

# **Using Adobe Photoshop to Create Digital Cartoons or Caricatures (Third File)**

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**First Draft: Thursday, March 8, 2012**

# **Part One:**

## **Basic Sets of Photoshop Tools and Settings Used to Create Cartoon and Caricature-Style Images**

### **Section Five:**

#### **Using Filter-Artistic-Poster Edges and Other Tools to Create Two-dimensional Digital Cartoon or Caricature Images out of Three-dimensional Photographic Images**

In this Section, Photoshop tools and settings previously discussed will be reviewed (*Figures 17A through 18D*). These tools and settings are used to create cartoon or caricature-looking color

tone and distorted geometry out of normal photographic images; however, by traditional definition, a cartoon or caricature is basically a two-dimensional line art, not a three-dimensional looking photo. Thus, additional tools and settings must be used to the edges of the humans or animal bodies, to other relevant objects, etc.; the Poster Edges Tool from the Artistic submenu of the Filter menu could be used to accomplish this purpose (*Figures 19A through 19L*).

The steps for accomplishing the above tasks are explained in details in the footnotes of the *Figures* included in this Section.



*Figure 17A. The original image created in Discreet 3D Studio MAX software program.*



*Figure 17B. Using the Twirl Tool with a Brush Size large enough to cover the head of the animal.*



Figure 17B. Twirling with increased Brush Size large enough to cover both animals.



Figure 17C. Twirling with still increased Brush Size large enough to cover almost the entire image.



Figure 17D (left). Increasing the size of the head with a Brush Size large enough to cover both animals, with the Bloat Tool.

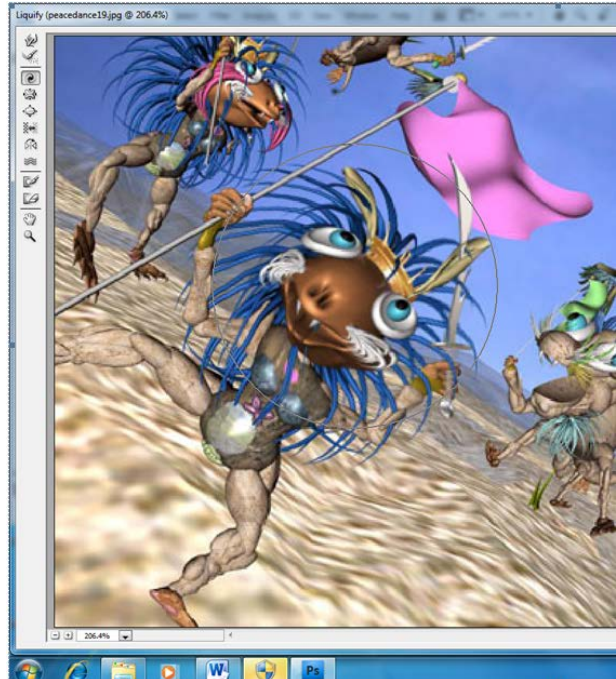


Figure 17E (right). Increasing the size of the nose of the frontal animal with a Brush Size large enough to cover the nose and the mouth, with the Bloat Tool, dragging leftwards to distort the selected portion of the image.

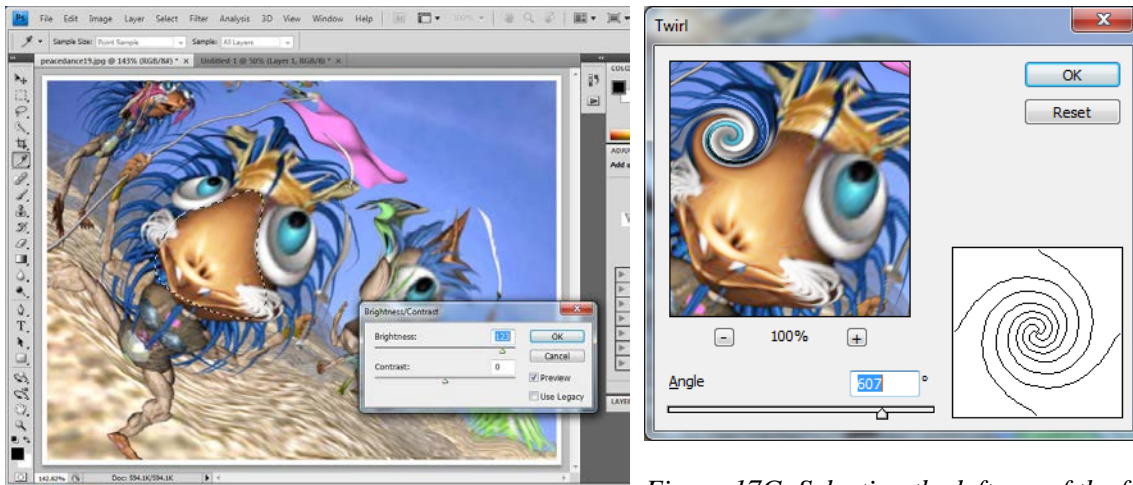


Figure 17F. Selecting the face of the frontal animal and applying Brightness control to lighten it up.

Figure 17G. Selecting the left eye of the frontal animal and applying a Twirl action.



Figure 17H. Selecting the Forward Warp Tool from the Liquify submenu of the Filter menu, dragging the mouse button leftward on the mouth lips to extend their lengths.

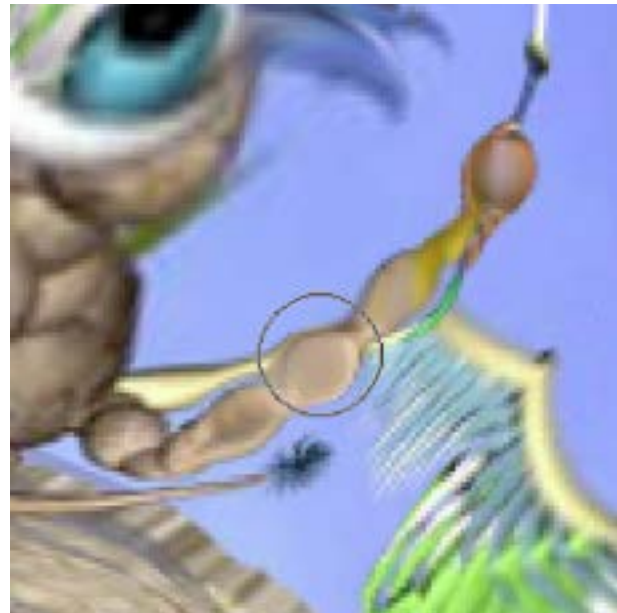


Figure 17J. Selecting the Bloat Tool from the Liquify submenu of the Filter menu to increase the size of the arm.

