

## Critical Thinking Questions

1 Describe the key differences between raster-based and vector-based graphics.

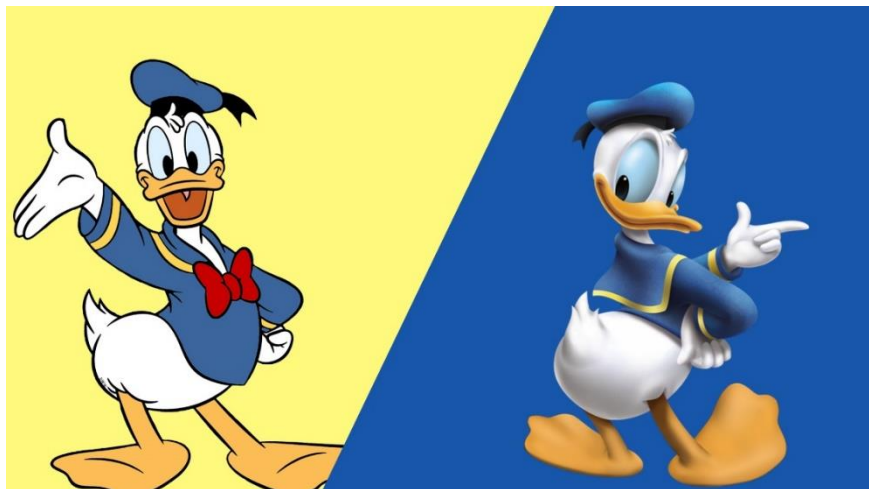
- Raster and vector are the two most used file formats when working with digital pictures, graphic design, logos, and other forms of digital images. Raster and vector graphics serve different purposes in design, and its usage depends on what kind of digital image will be created. Raster graphics are made up of pixels, which are small dots that blend color and tone to create the image. When a picture is zoomed in or magnified, pixels appear as little squares on graph paper. More pixels result in higher quality at the same or bigger sizes as the original, but they also increase file size, and vice versa.

The vector graphic, also known as scalable vector graphics (SVG), is formed of anchored dots linked together by lines and curves to produce the image. No matter how large the image is, their lines are precise and retain all of their quality and detail. Additionally, because these images are device-independent, their quality is not influenced by factors like the number of dots on a printer or the number of pixels on a screen. It is important to know the differences of that two to have the best image produced when creating digital images.

2 Describe the main differences between 2D and 3D images. Provide at least one example of each, as well as an example of the software used for creating and editing them.

- Dimensions are denoted by the terms 2D and 3D. The term 2D refers to two dimensions, and 3D refers to three dimensions. 2d and 3d are the most common used in reference to photography and other graphic image technology. A 2D image has only height and width, but a 3D image has three dimensions: length, width, and height. 2D is flat, combining the horizontal and vertical or X and Y dimensions, the image has only two dimensions and becomes a line when rotated to the side. The depth or Z dimension is added in 3D. This third dimension enables rotation and viewing from various angles.

Different tools can be used to create and edit either 2D or 3D images, and with these tools, it is possible to convert 2D images to 3D images. In regards of my experience creating various digital images, the most commonly programs that I am using are Adobe Photoshop and Blender 3D. I am using Photoshop to create and edit 2d images and Blender 3D to create stunning 3D visuals and as well for producing 3D animations.



2D

3D

3 Imagine a client asked you to create a billboard to promote their new line of hair care products. Describe the tools and specific elements that you would use to create this image.

- To create this kind of image, especially it is an advertising image, Adobe Photoshop is great to use for this. I will also use a 3D software such 3D Blender to add some 3D images as it is more appealing to the eyes of the viewers, and also it is for billboard, so it will not look plain. For able to create an effective image advertisement of their product, it is best to include in the image their hair care product itself and add a model (person) to really emphasize the product. Concerning the design, I would stick to theory "Less is More", including and manipulating only the needed elements such the colors, shapes, objects, fonts, etc. for viewers to only focus on what is important in the image. And of course, I will apply the different rules and theory in designing to have the best possible advertising image produced. Lastly, the image will be used for a billboard, so I will be attentive about how it appears after it's finished, considering the optimal resolution and the best file type for it.

