

**The American University in Cairo
Academic Computing Services**

Introduction to Adobe Photoshop 5.0

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Adobe Photoshop is a powerful, professional image-processing tool. It processes a variety of image formats. The quality of produced images is eligible for press production. Throughout this document, we will cover most of the basic features of this program.

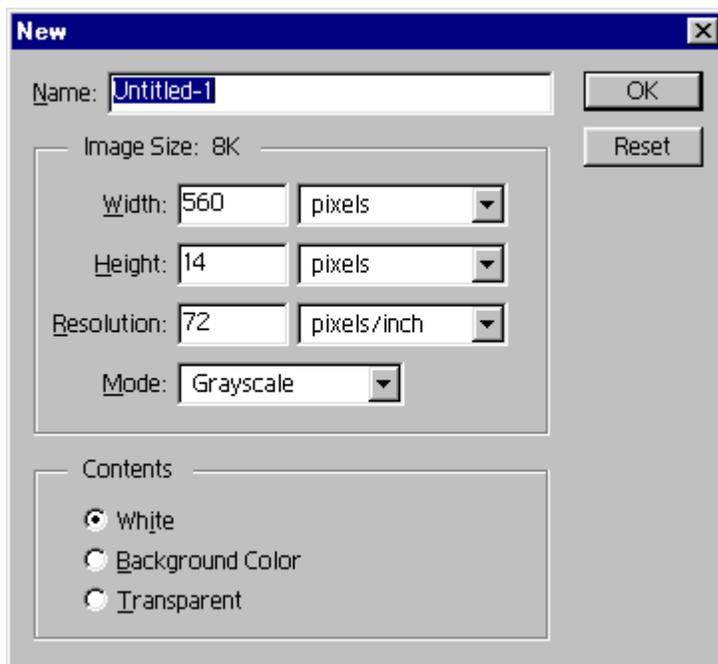
Start Adobe Photoshop

To start this program, click **Start** button. Choose **Programs**, then **Adobe**. This group of programs includes the **Adobe Photoshop 5.0** program. Click this item; the program starts.

New Document

To create a new image, choose **File** menu then **New** item. A window appears with the following fields as the image properties:

- **Name:** You can give the new image any title you wish by typing this title in this field.
- **Image Size:** This field shows the expected storage space needed for this image in terms of kilobytes.
- **Width:** the width of the image in terms of the measurement units stated in this field. The available units are pixels, inches, cm, points, picas, and columns.
- **Height:** the height of the image in terms of the selected measurement units. The available units are pixels, inches, cm, points, picas, and columns.
- **Resolution:** the number of displayed/printed pixels per inch or pixels per cm. The higher the resolution, the better the quality of the image. However, the higher the resolution, the bigger the storage size of the image and the longer time it takes to load the image online. A standard web-based image resolution would be 72 pixels/inch. However, the printed images should be at resolutions 200 pixels/inch or more.
- **Mode:** This field determines the color model used to display and print the image. Photoshop bases its color modes on established models for describing and reproducing color. This includes Bitmap, Grayscale, RGB color, CMYK color and Lab color. Common models include HSB (for hue, saturation, brightness); RGB (for red, green, blue); CMYK (for cyan, magenta, yellow, black); and Lab (for lightness, green-red axis, blue-yellow axis).
- **Contents:** this field specifies the background color of the image. It can be white in color, uses the currently selected background color, or with a transparent background color.



Let's create an image with the following settings: Name: test, Width=200 pixels, height= 200 pixels, resolution= 72 pixels/inch, mode=RGB color, Contents=White

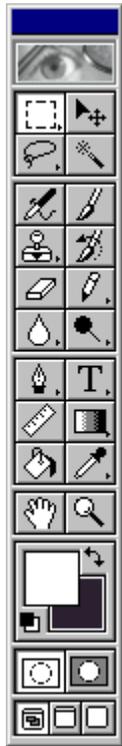
Overview on the Working Space

The Photoshop program opens the following working space:

