



M2: Image Formatting

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Basics of Image Formatting for Publication of a Document

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Outline

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- Study on image quality parameters
- Basics of image formatting
- Preparation of a best quality image for publication



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Introduction

- Any document requires the best presentation to make the content easy to the end user and some times it becomes necessary to represent some section of any part. These tasks are solved with help of the image.
- Camera captured graphics are called as photo (short form of photography). Pictures are generally represent painted graphics of any object or logical concept. Image is overlapping concept of these two.
- Diagram is a symbolic representation of chart (represent logical relationship between variables), graph plot (statistical data representation or models), schematics (complex machine structure to simple block diagram). These are also converted into its equivalent image with specific size.
- Overall, image is the graphical representation of real object or logical concepts or statistical models in raster or vector form.
- In raster image, the smallest unicolor point (generally rectangular in shape) is called as pixel and its series/grid is called bitmap and generate the concept of any raster image. Whereas, Vector image files used to represent lines and curves to form polygons and other shapes. Interpolation mathematical tool is very helpful to generate the new points in the vector file.

All diagrams and pictures could be represented in any specific format and these format are chosen based on working platform (software, purpose, representation)



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Quality Parameter

- Pixel: Number of dots present on image.
- Resolution: Number of dots per inch (dpi) that appear in an image.
- Compression: JPEG (lossy) and PNG (lossless) both are compressed image and utilize less memory size to store the specific image.
- Size: Large image requires large size of memory.
- Image layers on application software specific format allows to modification of the images.



File Extension

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Joint Photographic Experts Group (JPEG)

- JPEG is lossy image compression technique of digital photography (raster image).
- It was developed by IBM and later modified version of JPEG 2000 was introduced but unable to replace the first one.

Portable Network Graphics (PNG)

- PNG is a raster image file format used for lossless image compression.
- PNG was developed as an improved, non-patented replacement for Graphics Interchange Format (GIF).

Scalable Vector Graphics (SVG)

- It is an Extensible Markup Language (XML)-based vector image format for two-dimensional graphics with support for interactivity and animation.
- Due to created by XML, it can be searched, indexed, scripted, and compressed. As XML files, SVG images can be created and edited with any text editor, as well as with drawing software.

Tagged Image File Format (TIF/TIFF)

- It is a raster graphics images and popular among graphic artists, the publishing industry, and photographers.
- TIFF is widely supported by scanning, faxing, word processing, optical character recognition, image manipulation, desktop publishing, and page-layout applications.



File Extension (Contd...)

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Bitmap Image File (BMP)

- It is also a raster image format and provides the compression facility over the image.
- It holds the detail pixel information, hence, sometime its size becomes higher than usual.

Encapsulated PostScript (EPS)

- It may contain 2D vector graphics, bitmap images, and text. EPS files also include an embedded preview image in bitmap format.
- EPS files are often used to save artwork, such as logos and drawings.

Graphics Interchange Format (GIF)

- It is an image file format commonly used for images on the web and sprites in software programs.
- Unlike the JPEG image format, GIFs use lossless compression that does not degrade the quality of the image.

Portable Document Format (PDF)

- A PDF file usually stores an image as a separate object (an XObject) which contains the raw binary data for the image. These are all listed in the Resources object for the page or the file and each has a name (ie img1).
- It is wrong to think of images embedded inside a PDF as TIF, GIF, BMP, JPEG or PNG.



Image Formatting: Importance

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- 1 Photo resizing : crop image for arequired size
- 2 Photo retouching : cleaning of image
- 3 Background removing : placing an object on new background
- 4 Add watermark or labels : put a text or reduce opacity of images create watermark
- 5 Color corrections : pick color and fill color on image change the color of any section
- 6 Information Addition : put any additional required text information or signature
- 7 Technical Quality: sharpness and well exposed
- 8 Photo pairing : similar size images are kept in a single unit
- 9 Data compress : save image as required format and reduce its dpi

Image editing software performs each individual tasks on a layer and all lateres are overlapped+merged at time of image export in JPG/PNG/PDF form.



Image Formatting: Softwares[3]

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Adobe Photoshop[1]

- 1 It is a raster graphics editor developed and published by Adobe Inc. for Windows and macOS.
- 2 It was originally created in 1988 by Thomas and John Knoll. Since then, the software has become the industry standard not only in raster graphics editing, but in digital art.
- 3 It works based on the layer format and export the images in jpg, png, pdf etc. format. It saves its working layer based file with PSD extension.

Gimp[2]

- 1 It is a free and open-source raster graphics editor used for image retouching and editing, free-form drawing, converting between different image formats, and more specialized tasks.
- 2 It is released under GPL licenses and is available for Linux, macOS, and Microsoft Windows.
- 3 It works based on the layer format and export the images in jpg, png, pdf etc. format. It saves its working layer based file with XCF extension.



Image Formatting: Tools

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- Crop/Resize
- Filter
- Brightness (amount of light of an image) and contrast (separation between darkest and brightest area of image)
- Filtering: sharpening and softening (blurring; emphasis on texture and drawing viewing focus) and softening is the opposite
- Rotate and Flip
- Add text
- Background change
- Transparency



Gimp: Drawing Shapes

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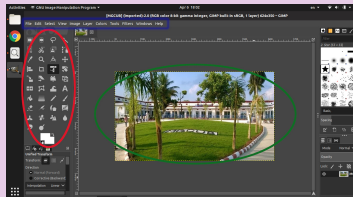
Transparency

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(a) Original Image of MGCU, Bihar



(b) Different shapes are drawn followed by selection tool and foreground filling color in Gimp.

Figure 1: Example of drawing different shapes in Gimp.



Gimp: Image crop/Resize

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(a) Original Image of MGCU, Bihar



(b) The university name has cropped from original image and size has increased on a new background in Gimp.

Figure 2: Example of crop, resize and background change in Gimp.



Gimp: Adding Text

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(a) Original Image of MGCU, Bihar



(b) The additional information could be incorporated on the image as text with variety of font, size, spacing in Gimp.

Figure 3: Example of text addition in Gimp.



Gimp: Rotation

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(a) Original Image of MGCU, Bihar



(b) Original image has rotated and added with similar type of second rotated image in Gimp.

Figure 4: Example of rotation of images in Gimp.



Gimp: Filter

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(a) Original Image of MGCU,Bihar



(b) The front tree in original image has blurred in edited image in Gimp.

Figure 5: Example of blurring of specific object in Gimp.



Gimp: Transparency

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(a) Original Image of MGCU,Bihar



(b) Transparent text has incorporated on original image in Gimp.

Figure 6: Example of transparency or changing of second image opacity in Gimp.



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- What are the parameters to define the image quality?
- Describe about any four image file extension.
- What are the importance of image editing for publication of a document?
- Describe about the basic tools of image editing softwares.
- Create a poster to provide a workshop advertisement by using Image Editing Software (Photoshop/Gimp).



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A. Systems, *Adobe Photoshop 7.0*. Adobe Press, 2002.



A. Wernicke, R. Joost, U. Ehlert, M. Ciampa, J. Hardelin, A. Falappa, M. Quiñones, I. Antl, C. Ji-Hui, N. Shmyrev et al., "Gnu image manipulation program: User manual," 2010.



www.wikipedia.org. [Online]. Available: www.wikipedia.org



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Thank You...