GIMP lab exercise

BRITISH COLUMBIA INSTITUTE OF TECHNOLOGY
School of Computing and Academic Studies *COMP-1536*
Program: CST *Due: At the end of the lab period*

You are expected to complete the exercise during your lab session, show your instructor your work, and submit it into D2L lab site for COMP1536. If you do not finish, then submit whatever you have by 8:00 PM on the day of your lab for late marking. This will, however, cost you a deduction of 10% of the maximum mark.

Learning basic graphics manipulation with GIMP

The objective of this lab is to:

1) Install GIMP
2) Use GIMP to enhance a picture

What is GIMP?

GIMP is the GNU Image Manipulation Program.

It is a computer program for creating and editing digital images. In particular, it is designed for editing digital photographs and typical web graphics. You can also use it to make some pretty amazing drawings.

GIMP is a complex program suitable for professional artwork, but it is also a lot of fun – a place to play with pretty pictures and let your imagination run wild.

GIMP is a free open source software. It is written and maintained by volunteers and distributed without cost. Originally developed for Unix/Linux, it is also available for Windows and Mac OSX.

Installing GIMP

GIMP is pre-installed on the lab computers, and bundled with many Linux distributions. If it is missing on lab computers or if you wish to install it on your laptop or home machine, follow these steps:

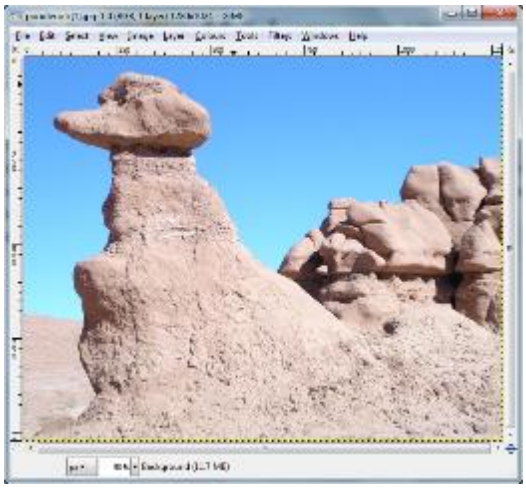
1) Go to http://www.gimp.org/downloads/. Click on button “Download GIMP 2.8.22 directly”.
2) In the case of Windows, run the setup file named “gimp-2.8.22-setup.exe”.
3) Accept all the default options when you install GIMP.

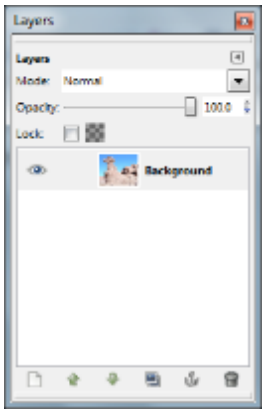
Once installed, the GIMP user interface is pretty much the same regardless of platform.

If you have a slightly older version of GIMP (e.g. GIMP 2.6) installed, you can complete this lab using with it. There will be minor differences with some of the commands, but you should have no trouble figuring them out.

Exercise – Giving poodle rock a nose:

1) Start GIMP 2. You should see these windows:
2) *Toolbox window* on the left-hand-side
3) *Image window* in the middle
4) *Layers window* on the right-hand-side. If you do not see the *Layers window* hit the *CTRL-L* keyboard combination.
5) In your web browser, go to http://gimpbook.com/origpix/ch3/poodlerock.jpg where you can view the photograph of a rock formation from the Goblin Valley, Utah. The rock formation looks like a giant poodle dog. We will henceforth call it "Poodle Rock".
6) Right-click on the "Poodle Rock" picture and select "Copy". Paste the image into GIMP's middle window. Alternatively, you can simply *drag-and-drop* the image from your browser into GIMP.