- **Title Bar:** this blue bar includes the name of the Photoshop program augmented with the name of the current open document. On the right hand side of the bar there are 3 buttons for minimizing, resizing and closing the program.
- **Menu Bar:** the main menu of commands is displayed in this bar. It includes the **File, Edit, Image, Layer, Select, Filter, View, Window** and **Help** menus. All the needed commands for image processing are accessible from these menus
- **Toolbars:** a set of utilities toolbars and windows appear in the working space to facilitate the use of various tools and features. In case you need to access a missing toolbar, click **Window** menu, and then choose the hidden tool.
- **The Image Window:** Each open image is displayed in a separate window titled with its name and can be minimized, resized or closed. Next to the filename, appears the zooming size of the window (its value is a percent of the actual size of the image) and the color mode of this file.
- **Status bar:** At the bottom of the working area appears the status bar that shows the zooming factor used in the current active image window – in case more than one image are open simultaneously – where one can change this factor by typing the desired zoom factor. The document size and an instantaneous help - on each action you do or command you select - follow.

Toolbox

The toolbox consists of the following useful tools:



The **rectangular marquee tool** makes rectangular selections. If you place the mouse on top of this tool and drag it to the right, this set of tools shows up:



The **elliptical marquee tool** makes elliptical selections.

The **single row marquee tool** makes 1-pixel wide row selections.

The **single column marquee tool** makes 1-pixel wide column selections.

The **crop tool** trims images.



The **move tool** moves selections, layers, and guides. You place the mouse on top of the selection and drag the mouse to move the selection.



The **lasso tool** makes freehand selections. This tool has a set of sister tools:



The **polygon lasso tool** makes freehand and straight-edged selections.

The **magnetic lasso tool** draws selection borders that cling to the edges of objects.



The **magic wand tool** selects similarly colored areas. If you double-click this tool, an options palette appears where you can setup the featuring factor.



The **airbrush tool** paints soft-edged strokes. It applies gradual tones (including sprays of color) to an image. The edges of the stroke are more diffused than those created with the paintbrush tool. The pressure setting for the airbrush tool controls how quickly the spray of paint is applied. If you hold down the mouse button without dragging, you can build up color.



The **paintbrush tool** paints brush strokes.



The **clone stamp tool** paints with a copy of an image.

Its sister tool is the **pattern stamp tool** that paints with the selection as a pattern.



The **history brush tool** paints with the selected state or snapshot.



The **eraser tool** erases pixels and restores parts of an image to a previously saved state.



The **pencil tool** draws hard-edged freehand lines.

Its sister tool is the **line tool** that draws straight lines.

 The **blur tool** blurs hard edges in an image. Its sister tools are:   
 The **sharpen tool** sharpens soft edges.
 The **smudge tool** smudges data in an image.

 The **dodge tool** lightens areas in an image. Its sister tools are:   
 The **burn tool** darkens areas in an image.
 The **sponge tool** changes the color saturation of an area.

 The **pen tool** lets you draw smooth-edged paths. Its sister tools are:
     
 The **magnetic pen tool** draws paths that cling to the edges of objects.
 The **freeform pen tool** draws paths directly as you drag.
 The **add-anchor-point tool** adds anchor points to a path.
 The **delete-anchor-point tool** deletes anchor points from a path.
 The **direct-selection tool** selects and moves paths and parts of paths.
 The **convert-anchor-point tool** converts straight-line segments to curved segments, and vice versa.

 The **type tool** creates type on an image. It has a set of sister tools which are:
   
 The **type mask tool** creates selection borders in the shape of type.
 The **vertical type tool** creates vertical type on an image.
 The **vertical type mask tool** creates selection borders in the shape of the vertical type.

 The **measure tool** measures distances, locations, and angles.

 The **linear gradient tool** creates a straight-line blend between colors. Its sister tools are:    
 The **radial gradient tool** creates a circular blend between colors.
 The **angle gradient tool** creates an angular blend between colors.
 The **reflected gradient tool** creates symmetric straight-line blends between colors.
 The **diamond gradient tool** creates diamond-shaped blends between colors.

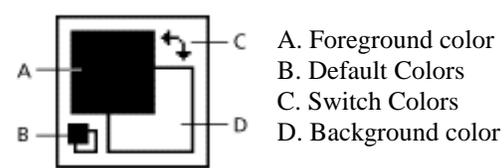
 The **paint bucket tool** fills similarly colored areas with the foreground color.

 The **eyedropper tool** samples colors in an image. Its sister tool is the **color sampler tool** that samples up to four locations simultaneously.

