DIVISION OF INFORMATION TECHNOLOGY SERVICES
CAL STATE LA

Adobe Photoshop CC 2015
Part 1: The Basics

Spring 2016, Version 1

Table of Contents

Introduction

Adobe Photoshop CC 2015 is a photo editing program that pushes the boundaries of digital imaging and editing. While widely used by professional photographers as well as web and graphic designers, Photoshop can also provide a creative outlet for amateurs, enthusiasts, and artists alike. This handout covers the basics of Photoshop CC 2015 which includes maneuvering through the interface as well as editing, saving, and printing images. The lessons incorporate new features found in Photoshop CC 2015. However, many of the techniques can also be used in previous versions of Photoshop.

New Features of Photoshop

Adobe has added many new features to Photoshop CC, allowing you to go even further when editing photographs. Some of the new features of Photoshop CC are improved guides which let you quickly see the distance in pixels between objects so you can lay out content with precision, and the editable rounded rectangles which let you resize shapes, edit them, and re-edit them before or after they are created. The **Perspective Warp** feature lets you easily adjust perspectives in images. For more information, visit the Adobe Photoshop CC New Features page.

Downloading the Data Files

This handout includes sample data files that can be used to follow along the steps. If you plan to use the data files, download the following ZIP file to your computer and extract the files. It is recommended to save the data files on your desktop for easy access.

- Adobe Photoshop CC 2015 Part 1 Data Files

Starting Photoshop

The following steps cover how to start Photoshop CC 2015 using the computers in the ITS Training Program computer labs. The steps for starting the program on other computers may vary.

To start Photoshop CC 2015 in Windows 10:
1. Click the **Start** button, click **All apps**, and then click **Adobe Photoshop CC 2015**.

Opening Files in Photoshop

Photoshop works with digitized images which can come from a digital camera, a scanner, other drawing programs, or captured video stills. Once the desired digital image has been imported to a computer, you can open it in Photoshop for further viewing and editing.

To open a file in Photoshop:
1. Click the **File** menu, and then click **Open** (see Figure 1).
2. In the **Open** dialog box, navigate to the **Data Files** folder, select the **earth_and_moon.jpg** file, and then click the **Open** button.
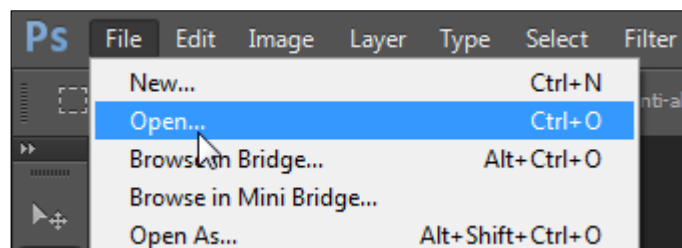3. Repeat steps 1 and 2 to open the **red_moon.jpg** file.

Figure 1 – File Menu When Selecting Open

Navigating through Photoshop

The best way to become familiar and comfortable with any workspace is to explore and practice. Furthermore, learning to maneuver through Photoshop CC 2015 will give you a head start when learning how to use other Adobe CC 2015 programs with a similar interface (e.g., InDesign, Illustrator, or Flash).

Workspace Overview

The work area, or workspace, includes menus, toolbars, and panels that give you quick access to an array of tools and options for editing and manipulating images and graphics. The default workspace in Photoshop displays the **Menu** and **Options** bars at the top of the window, the **Tools** panel on the left side of the window, and several other panels on the right side of the window (see Figure 2).
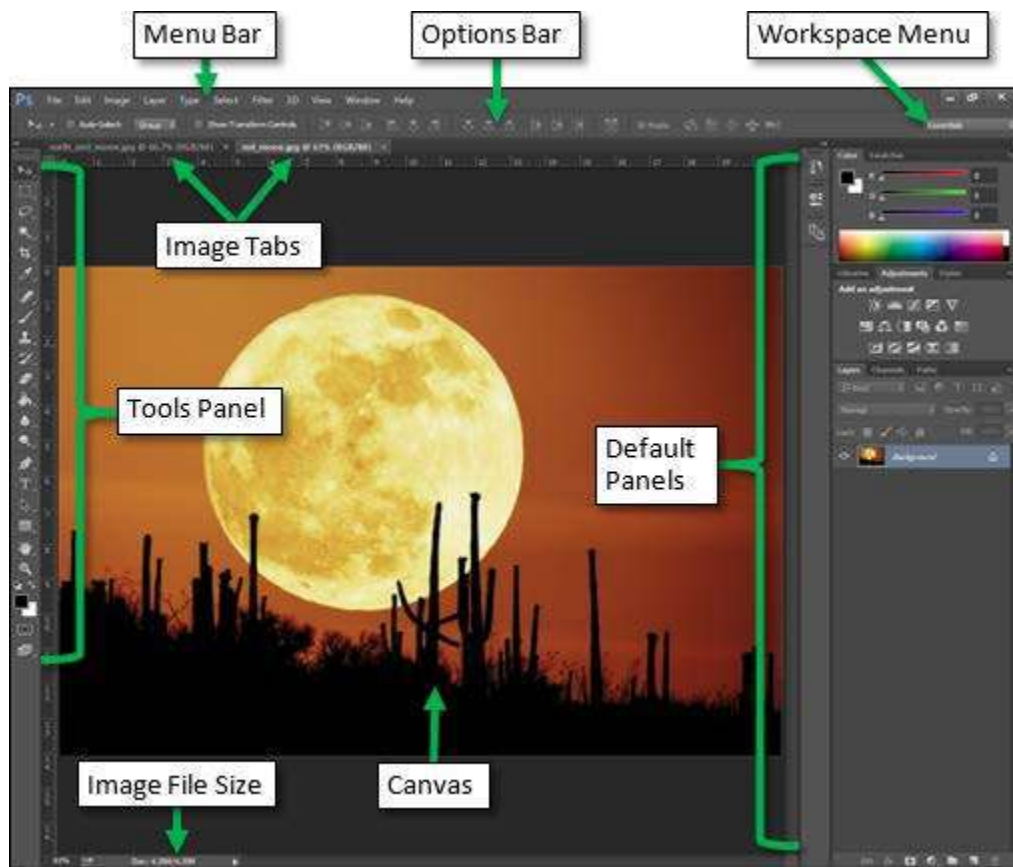

Figure 2 – Photoshop CC 2015 Default Workspace

Changing the Workspace

Not all projects utilize the same tools and panels. Therefore, Photoshop includes a number of preset workspace layouts which cater to certain types of projects, as well as the option to customize one's own workspace.

To select a preset workspace:
1. Click the **Window** menu, point to **Workspace**, and then click **Typography** (see Figure 3).

To return to the default workspace:
1. Click the **Window** menu, point to **Workspace**, and then click **Essentials (Default)** (see Figure 3).

NOTE: Another way to switch from one workspace to another is to use the **Workspace** menu located on the right side of the **Options** bar, above the default panels (see Figure 4).
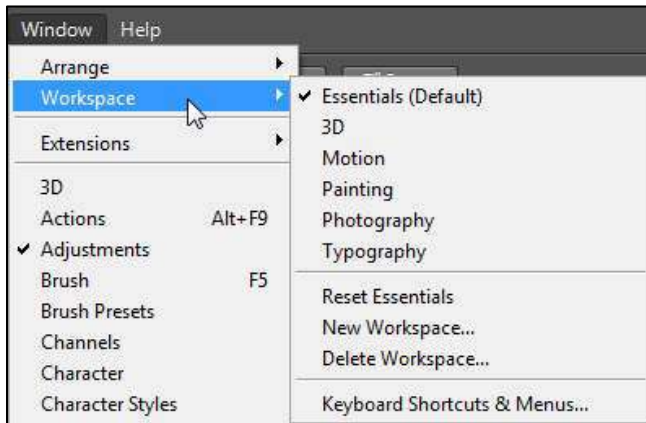

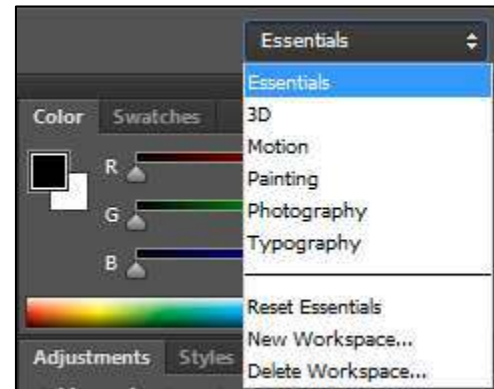Figure 3 – Window Menu and Workspace Submenu

Figure 4 – Workspace Menu

To customize and save a workspace:

1. Use the **Window** menu to add and remove the desired panels. Resize and position the panels within the workspace as desired.

   NOTE: A check mark next to a panel name on the **Window** menu indicates that the panel is open. Selecting a panel name with a check mark closes that panel; selecting a panel name without a check mark opens that panel.