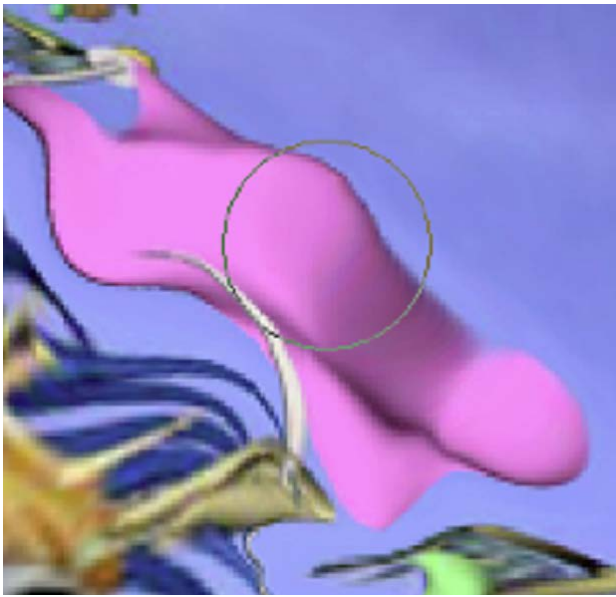


Figure 17K. Selecting the Forward Warp Tool from the Liquify submenu of the Filter menu, dragging the mouse button outward from the edge of the flag to increase its size.

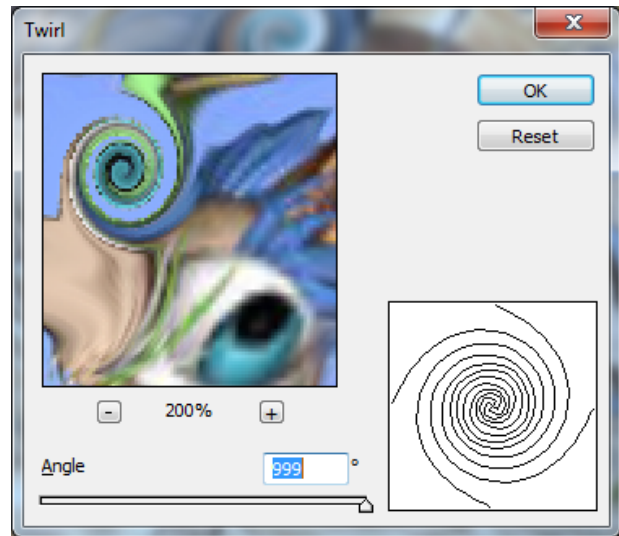


Figure 17L. Applying a Twirl effect on the left eye of the animal on the rear.

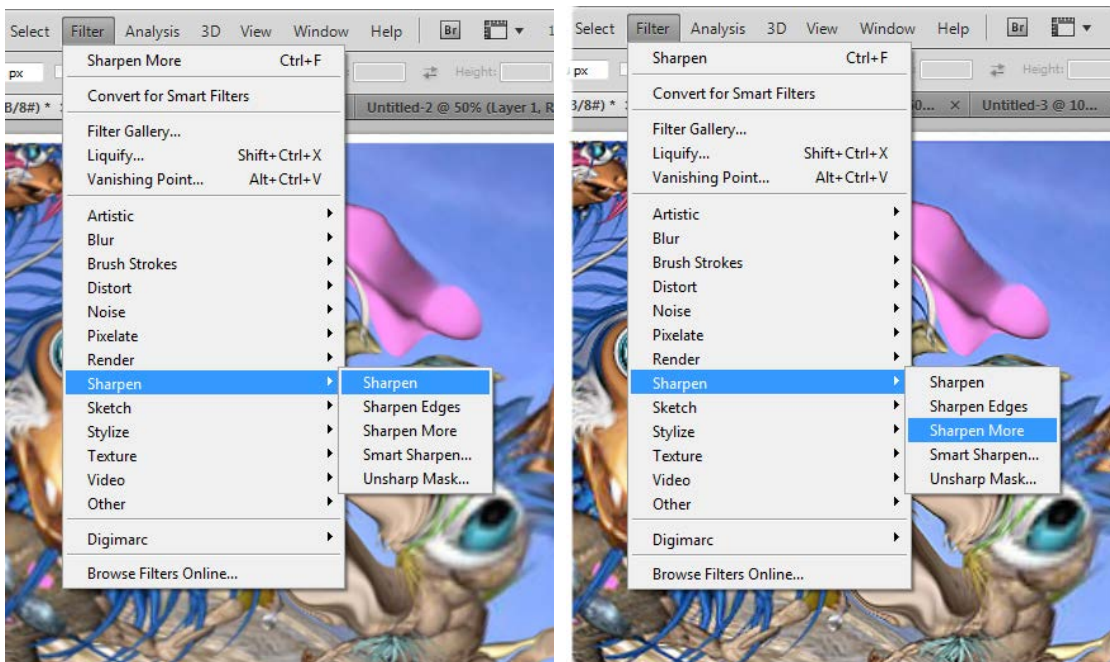


Figure 18A. Sharpening the image in preparation to convert the photographic-looking cartoonized image into one with black outlines, using the Sharpen and Sharpen More Tools from the Sharpen submenu of the Filter menu. In Photoshop, it appears that sharper images could yield better results when the Poster Edges Tool from the Artistic submenu of the Filter menu is used to create outlines on the edges of objects.

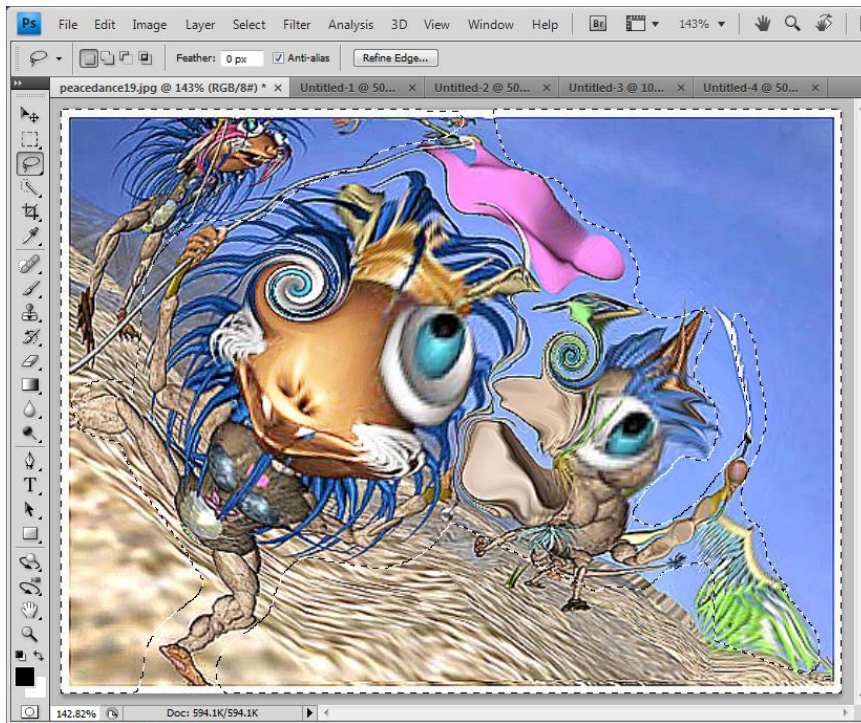


Figure 18B. Using the Lasso Tool to select the surrounding areas outside of the imageries of both animals, and applying a convenient Feather (30 pixels in this case).