 The **hand tool** moves an image within its window.

 The **zoom tool** magnifies and reduces the view of an image.

The current foreground color appears in the top color selection box in the toolbox, the background color in the lower box. The default foreground color is black, and the default background is white.

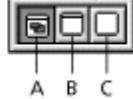


To reverse the foreground and background colors, click the Switch Colors icon in the toolbox.
 To return to the default foreground and background colors, click the Default Colors icon in the toolbox.
 To change the foreground (or background) color, click the top (or lower) color selection box in the toolbox. A palette of colors pops up. Select the desired color.

 **Quick Mask mode** lets you edit any selection as a mask without using the Channels palette and while viewing your image.

To return back to the standard mode, click the standard mode button 

To change the viewing mode of image windows, click a window control:



- A. Standard screen mode
- B. Full screen mode with menu bar
- C. Full screen mode

Feathering

Blurs edges by building a transition boundary between the selection and its surrounding pixels. This blurring can cause some loss of detail at the edge of the selection.

You can define feathering for the marquee, lasso, polygon lasso, or magnetic lasso tool as you use the tool, or you can add feathering to an existing selection. Feathering effects become apparent when you move, cut, or copy the selection.

Type tool

If you wish to type text within the image, use the **Type** tool in the toolbox. Once you click inside the image, a window pops up with the following fields:

Font: through this field, you can decide the font type of the selected text. Moreover, you can make the text regular, bold, italic, or both.

Size: this field allows you to specify the font size of the selected text. Moreover, you specify the unit of measurement of the font size whether points or pixels.

Leading: this field specifies the spacing between baselines and is measured in the units you specify in the Type Tool dialog box.

Kerning: This field controls the spacing between two characters. You can control kerning manually, or you can turn on the auto-kern field.

Tracking: tracking inserts uniform spacing between more than two characters in

selected type. Use tracking to adjust the spacing of a selected word or of an entire block of text.

Positive kerning or tracking values move characters apart; negative values move characters closer together.

Color: this field allows you to choose the desired fill color of the selected text.

Baseline: It controls the distance that text appears from its baseline, either raising or lowering the selected type to create superscripts or subscripts.

Alignment: You can align the typed text to the left, in the center, or to the right.

Preview: if this field is checked a view of the text with the current settings appears in the image window.

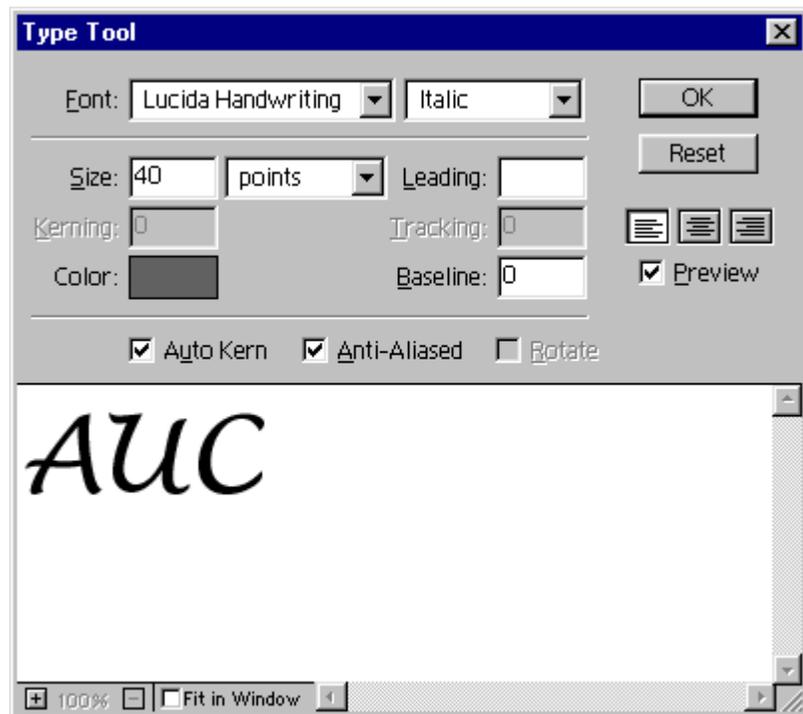
Anti-Aliased: this option removes jagged edges from the typed text

Rotate: When you create vertical type, you can select the **Rotate** option to rotate the character direction by 90°. The Rotate option does not affect double-byte characters.

