



Chapter 3

Introduction to GIMP

Learning Objectives

After learning this chapter, learner will be able to:

- State the purpose of Image Editing software.
- List the features of Gimp.
- Install Gimp Software from the provided link.
- Change the size of an image.
- Prepare the images for web.
- Crop the parts of the images.
- Understand the concept of Layers.

As you have worked with so many photo editing software such as Microsoft Paint, Drawing of Open Office.org etc. Now, in this chapter you will learn how to work with the images using GIMP software which is free and open source.

1. IMAGE EDITING TOOLS-INTRODUCTION

Image editing encompasses the processes of altering images, whether they are digital photographs, traditional analog photographs, or illustrations. Traditional analog image editing is known as photo retouching, using tools such as an airbrush to modify photographs, or editing illustrations with any traditional art medium.

There are two basic ways that images can be adjusted. Pixel editing works at the pixel level and requires altering the original image. Parametric Image Editing works by saving instruction sets that change the appearance of images without actually changing the original image data.

2. LIST OF COMMONLY USED IMAGE EDITING TOOLS

- (a) **The GIMP:** GNU Image Manipulation Program is free and powerful open source image editing tool that provides retouching of photos, authoring of photos and composition of photos.
- (b) **FastStone Image Viewer:** The FastStone Image Viewer is an interactive application that provides the image editing, image browsing and image converting. It supports

almost all major formats with some useful features including email facility, 150+ transitional effects, high-quality magnifier, scanning facility and image annotation.

- (c) **Serif PhotoPlus X4:** The Serif PhotoPlus X4 offers a wide variety of features for image editing in a very user-friendly environment. This tool offers photos organizer, scrapbooking, greeting cards, and web galleries.
- (d) **Photo Impression 6.5:** This tool provides the image-editing facility in a very simple way. It automatically organizes all of your photos and lets you to print them effectively.
- (e) **PhotoStudio 6:** The PhotoStudio 6 allows you to add animated text and stamping facility on high-bit depth images. This tool also lets you to work with layers for image editing purpose. You can easily transform your raw photos into good ones by using this tool because of its ease and simple navigation.
- (f) **Picasa:** Picasa is the kind of application that the built in editor is more than robust enough for most casual users and includes basic color correction, cropping, and a variety of special effects—the majority of which manage to avoid being cheesy. Picasa isn't a tool for deep and detailed editing but it is extremely easy to use for the kind of quick crop and quick editing, most digital camera owners need.
- (g) **Paint.net:** The interface of Paint.net is easy to pick up and an unlimited undo function helps in correcting your learning, curve shapes, a snap making etc... Paint.net is favourite among Windows users looking for a powerful image editor.
- (h) **Photo! Editor:** Photo! Editor is powerful multifunctional software offering a complete set of image editing tools. It contains everything a digital camera owner might need to correct or enhance their photos. You will enjoy the ultimate convenience and professional approach provided by each of the tools.
- (i) **Inkscape:** The Inkscape is the open source image editing tool with standard features making it the best alternative of the Adobe Photoshop. It allows the vector based controls just like the Adobe Illustrator with powerful features. Most prominent features of Inkscape are node-editing, bitmap tracing, direct XML editing, and alpha blending. These features make the Inkscape a very powerful and free image editing tool.
- (j) **Corel PaintShop Photo Pro X3:** The Corel Paint Shop Photo Pro allows you to adjust and clean-up your photos using the integrated photo organizer with advanced enhancement tools. With the smooth interface and fast speed Corel Paint Shop Photo Pro X3 makes it very easy for you to edit and organize your photos.

3. GIMP

3.1 Introduction

GNU Image Manipulation Program is free and powerful open source image editing tool that provides retouching of photos, authoring of photos and composition of photos. It is free and consists of many similar features provided by the Photoshop. It's available for free for download distribution software that allows you to create image composition and image authoring.



GIMP is a multi-platform photo manipulation tool. Most GNU/Linux distributions include GIMP as a standard application. The GIMP is also available for other operating systems such as Microsoft Windows™ or Apple's Mac OS X™ (Darwin).

The GIMP is a Free Software application covered by the General Public License [GPL]. The GPL provides users with the freedom to access and alter the source code.

3.2 Features of GIMP are:

- ❖ It can be used as a simple paint program
- ❖ An expert quality photo retouching program.
- ❖ An online batch processing system.
- ❖ A mass production image renderer.
- ❖ The advanced scripting interface allows everything from the simplest task to the most complex image manipulation procedures to be easily scripted.
- ❖ It can convert and save files to many file formats such as gif, jpeg, tiff, etc

- ❖ It can load and save animations in a convenient frame as layer format.
- ❖ Virtually unlimited images can be opened at one time.
- ❖ GIMP works with numerous operating systems including Linux, Mac OS and Microsoft Windows.



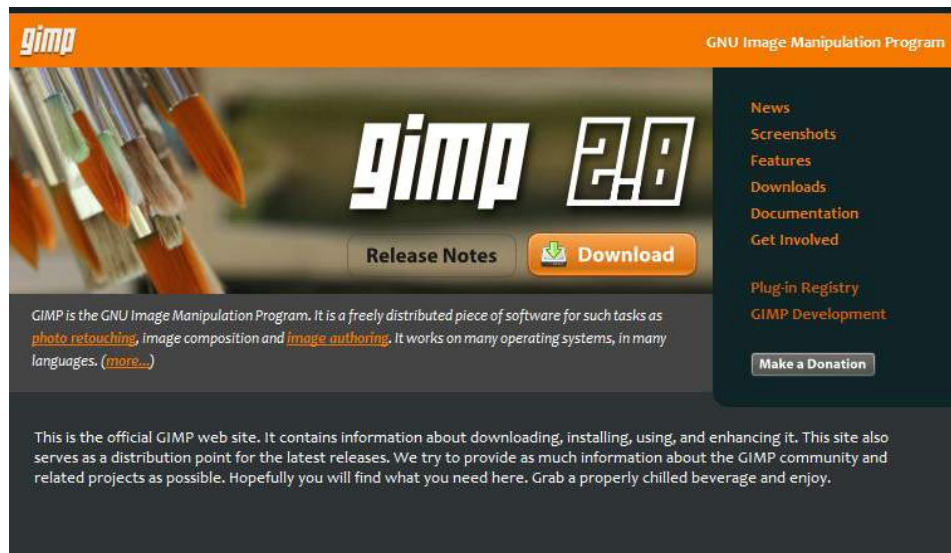
Note

It is also available as a part of Ubuntu no root package from the Google Play store on Android.