2. Click the **Window** menu, point to **Workspace**, and then click **New Workspace** (see Figure 3).
3. In the **New Workspace** dialog box, in the **Name** box, type the desired name for the custom workspace (e.g., Workspace1) (see Figure 5).
4. Select the **Keyboard Shortcuts** and **Menus** check boxes.
5. Click the **Save** button. The new **Workspace** is displayed at the top of the **Workspace** menu (see Figure 6).
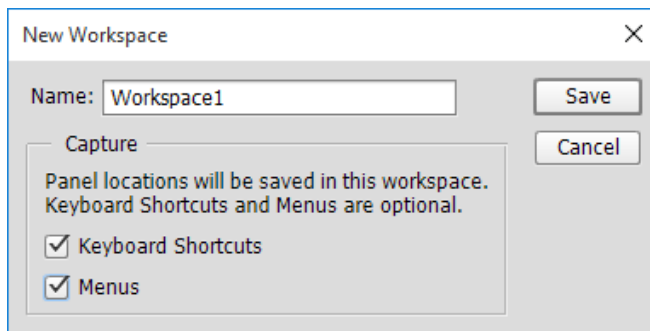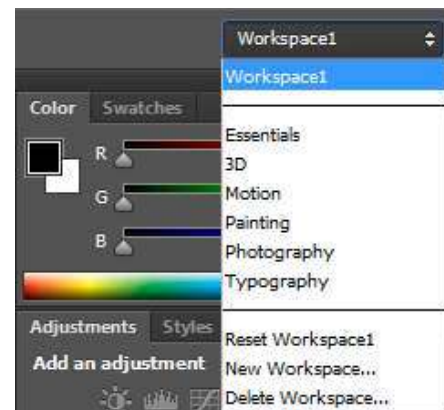

Figure 5 – New Workspace Dialog Box

Figure 6 – Workspace Menu with a Custom Workspace

To delete a custom workspace:

1. Click the **Workspace** menu, and then click **Essentials** (see Figure 6).

   NOTE: A workspace cannot be deleted if it is the active workspace.

2. Click the **Workspace** menu again, and then click **Delete Workspace**.
3. In the **Delete Workspace** dialog box, click the **Workspace** arrow and select the workspace that you want to delete (e.g., Workspace1).
4. Click the **Delete** button. A confirmation dialog box opens.
5. Click the **Yes** button to proceed.
6. Click the **Workspace** menu to verify that the custom workspace has been deleted and is no longer listed on the menu.

Changing the Screen Mode

When previewing an image, it helps to have a different background and to remove the workspace altogether. By default, Photoshop opens in **Standard Screen Mode**.

To change the screen mode:
1. Click the **View** menu, point to **Screen Mode**, and then click **Full Screen Mode**.
2. In the **Message** dialog box, click the **Full Screen** button (see Figure 7). The image is displayed in **Full Screen Mode**, with only a black background (see Figure 8).
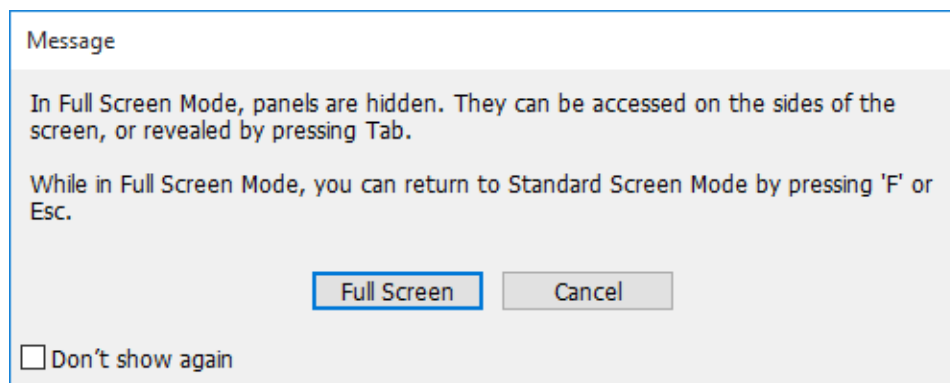

Figure 7 – Message Dialog Box

Figure 8 – Full Screen Mode

3. Press the **Esc** key to return to **Standard Screen Mode**.

Panels

To collapse panels to just their icons, simply click the double arrow at the top of a panel group (see Figure 9). To expand the panels, click the double arrow again (see Figure 10). You can also move panels within the workspace by dragging a panel tab to the desired location. When panels are collapsed to icons, you can drag the dotted line to move an entire panel group or an individual panel.

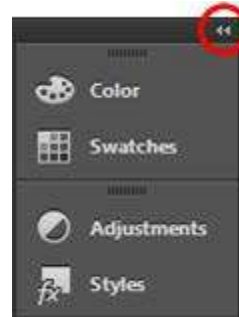**Figure 9 – Collapse to Icons Button**

Figure 10 – Expand Panels Button

Using the Tools Panel

The **Tools** panel contains selection tools, editing and painting tools, foreground and background color selection boxes, and viewing tools. Clicking the double arrow at the top of the Tools panel switches the panel back and forth from a single column to a double column (see Figure 11).
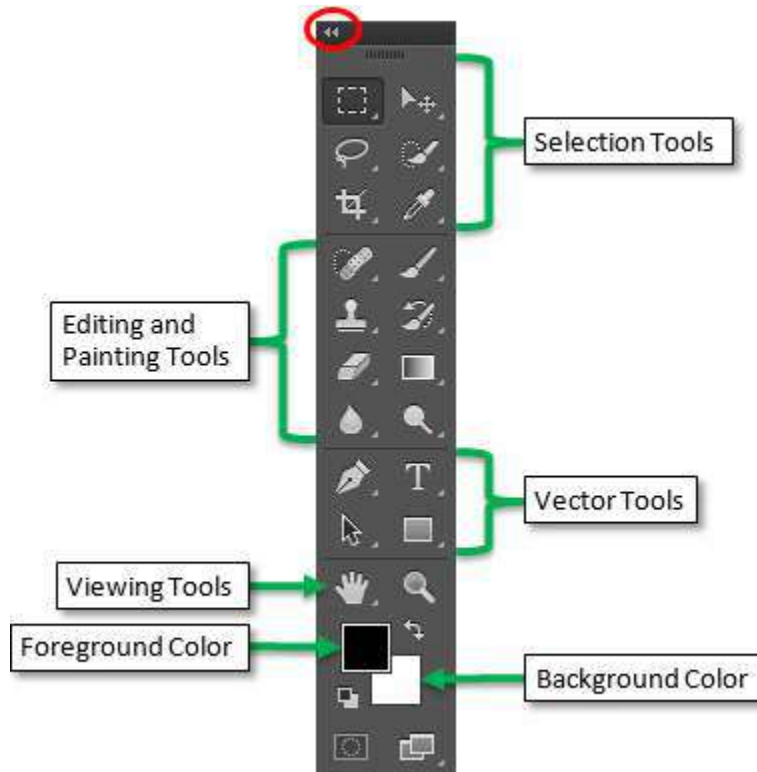
Figure 11 – Tools Panel in Double Column View

Using the Options Bar

The **Options** bar is located below the Menu bar. Depending on which tool is selected in the Tools panel, the Options bar changes and displays options accordingly (see Figure 12).

Figure 12 – Options Bar When the Type Tool is Selected

To zoom in or out of an image:

1. Click the **earth_and_moon.jpg** tab in the **Document** window to activate the file (see Figure 13).
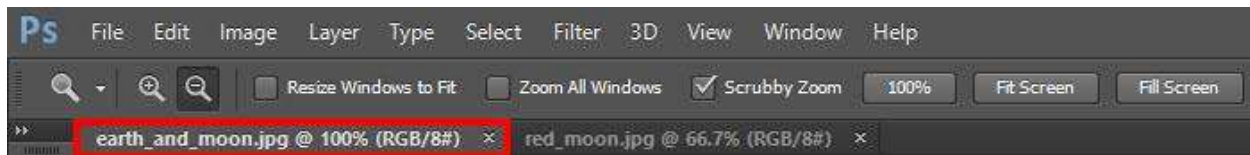

Figure 13 – File Tabs

2. Click the **Zoom Tool** located near the bottom of the **Tools** panel. The mouse pointer becomes a magnifying glass with a plus sign in its center.
3. Click the Earth image once to magnify it.
4. To zoom in even more, click the image again repeatedly until the desired magnification is reached.
5. To zoom out, click the **Zoom Out** button on the **Options** bar, and then click the Earth image once.
6. Click the image again repeatedly to zoom out even more.

To fit the image to the screen:

1. Click the **Fit Screen** button on the **Options** bar.

   NOTE: Clicking the **100%** button on the **Options** bar displays the image at 100%. Clicking the **Fill Screen** button on the **Options** bar makes the image fill the screen.

Accessing Hidden Tools

The Tools panel groups similar tools together, displaying only one tool from a group at a time while the rest are hidden beneath the tool. A small white triangle at the lower-right corner of a tool indicates that there are hidden tools beneath it. To view hidden tools, right-click a tool or click and hold down the mouse button on a tool (see Figure 14).
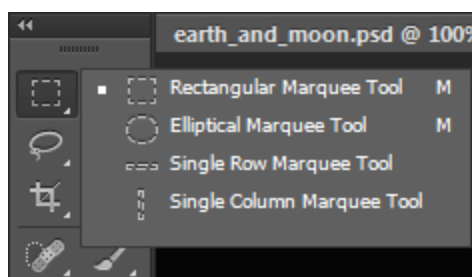

Figure 14 – Hidden Marquee Tools

To use the Marquee Tool:

1. Right-click the **Rectangular Marquee Tool** in the **Tools** panel, and then click the **Elliptical Marquee Tool** on the hidden tools menu (see Figure 14).