Text Area: in this area you can type the text you that should appear in the image

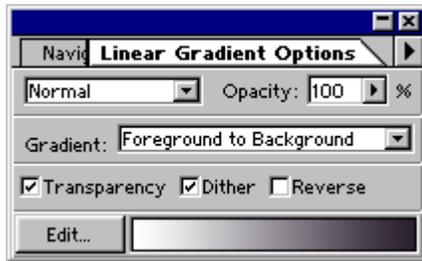
Finally, you press the **OK** button to apply these settings.

Anytime you wish to change the settings of the typed text, you double-click the T in the text layer.



Gradient Editing

You can apply gradient fill to any selected area. Choose the gradient tool from the toolbox. If you double-click the gradient tool, the linear gradient window appears. This window includes the following fields:



Opacity: this field sets up the level of transparency of the gradient fill.

Gradient: you can select the desired type of gradient from the available list. Among the popular gradients, the list includes: Foreground to Background (starts by the current foreground color and gradually changes the color to reach the current background color), Foreground to Transparent, Transparent Rainbow and more. If you wish to edit any of the available gradients to create a customized gradient fill, press the **Edit**

button. The **Gradient Editor** window pops up with the following fields:

- List of gradients.
- **Adjust:** to decide whether to adjust the colors or the transparency level.
- The scale of colors allows you to change any of the colors involved in the composition of the gradient. You can add new colors by clicking in the desired position along the color scale. To change the point of transfer from one color to another, slide the diamond shape.
- You can duplicate a gradient by pressing the **Duplicate** button.
- You can remove a gradient from the list by pressing **Remove** button.
- You can save gradients in separate files through the **Save** button.
- You can load gradients through the **Load** button.

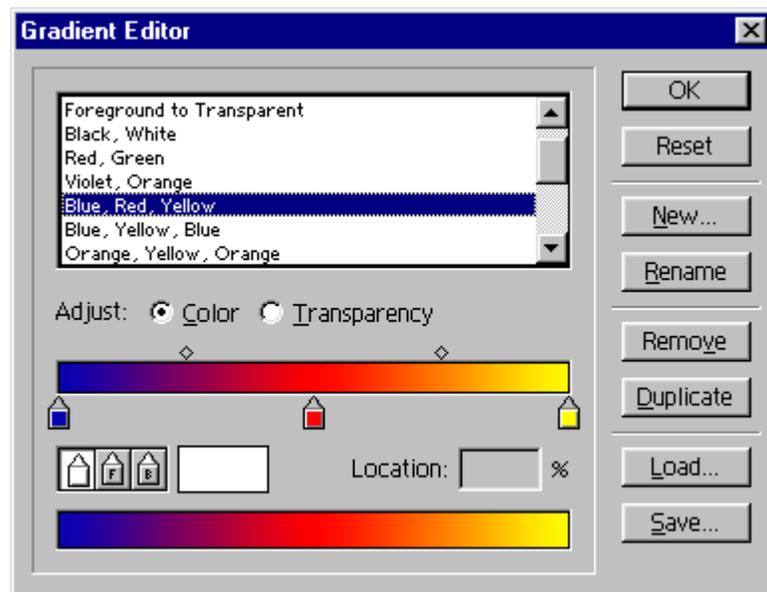
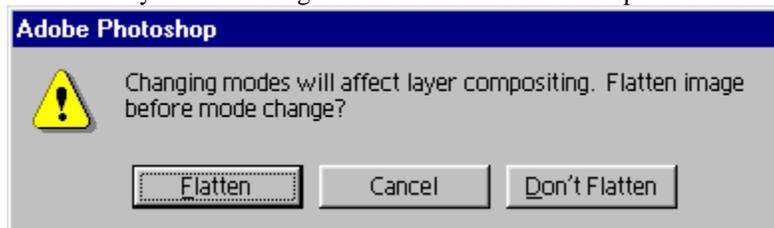


Image Mode Adjustment

One can convert the image from one mode to another through the **Image** menu, **Mode** item. There is a list of the available modes to choose among including Bitmap, Grayscale, RGB Color, Indexed Color, CMYK Color, Lab Color, and Multichannel. As you select a new mode, you will be prompted whether or not to flatten the layers of the image. You have the choice to keep them or flatten them all into one layer.