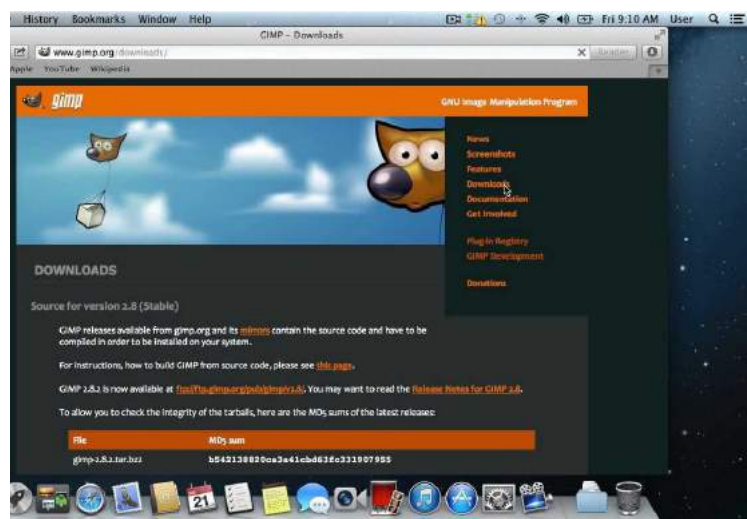
3.3 How to download GIMP from net

Steps to download GIMP:

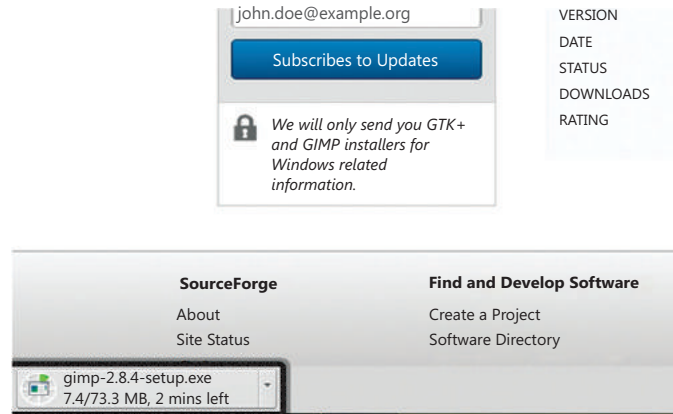
- ❖ Go to www.gimp.org
- ❖ Then click on Download button



- ❖ Click “Download Gimp”



- ❖ The Download will start



3.4 File Formats Supported in GIMP

Formats	Expansions
TIFF	Tagged Image File format
XWD	X Window System
JPEG	Joint Photographic Experts Group
XPM	X Pixmap
GIF	Graphics Interchange Format
PNG	Portable Network Graphics
PSD	Photoshop Document
PPM	Portable PixMap
BMP	Bitmap
PCS	Personal Computer Exchange

3.5 GIMP Compatible Platforms:

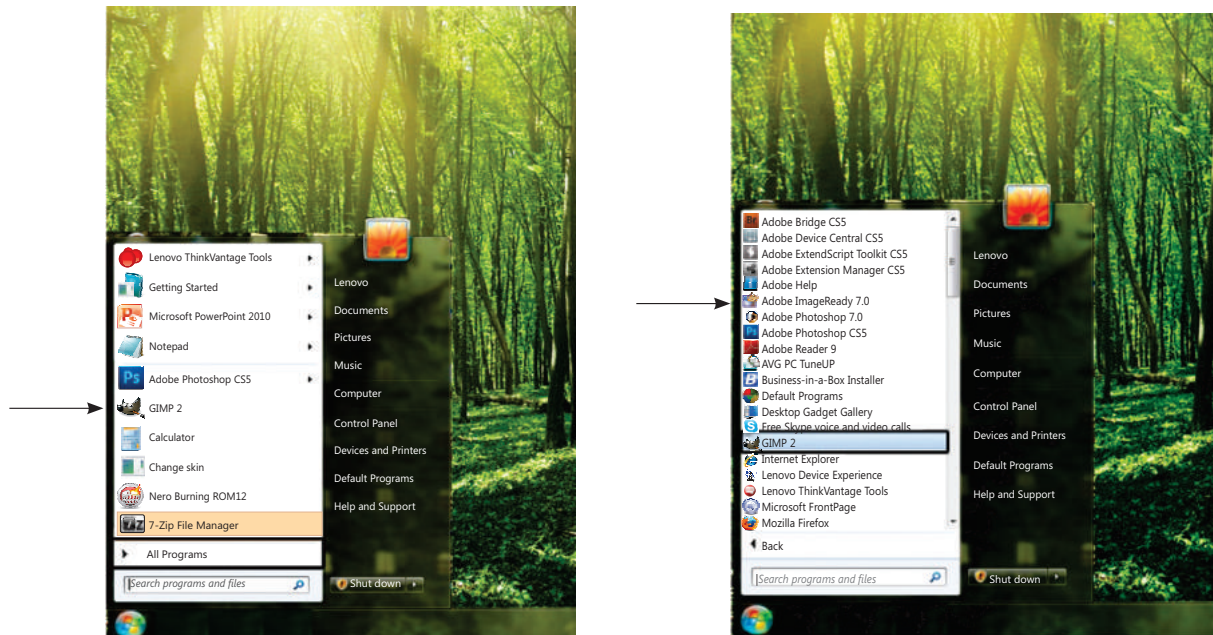
- ❖ GNU/Linux (i386, PPC)
- ❖ Microsoft Windows (XP, Vista, Windows 7)
- ❖ Mac OS X
- ❖ Sun OpenSolaris
- ❖ FreeBSD