   NOTE: When the **Marquee Tool** is selected, the mouse pointer becomes the shape of a cross.

2. In the **Document** window, drag the mouse pointer to make an elliptical selection around the image of the Earth (see Figure 15). Keep the mouse button pressed.

   NOTE: Once the mouse button is released, the selection can no longer be edited. However, it can still be moved by dragging the selection with the mouse pointer (see Figure 16).

3. Hold down the **Spacebar** and drag the pointer to reposition the selection.
4. Release the **Spacebar** and drag the pointer to resize the selection.

   NOTE: The **Shift** key can be used to retain the shape of a perfect circle.

5. Repeat steps 3 and 4 as necessary to fit the selection around the circumference of the Earth, and then release the mouse button.

   NOTE: The animated dashed line connotes that the area inside it is selected and therefore, is the only editable area of the image.

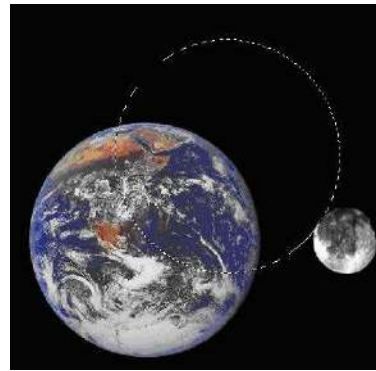**Figure 15 – Selecting an Image Using the Marquee Tool**

Figure 16 – Moving the Marquee Selection

6. Click the **Move Tool** in the **Tools** panel.
7. Drag the selection to move its contents completely outside the cutout area (see Figure 17).
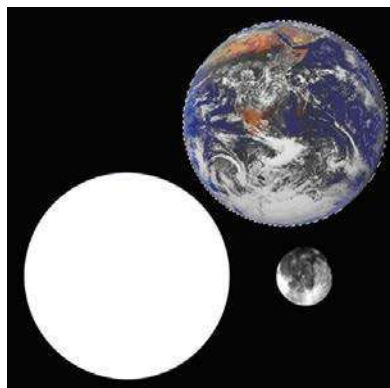

Figure 17 – Moving the Selected Image

   NOTE: To remove the selected area entirely, click the **Edit** menu, and then click **Cut**.

8. To remove the marquee selection, click the **Select** menu, and then click **Deselect**.

Changing Foreground and Background Colors

When using a painting tool (e.g., the Brush Tool), or creating text or shapes, the current **Foreground** color is applied. The **Background** color manifests when the Eraser Tool is used on the Background layer. With the Gradient Tool, the Foreground and Background colors can be used to produce different blends.

To change the Foreground color:
1. Click the **Foreground** color selection box in the **Tools** panel.
2. In the **Color Picker (Foreground Color)** dialog box, drag the vertical color slider up or down to select a color (see Figure 18).
3. Click inside the large square to the left of the vertical color slider to select a hue.
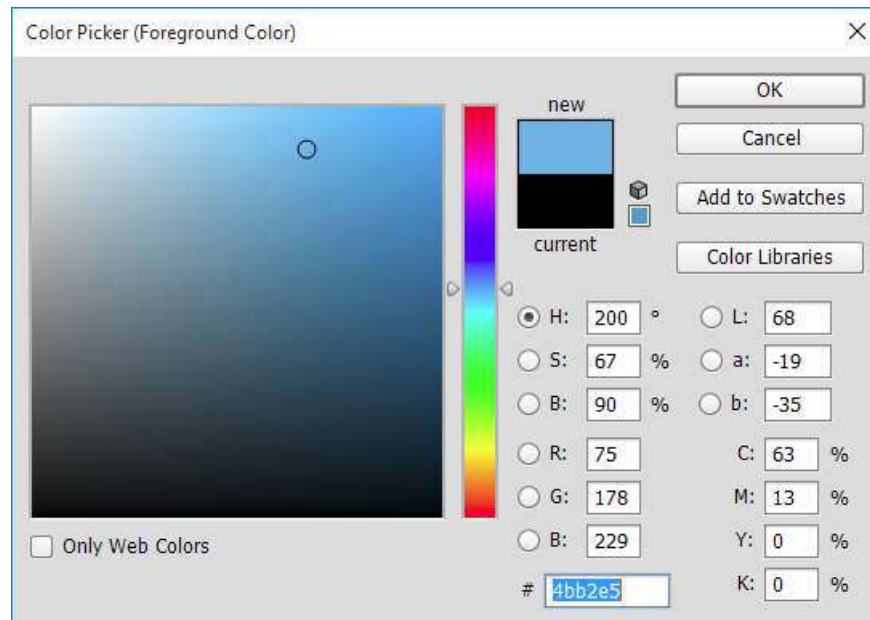4. Click the **OK** button. The **Foreground** color is changed.

Figure 18 – Color Picker (Foreground Color) Dialog Box

5. Right-click the **Gradient Tool** in the **Tools** panel, and then click the **Paint Bucket Tool** on the hidden tools menu.
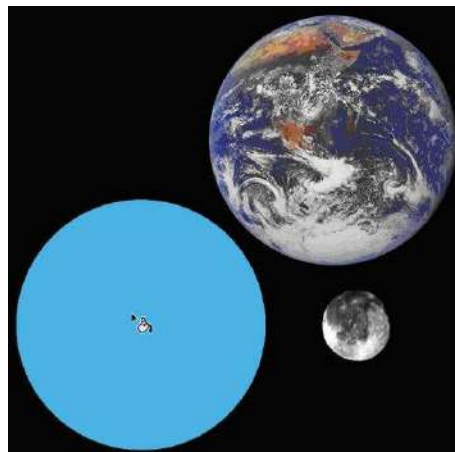6. Click inside the white circle to paint it (see Figure 19).

Figure 19 – Blue Painted Circle Cutout

Using the Navigator Panel

Found on the Window menu, the **Navigator** panel is used for moving an image in its window and for changing the zoom level of an image. The zoom level is indicated as a percentage in three locations: on the file tab in the Document window, in the lower-left corner of the Document window, and in the lower-left corner of the Navigator panel.

The red rectangular outline, or view box, inside the Navigator panel represents the area of the image that appears in the Document window (see Figure 20). This is especially useful when working at very high zoom levels. If the image is magnified, you can drag the view box on the thumbnail to move the image in its window. You can use the **Zoom In** and **Zoom Out** buttons as well as the **Zoom** slider to change the image's zoom level.
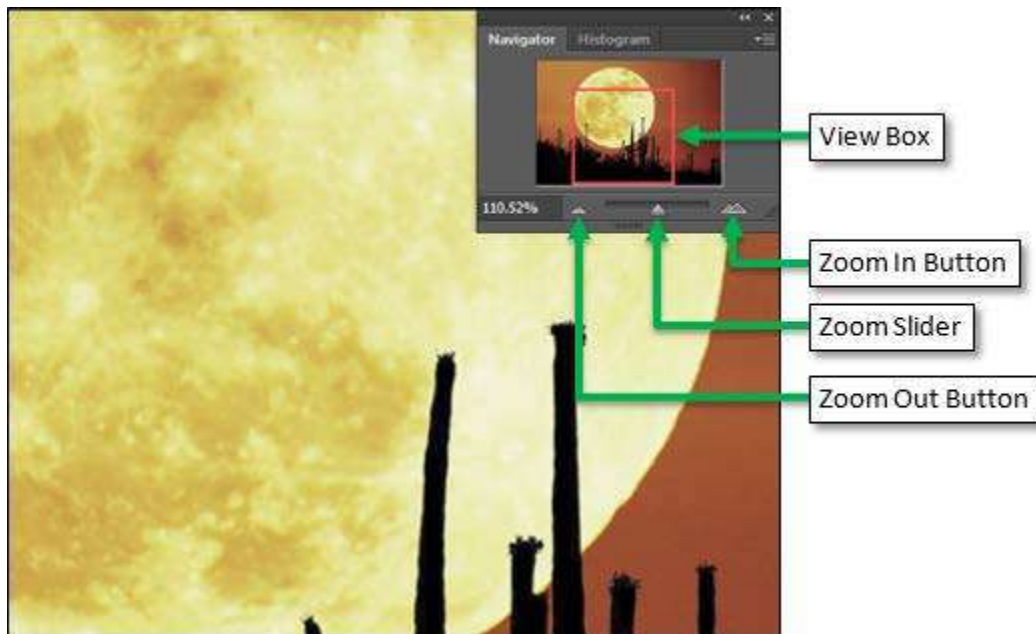

Figure 20 – Navigator Panel and Document Window

Using the History Panel

Another great thing about working with digital images is the ability to take back unwanted actions by one or even multiple actions at a time. The **History** panel records each change that is applied to an image and lists each one as a separate state in the panel, with the bottommost state being the most recent (see Figure 21). Clicking on a prior state restores the document to that stage of the editing process.