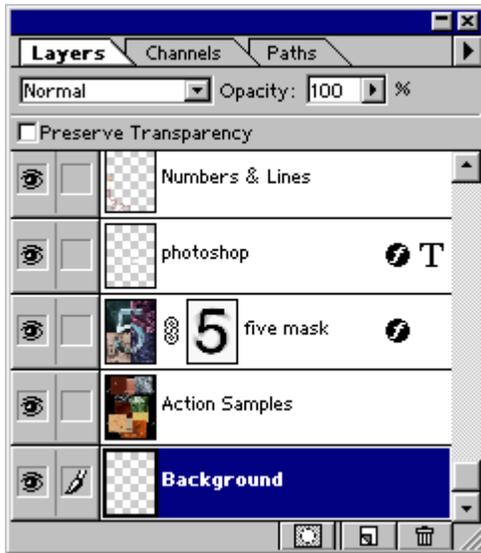


Layers Palette

Adobe Photoshop treats any image as a set of layers on top of each other. This gives great flexibility in applying any effect on separate objects in separate layers. Many effects automatically paste the result in a

new layer. However, we can create new layers by choosing **Layer** menu, **New** item, **Layer** option. A window pops up with the fields of the layer name, percent of opacity and the mode of blending the colors in this layer with the colors in the layers below.

All the created layers are listed in the **Layers Palette**. To display this palette, choose **Window** menu, **Show Layers** item. The palette consists of the following:



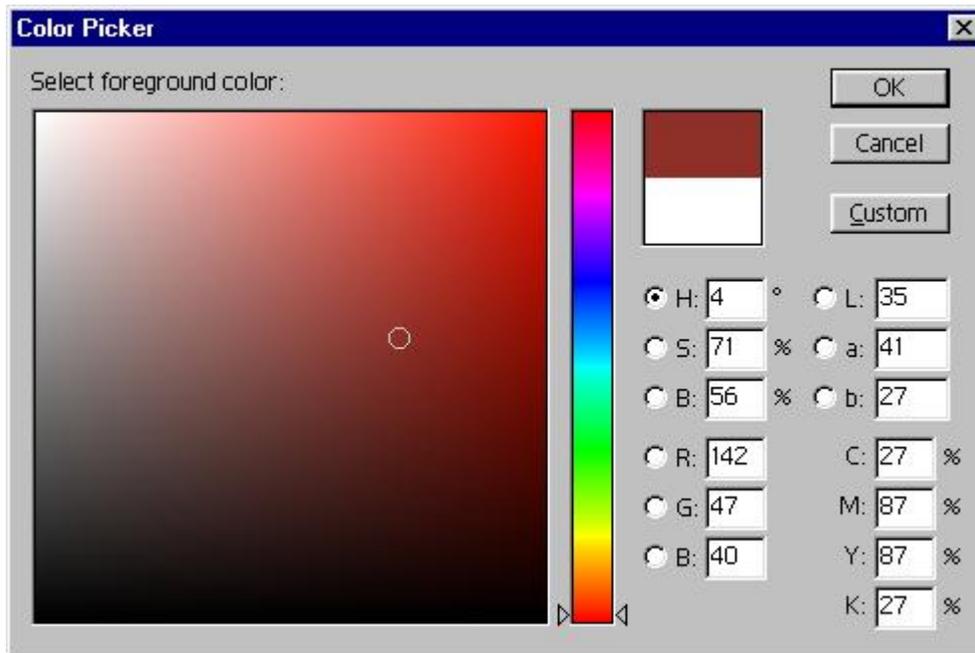
- A list of the currently available layers arranged from top to bottom, where each one is displayed as a thumbnail with the layer name and indicators of the applied effects or type tool.
- On the left hand side of each layer there might be an eye to indicate that this layer is visible in the final shape of the image. Otherwise, this layer is hidden or invisible. If you wish to hide a layer, click on the eye to hide it.
- If there is a brush icon next to the eye, then this layer is the one currently being edited. The selected layer is highlighted with the blue color.
- At the top of the list there is layer mode list and the opacity percent. They are applicable to the selected layer.
- Photoshop, by default, creates a layer named Background as the first layer in your image. You may rename it, or delete it.
- To move a layer to the bottom or at a higher level, drag the layer to the position you wish to place it in.
- To delete a layer, select the layer then press **Layer** menu, **Delete Layer** item. Alternatively, you may drag the layer into the trash drawn at the right bottom corner of the Layers Palette.
- If you wish to merge the currently selected layer with the one directly below it, choose **Layer** menu, **Merge Down** item.
- To merge set of layers even if they are not adjacent, select them as the visible layers, then choose **Layer** menu, **Merge Visible** item.
- Most of these commands can be also accessed from the arrow menu located at the right top corner of the Layers Palette where you can create a new layer, delete the selected layer, merge layers, edit the layer options, flatten the whole image, or edit the palette options.
- To edit the effect applied on a certain layer, double-click the *f* icon displayed next to the layer name.
- If you wish to edit the text typed in a certain layer, double-click the T icon displayed next to the layer name.
- To link two layers together by a chain, select one of them then click on the brush area of the other layer; a chain will appear to indicate a link between the two layers.