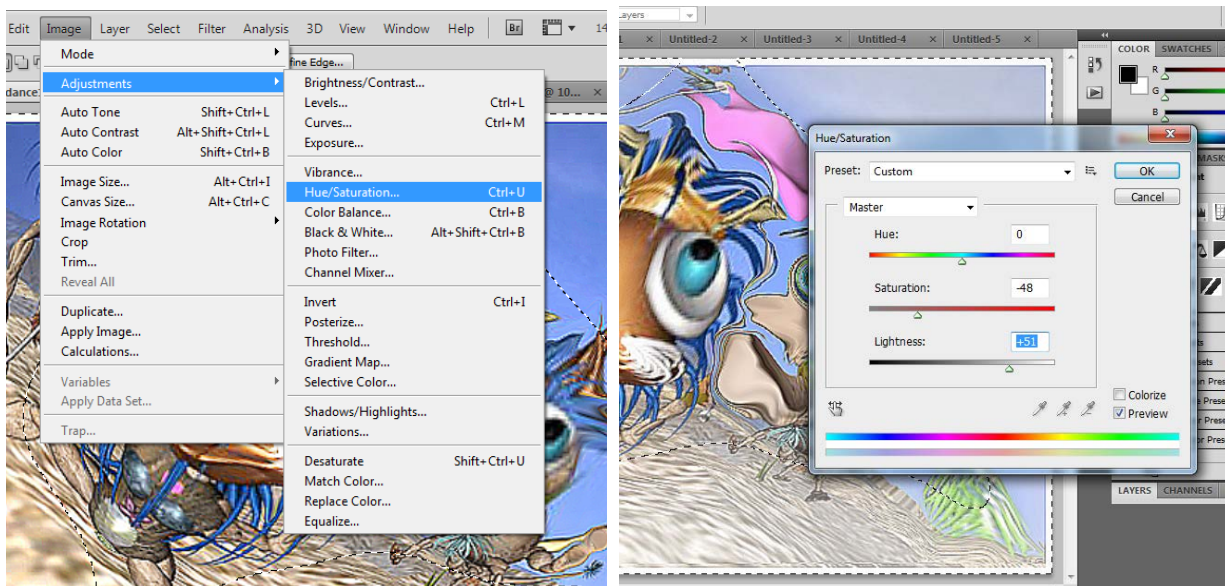
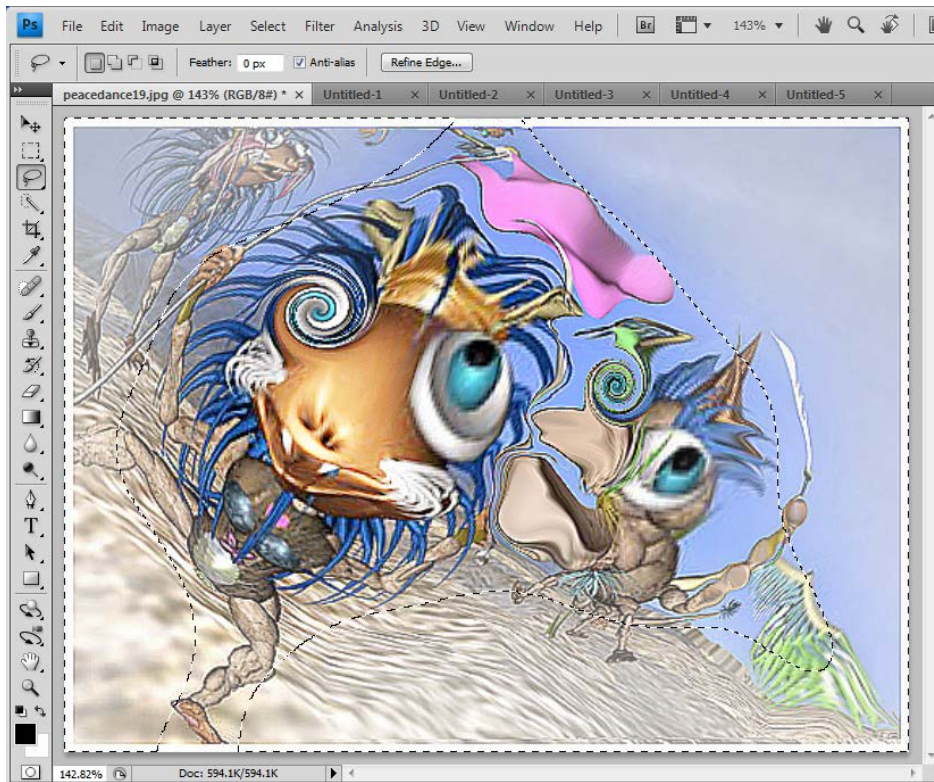
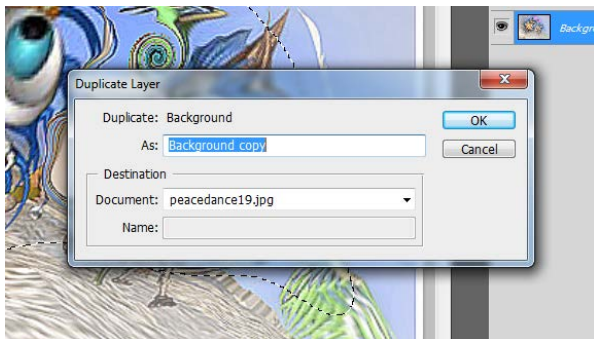


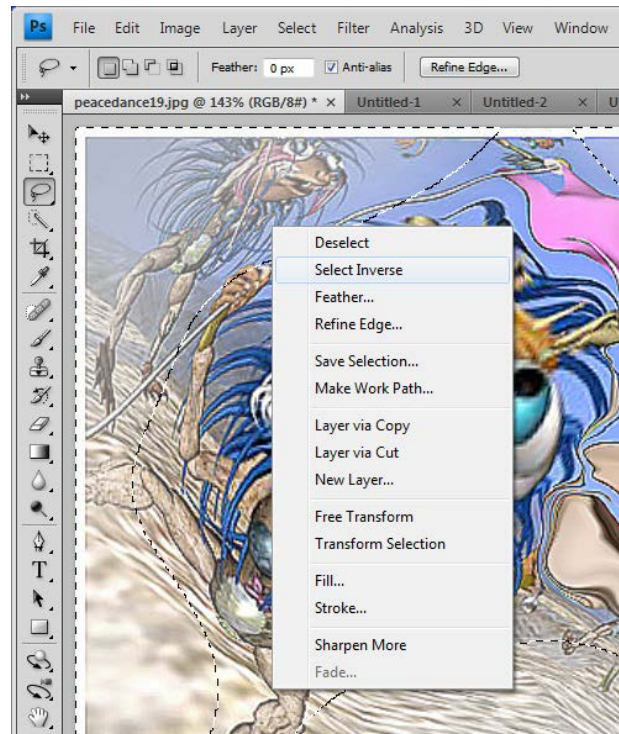
Figure 18C. Changing the Hue, Saturation, and Lightness values with the Hue/Saturation Tool.



