

## **IN2610 – Graphic Design and Development**

### **Lab Worksheet 1 Part 1**

#### **Introduction to GIMP**

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**Software:** GIMP

Download link: <https://www.gimp.org/downloads/>



#### **What is GIMP?**

GIMP is a multi-platform photo manipulation tool. GIMP is an acronym for GNU Image Manipulation Program. The GIMP is suitable for a variety of image manipulation tasks, including photo retouching, image composition, and image construction.

GIMP has many capabilities. 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, an image format converter, etc.

GIMP is expandable and extensible. It is designed to be augmented with plug-ins and extensions to do just about anything. The advanced scripting interface allows everything from the simplest task to the most complex image manipulation procedures to be easily scripted.

One of The GIMP's strengths is its free availability from many sources for many operating systems. Most GNU/Linux distributions include The 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 that makes up computer programs.

## **Features and Capabilities**

The following list is a short overview of some of the features and capabilities which GIMP offers you:

1. A full suite of painting tools including brushes, a pencil, an airbrush, cloning, etc.
2. Tile-based memory management, so image size is limited only by available disk space
3. Sub-pixel sampling for all paint tools for high-quality anti-aliasing
4. Full Alpha channel support for working with transparency
5. Layers and channels
6. A procedural database for calling internal GIMP functions from external programs, such as Script-Fu
7. Advanced scripting capabilities
8. Multiple undo/redo (limited only by disk space)
9. Transformation tools including rotate, scale, shear and flip
10. Support for a wide range of file formats, including GIF, JPEG, PNG, XPM, TIFF, TGA, MPEG, PS, PDF, PCX, BMP and many others
11. Selection tools, including rectangle, ellipse, free, fuzzy, bezier and intelligent scissors
12. Plug-ins that allow for the easy addition of new file formats and new effect filters.

## **Interface Basics**

At the heart of GIMP is the user interface, the set of elements a user interacts with to carry out image manipulation and other tasks.

The GIMP interface consists of five main elements: (See Figure 01)