4. STARTING GIMP

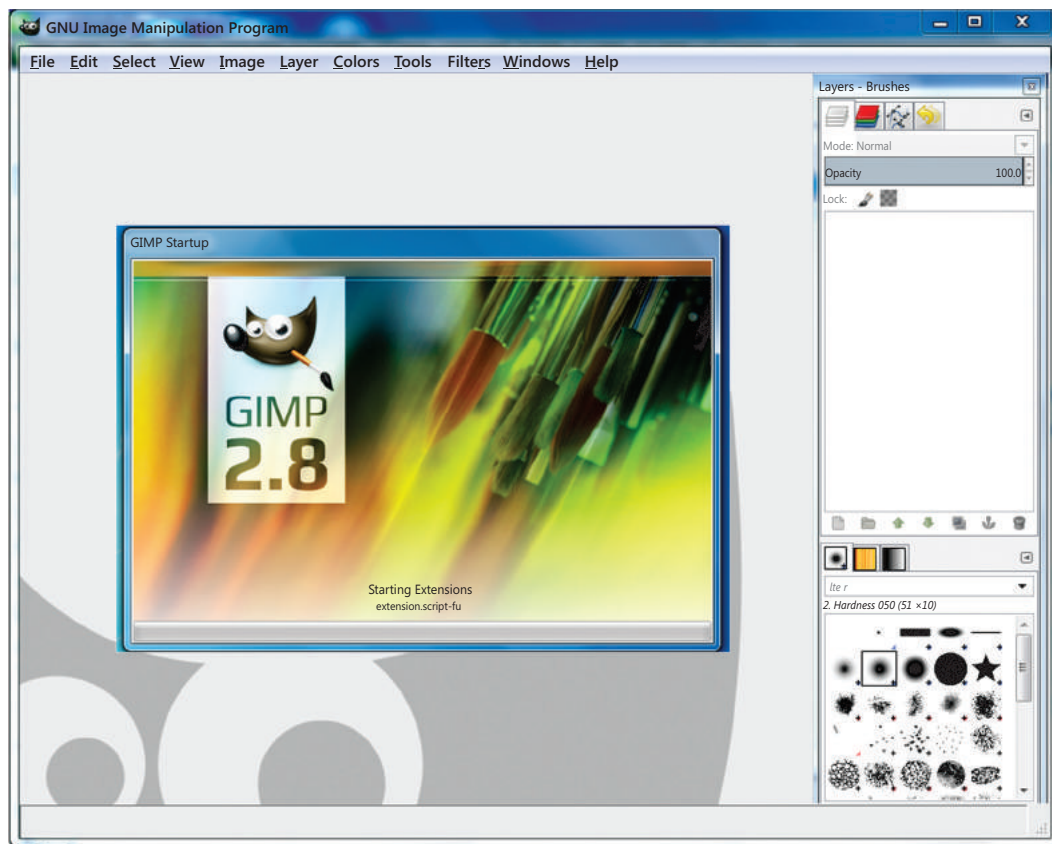
4.1. Open Gimp Software

Tip: GIMP was originally released as the general Image Manipulation Program, by Spencer Kimball and Peter Mattis. Development of GIMP began in 1995 as a project at the 'University Of California, Berkeley.

Step 1: Select Start → All Programs → GIMP 2

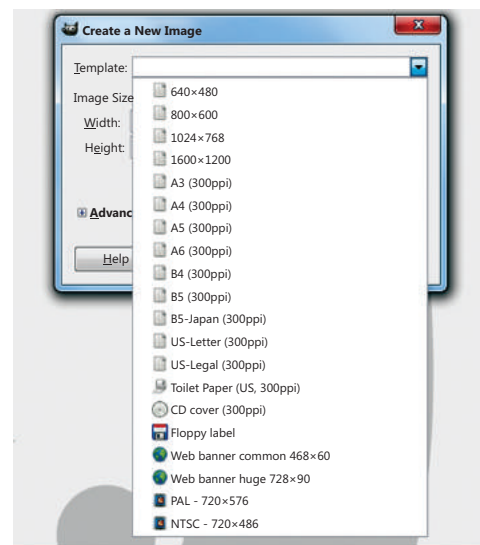
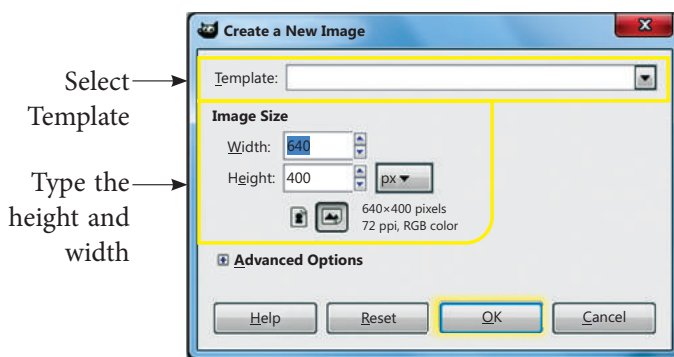
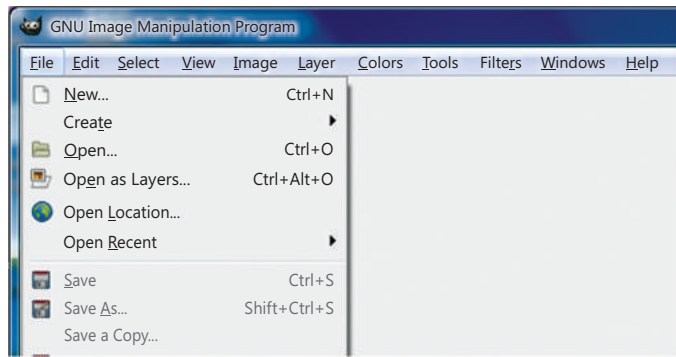


Step 2: The GIMP 2 window appears.