*Figure 18D. The resulted image ready for further processing into a digital line art cartoon.*



*Figure 19A (left). Duplicating the layer to save the original and to prepare for further composite results if needed, selecting the duplicate layer for the following steps.*



*Figure 19B (right). Right-clicking on the screen to open up the contextual menu, and selecting the Select Inverse option to select the main images of both animals, for the use of Poster Edges Tool.*



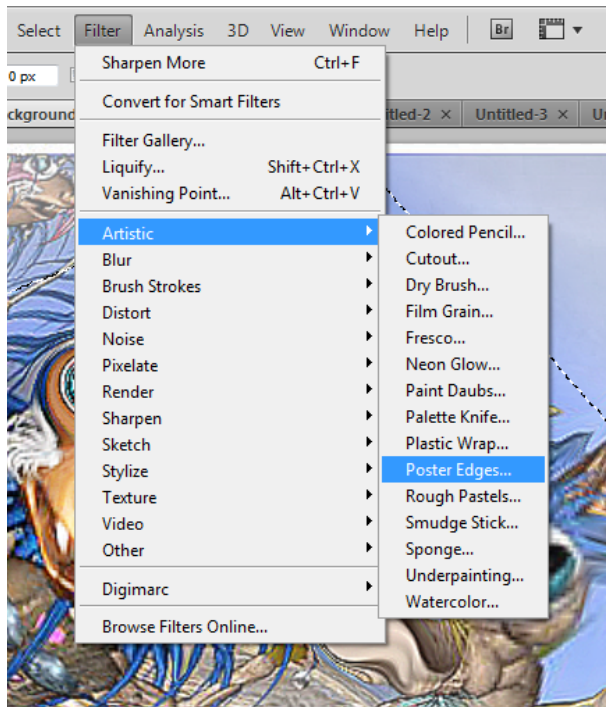


Figure 19C. Selecting the Poster Edges Tool from the Artistic submenu of the Filter menu.

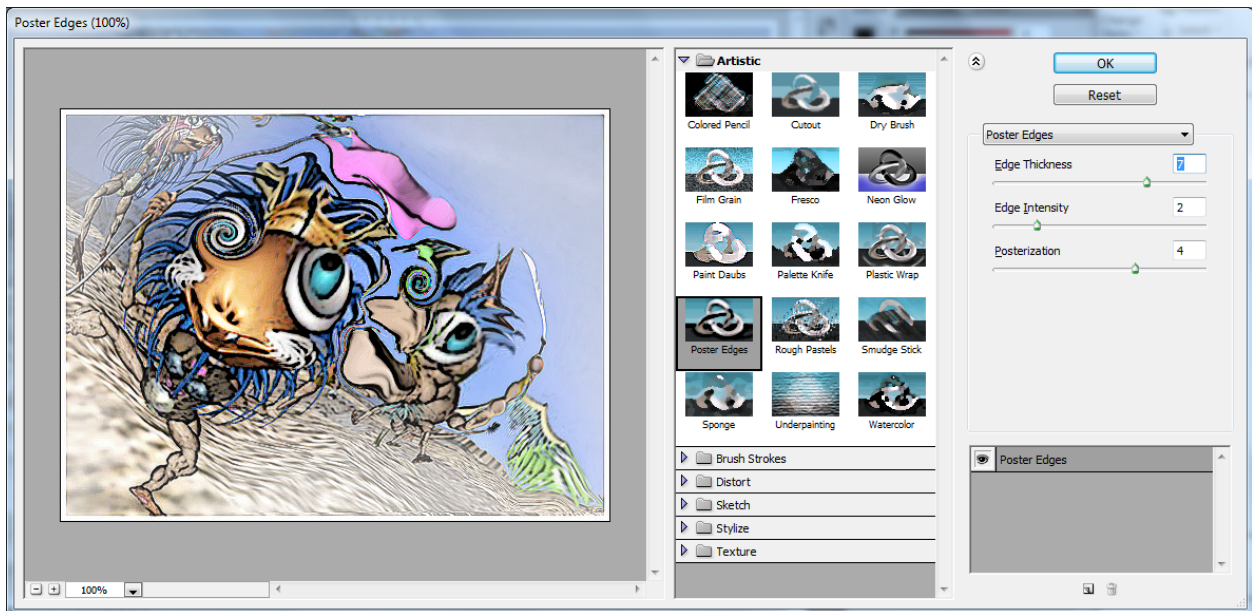


Figure 19D. Dragging the sliders beneath the Edge Thickness, Edge Intensity, and Posterization bars until a desired result is seen, and clicking the OK button to apply the effect.



Figure 19E. The outcome achieved so far.

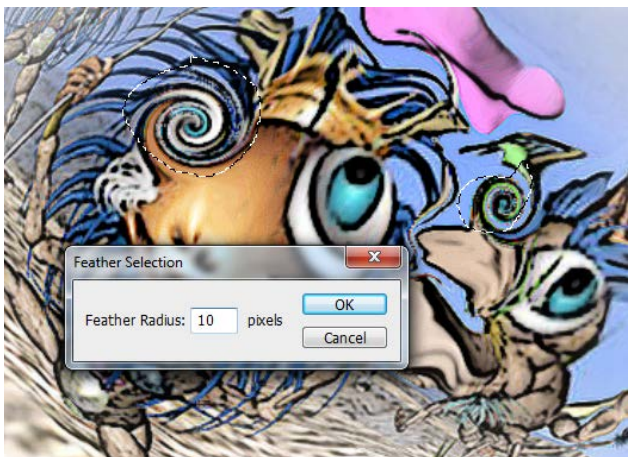


Figure 19F. Using the Lasso Tool to select the left eyes of both animals, and applying a 10-pixel Feather on the selections.



Figure 19G. Pressing the Delete key on the keyboard twice to delete the outlined images of the eyes from the duplicate layer.