4 Imagine that you were hired to create the label for a new brand of soup. The client wants to emphasize that the soup has homemade flavor. Describe the tools and specific elements that you would use to create this image.

- The creation of this advertising image is also the same in the above scenario, applying also the theories in designing for the creation of this product image. Photoshop is best for this type of image, and I will also add some 3d objects or images using the 3D Blender. To emphasize the required focus of the image, it is best to showcase or highlight their product, which is the soup, by adding it to the poster image and manipulating it. And to show that their food product is really homemade, might as well add a unique element of theirs to image. A warm color tint would be suitable for this photo since it would attract focus to the subject.

5 Describe a situation in which you might use anti-aliasing on an image.

- To better understand when to apply anti-aliasing, it is important to first understand what aliasing is. Aliasing is the visible stair-stepping of edges or the little squares (pixels) that is stacked over the top of each other causing it to look jagged that happens in an image when the resolution is too low. So anti-aliasing is used to fix this kind of problem. Anti-aliasing is a method used in digital imaging to minimize the visual faults that appear when high-resolution images are shown in a lower resolution.

Anti-aliasing is often heard and used in video games as it makes the games visuals or graphics look great. It can be applied not just in video games but also to other visual platforms. For example, you are going to create a commercial image, so you might used anti-aliasing on your image to avoid having jagged outline when it is presented or shown in different screen resolution. Although, you made sure that your image is exported on the best possible highest resolution, but you did not apply anti-aliasing, it will look pixelated when it is displayed on lower screen resolution causing it to ruin the image's quality. So, it is best to apply anti-aliasing to your image on that kind of situation.

## **UNIT 1: LAB**

### **Enhance Raster-Based Images**

This lab will help you learn how to use GIMP to enhance digital photographs. If you already own and are familiar with Adobe Photoshop, feel free to use it instead of GIMP to complete this lab. GIMP was created to be an open-source free alternative to Photoshop, so it shares most of the same features.

#### **Step 1: Get Familiar with the GIMP Interface**

In this lab, we'll make enhancements to photographs in order to get more familiar with the GIMP interface. The instructions included here will not be enough for you to learn how to use the tools. There are two things you can do to get the information you'll need:

- Refer to the GIMP User Manual. You'll find this under the Help dropdown menu.
- Search the internet for video tutorials. Fortunately, there are many professional GIMP users who have created "how-to" videos. To get started, use this search string:

GIMP 2.10 tutorial beginner

Throughout the lab, we'll suggest search strings to help you find the specific tutorials you'll need to finish your work.

Here are two GIMP tips to get you started:

## Finding What You Need

There are so many tools in GIMP with so many features that it can be difficult to find things. If you can't find something you're looking for, type / and then the first few letters of the tool you want to use. (For example, /erase will take you to the Eraser tool.) Even more handy, /layers will give you a menu of all the available actions you can do to a layer.

## How it Looks

GIMP automatically opens with several unattached (floating) windows—if you like this set-up that's fine, but if you'd rather have all these different windows connected, type /single. That will bring up "Single Window Mode." Click on that term and it will connect all the floating windows.

Also, the tools/toolbox are set to a dark background with simple icons. If you'd like to have a toolbox with a white background and colorful tool icons (or another style), choose **Preferences** from the GIMP dropdown menu and then **Interface**. You'll see options for changing the Theme (overall colors in the windows) and Icon Theme (how the tool icons look). You can click on each of the different options to see what's available and pick the one that works best for you.

## Step 2: Crop and Create Feathering on the Edges of a Photograph

Your manager wants to use this photo on one of the company's web pages with a white background and has asked you to do two revisions first.



1. Feather the edges in the shape of a rounded rectangle, like the example of the USS Yorktown from the unit.
2. Crop the photo, cut out some background, and make it so the elephant is filling the frame.

Once you've made these enhancements, she asks that you save it as a JPG so that it will load fast on the web.

