Lecture 2 Multimedia Authoring and Tools
Example programs are PowerPoint
Frames Metaphor

- **Quest by Allen Communication**
  - A visual authoring environment for both novice and expert training and education content developers, has become a premier software product in its class, used by individuals, corporate and government organizations to create interactive, media-rich training materials.
HyperStudio

- A flexible multimedia-authoring tool for the classroom that enables students to create interactive reports by mixing digital sources such as clipart, text, photos, video, sounds, animation and narration.
Cast/score/scripting metaphor

- Macromedia Director
Hypertext and Hyperimages

- **Hypertext** – how to determine nodes?
  - Section or chapter title
  - Automatic keyword extraction and linking
  - A database management system can maintain the integrity of links when new nodes are inserted

- **Hyperimages**
  - After describing the meaning of images, text-based methods can be brought into play
VRML Tutorial

ImageTexture and PixelTexture

- **ImageTexture**

  ```
  Shape {
    appearance Appearance {
      material Material {
        texture ImageTexture {
          url "images/Brick.jpg"
        }
      }
    }
    geometry Box {
    }
  }
  ```

- **PixelTexture**

  ```
  Shape {
    appearance Appearance {
      material Material {
        texture PixelTexture {
          image 1 3 3  # width, height, 3-byte RGB image
          0xA00000  # yellow at the bottom
          0xF00000  # red at the top
          0xA00000
        }
      }
    }
  }
  ```
3D Color Histogram

- R, G, B are quantized into 16 scales, respectively
- The histogram has $16 \times 16 \times 16$ bins
  - E.g. if exactly 23 pixels have RGB values (45, 200, 91) then store the value 23 in it
- We can see a few important clusters of color information
- Clustering allows us to pick the most important 256 groups of color

Multimedia Systems, CSIE, CCU