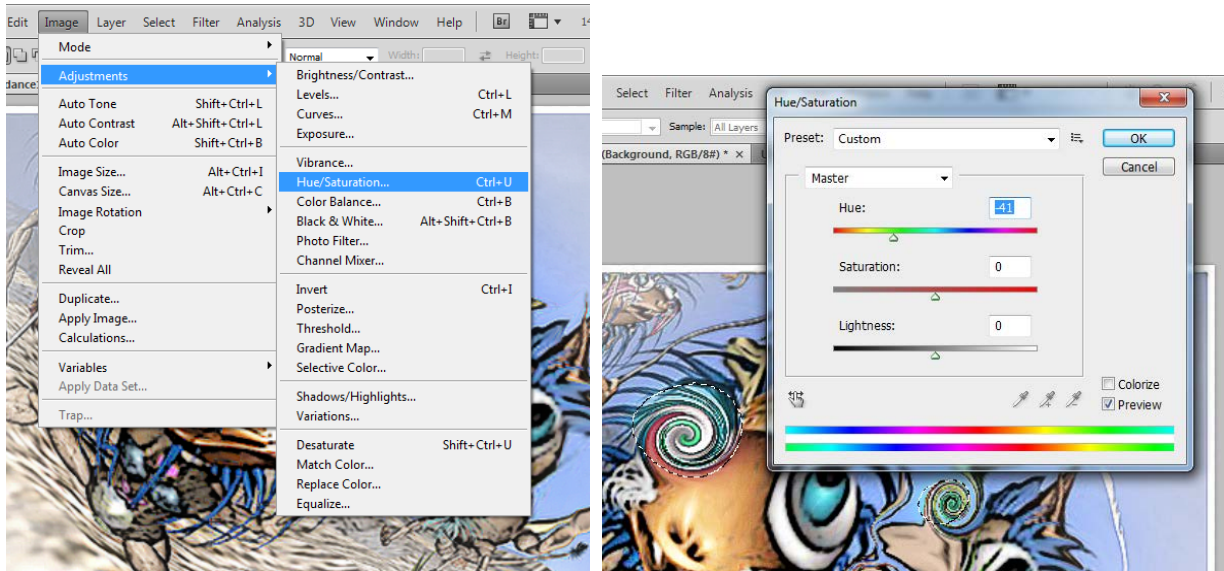


Figure 19H. Switching to the original layer, selecting the Hue/Saturation Tool from the Adjustments submenu of the Image menu (left), changing the Hue value of the original layer in the Hue/Saturation tool window; the eyes in the original layer is shown through the cutouts in the duplicate layer (right).

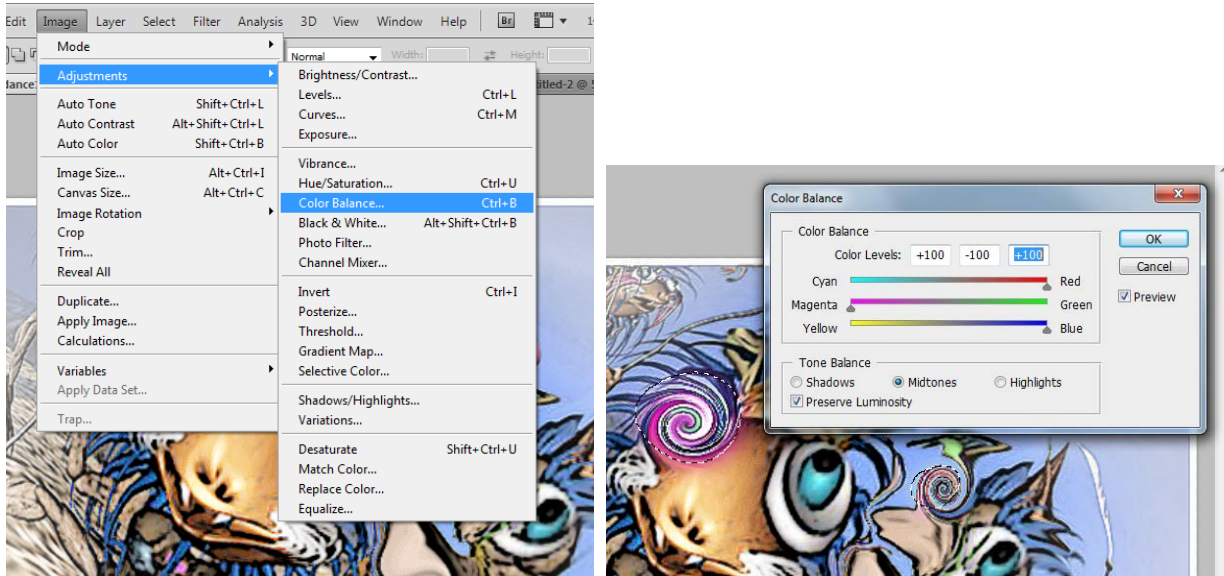


Figure 19J. Using the Color Balance Tool from the Adjustments submenu of the Image menu to the original layer.

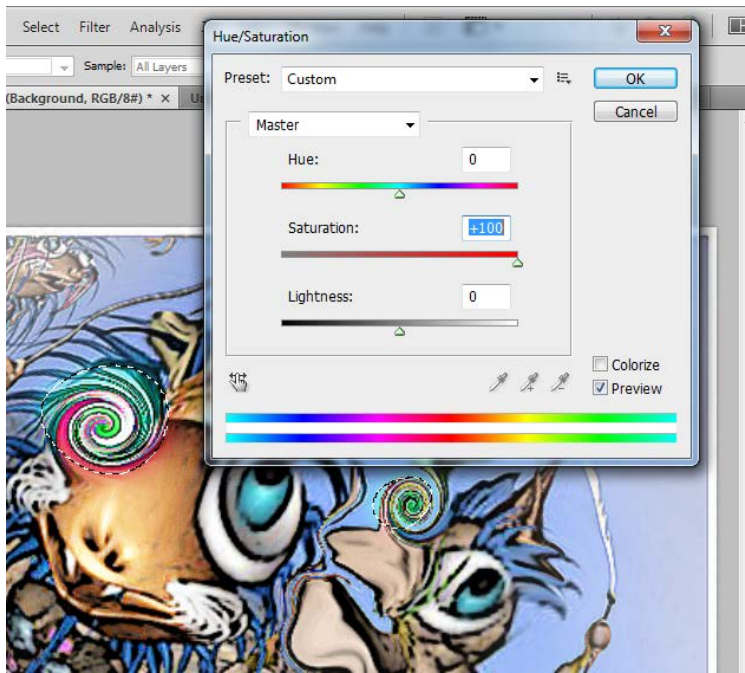


Figure 19K. Using the Hue/Saturation Tool again on the original layer.



Figure 19L. The final result.

# Part Two: Mini-Projects for the Creation of Cartoon and Caricature-Style Images out of Normal Digital Photos

## Mini-Project One: The Happy Cat

Photoshop tools and setting explored in the previous portion of this Research Paper will be used to create a cartoon-looking line-art work of a happy cat out of a normal digital photo of a cat (*Figure 20A through Figure 20Q*).