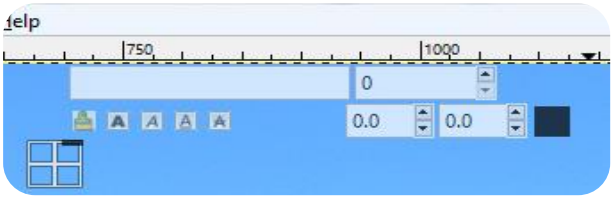




A layer appears in the *Layers window*.

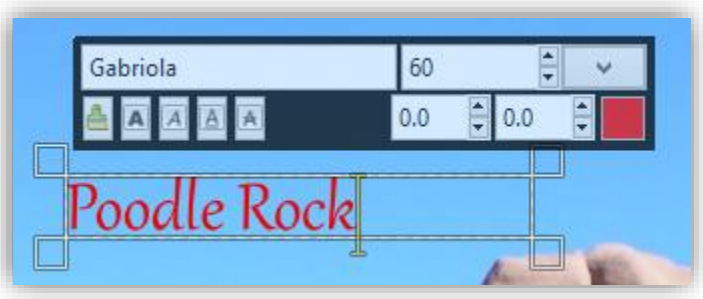
7) We will next add a description "Poodle Rock!" on the picture. To do that, select the "Text" tool in the *toolbox window* on the left-hand-side.

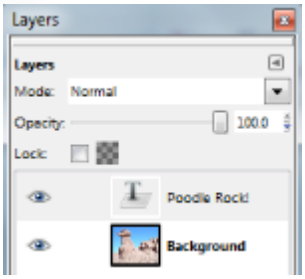
8) Click on the image somewhere on the clear blue sky. The *Text Editor* window pops up:



9) Add your description:

- resize the textbox so that it can hold a larger word
- set the font size in the *Toolbox* window to 60pt.
- enter the text "Poodle Rock!" using a non-standard whimsical font, like Gabriola (on Windows) or Liorah BT (on Linux)
- make the foreground color red

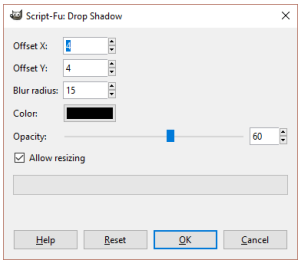




As soon as you type "Poodle Rock!" into the *Text Editor*, your text appears in the window. But something else happens: a new layer also appears in the *Layers* window. You now have two layers.

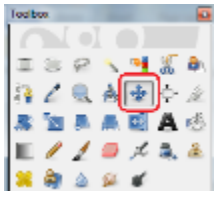
The outline around the text is the boundary: it shows the size of the layer. It is not really part of the image, and will not be visible when you save the image.

10) Next, we will add a drop shadow to the text to make it look even better. To make a drop shadow for a text layer, make sure the text is highlighted in the *Layers dialog*, and then go to the image window's menu and choose *Filters >> Light and Shadow >> Drop Shadow*. This brings up the *Drop Shadow* dialog:



Simply click *OK* accepting the default values. The text should now display a drop shadow contained in a separate layer:

11) Since the text is in a different layer, you can move it around to a different place on the picture using the *Move tool* in the toolbox:



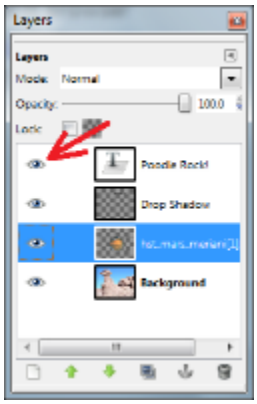
When the move tool is active, moving your mouse over the text in the image window changes the cursor from a *pointing hand* to *crossed arrows* allowing you to move the text. With the *Move tool* active, you can drag the text around with your mouse to position it exactly where you want it.

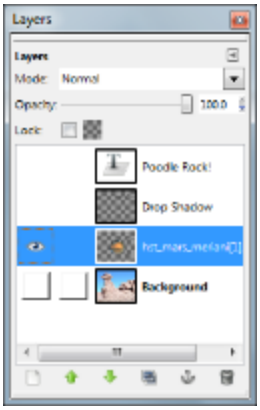
Note: If you mess up, you can always *undo* using the keyboard CTRL-Z command.