1. Image window
2. Main toolbox
3. Tool options
4. Layer dialog
5. Brushes/Patterns/Gradients

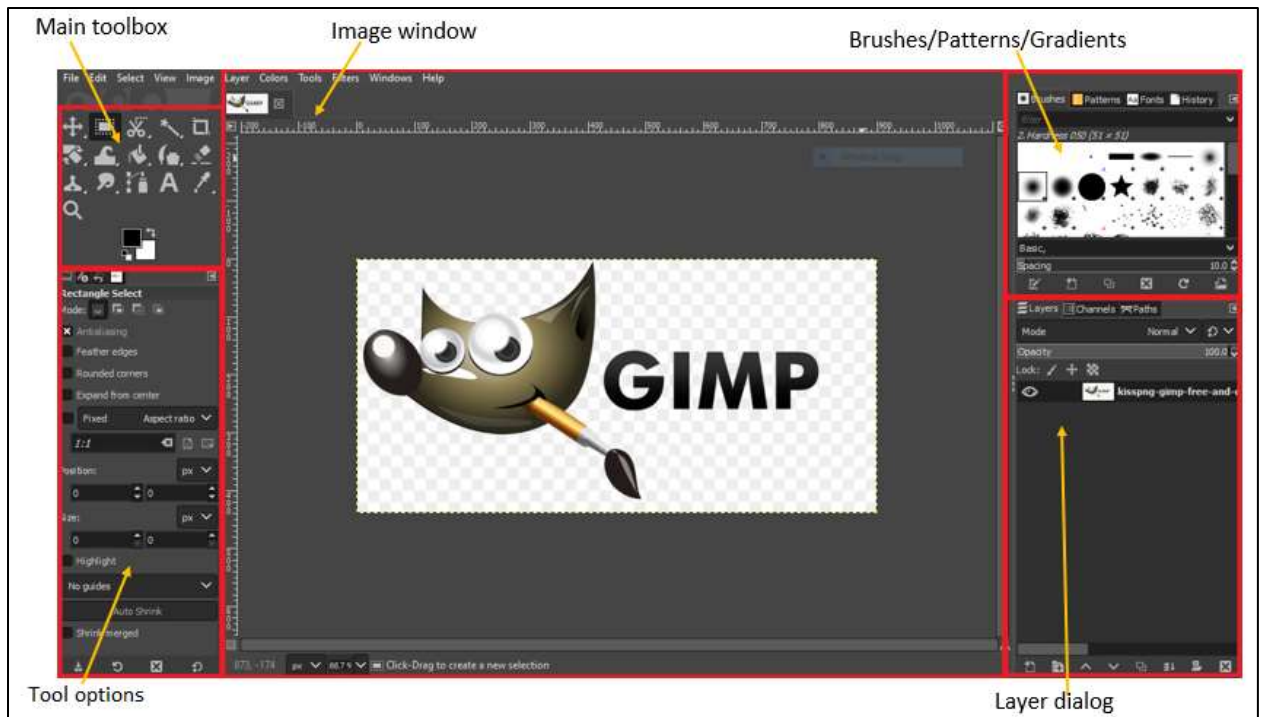


Figure 01: Elements of the interface

## 1. The Image window

The Image window is like a painter's canvas. This is where images are opened and contained during the editing process. At top of the Image window is the Main menu, which includes a row of sub-menus. These sub-menus access nearly all functionality of GIMP. Options from saving a file, to selecting specific tools and filters, to working with layers are controlled here. The nice thing about GIMP is that it allows the use of multiple Image windows within the same session. This is especially helpful when working with layered images or creating animated GIFs.

Aside from displaying the image you are editing, the Image window also provides basic file information including file name, file size, dimensions, and number of layers. There is also an option to adjust the zoom level, which refers to the view an image is scaled to. When images are first opened, GIMP automatically adjusts this view, so the entire image is visible.

## 2. Main toolbox

The Toolbox is a sidebar that contains image editing tools.

It is an icon-based menu containing image editing tools. If you are unsure of what a particular tool does, hover the pointer over any tool icon and a short description appears. (See Figure 02)

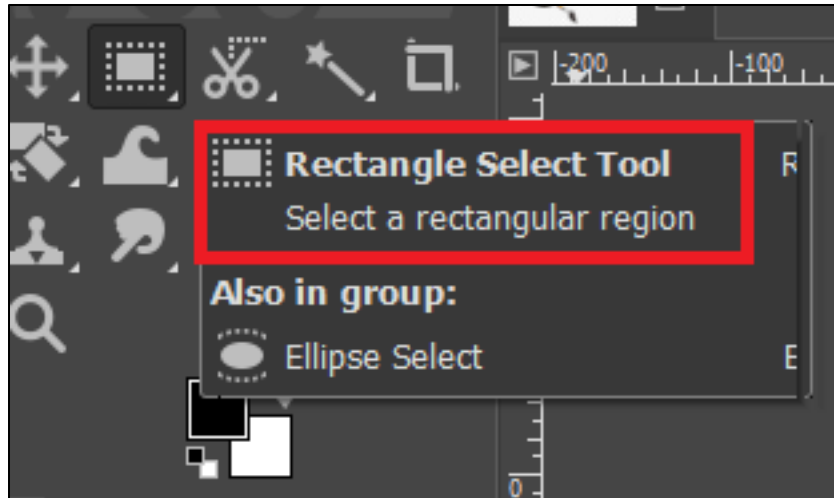


Figure 02: Appearing the short description

### 3. Tool options

Each tool on the Toolbox also has its own Tool Options.

Underneath you have the options available for each tool. Therefore, it is not static content; it changes every time you select a different tool.

For instance, the Text Tool contains options such as Font, Size, Hinting, Color, and paragraph alignment. (See Figure 03)