*Figure 20A. The original digital photo of a cat found at the University of Georgia campus, around 2009.*

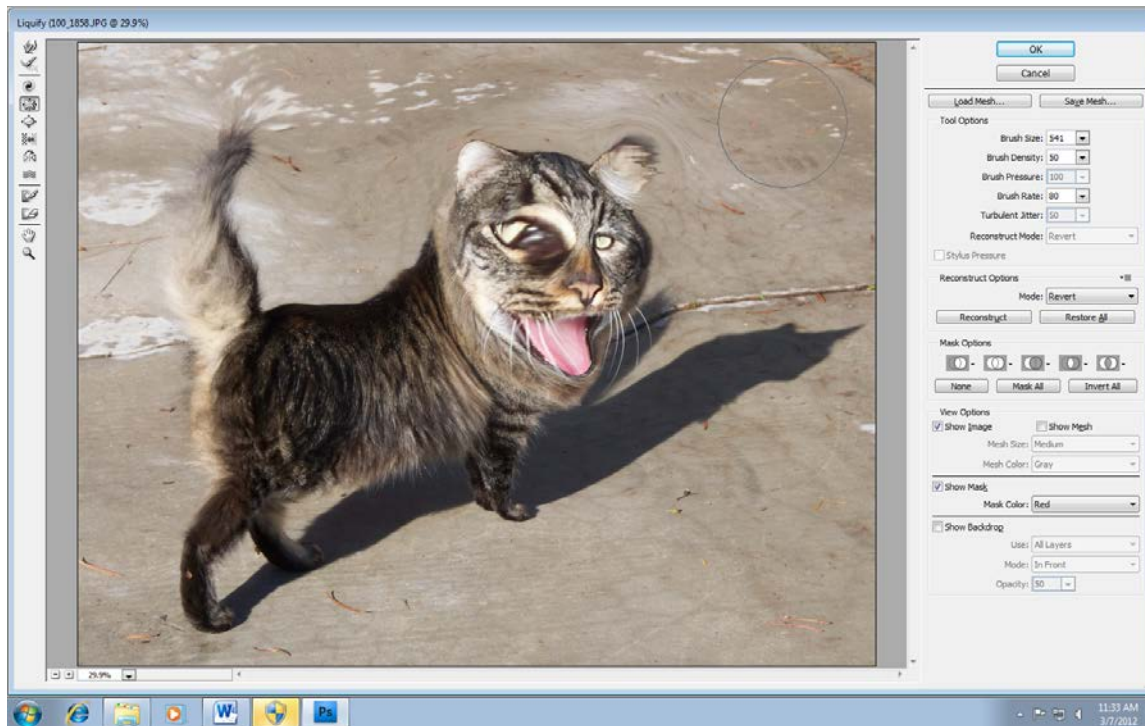


Figure 20B. Using the Bloat Tool from the Liquify submenu of the Filter menu to increase the size of some portions of the image, so as to achieve a basic cartoon outlook.

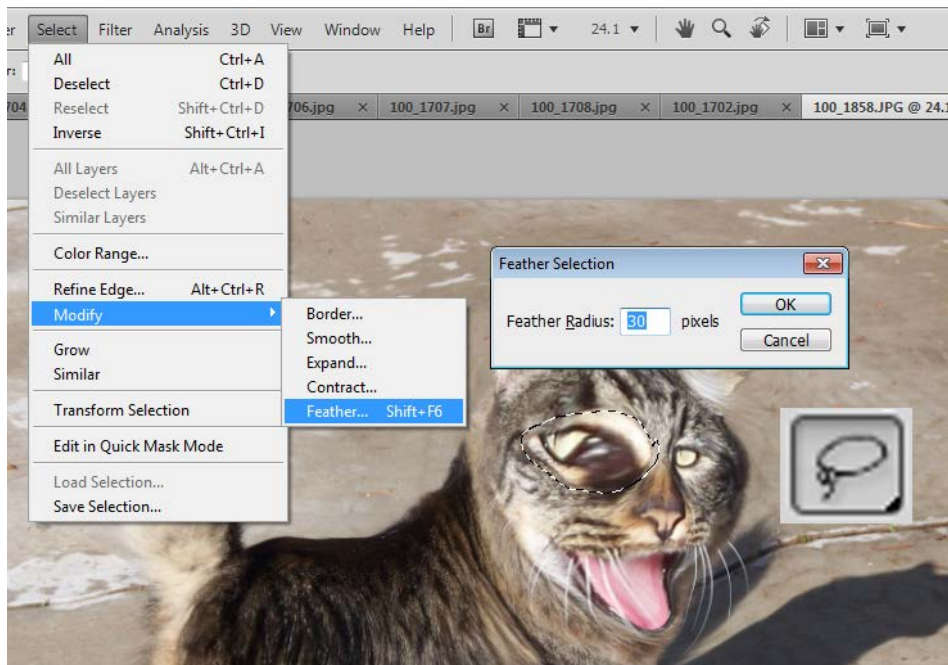
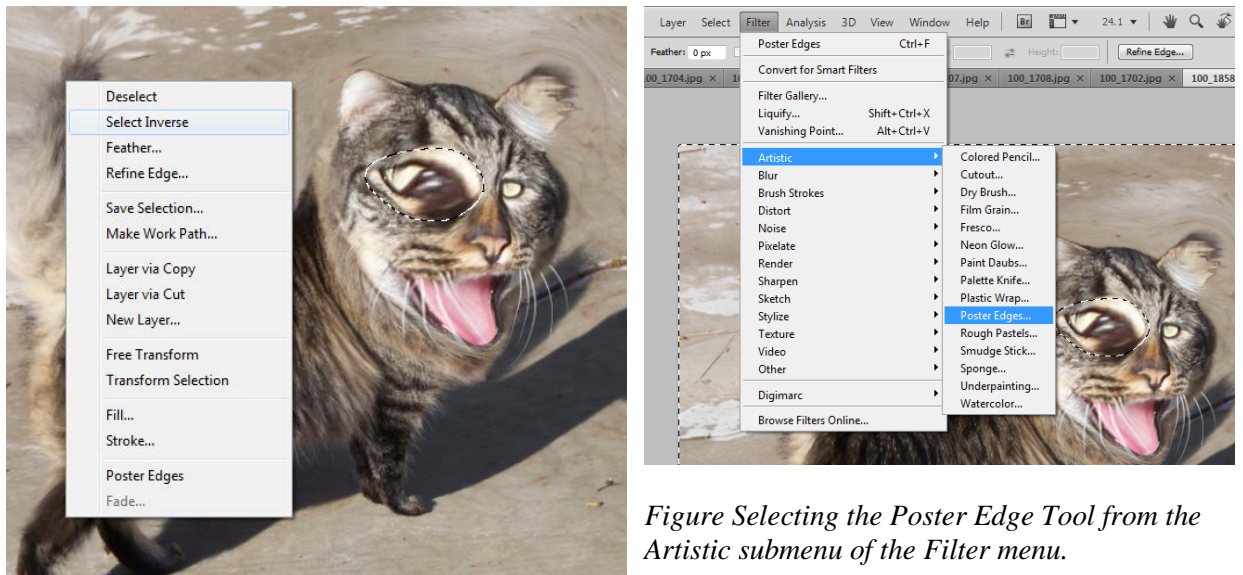
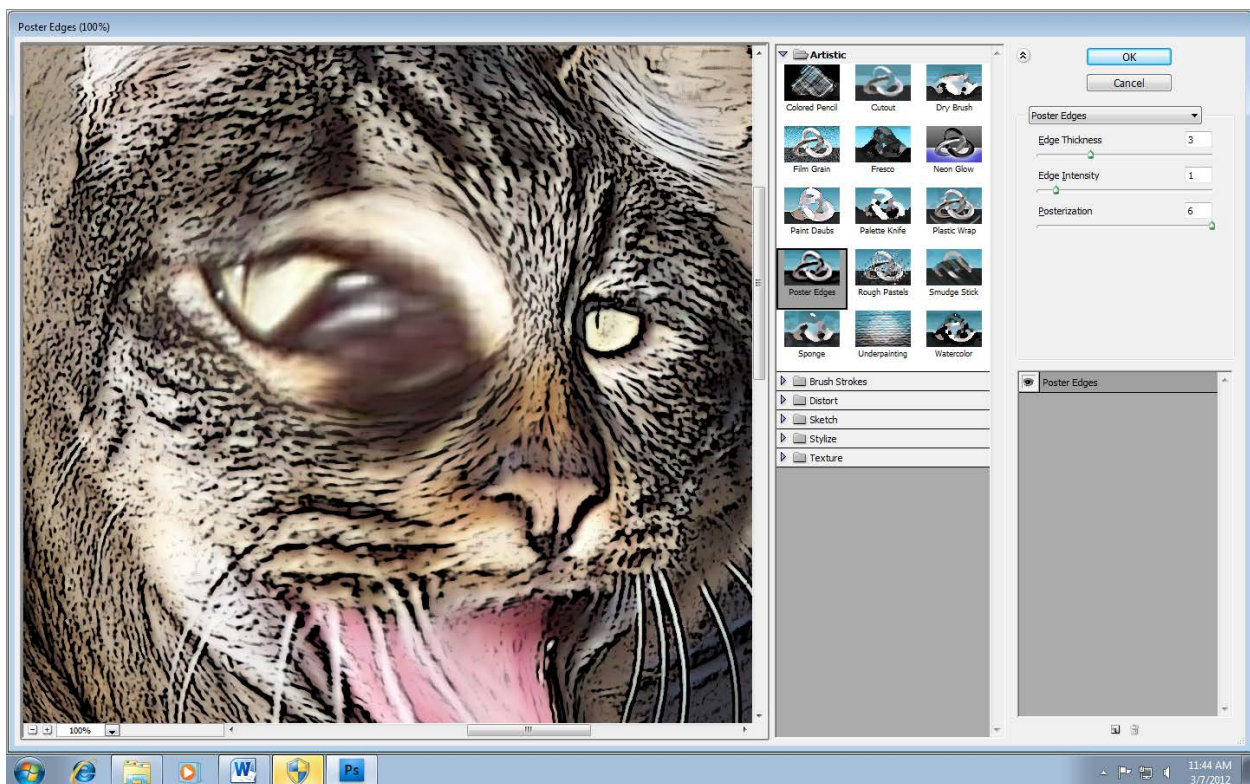