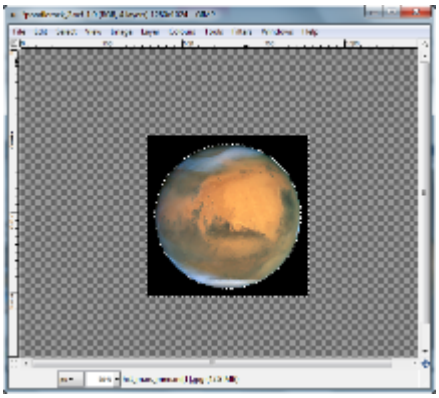
12) We will next give the "Poodle Rock" a nose consisting of a miniature planet Mars. Point your browser to an image of Mars located at http://gimpbook.com/origpix/ch3/hst_mars_meriani.jpg. Copy the image from your browser then: *Edit >> Paste As >> New Layer*.

The image of Mars gets pasted into a separate layer. We have one problem, though. The background of Mars is black and we need to make it transparent.

13) Hide all layers except the *Mars layer*. This is accomplished by clicking on the "Eye" icon beside each layer, except Mars. This toggles between hiding the layer (eye off) and showing the layer (eye on).

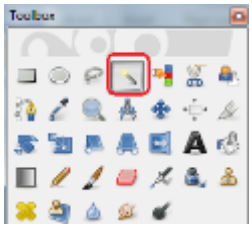






14) We must make sure that there is no other background except the black background. This is done by highlighting the *Mars layer* and then selecting the following in the middle Image window: *Layer >> Transparency >> Add Alpha Channel*. If "Add Alpha Channel" is grayed out, then you need not worry.

15) Next, we will select the black background. Click on the "Fuzzy Select Tool" (also known as the magic wand) from the toolbox.



16) Click somewhere in the black area surrounding Mars. Once the entire black contiguous region is selected, hit the *DEL* key. This will delete the black background in favor of transparency.

We are now ready to shrink the size of Mars and move it over to become the "Poodle Rock" nose.

17) Enable all the layers by ensuring that the *Eye* icon is visible beside each layer.

18) We're almost there. The image of Mars is not the right size. Mars is too big to be a Poodle's nose. To scale the layer, right click on the Mars layer and select 50*Scale Layer*. This brings up the "Scale Layer" dialog. Change the width to *50* then hit the *TAB* key. GIMP automatically adjusts the height because it maintains the image's aspect ratio. When you click on the *Scale* button, Mars' size becomes a reasonable size for a nose.
19) Use the Move tool to position the miniature Mars as a nose for our Poodle Rock.
20) It is time for us to save. You can save your image using formats GIF, JPEG, BMP, PNG, TIFF, PSD (Photoshop format) or XCF (GIMP format). If you want to maintain layer information, make sure to save using XCF format. We will save the file in both *xcf* and *png* image formats.

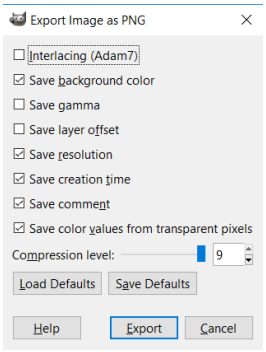
To save in *xcf* format just choose *File* >> *Save* in the middle image window. Make sure you navigate you your preferred working directory before saving.

To save in *.png* format:

> Click *File* >> *Export*. Navigate to a suitable directory on your hard drive and give the file a name conforming to **LastName_FirstName_set_week02_ver1.png.** (Example: Doe_Jane_1B_week02_ver1.png), then click on the *Export* button.