Here are step-by-step instructions:

1. Download the file and open it in GIMP.
2. Use the **Crop tool** to tighten the image on the elephants and to cut out the foreground.
3. Select the whole image ( **Ctrl+ A** on the keyboard, or choose the dropdown menu **Select** and then **All**).
4. In Select dropdown menu, choose **Rounded Rectangle**. A small menu box will open that says Script-Fu: Rounded Rectangle; this box is for setting the radius of the feathering. Set it to **30** and then press **OK**. When you look at the image again, you'll see a new border around it that is in the shape of a rounded rectangle.
5. Creating the rounded rectangle took care of the edges, but there isn't much feathering space along the sides, so next we'll shrink it a little.
6. In the Select dropdown, choose **Shrink**. A new menu box with the title of Shrink Selection will open, asking how many pixels. Set it to 10. Once you click OK, you'll see that there is now a little area along each side of the photo marked, as well as the rounded edges.
7. In the Select dropdown, choose **Feather**. A new menu box called Feather Selection will appear. Set feather selection to **10 pixels**.
8. In the Select dropdown, choose **Invert**. This will make it so that the clipping between the photo and the edges is what is selected for GIMP.
9. Right click on the image ( **Ctrl+ Click** for a Mac); choose **Edit** and then **Clear**. When you look at your photo again, the edges will be rounded and feathered. Make sure that the feathering didn't cut off any of the elephant. If it did, then you should start over and crop it less.

### **Step 3: Transfer a Photograph from Your Camera and Use Layers to Add Text**

The art director has asked you to put a tagline on one of the photos you created from the photoshoot in the Unit 3 Activity. (If you haven't completed the photoshoot activity, then use any photo that you have taken that you think would be appropriate for this task.)

The art director will be using this photo in an online presentation:

**The tagline she'd like you to add:**

Is your phone spying on you?

**She has asked you to:**

1. Choose a font that you think would appeal to the target audience (males/females ages 15-19) and that fits the question in the tagline.
2. Place the text wherever you think looks best, based on how it fits in with the layout of the photo.

**Hint:** When choosing which photo to use, consider the layout of all four photos, and choose one that you think will work most effectively with the line of text added.

Once you choose the photo, transfer it from your camera to your computer so that you can open it in GIMP.

**Note:** It's best to re-transfer the raw file rather than using a JPG from the last unit.

**Use Layers to Add Text to the Photo.**

You won't be able to learn how to use layers without watching some tutorials. Using layers is one of the most important skills you'll have to develop for image enhancement, so watch a few videos that you find using this search string:

GIMP 2.10 tutorial layer

When you have completed editing the photograph, please save it as a JPG to your Google Drive folders. You will be using it as part of an online presentation in the final unit of this course.

### **Step 4: Practice Using Color Enhancement Techniques**

Your manager is working on a brochure for a charity that your company does a lot of work with. He has asked if you would play around with color enhancement on the following photo of white pelicans at the Salton Sea.



The brochure has a color palette that is more aqua—he has given you this color information:

**RGB: 6, 225, 197**

**HEX: #06E1C5**

He'd like you to see if you can do two things:

1. Color enhance the ocean and sky so they are a little more aqua in tone.
2. Make sure the pelicans still stand out.

### **Practice Using Color Enhancement and Layer Modes to Edit the Photograph**

By now, you've probably learned a few things about how to adjust colors in a photo from watching videos about layers and masks. Here are a few more search strings to help you find additional tutorials:

GIMP 2.10 tutorial color enhancement

GIMP 2.10 tutorial layer mode



GIMP has a robust selection of Modes (filters that you can apply to a layer) that work well for color enhancement. Create a new layer with a more aqua-toned color and then apply several different types of modes to it—see which one produces the best effect.

When you've achieved the goals for this project, export the file as a high-resolution JPG. This will make it easy for your manager to show it to the designers at the charity. When they get ready to print it, they'll ask you for a higher resolution file, so don't forget to keep your native GIMP file (XCF) for the future.

### Step 5: Post Your Enhanced Photos with Notes

Export your enhanced photographs as high-resolution JPGs. In a word processing program, write up notes to describe the tools you used and what you did to enhance each photograph.