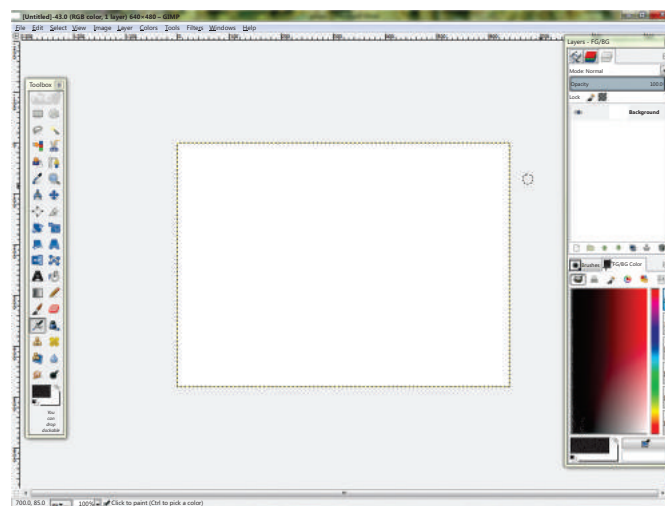
4.2 To create a New File

1. Click on File Menu
2. Select New option
3. Type the height or width /Choose a template
4. A dialog box appears; using this you can select the template and specify the size by setting values for both height and width.



5. Press OK.

A new blank image file is created. Now, you can use the tools and create your own drawings.

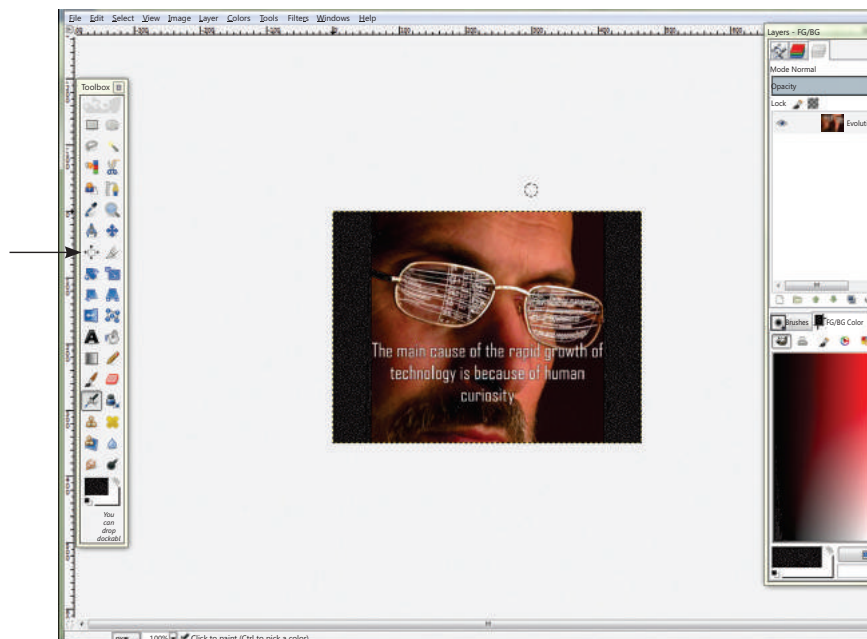
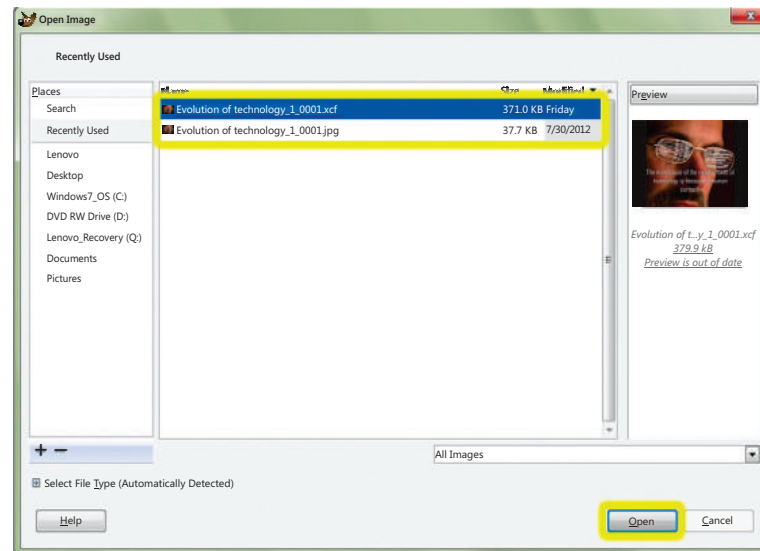
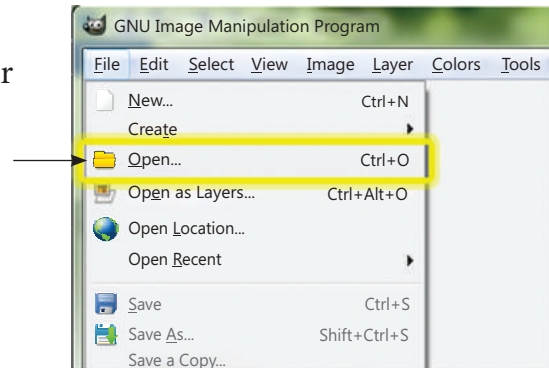


4.3 Opening an existing file

You can open an existing GIMP file or any other saved image of GIMP.

To open an existing file, follow the given steps.

1. Click on file Menu
2. Select Open option
3. Select the file name and click on Open button



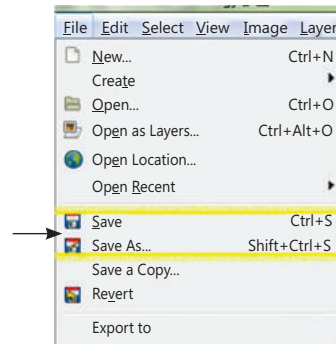
Selected file will be opened.