Color Palette

To select a foreground color or a background color or any needed color during processing, double-click the current displayed color box; a color picker window will appear with the following options:

- To the right side, you can notice a wide rectangular area with a gradient of the current color from which you can pick the desired degree of this color.
- Next comes a vertical scale of colors, from which you may pick the color you want. Accordingly, the gradient of the picked color will appear in the wide area.
- This scale is followed by two small rectangles colored by the current color and the new picked color respectively.
- Under them there is a list of numbers indicating the settings of the newly picked color in terms of Hue (indicated by H), Saturation (indicated by S), Brightness (indicated by B).
- The RGB components of the color are listed as R (stands for Red), G (stands for Green), B (stands for Blue).
- Next comes the degree of luminosity (represented by L).
- Finally the CYMK components of the color are listed as C (stands for Cyan), Y (stands for Yellow), M (stands for Magenta), and K (stands for Black).
- If you wish to pick a customized color or to get a pantone color, click the **Custom** button.

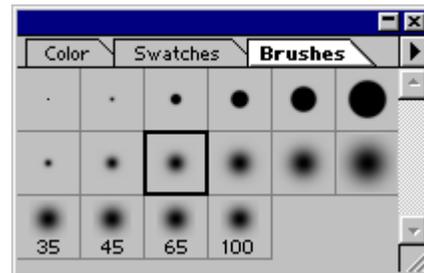
Finally you press the **OK** button to apply the newly picked color.



Brushes Palette

The brush sizes and shapes available for painting and editing appear in the Brushes palette. You can add new brushes or delete ones you don't need. You also can use part of an image to create a custom brush shape. Brush settings are retained for each of the painting tools (airbrush, paintbrush, eraser, pencil) and editing tools (history brush, rubber stamp, smudge, focus, toning).

To display the Brushes Palette, choose **Window** menu, **Show Brushes** item.



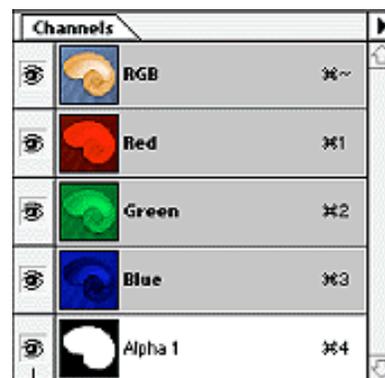
If you double-click the paintbrush, the Paintbrush Options window pops up with the following option settings: Blending Mode, Opacity, Fade (number of steps taken by the brush to paint a faded color), Wet Edges (if you check it, the edges of the brush become wet in color). The same option settings can be applied to the airbrush tool by double-clicking it.

Channels Palette

The Channels palette lets you create and manage channels and monitor the effects of editing. The palette lists all channels in the image—a composite channel first (for RGB, CMYK, and Lab images), then individual color channels, spot color channels, and finally alpha channels. Appearing to the left of the channel name, a thumbnail of the channel's contents automatically updates as you edit the channel.

To display the channels palette, choose **Window** menu, then **Show Channels**.

Accordingly, you can hide or show any channel separately.



Select Options

Through the select tool and the Select menu, you can apply various effects on selections.