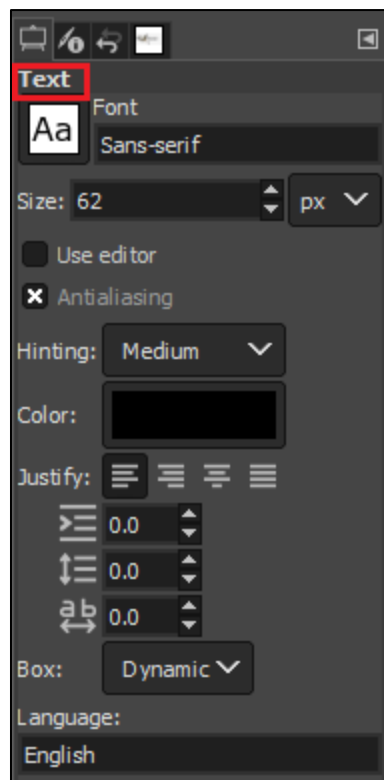
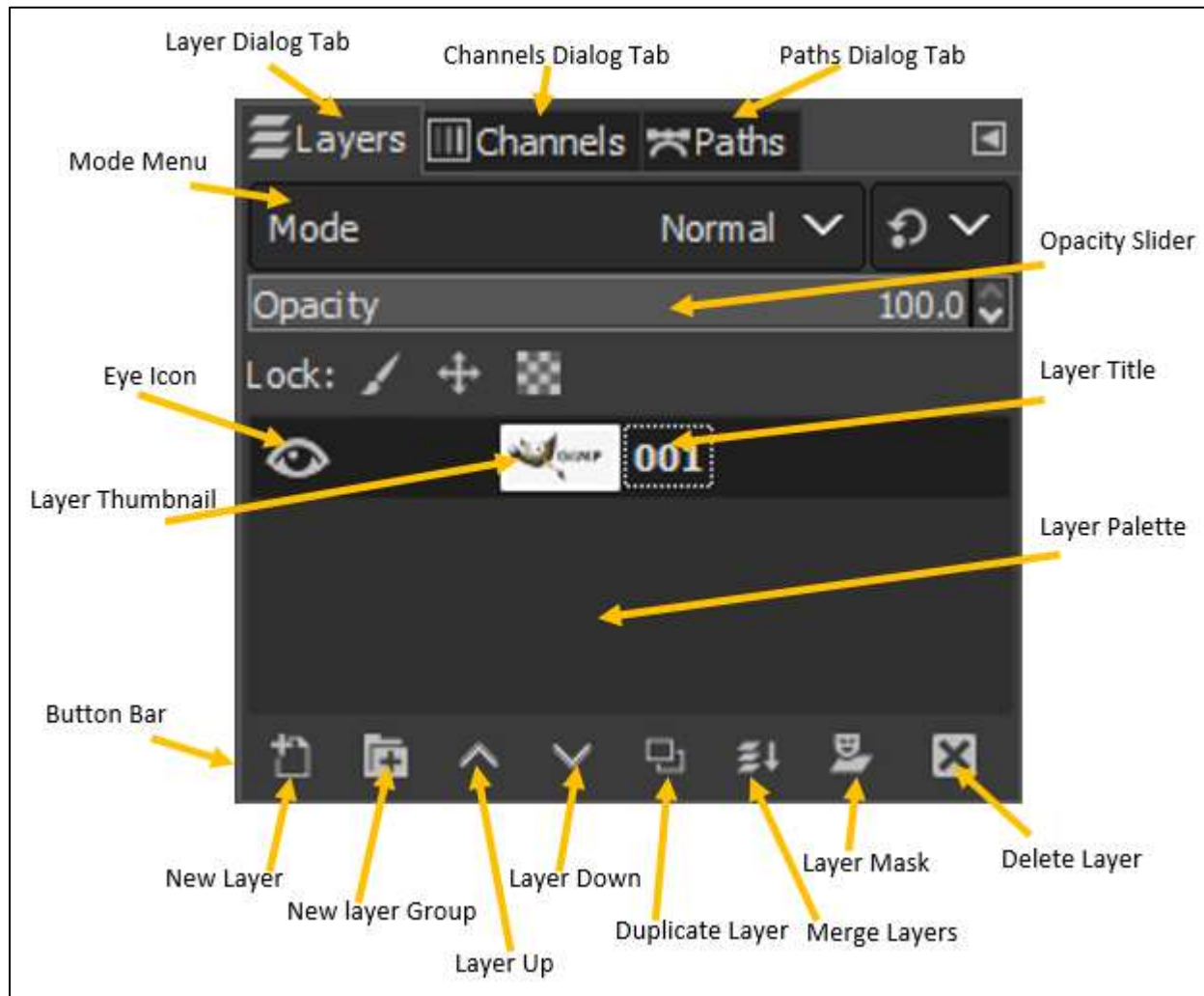


Figure 03: Text Tool options

#### 4. Layer dialog

The Layers dialog lists all layers and layer groups in an image. You can use the Layers dialog to show and hide layers, create new layers, and work with groups of layers. You can access additional commands and options from the Layers dialog menu. (See Figure 04)



#### 5. Brushes/Patterns/Gradients

The Brushes dialog shows all brush designs you can use. You can use the Brushes dialog to edit the brushes, create new brushes, and delete brushes. (See Figure 05)