NOTE: To undo a single action, click the **Edit** menu, and then click **Step Backward**. To redo an action, click the **Edit** menu, and then click **Step Forward**.
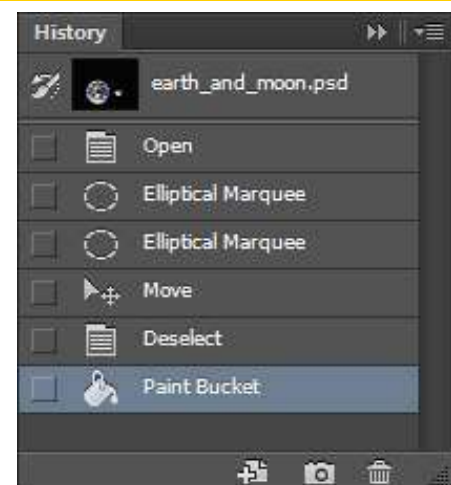

Figure 21 – History Panel

Using the Layers Panel

Each layer includes multiple components such as layer visibility, layer title, layer/vector mask thumbnail (if applicable), layer thumbnail, and layer effects (if applicable) (see Figure 22). Layers can be created, restacked, moved, deleted, and duplicated.
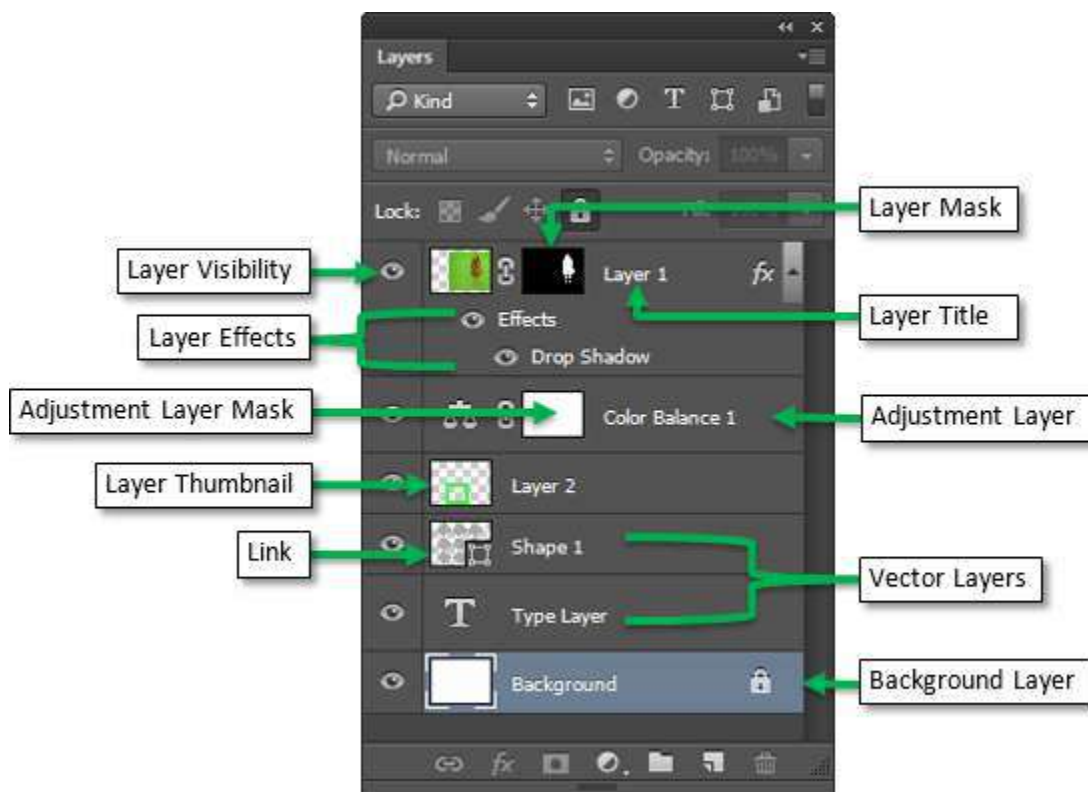

Figure 22 – Layers Panel

Working with Layers

Layers determine the order in which objects are displayed. Furthermore, only the currently active or selected layer can be edited. The following steps introduce the basics of working with layers such as naming, moving, creating, or deleting a layer.

To name or rename a layer:
1. Open the **practicing_with_layers.psd** file.
2. In the **Layers** panel, click the eye icon next to each layer to determine what object is located on that layer (see Figure 23).

   NOTE: Another method for determining what object is located on a specific layer is to right-click that layer's eye icon, and then click **Show/Hide all other layers** on the shortcut menu.

3. Double-click the **Layer 3** layer title, type **Post Office**, and then press the **Enter** key.
4. Repeat step 3 to rename **Layer 4** to **Person**.

To move a layer:
1. Drag the **Layer 1** layer above the **Background** and **Sun** layers until a thick border appears (indicating the layer's new position), and then release the mouse button (see Figure 24). The grass image appears on the screen.
2. Rename **Layer 1** to **Grass**.
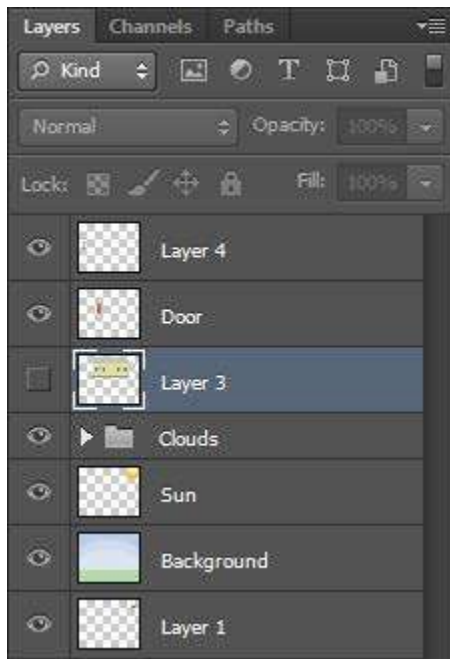
Figure 23 – Layer 3 Visibility Off
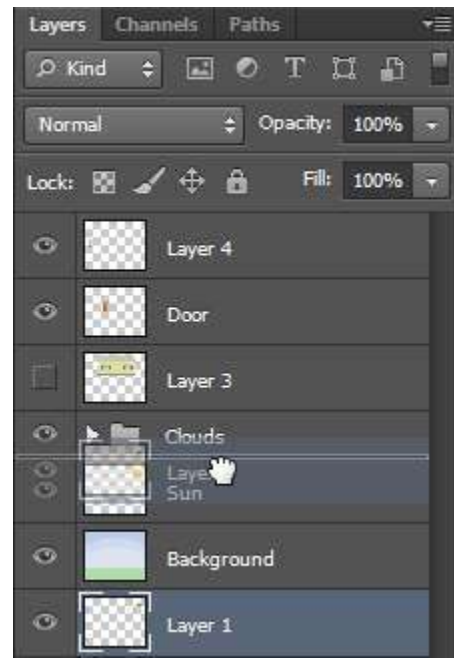
Figure 24 – Moving a Layer

To move objects on a layer:

1. Make sure the **Grass** layer is selected in the **Layers** panel.
2. Click the **Move Tool** in the **Tools** panel.
3. Drag the image of the grass down to ground level (see Figure 25).
4. Select the **Post Office** layer and drag the image of the post office down to ground level.
5. Repeat the same procedure with the **Person** and **Door** layers.

Figure 25 – Moving Objects on a Layer

To duplicate a layer:
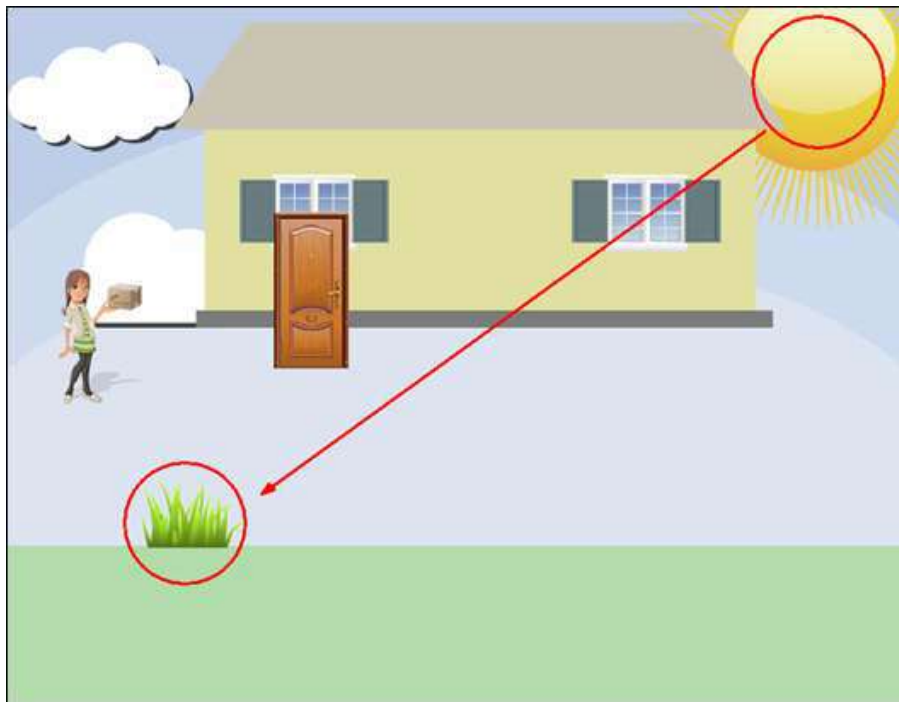
1. In the **Layers** panel, right-click the **Grass** layer, and then click **Duplicate Layer** on the shortcut menu (see Figure 26).
2. In the **Duplicate Layer** dialog box, in the **As** box, change the name to **More Grass** (see Figure 27).
3. Under **Destination**, make sure the file name displayed in the **Document** box is the same file as the current working file.
4. Click the **OK** button. A new layer titled **More Grass** is added in the **Layers** panel.
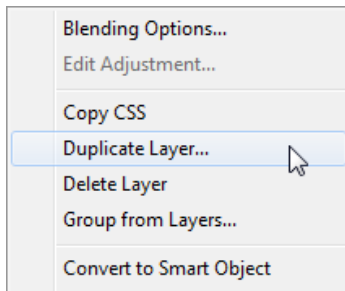5. Move the grass on the **More Grass** layer to the right side of the post office.