4.4 Saving a File

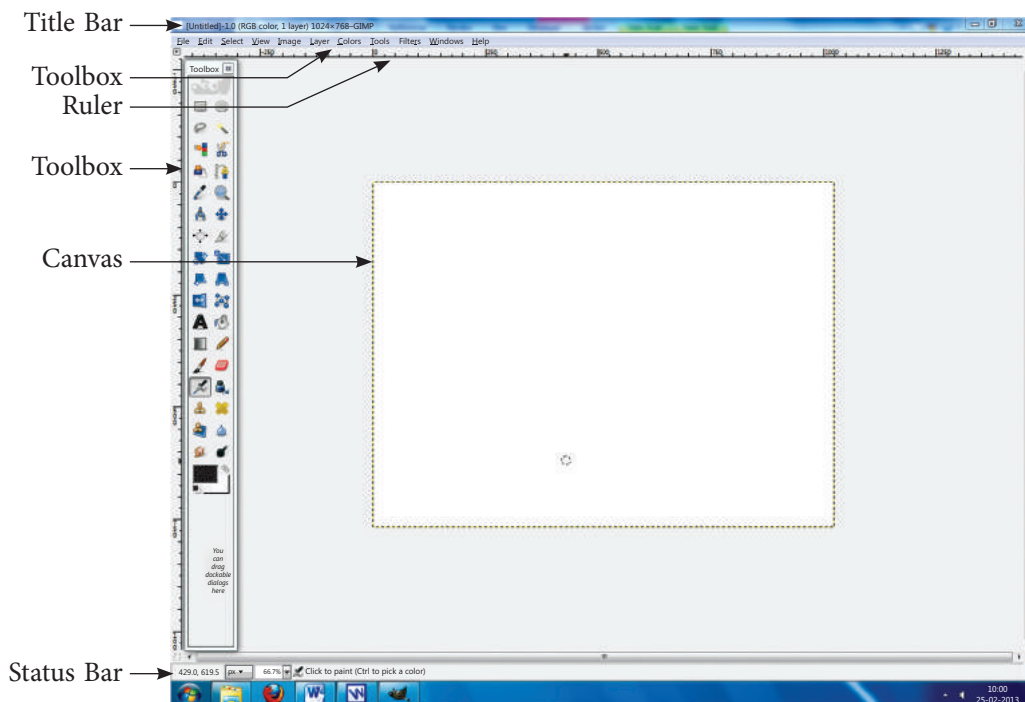
To save your file, follow the given steps:

1. FILE → SAVE/SAVE AS...
2. The Save Image dialog box appears

Give a name to the file, select the format of the image and click on save button.



5. UNDERSTANDING GIMP WINDOW



The main components of the GIMP Window are as follows:

Title bar It is also known as Emphasis Bar. Title bar is placed at the top of the image. It shows the name of the image and some basic information about it.

Menu bar The Menu Bar is placed below the title bar. This menu gives you access to nearly every operation you can perform on an image.

Toolbox The GIMP provides a toolbox in order to quickly perform basic tasks such as making selections or drawing paths.

Ruler In the default layout, rulers are shown above and to the left of the image, indicating coordinates within the image. By default, pixels are used, but

you can change to other units. One of the most important uses of rulers is to create guides. If you click on a ruler the guidelines will be created, which helps you to position things accurately.

Status bar The Status Bar is placed at the bottom of the image. Most of the time, by default, it shows which part of the image is currently active, and the amount of system memory that the image is consuming. The status area displays, what operation is being performed, and its state of progress.

Canvas The most important part of the image window is of course the image display or canvas. It occupies the central area of the window surrounded by a yellow dotted line showing the image boundary against a neutral grey background. You can change the zoom level of the image display in a variety of ways, including the Zoom setting described below.

5.2 Tool box

The GIMP has a diverse assortment of tools that lets you perform a large variety of tasks.

Various Tool used in gimp are as follows:-

5.2.1 Rectangle Select Tool [R]

The Rectangle Selection tool is designed to select rectangular regions of the active layer. It is the most basic of the selection tools, and very commonly used.

5.2.2 Oval Selection Tool [E]

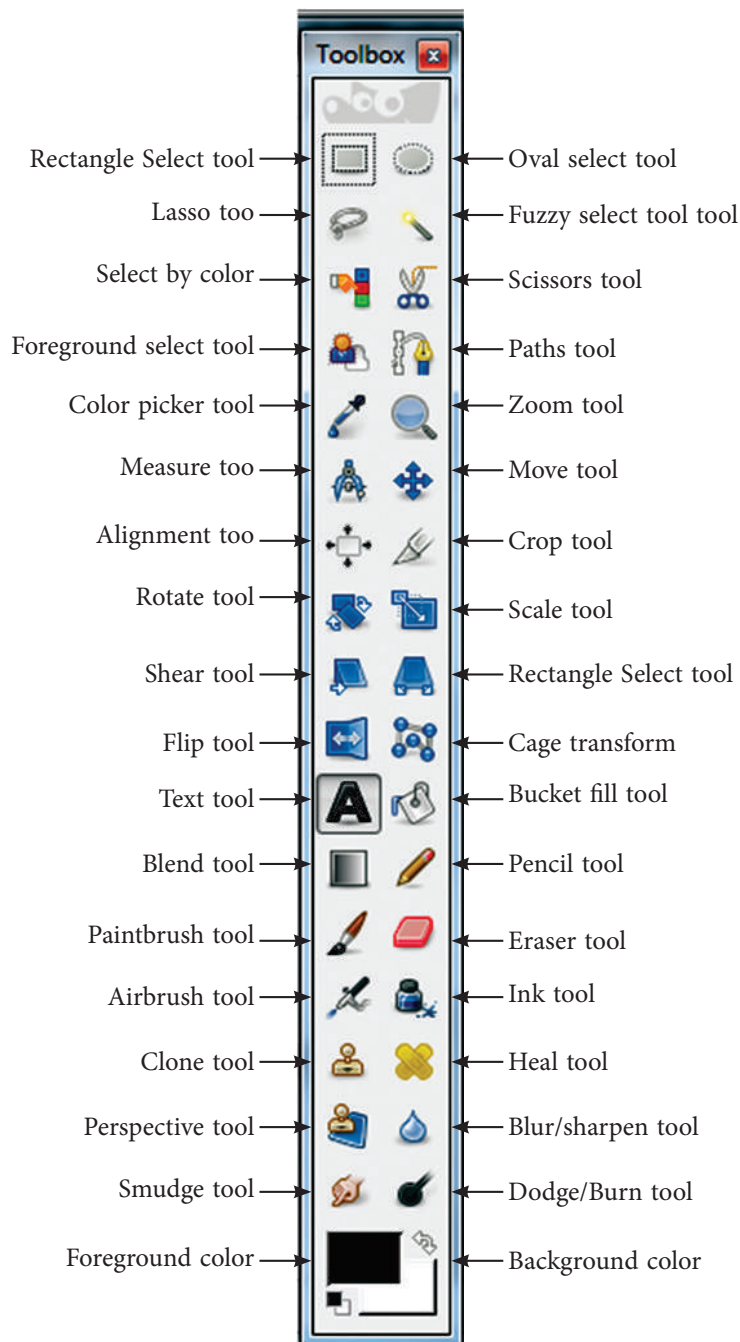
The Oval Selection tool is used to select circular and elliptical regions from an image, with high-quality anti-aliasing if you want it.

