dynamically displaying a font.
8. _____ is the space between lines.
9. Discuss the problems encountered using text across computer platforms and in different languages.