Figure 26 – Shortcut Menu When Selecting Duplicate Layer
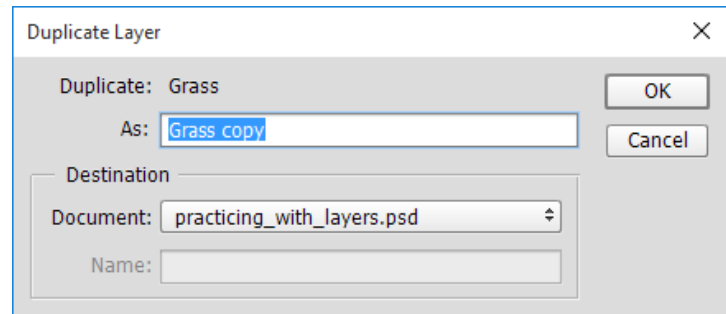
Figure 27 – Duplicate Layer Dialog Box

To create a new layer:

1. Click the **Layer** menu, point to **New**, and then click **Layer**.
2. In the **New Layer** dialog box, type **Clouds** in the **Name** box, and then click the **OK** button (see Figure 28).

   NOTE: You can also create a new layer by clicking the **Create a new layer** button at the bottom of the **Layers** panel.

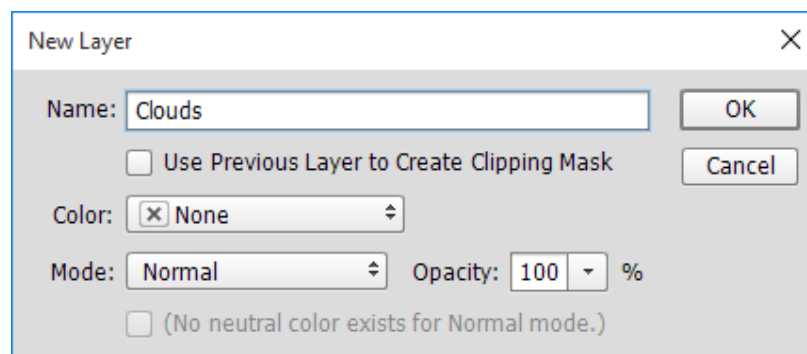**Figure 28 – New Layer Dialog Box**

To delete a layer:

1. Right-click the **Clouds** layer in the **Layers** panel, and then click **Delete Layer** on the shortcut menu. A confirmation dialog box opens (see Figure 29).
2. Click the **Yes** button to confirm the deletion.

   NOTE: You can also delete a layer by clicking the **Delete layer** button at the bottom of the **Layers** panel.
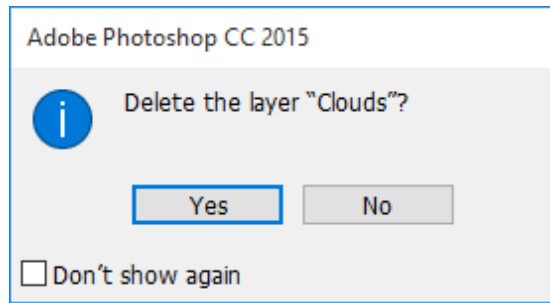
Figure 29 – Confirmation Dialog Box

Basic Image Editing

Onscreen, Photoshop images are bitmaps – a geometric arrangement of a layer of dots, or pixels, of different shades or colors on a rectangular grid. Each pixel represents a color or shade. Bitmap programs, like Photoshop, are ideal for producing painterly and/or photographic images. In addition to fixed pixel imagery, Photoshop also works with vector graphics such as paths, shapes, and editable type. Vector graphics are drawings that retain their crispness when scaled since they are mathematically defined.

NOTE: Before any retouching or editing, it is highly recommended to duplicate an image file and work with the copy. This way, the original is kept intact for future purposes.

Resizing Images

Resolution (ppi = pixels per inch or dpi = dots per inch) refers to the quality of an image. The higher the resolution, the higher the number of pixels along the width and height of an image (hence, better image quality). However, the file size of an image also increases with increased resolution, making it more laborious to process or download. Depending on the situation, you can resize an image to fit your specific needs. For photo quality printing, the image file should be set at a higher resolution (i.e., 300 dpi). For online viewing, the image file can be set at a lower resolution (i.e., 72 dpi).

The default settings for many digital cameras produce an image that is large in physical dimensions (i.e., width and height), but low in pixels per inch (usually 72 ppi). The following steps show you how to decrease the physical size of a digital camera image and increase its resolution without losing quality.

NOTE: For scans, you can stipulate the physical dimensions and resolution of the image according to your desired output at the time of scanning.

To resize a digital camera image:
1. Open the **resize_digital_image.jpg** file.
2. Click the **Image** menu, and then click **Image Size**.
3. In the **Image Size** dialog box, deselect the **Resample** check box to make the **Width**, **Height**, and **Resolution** values interdependent (see Figure 30).
4. Change the **Resolution** from **72** pixels/inch to **300** pixels/inch. The **Width** and **Height** values change in direct proportion to the change in **Resolution**.
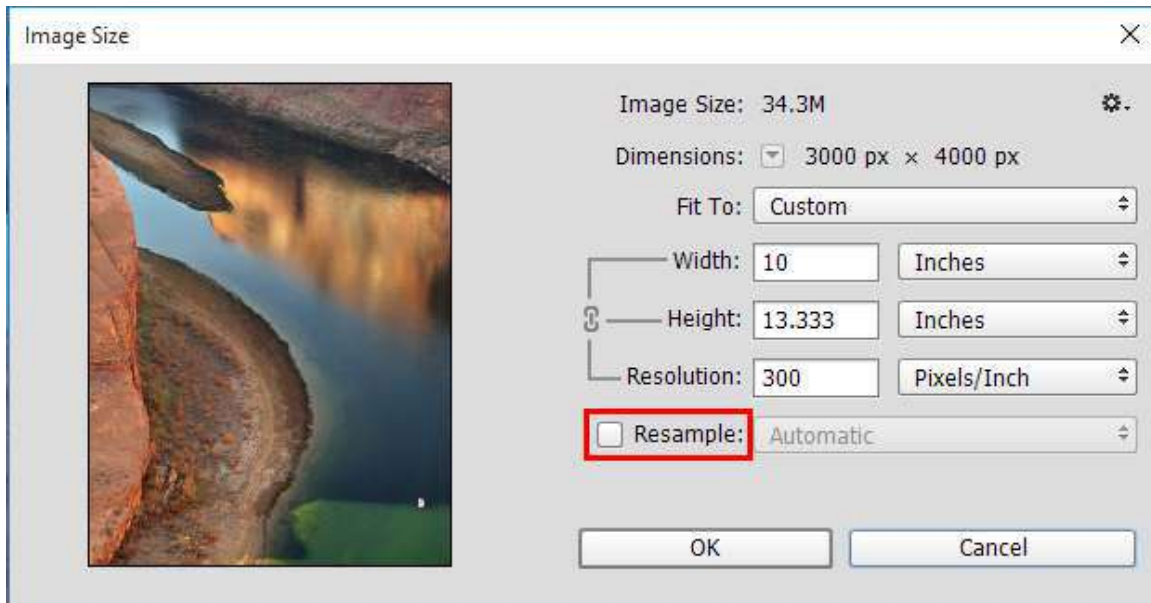5. Click the **OK** button to apply the changes.

Figure 30 – Image Size Dialog Box

To downsize an image:

1. Click the **Image** menu, and then click **Image Size**.
2. In the **Image Size** dialog box, select the **Resample** check box (see Figure 30).
3. To preserve the width-to-height ratio of the image, make sure the **Constrain Aspect Ratio** button 🔗 is selected.
4. If the image has layers with styles applied to them, click the **Gear** icon ⚙ in the upper-right corner of the dialog box and select **Scale Styles** to scale the effects in the resized image.
5. Type the desired **Width** or **Height**.
6. Click the **OK** button to apply the changes.

    NOTE: The quality of the image will not be affected. However, these steps should only be used to downsize an image, not upsize it. Upsizing will degrade the image quality.