5.2.3 Lasso Tool [F]

The Free Selection tool, or Lasso, lets you select a drawing it free-hand with the pointer, while holding down the left mouse button. When you release the mouse button, the selection is closed by connecting the current pointer location to the start location with a straight line.

5.2.4 Fuzzy Selection (Magic Wand) Tool [U]

The Fuzzy Select (Magic Wand) tool helps you to select areas of the current layer or image based on colour similarity. The Wand is a good tool for selecting objects with sharp edges.



5.2.5 Select By Colour [Shift + O]

The Select by Colour tool is used to select areas of an image based on colour similarity. It works a lot like the Fuzzy Select tool (“Magic Wand”). The main difference between them is that the Magic Wand selects contiguous regions with all parts connected to the starting point by paths containing no large gaps; while the Select by Colour tool selects all pixels that are sufficiently similar in colour to the pixel you click on, regardless of where they are located.

5.2.6 Text Tool [T]

The Text tool places text into an image. You can write your text directly on the canvas. As you type your text, it appears on the canvas in a rectangular frame.

5.2.7 Eraser Tool [Shift + E]

The Eraser is used to remove areas of colour from the current layer or from a selection of this layer. If the Eraser is used on something that does not support transparency, then erasing will show the background colour as displayed in the Colour Area of the Toolbox

5.2.8 Bucket Fill Tool [Shift + B]

This tool fills a selection with the current foreground colour. If you Ctrl + click and use the Bucket tool, it will use the background colour instead.

5.2.9 Colour Area

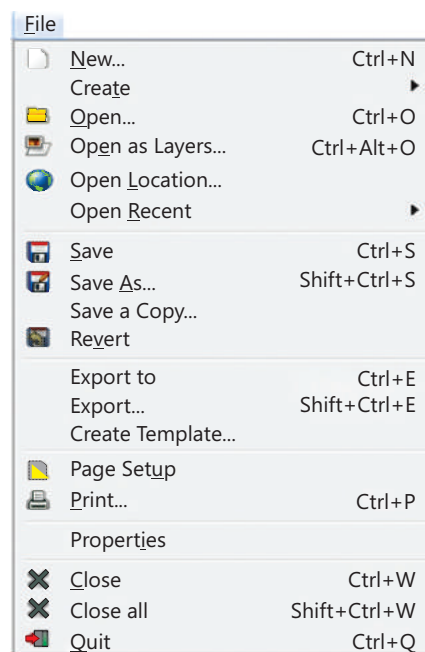
This area shows GIMP's basic palette consisting of two colours; the foreground and the background which are used for painting, filling, and many other operations. Clicking on either of the colour displays brings up a Colour Editor dialog, which permits you to change it.

6. MENUS OF GIMP WINDOW

6.1 File Menu

File Menu

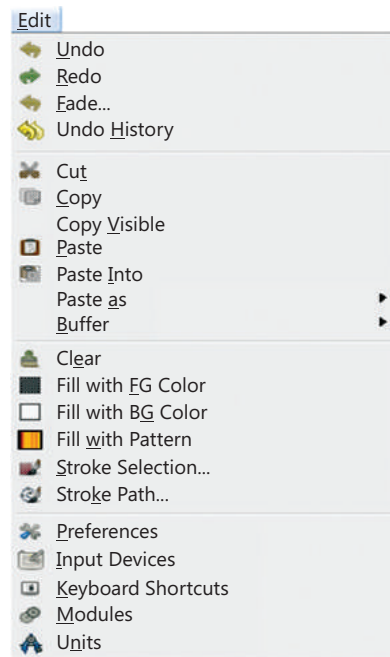
Contains the most commonly used commands related to GIMP file.



6.2 Edit Menu

Edit Menu

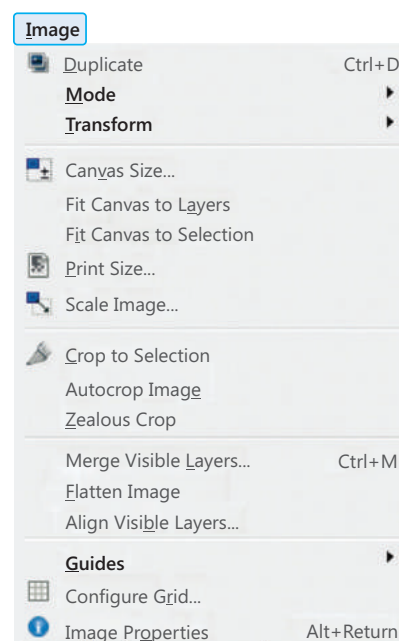
It contains the commands related to the handling of information i.e. cut, copy and paste and other selection commands.



6.3 Image Menu

Image Menu

It contains commands which are used to edit the entire image or specific part of an image or active layer.