- From **Select** menu, **All** item, you can select the whole image or layer.
- From **Select** menu, **Deselect** item, you can remove the selection currently visible.

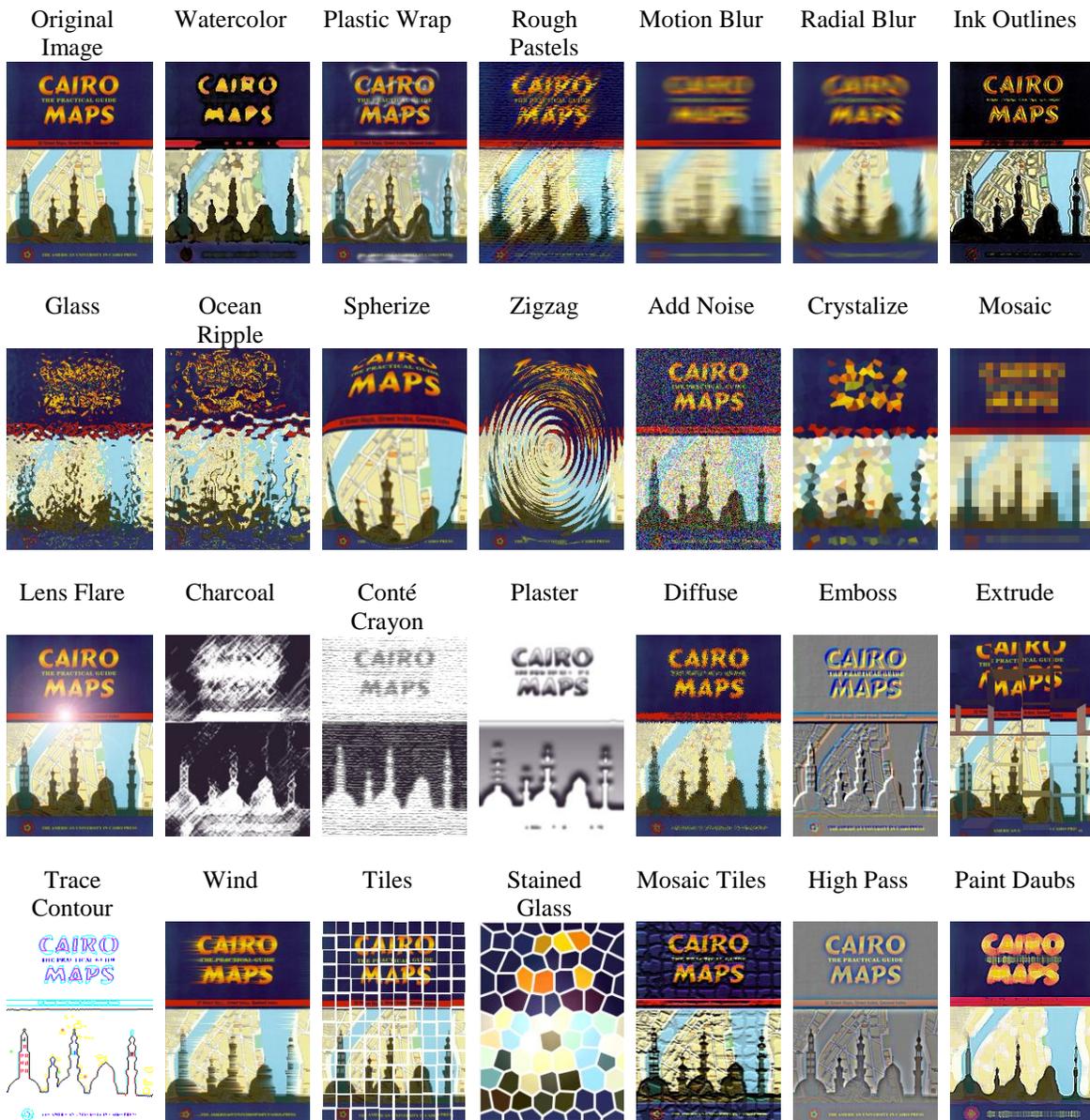
- From **Select** menu, **Inverse** item, you can invert the selection applied on the layer or image.
- To select a color range using sampled colors, choose **Select** menu, **Color Range** item.
- You can modify the selection through **Select** menu, **Modify** item.
- Transformations can be applied on the selection area using **Select** menu, **Transform Selection** item.
- You can save selection for later use in the same image or in other images, choose **Select** menu, **Save Selection** item.
- You can load selections saved from the same image or other images, choose **Select** menu, **Load Selection** item.