To resize multiple images at one time:

1. Click the **File** menu, point to **Scripts**, and then click **Image Processor**.
2. In the **Image Processor** dialog box, under **Select the images to process**, click the **Select Folder** button (see Figure 31).
3. In the **Choose Folder** dialog box, locate and select the **Resizing Multiple Images** folder, and then click the **OK** button (see Figure 32).
4. In the **Image Processor** dialog box, under **Select location to save processed images**, select the **Select Folder** option button, click the **Select Folder** button, select the **Desktop** as the location to save the resized images, and then click the **OK** button. Or, select the **Save in Same Location** option button to save the files in the same folder.
5. Under **File Type**, select the **Save as JPEG**, **Save as PSD**, and **Save as TIFF** check boxes to create three new copies of each photo.
6. Select the **Resize to Fit** check box for each format, and then type **640** as the **Width** pixel dimension and **480** as the **Height** pixel dimension of the newly resized images.

    NOTE: The **Height** pixel dimension will automatically change to be proportionate to the **Width**.

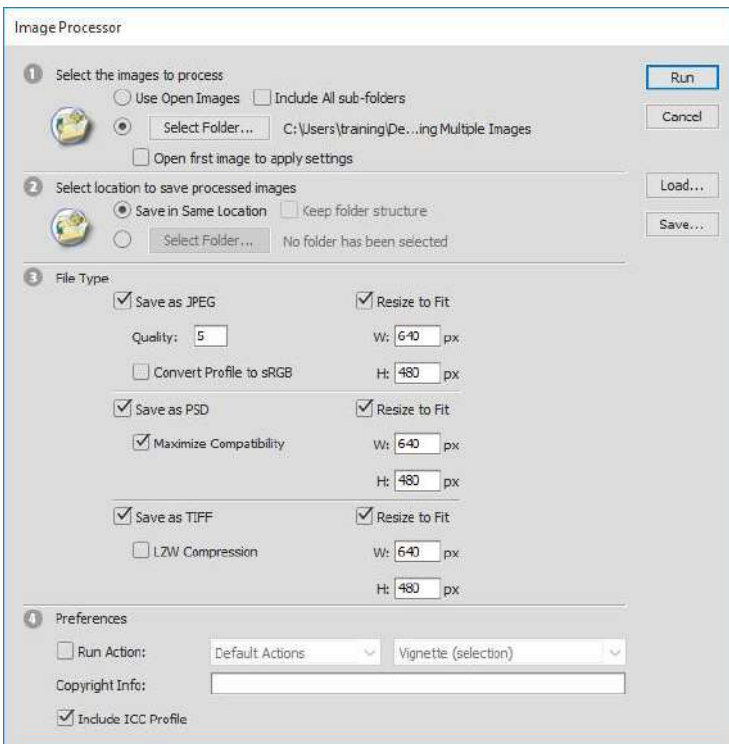7. When finished, click the **Run** button.
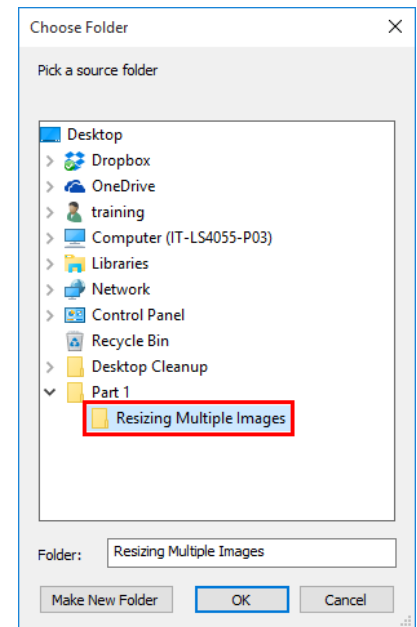
Figure 31 – Image Processor Dialog Box

Figure 32 – Choose Folder Dialog Box

Cropping and Straightening Images

Cropping is the process of removing portions of an image. The **Crop Tool** can be used to crop and straighten images in Photoshop.

To crop and straighten an image:
1. Open the **practice_cropping.jpg** file.
2. Click the **Crop Tool** in the **Tools** panel. Crop borders appear on the edges of the image.
3. Draw a new cropping area or drag the corner and edge handles of the crop box to specify the crop boundaries in the image.
4. To straighten the image, place the pointer a little outside a corner handle until a curved arrow appears, and then drag to rotate the image as needed. A grid displays inside the crop box and the image rotates behind it.

   NOTE: The crop area might have to be re-adjusted after the image is rotated.

5. To complete the crop, click the **Commit** button on the **Options** bar, or press the **Enter** key.

   NOTE: You can cancel the crop operation by clicking the **Cancel** button on the **Options** bar, or pressing the **Esc** key.

To crop and straighten multiple images at once:
1. Open the **cropping_multiple_images.jpg** file.
2. Click the **File** menu, point to **Automate**, and then click **Crop and Straighten Photos**. Each cropped and straightened image appears in its own tab.

Rotating Images

In Photoshop, you can rotate and flip an image in many directions. The **Image Rotation** commands rotate all the layers of an image, while the **Flip Canvas** commands flip all the layers of an image, creating a mirror image.

To rotate an image:
1. Open the **rotate_image.jpg** file.
2. Click the **Image** menu, point to **Image Rotation**, and then click **90º Counter Clockwise** (see Figure 33).

    NOTE: The **Flip Canvas Horizontal** command flips the image from left to right. The **Flip Canvas Vertical** command flips the image up to down.
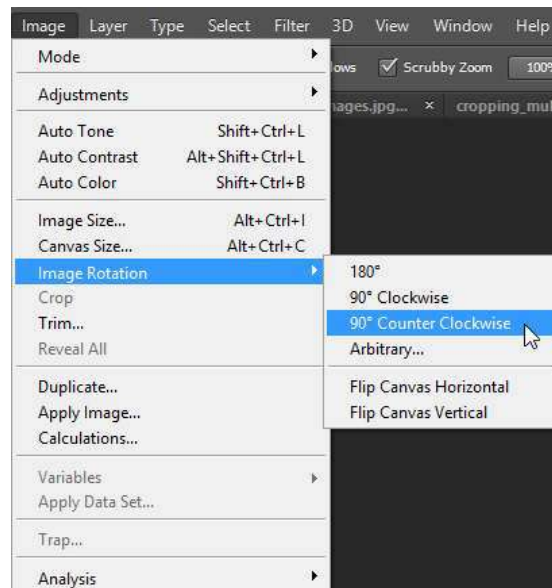
Figure 33 – Image Menu and Image Rotation Submenu

To rotate an image by specifying an angle:
1. Click the **Image** menu, point to **Image Rotation**, and then click **Arbitrary**.
2. In the **Rotate Canvas** dialog box, in the **Angle** box, type a value between **-359.99º** and **359.99º** (see Figure 34).
3. Select the **ºClockwise** or **ºCounter Clockwise** option button.
4. Click the **OK** button.

Figure 34 – Rotate Canvas Dialog Box

Basic Touch-ups

Whether it is red eye, dust, a pimple, or a crack, Photoshop offers an array of tools to replace unwanted portions of an image.

Fixing Red Eye

Red eye occurs when the retinas of a subject's eyes are reflected by the camera's flash unit (see Figure 35). Photoshop offers a simple way to correct this by using the **Red Eye Tool** which is hidden under the Spot Healing Brush Tool.
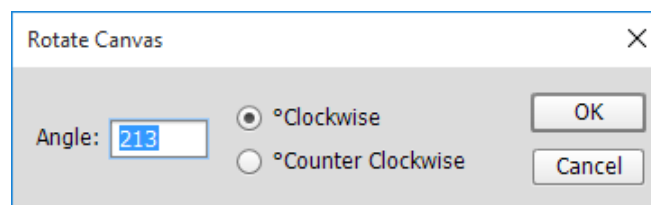

Figure 35 – Image with Red Eye

To remove red eye:

1. Open the **red_eye.jpg** file.
2. Use the **Zoom Tool** as necessary to achieve the desired magnification.
3. In the **Tools** panel, right-click the **Spot Healing Brush Tool**, and then click the **Red Eye Tool** (see Figure 36).
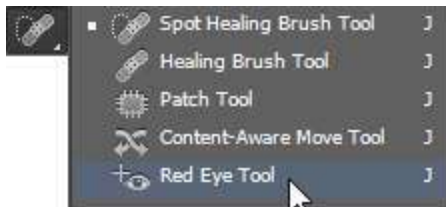4. Click once on each eye to see the red reflection disappear (see Figure 37).

Figure 36 – Selecting the Red Eye Tool

Figure 37 – Image After Red Eye Correction

Repairing Flaws and Imperfections

The **Clone Stamp Tool**, the **Healing Brush Tool**, the **Patch Tool**, and the **Spot Healing Brush Tool** can be used to either repair or replace a selected area of an image (see Table 1).

Table 1 – Healing Tools

Name	Description
Clone Stamp Tool	Copies a part of an image that the user defines (i.e., the source) and copies it exactly to a new area. Use when matching color and shading.
Healing Brush Tool **Patch Tool**	Takes a part of an image (i.e., the source) and blends it with surrounding pixels of a designated area. Use when matching similar texture.
Spot Healing Brush Tool	Automatically samples from surrounding areas and blends it to an area needing repair.