Figure 20C. The sharpness of the cat's left eye being ostensibly different from other portions of the cat's body (due to larger amount of distortion with the Bloat Tool), selecting the area and applying a 30-pixel Feather for special treatment.



*Figure Selecting the Poster Edge Tool from the Artistic submenu of the Filter menu.*

*Figure 20D. Selecting the inverse portion (everything except the left eye).*



*Figure 20F. Applying a Poster Edge effect with Edge Thickness set at 3, Edge Intensity set at 1, and Posterization set at 6.*

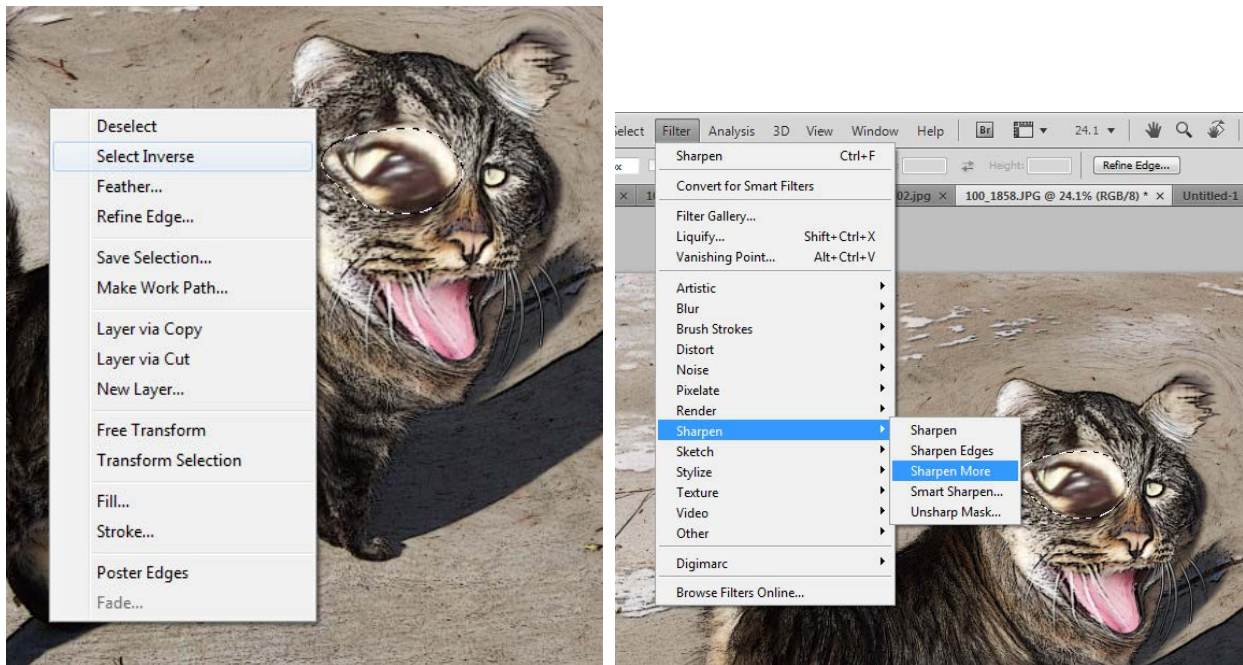


Figure 20G. Inverse the selection to choose the left eye only (left) for sharpening treatment, using the Sharpen and then the Sharpen More Tools from the Sharpen submenu of the Filter menu.