Filters

Photoshop has a rich list of filters that can be applied to any layer or selection in the image to impose artistic effects. You access these filters from **Filter** menu.

Typed Text does not undergo these filters except if it is rendered (press **Layer** menu, **Type** item, **Render Layer** option).

Let's view the effect of some of the popular filters on the following image:

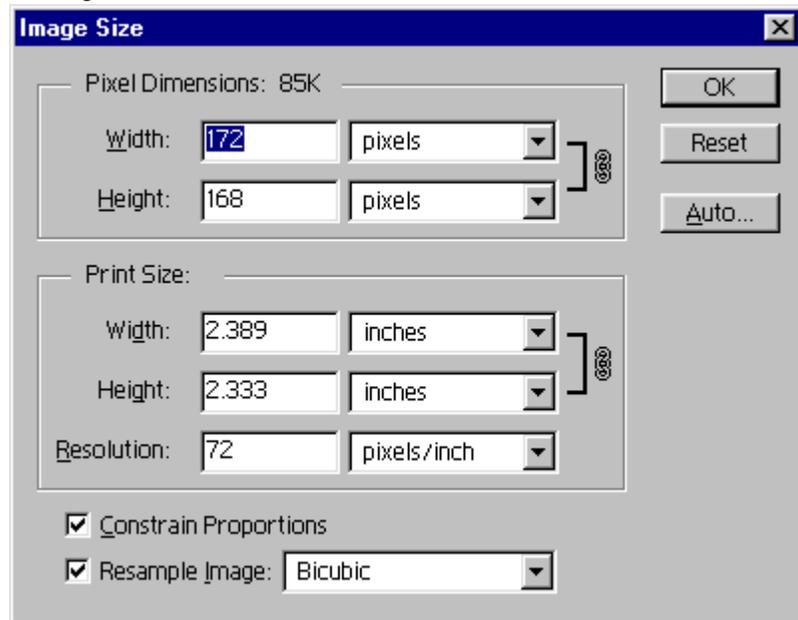


You can combine as much filters in the same layer or image as you wish. Finally, Photoshop has adopted the digital watermark technology to preserve the artist's copyright of his masterpiece. This digital watermark is invisible but can be detected by software. The digital watermark tolerates filters and image processing.

Resize Image

When preparing images for print, it's useful to specify image size in terms of the printed dimensions and the image resolution. These two measurements determine the total pixel count and therefore the file size of the image. If you wish to change the size of the image, choose **Image** menu, **Image Size** item. The **Image Size** window pops up with the following fields:

- Pixel Dimensions: the on-screen width and height of the image.
- Print Size: the width and height of the image on the printed-paper. Moreover, the resolution can be adjusted in this field.
- Constrain Proportions: enforces to keep the proportion between width and height as we change the dimensions.
- Resample Image: to enforce resampling the image after changing the image dimensions.



To change only the print dimensions or only the resolution and adjust the total number of pixels in the image proportionately, make sure that Resample Image is selected.

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Save As Formats

The Photoshop document (represented by the **psd** file extension) is the default format in which images are stored. It preserves all the layers and applied effects in the image, which enables changes at any time.

However, this format requires big storage area. To display the final image on the web, you must save a copy of this image in the **JPG** format or the **GIF** format. This can be done through **File** menu, **Save A Copy** item. Then select the **jpg** file format. For the **GIF** format, choose **File** menu, **Export** item, **GIF98a format** option. Notice that only the visible layers are included in the resulting JPG or GIF file.

Photoshop opens a variety of image file formats – through **File** menu, **Open** item - such as TIFF files (taken from a scanner), GIF, JPG, BMP, EPS (for postscript), PCD (Kodak Photo CD), PDF, PCT (PICT file format) and more. Furthermore, Photoshop can be adjusted to receive images directly from a scanner through **File** menu, **Import** item.

Inside Photoshop you can open more than one image simultaneously where you can apply copy and paste among these images.