To remove dust from a scanned image:

1. Open the **removing_dust.jpg** file.
2. In the **Tools** panel, right-click the **Red Eye Tool**, and then click the **Spot Healing Brush Tool** (see Figure 38). The mouse pointer becomes the shape of a circle.
3. To change the size of the circle to match the area needing repair, click the **Brush** arrow on the **Options** bar, and then use the **Size** slider to increase or decrease the size of the brush (see Figure 39).

   NOTE: The size of the brush should be slightly larger than the area needing repair. The opening bracket [and closing bracket] keys can be used as shortcuts to decrease or increase the size of the brush, respectively.

Figure 38 – Selecting the Spot Healing Brush Tool
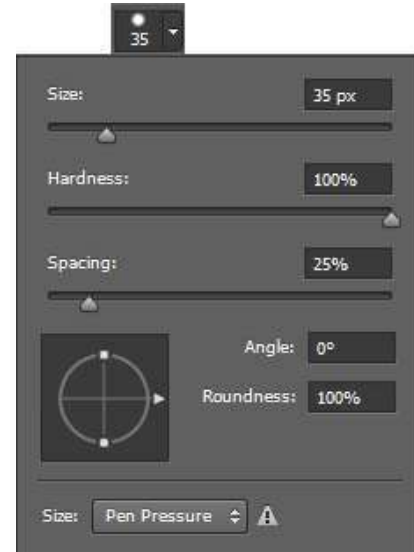
Figure 39 – Brush Menu

4. Drag the **Hardness** slider all the way to the left until it is set to **0%**.
5. Click each dust particle on the image to watch it disappear as it blends with the surrounding pixels.
6. To remove the white spot on the subject's shoulder (see Figure 40), click the **Clone Stamp Tool** in the **Tools** panel.
7. Hold down the **Alt** key and click the part of the image that can be used as a sample to clone on top of the unwanted spot, and then release the **Alt** key.
8. Place the mouse pointer over the white spot on the subject's shoulder and click to watch it disappear.

Figure 40 – Image with White Spot

To repair blemishes:
1. Open the **removing_acne.jpg** file.
2. In the **Tools** panel, right-click the **Spot Healing Brush Tool**, and then click the **Healing Brush Tool** .
3. Set the **Size** of the brush to a size slightly larger than the size of the acne.
4. Set the **Hardness** of the brush to **0%**.
5. Hold down the **Alt** key and click an unblemished part of the skin with texture similar to the area needing repair, and then release the **Alt** key.
6. Place the mouse pointer over the acne on the subject's face and click once to watch it disappear (see Figure 41).
7. Repeat steps 3 to 6 to repair any other remaining skin imperfections on the subject's face (see Figure 42).
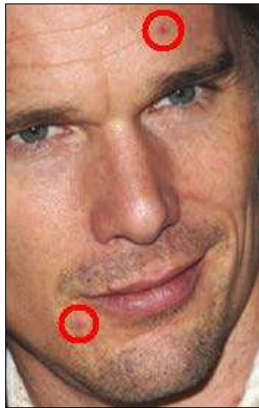
Figure 41 – Unrepaired Image
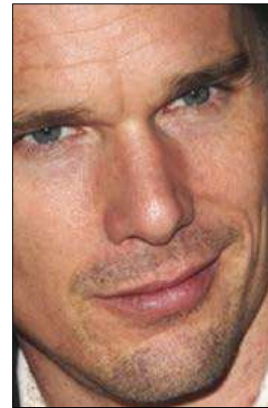
Figure 42 – Repaired Image

To make larger body markings disappear:
1. Open the **removing_tattoo.jpg** file.
2. In the **Tools** panel, right-click the **Healing Brush Tool**, and then click the **Patch Tool** (see Figure 43).
3. Drag to select the area of the image you want to repair (see Figure 44).

    NOTE: If the area needing repair is very large, work on a section of it at a time.
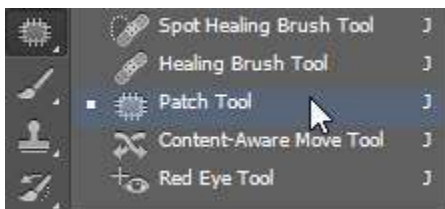
Figure 43 – Selecting the Patch Tool

Figure 44 – Patch Tool Marquee

4. Drag the selection to an area with clean, blemish-free skin that has a texture similar to the area needing repair (see Figure 45).
5. Release the mouse button and watch as the selected area blends with the sampled area (see Figure 46).

Figure 45 – Dragging the Selection

Figure 46 – Final Retouched Image

6. Repeat steps 4 and 5 to remove the remaining parts of the tattoo.
7. To remove the marquee selection, click the **Select** menu, and then click **Deselect**, or click anywhere outside the marquee selection region.

Adjusting Images Automatically

Photoshop offers three automatic adjustments: **Auto Tone**, **Auto Contrast**, and **Auto Color**. You can use these features to fix pictures with very little effort. **Auto Tone** adjusts the tonal range of an image. **Auto Color** removes color casts and adjusts the color in the shadows, midtones, and highlights by neutralizing the midtones and clipping the white and black pixels. **Auto Contrast** turns the almost-lightest pixels in an image white and the almost-darkest pixels black, and then redistributes the gray levels in between.

To use auto adjustments:
1. Open the **auto_adjustments.jpg** file.
2. Click the **Image** menu, and then click **Auto Tone** to automatically adjust the tonality of the image (see Figure 47).
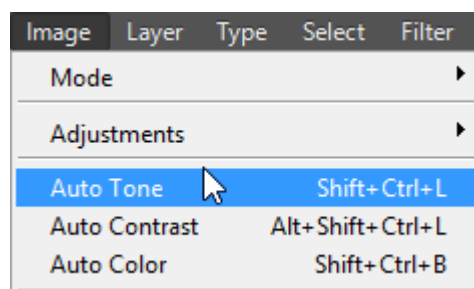

Figure 47 – Image Menu When Selecting Auto Tone

3. Click the **Image** menu, and then click **Auto Color** to remove any color casts.
4. Click the **Image** menu, and then click **Auto Contrast** to automatically adjust the contrast of the image.

   NOTE: The adjustments are applied directly onto the layer (see Figure 48).

Figure 48 – Image Before and After Applying Auto Adjustments

Saving Images

Image files can be saved in different file formats (see Table 2 and Table 3). It is vital to save image files progressively along the way to minimize potential work loss due to technical difficulties or other unexpected events. Compressed images degrade when repeatedly saved. However, uncompressed images, while larger in file size, do not.

Table 2 – Image File Formats (Compressed)

Extension	Format	Description
JPEG or JPG	Joint Photographic Experts Group	Preserves color fidelity of photographic images that contain gradations of color (i.e., continuous tone). Displays millions of colors.
PNG	Portable Network Graphics	Can save partially transparent pixels using alpha transparency (i.e., any one of 256 levels of opacity). Limited to 256 colors.
GIF	Graphics Interchange Format	8-bit file format which can save up to 256 colors. Good for images containing flat-color areas, shapes, and type.
BMP	Bitmap	Standard bit-mapped graphics format used in Windows. Used for graphic files.

Table 3 – Image File Formats (Uncompressed)

Extension	Format	Description
TIFF or TIF	Tagged Image File Format	Photographic file standard. Saves layers, layer transparency, adjustment layers, editable type layers, layer effects, grids, and guides.
PSD	Photoshop Document	Photoshop's native file format.
RAW	Digital Negative	Digital negative file format.

To save an image for the first time:

1. Click the **File** menu, and then click **Save As**.
2. In the **Save As** dialog box, select a location to save the file.
3. Type a name for the image in the **File name** box.
4. Click the **Format** arrow and select the desired file format from the list (see Figure 49).

    NOTE: Only the native Photoshop (PSD), Large Document Format (PSB), TIFF, and Photoshop PDF formats can save files that contain multiple layers.

5. Click the **Save** button.
6. If an **Options** dialog box opens, select the desired options, and then click the **OK** button.

    NOTE: To save changes to an already saved image, click the **File** menu, and then click **Save**.
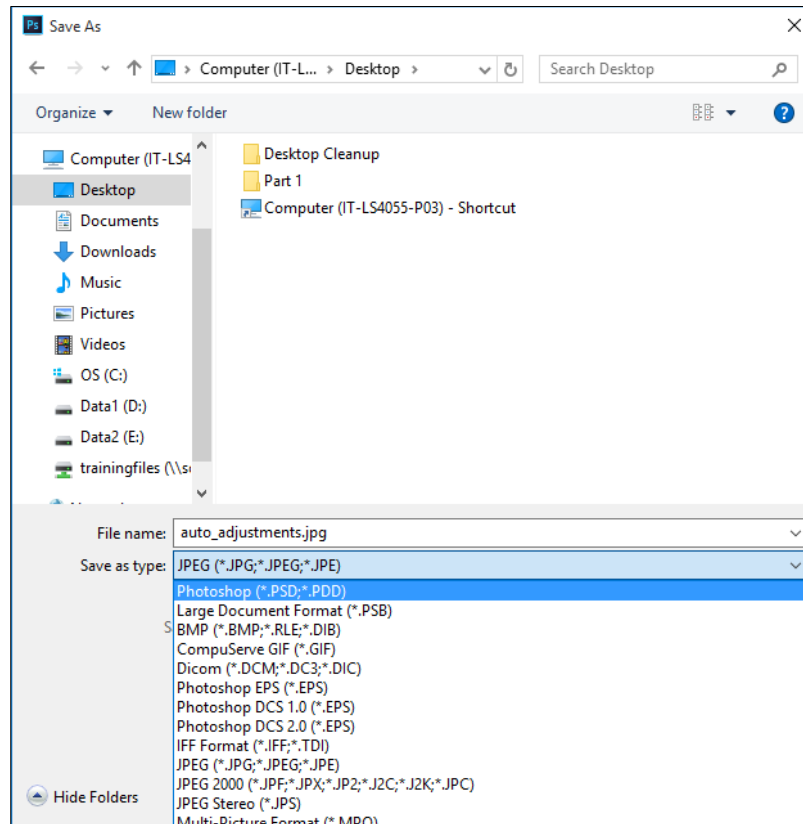

Figure 49 – Save As Dialog Box

Printing Images

Achieving a good print from an image depends on a variety of things such as the type of printer and paper being used, the quality of the digital image, and the calibration of the monitor.

