FUNDAMENTAL OF MULTIMEDIA
MULTIMEDIA ELEMENTS : GRAPHICS/ IMAGE

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Communitising Technology

Chapter Description

- **Expected Outcomes**

At the end of this lesson you will understand:

- Image formats
- Image color scheme
- Image enhancement
- Video – Analogue and digital video
- Recording formats and standards
- Transmission of video signals
- Video capture
- Computer-based animation

- **References**

- Tay Vaughan. Multimedia: Making It Work, Ninth Edition. Mc Graw Hill. 2014. ISBN-13: 978-0071832885.
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- Khalid Sayood. Introduction to Data Compression, Fourth Edition (The Morgan Kaufmann Series in Multimedia Information and Systems) 4th Edition. Elsevier. 2012 ISBN-13: 978-0124157965.
- Savage, T.M., Vogel, K.E. An Introduction to Digital Multimedia 2nd ed.. 2013. Jones & Bartlett Learning   ASIN: B00LZM6ESY.
- Parag Havaldar, Gerard Medioni. Multimedia Systems: Algorithms, Standards, and Industry Practices (Advanced Topics) 1st Edition. Cengage Learning. 2011. ISBN-13: 978-1418835941
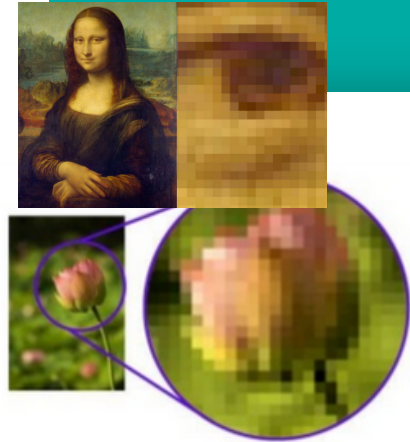
Graphics

- Graphics are an important part of the communication process.

- They can be used to:
    - Highlight information
    - Set a mood or tone
    - Provide examples
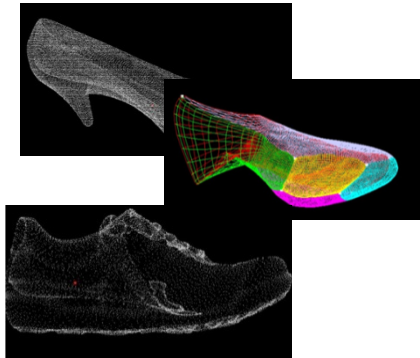   - Serve as backgrounds
    - Hyperpictures

TYPES of Graphics

- Raster/Bitmap graphics
  - » Composed of **pixels** (bitmap)**.**
  - » An array of pixels of various colors, which together form an image.
  - » Real images – captured from devices (camera/scanners).
 - » Data format: .GIF, .JPEG, .PNG, .TIFF.
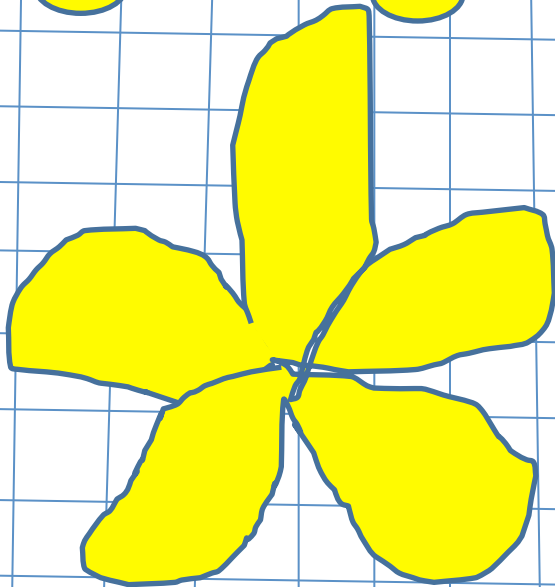
- **Vector graphics**
  - » Composed of paths/lines/curves.
  - » The data file for a vector image contains **the points** where the paths start and end, how much the paths curve, and the colors that either border or fill the paths.
  - » Drawn on the computer – only require small amount of memory.
  - » The images can be scaled to be very large without losing quality.
  - » Represent images in computer graphics.
  - » Data format: .EPS, .PDF, .PSD, .AI. (based on tools to edit).
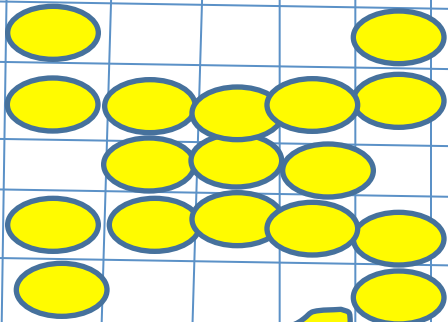
Bitmap

Vector

Graphics design

- Graphics editing programs allow designers to draw, paint, or edit images.

- A combination of different graphic programs may be used in creating multimedia presentations.

- Determine the best balance between the size and quality.

- Use appropriate graphics for the intended purpose and audience.

- Choose appropriate file formats:
  - Standard for the internet:
    - » JPEG (Joint Photographer Experts Group)
    - » GIF (Graphics Interchange file format)
    - » PNG (Portable Network Graphics)

Most popular:

    TIFF - Tagged Image File Format

    BMP – Bitmap

    PCX - Windows Paint

    PICT - Macintosh

Image Enhancement

- In computer graphics, the process of improving the quality of a digitally stored image by manipulating the image with software.

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2 type of Image Enhancement

1. Programs specialized for image enhancement are sometimes called *image editors*.

- The programs of software will helps to enhance and manipulate the image to increase the quality of the image

Example

PhotoScape

PhotoShop

2. Image enhancement using the technique such as image processing.

Source: www.mathsworks.com