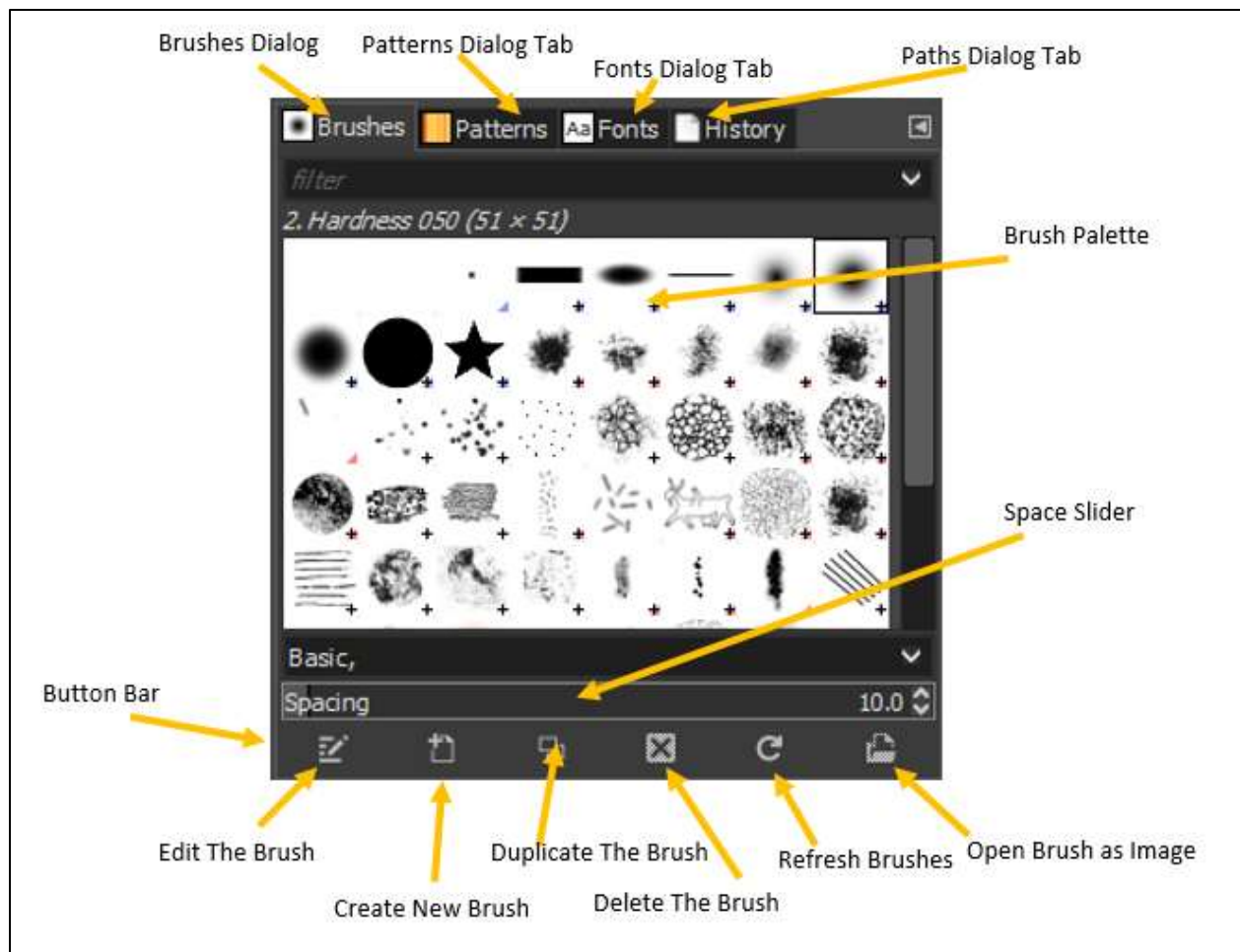


Figure 05: Elements of the Brushes dialog

## Layers

Layers allow you isolate different parts of an image on layers. Each layer can then be edited as discrete artwork, allowing unlimited flexibility in composing and revising an image.

Every GIMP image contains one or more layers; every new file is created with a background, which can be converted to a layer. You can view and manipulate layers in GIMP with the Layers dialog.

All new layers in an image are transparent until you add artwork (pixel values). Working with layers in GIMP is analogous to placing portions of a drawing on sheets of acetate – individual sheets may be edited, repositioned, and deleted without affecting the other sheets and when the sheets are stacked the entire drawing is visible.