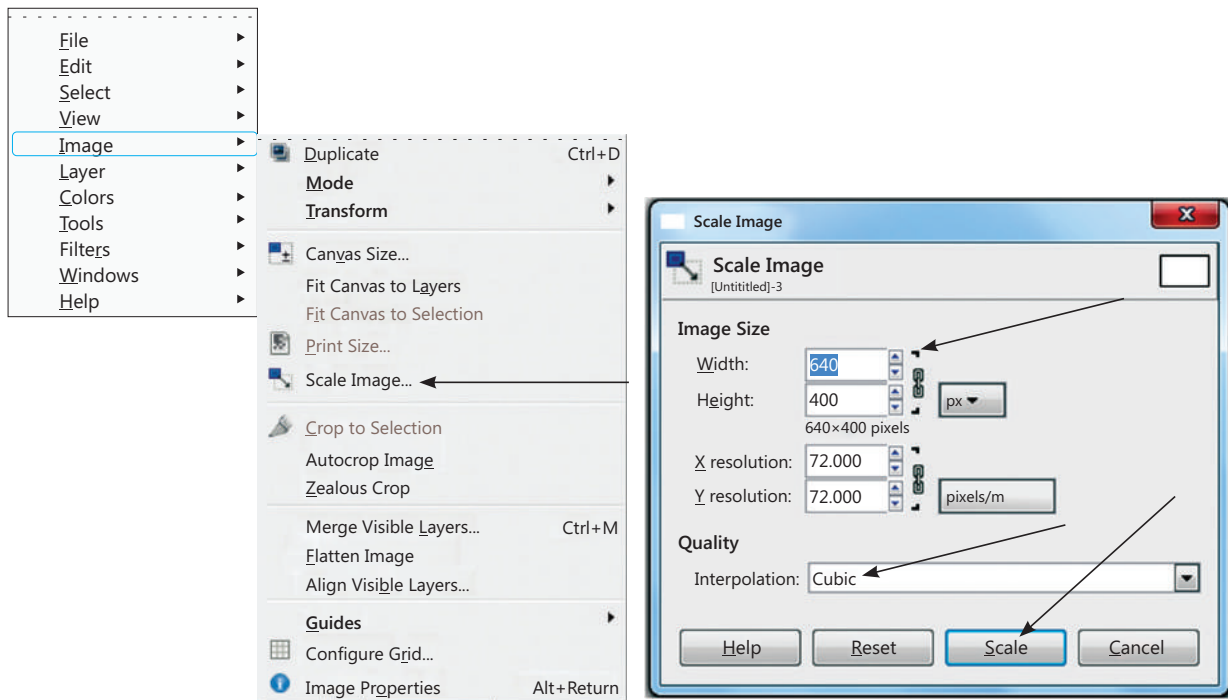
7. EDITING THE IMAGES

7.1 To change the Size of an Image (Scale)

If you have a huge you want to put it nicely for viewing on a web page. GIMP is a quick solution. The first thing that you might notice is that GIMP opens the image at a logical

size for viewing. So, if your image is really big it will display it zoomed out until it fits nicely on the canvas

- ❖ Set the Resolution of image
- ❖ Set the Interpolation Quality
- ❖ Click on “Scale” to confirm.



7.2 How to prepare images for web

To make your jpeg images smaller without changing the pixel and width of the image, you can change the size (bytes) of the image a lot.

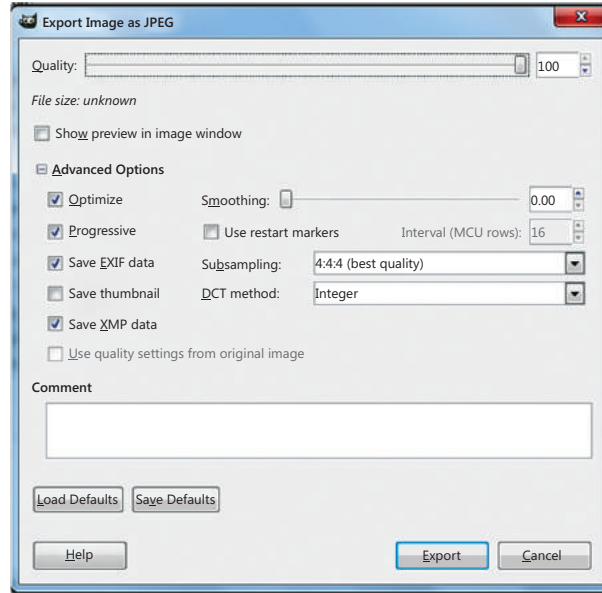
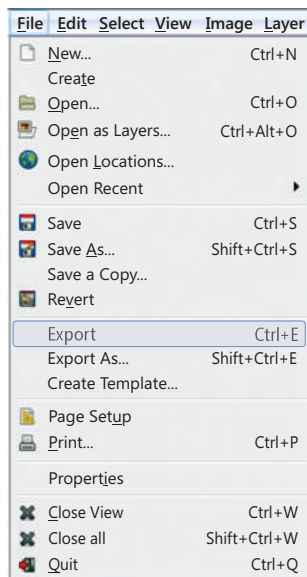
Step 1:

To prepare this image for the web, you first need to reduce the image to a better width and height for web according to the scale.

Step 2:

In **File** → select **Export...**

In the JPEG Save Dialog, you can opt for GIMP defaults which reduce the size quite a bit, without hurting the visual quality of the image. If you would like to make it smaller still, change the compression level by moving the “Quality” slider down. You can see the quality of the image changing.



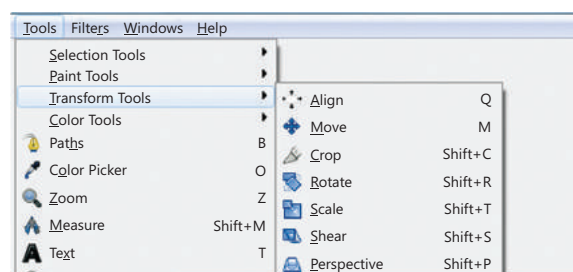
7.3 How to Crop an Image

It is used to select a specified area which you want to focus and removes the unwanted parts or everything outside the selected area of a picture.