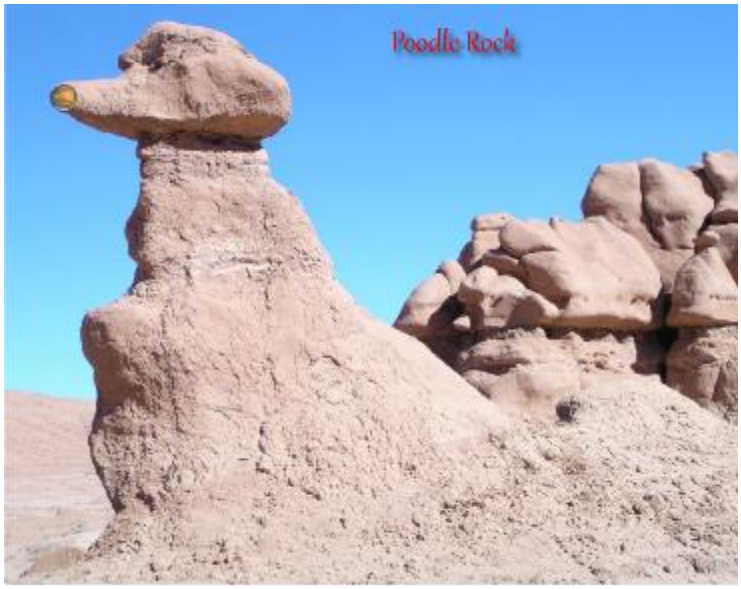
Note: With an older version of GIMP, you might have to choose *File >> SaveAs*, and give the filename a ".png" extension, in order to trigger the export dialog.

You will see this dialog:

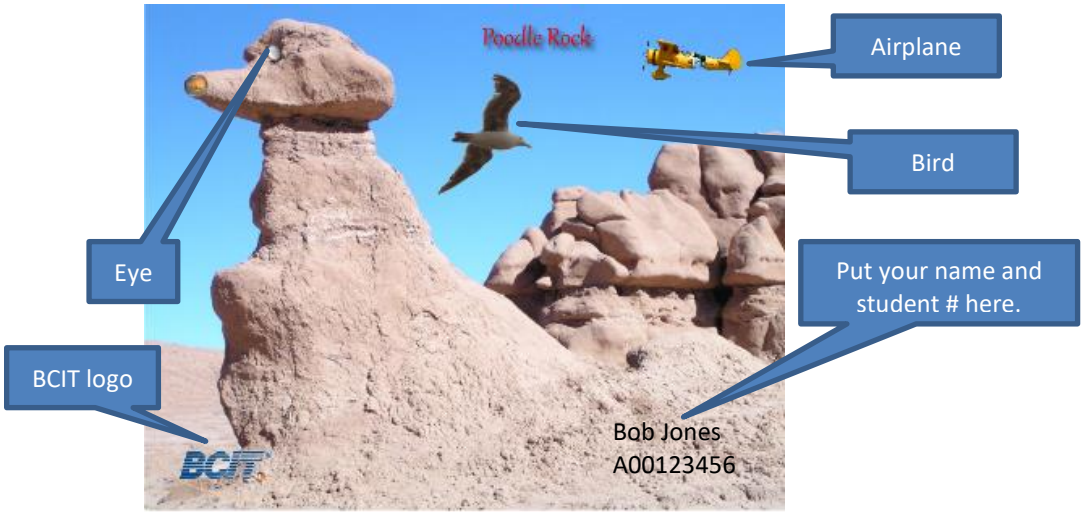


Click the *Export* button.
Click *Save*.
Click *File* >> *Quit*

21) Using your file manager (e.g. "Windows Explorer"), find the image you created and double click on it. You should see this cool mastered image displaying in your default graphics application on your computer:



Use more images to enhance our picture to look like this:

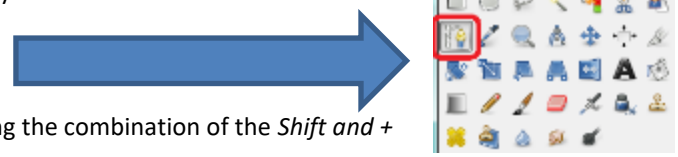


22) Open the .png file In GIMP.