## Selections

Selections allow you to specify an area of an image for editing. Only the area within a selection can be edited, areas outside the selection are protected from change.

### Selection Tools overview

Selection tools are designed to select regions from the active layer so you can work on them without affecting the unselected areas. Each tool has its own individual properties, but the selection tools also share several options and features in common.

There are seven selection tools. (See Figure 06)

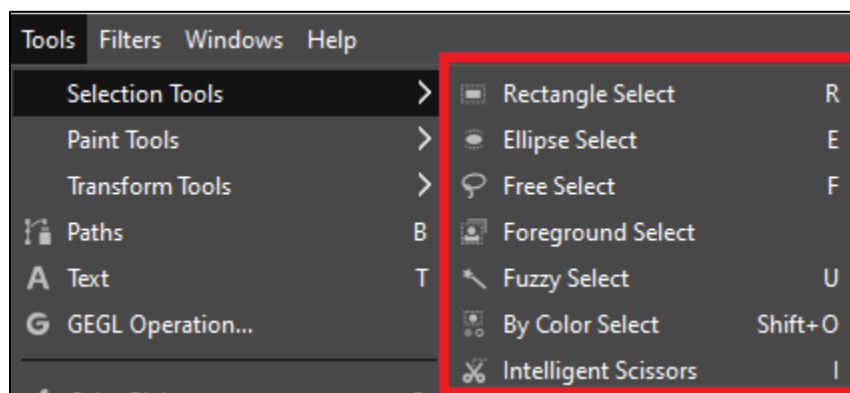


Figure 06: Selection tools

#### 1. The Rectangle Selection tool

The Rectangle Selection tool is designed to select rectangular regions of the active layer. Simply click and drag to create a rectangular selection. The selection is made once you release the mouse.

#### 2. Ellipse Selection Tool

The Ellipse Selection tool is designed to select circular and elliptical regions from an image, with high-quality anti-aliasing if you want it. Simply click and drag to create an elliptical selection. The selection is made once you release the mouse.

### **3. Free Selection Tool**

Allows you to draw a selection free-hand with your mouse or other pointer. When you release the mouse button, the selection is closed by connecting the current pointer location to the start location with a straight line. You can go outside the edge of the image display and come back in if you want to.

Holding down Shift while you are selecting an area adds to the current selection and holding down Ctrl subtracts from the selection.

### **4. Foreground Selection Tool**

This tool lets you extract the foreground from the active layer or from a selection.

Using the foreground select tool is done in two steps. First, you make selection which contains the entire object. Then you paint over the selected area with a brush, not crossing the object's border. Release mouse button when you're done and look to see if there are dark blue spots on your objects. If there are some, paint over them with a brush again and release to refine the selection. When there are no more blue areas inside the object, press Enter, and your object will be selected.

### **5. Fuzzy Selection Tool**

The Fuzzy Select tool is designed to select areas of the current layer or image based on color similarity.

Enables you to make a selection, based on contiguous areas of a similar color range. The color range is determined by the point at which you click on and the value of the Threshold . The Threshold field/slider controls how many similar tones of a color are selected when you click in an area.

When using this tool, it is very important to pick the right starting point. If you select the wrong spot, you might get something very different from what you want, or even the opposite.

The Wand is a good tool for selecting objects with sharp edges.

### **6. By Color Selection Tool**

The Select by Color tool is designed to select areas of an image based on color similarity. It works a lot like the Fuzzy Select tool. The main difference between them is that the Fuzzy Select tool selects contiguous regions, with all parts connected to the starting point



by paths containing no large gaps; while the Select by Color tool selects all pixels that are sufficiently similar in color to the pixel you click on, regardless of where they are located.

## **7. Intelligent Scissors**

This tool is useful when you are trying to select a region defined by strong color-changes at the edges. To use the Intelligent Scissors, you click to create a set of "control nodes", also referred to as anchors or control points, at the edges of the region you are trying to select. The tool produces a continuous curve passing through these control nodes, following any high-contrast edges it can find.

### **Save or export**

Whether you did a small modification or an original artwork, you need to save it (File -> Save). You can only use the GIMP extension '.xcf'.

If you want to use a universal format like .jpg or .tiff or even change it into Photoshop's .psd, you have to export it (File -> Export). From there, you have a huge variety of file formats to choose from.