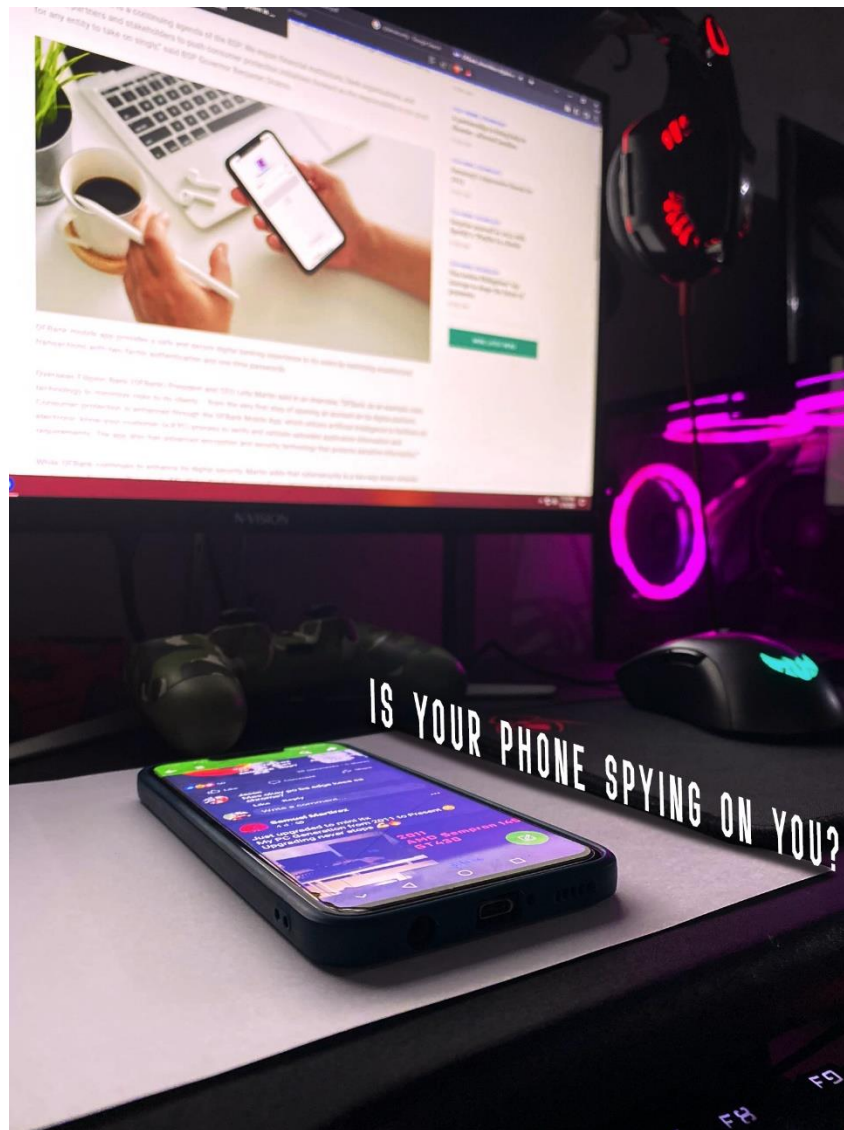
First photo



Adobe Photoshop was used to edit this image. I did not follow the method editing this photo because it uses GIMP; instead, I had my own steps editing while still meeting the required output. You may have noticed that the image became slightly blurry as it was cropped to focus on the elephant, causing the image to stretch and become blurry. Although the image is exported in the highest resolution possible, it is still blurry because it is also downloaded directly from this word document. This is also a major factor influencing the quality of this elephant photograph.



Second photo



This photo was also edited with Adobe Photoshop. I used certain photography techniques to produce this photo. The focus of this shot is the mobile phone as it is best suited on the phrase "Is phone spying on you?" To draw focus to the subject, I adjusted my camera settings to blur the background. As you can see, it really emphasizes the subject, in addition to the background portraying the subject and other tech stuff. Color grading was applied to improve the color of my photograph. I found that the font I used suits extremely well and of course, is easy to read. I placed the text such that it appears to be a part of the photo itself. I was able to finish the work with some understanding of the program I utilized.

Third photo



For the final image, Adobe Photoshop was also used to enhance this photograph. The requirement of this image is to make it more aqua looking like, so with the color information provided I used it and blended it with blueish color, to make it more aqua looking like. Also, I tweaked it with some curves to further enhance the color. And finally, to make it more realistic, I added some tint that matches the environment color of the photo. The only thing that I am concerned is that my output is a bit blurry as it is also downloaded directly from this word file.