Add an eye using image: http://gimpbook.com/origpix/ch10/titan/W00010549.jpg
Add an airplane using image: http://gimpbook.com/origpix/ch3/biplane.gif
Add a bird using image: http://gimpbook.com/origpix/ch10/smgull.jpg
Add BCIT logo: http://zenportfolios.com/jmalcolm/files/2009/11/bcit.jpg
Put your name and student number in the bottom right-hand corner.

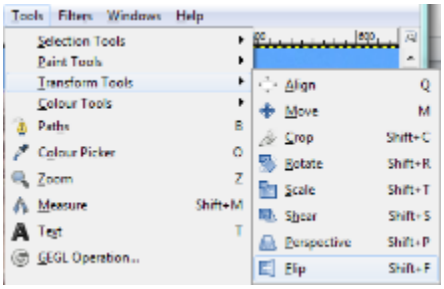
Make sure that all the above images are transparent in the sense that they do not have any background color.

23) Name the various layers with names that represent their purpose. This is done by simply double-clicking on a layer.
24) We will next rotate the head of the poodle by 180 degrees. The Paths (or Bezier - pronounced "bez-ee-ay") tool lets you define a selection of any shape. You can go step by step, stop to take a rest, and edit the path later.
    - Drag and drop the *eye* and *nose* layers so that they are right above the main *background* layer.
    - Right click on the nose and select “Merge Down”. This causes these layers to join the main background layer.
    - Highlight the main background layer
    - Choose the Bezier tool



    - zoom waaaay into the image using the combination of the *Shift and +* keys.
    - Click on selected fine-grained points,
    - *CTRL-click* to close loop,
    - click on *Select* >> *From Path* to select the head

25) Select *Tools* >> *Transform Tools* >> *Flip*. Then click on the right-hand-side of the poodle head. This causes the head to flip horizontally.



26) Using the *Move* tool, move the head so that it is correctly on the top of the neck.

27) You will notice a new layer named “Floating Selection (Transformation)”. Right-click on this layer and choose “To New Layer”. Name the new layer “Head”.
28) Highlight the main background layer on the right-side *Layer* window by selecting it.
29) There are some holes in the image that need to be filled with the color of the sky. Use the “Color Picker” tool to select a suitable color from the sky.

Use the “Bucket Fill Tool” to fill the holes with the color of the sky. Even though the hole is covered with a suitable blue color of the sky, there are still some curves that are not blue.

30) We need to smoothen out these fault curves. We shall use the “Clone Tool” to do this. Select the clone tool. *Control-Click* somewhere in the sky where you wish to use a color. To use that color to remove the fault curves double click and drag the mouse over the fault curve without releasing the mouse. Continue the same action until you have removed all the fault curves.

31) Finally, use some imagination to transform the scene into a battle or disaster zone.

    This could be a combination of fire(s), bomb(s), explosion(s), smoke, emergency vehicles, etc. Have some fun with it, and make sure your additions blend in well with the setting.

    Play with the Colors & Filters menu items to see what it can do to enhance your image. For example: *Colors* >> *Desaturate* can turn your image into black & white.

32) Show your work to the lab instructor who will give you a mark on the spot. Also, Copy your final disaster zone *png* image file to the D2L dropbox. Give it file name **LastName_FirstName_set_week02.png**. Example: *Doe_Jane_1C_week02.png*.

COMP1536 week 02 GIMP lab exercise marking guide:

Name _____ **Set** _____

Task	**Max Mark**	**Actual Mark**
Text with drop shadow located in correct place	2	
Transparent nose located in correct place	1	
Airplane located in correct place	1	
Transparent bird located in correct place	1	
Eye located in correct place	1	
Poodle rock head rotated horizontally, BCIT logo, and name + student #	2	
Battle or disaster zone	2	
TOTAL:	**10**	