NOTE: For most desktop ink-jet printers, leave the image file in RGB Color mode and allow the printer's driver to perform the conversion to CMYK to achieve the best results.

Flattening and Sharpening Images Before Printing

Before printing, you should flatten all layers to decrease the file size, thereby making it easier for the printer to process the image. Applying the **Unsharp Mask** filter adjusts the contrast of the edge detail and creates the illusion of a more focused image.

To flatten an image:

1. Click the **Layer** menu, and then click **Flatten Image**.

   NOTE: If the **Flatten Image** option is disabled, this means that the file does not contain multiple layers.

2. Click the **File** menu, and then click **Save As** to save the flattened image as a separate file.

   NOTE: Once an image has been flattened, the individual layers are not visible or editable. Saving the flattened version as a separate file will allow you to preserve the layered version for future editing.

To apply the Unsharp Mask filter:

1. Make sure the flattened image file is open.
2. Click the **Filter** menu, point to **Sharpen**, and then click **Unsharp Mask**.
3. In the **Unsharp Mask** dialog box, type **150** in the **Amount** box, **3.0** in the **Radius** box, and **1** in the **Threshold** box (see Figure 50).
4. Click the **OK** button.
5. Click the **File** menu, and then click **Save**. The layers have been flattened and the image has been sharpened. It is now ready to be printed.
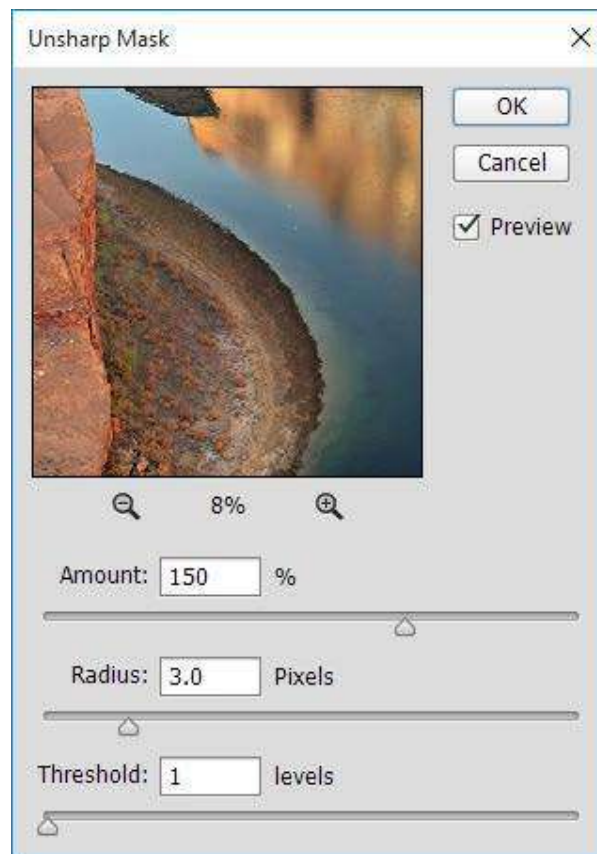
Figure 50 – Unsharp Mask Dialog Box

NOTE: The **Amount** control determines how much to increase the contrast of pixels; the **Radius** control determines the number of pixels surrounding the edge pixels that affect the sharpening; and the **Threshold** control determines how different a pixel must be from the surrounding area before it is considered an edge pixel and sharpened by the filter (see Figure 50 and Table 4).

Table 4 – Unsharp Mask Settings

Type of Image	Amount	Radius	Threshold
For soft objects (e.g., people, animals, flowers, and rainbows).	150%	1	10
For portraits.	75%	2	3
For cityscapes, urban photography, and travel.	150%	3	1
For general use.	85%	1	4
For web sharpening.	200%	0.3	0
For moderate sharpening (e.g., product shots).	120%	1	3
For maximum sharpening or out of focus images.	65%	4	3

To print an image:

1. Click the **File** menu, and then click **Print**. The **Print** dialog box opens (see Figure 51).
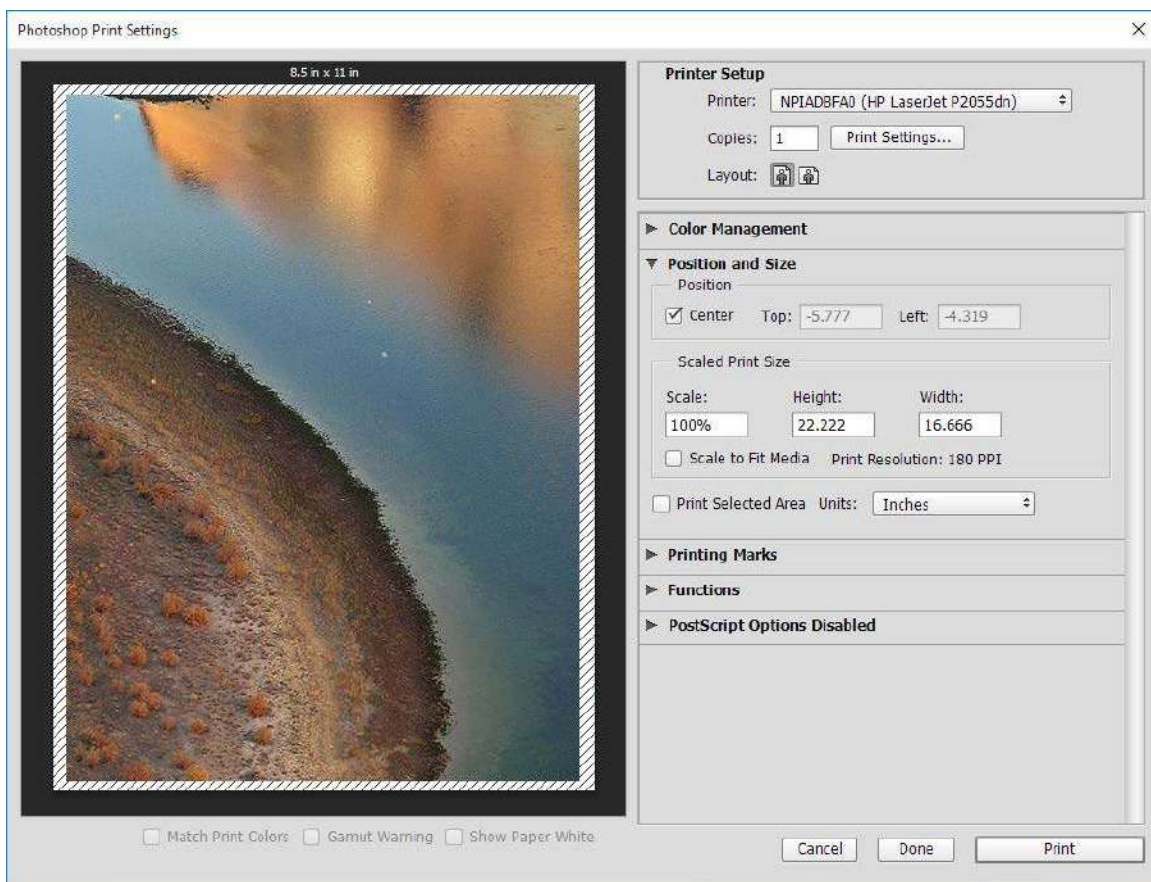
Figure 51 – Print Dialog Box

2. Click the **Printer** arrow and select the desired printer from the list.

   NOTE: Depending on the type of printer selected, a different dialog box may open offering varying levels of commands and printer features.

3. To set the paper orientation, click the **Portrait** button 🖼 or the **Landscape** button 🖼.
4. In the **Position and Size** section, under **Position**, select the **Center** check box to center the image on the paper.

NOTE: You can move and place the image anywhere within the printable area of the paper by deselecting the **Center** check box.

5. In the **Position and Size** section, under **Scaled Print Size**, select the **Scale to Fit Media** check box to fit the whole image to the print size of the paper.

    NOTE: When the **Scale to Fit Media** option is not selected, you can manually change the scale of the image by typing a number in the **Scale** box or dragging the corners of the image outline to rescale the image in the live preview pane located on the left side of the dialog box.

6. When finished setting the print options, click the **Print** button.