To get to the crop tool, you can either push the button on the toolbox  or right click on the image and follow the instructions:

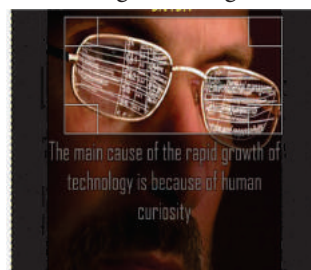
Tools → **Transform Tools** → **Crop & Resize**

This will change the cursor and allow you to click and drag a rectangular shape. Always click on the approximate upper left corner and drag to the lower right corner.

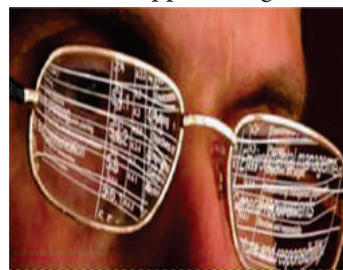


Original Image

Cropped Image



Cropping an Image



Cropped Image

8.1 LAYERS

Layers are wonderful tools, especially to create collages or to delete various portions of an image. In GIMP, the layers are virtually stacked up on top of each other; the lower layers will show through resulting in a composite image that can be exported as a flat file such as a JPEG or PNG. The separate elements of the composite image can be kept on separate layers; return to the layered file and easily edit it before saving a new flattened file.

You will learn about layers in detail in Class X.

Summary

- ❖ Image editing encompasses the processes of altering images
- ❖ The GIMP – GNU Image Manipulation Program is free and powerful open source image editing tool that provides retouching of photos, authoring of photos and composition of photos.
- ❖ The Rectangle Selection tool is designed to select rectangular regions of the active layer.
- ❖ Canvas is the part of the image window where the image is displayed.
- ❖ The Oval Selection tool is used to select circular and elliptical regions from an image.
- ❖ The Lasso tool allows you to select a drawing with the free-hand.
- ❖ The Fuzzy Select tool helps you to select areas of the current layer or image based on colour similarity.
- ❖ The Text tool places text into an image.
- ❖ The Eraser tool is used to remove areas of colour from the current layer or from a selection of this layer.
- ❖ The Bucket Fill tool fills a selection with the current foreground colour.
- ❖ The Colour area shows GIMP's basic palette, consisting of two colours, the Foreground and Background, used for painting, filling, and many other operations.
- ❖ Cropping is used to select a specified area which you want to focus and removes the unwanted parts or everything outside the selected area of a picture.
- ❖ Layers are transparent sheets stacked one on top of the other. You can see through transparent areas of a layer to the layers below.

EXERCISE

A. Multiple Choice Questions:

1. GIMP is image an _____ editing tool.
(a) Open source (b) Proprietary
(c) Shareware (d) Both (a) & (b)
2. The _____ tool allows you to select a drawing with the free-hand.
(a) Fuzzy Selection (b) Lasso
(c) Text d. Bucket Fill
3. The Fuzzy Select (Magic Wand) tool helps you to select areas of the _____.
(a) Canvas (b) All the layers
(c) Current Layer (d) Image with different colours
4. Shift+ C is the shortcut to _____ the image.
(a) Duplicate (b) Delete
(c) Copy (d) Crop
5. To prepare the images for the web means
(a) Reducing the size of an image (b) Zipping the image
(c) Crop the image (d) All of the above
6. GIMP's basic palette, consisting of _____ colours.
(a) Three (b) Two
(c) One (d) Many
7. _____ are transparent sheets stacked one on top of the other.
(a) Layers b. Canvas
(c) Windows (d) None of the these
8. Scale option is used to change the _____ of an image.
(a) Colour (b) Size
(c) Area (d) All of the above
9. It is the most important part of the image window where the image is displayed.
(a) Canvas (b) Window
(c) Scale (d) Size
10. The _____ tool places text into an image.
(a) Fuzzy Selection (b) Text
(c) Eraser (d) Bucket Fill

B. State True(T) / False(F)

- (a) Paint.net is most favourite of windows users. (T/F)
- (b) The Corel Paint Shop Photo Pro allows you to adjust and clean-up your photos. (T/F)

- (c) GIMP is open source image editing tool. (T/F)
- (d) Faststone image viewer has only 120 image transitional effects.

C. Fill in the blanks

- (a) The Corel Paint Shop Photo Pro allows you to use the _____ with advanced enhancement tools.
- (b) The PhotoStudio 6 provides the feature for adding _____ and stamping facility on high-bit depth images.
- (c) _____ is the most powerful image editing tool.
- (d) _____ is the tool not for detailed editing.
- (e) GIMP is presented in _____ forms.
- (f) Layers are wonderful for creating _____.
- (g) Cropping removes _____ or everything outside _____.
- (h) GIMP 2.8 defaults to _____ window mode.

D. Answer the following questions:

- Q.1. What is image editing ?
- Q.2. List few image editing tools available.
- Q.3. Explain GNU Image Manipulation Program ?
- Q.4. What is Photo retouching ?
- Q.5. Download GIMP on your PC/Laptop and paste snap shot of your work according to your download.
- Q.6. Write down the expansions of the following :
 - (a) .gif
 - (b) .png
 - (c) .tff
 - (d) .jpeg
 - (e) .jpg
 - (f) .psd
 - (g) .bmp
- Q.7. Explain functionality of the following :-
 - (a) 
 - (b) 
 - (c) 
 - (d) 
- Q.8. Discuss how to change the size of an Image.
- Q.9. How we can prepare images for web?
- Q.10. What do you understand by Layers?

E. Lab Session

1. Take your family picture, scan it and change the background colour and clothes colour using paint tools and layouts.
2. Design your Birthday party invitation using appropriate tools.
3. Import an image file of your choice. Change the foreground and the background color, use a text tool to give a heading to your file. Select the text tool and type your name in blue color. Select a portion of the picture and then change the direction. Save the file.
4. Make a collage on “ heritage of India”
5. Design digital poster on “Global Warming”.