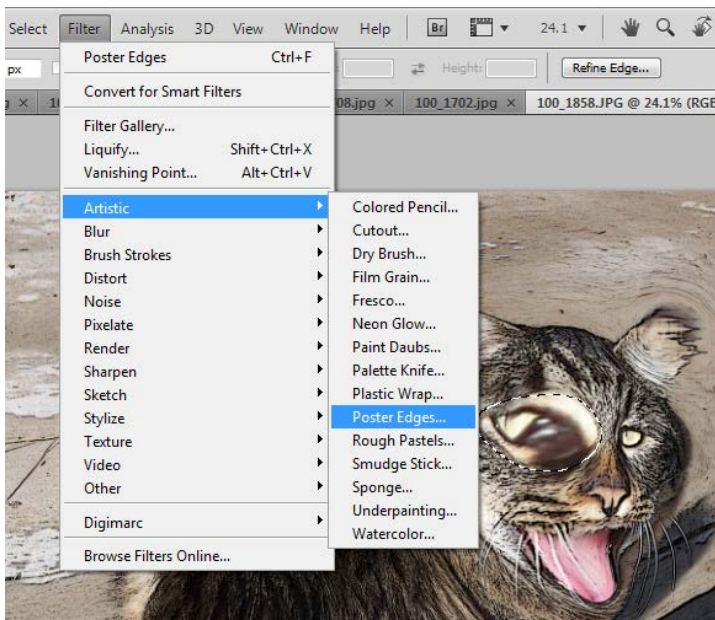


Figure 20H. Using the Poster Edge Tool to create black outlines on the left eye.



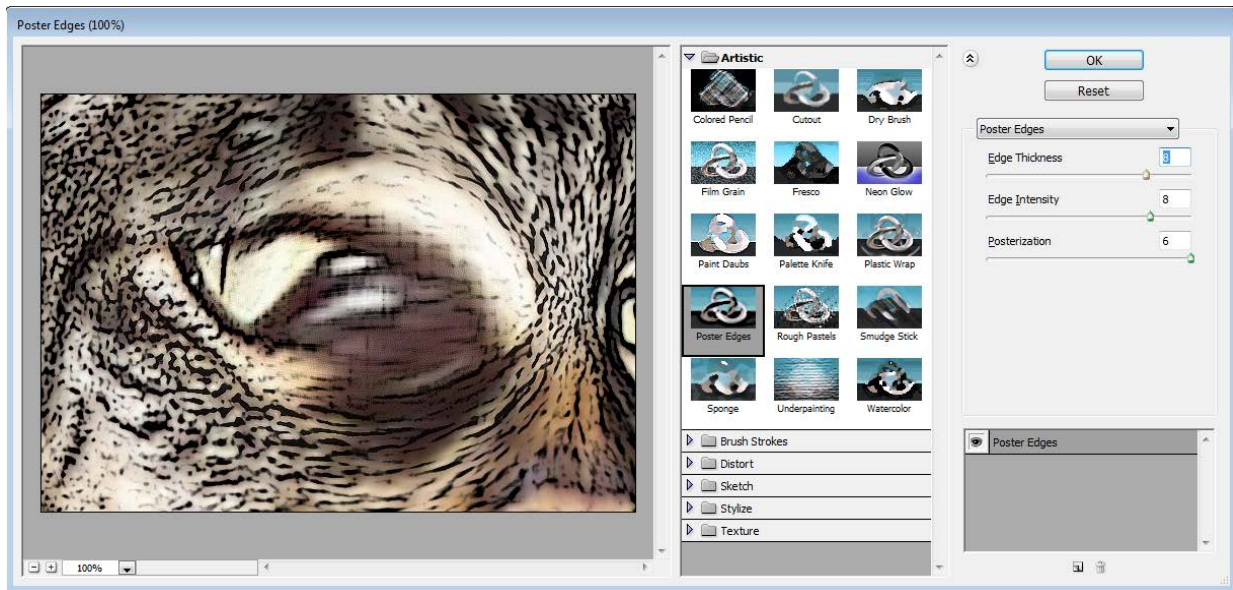


Figure 20J. Applying a Poster Edge effect to the left eye with Edge Thickness set at 3, Edge Intensity set at 8, and Posterization set at 6 respectively.



Figure 20K. Using the Lasso Tool to select the surrounding areas in front of and on the back of the cat; applying a 30-pixel Feather to both.

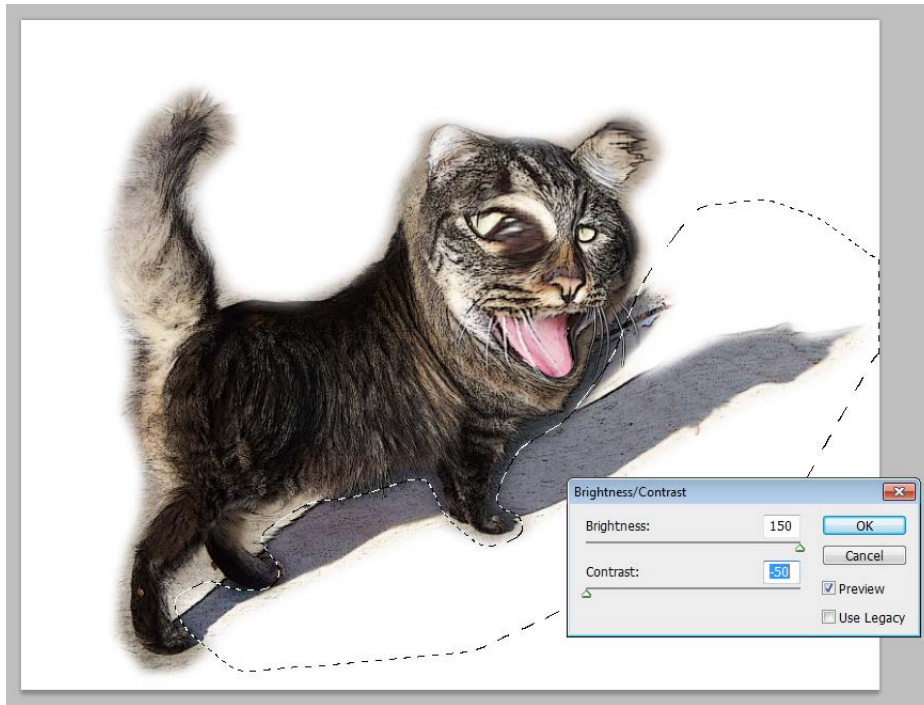


Figure 20L. Selecting the shadow with the Lasso Tool, applying a 30-pixel Feather, and using the Brightness/Contrast Tool from the Adjustments submenu of the Image menu to lighten up the shadowed area.



Figure 20M. Using the Forward Warp Tool from the Liquify submenu of the Filter menu to elongate and to curve up the tongue and the eye brows of the cat, to make it more cartoon-like.

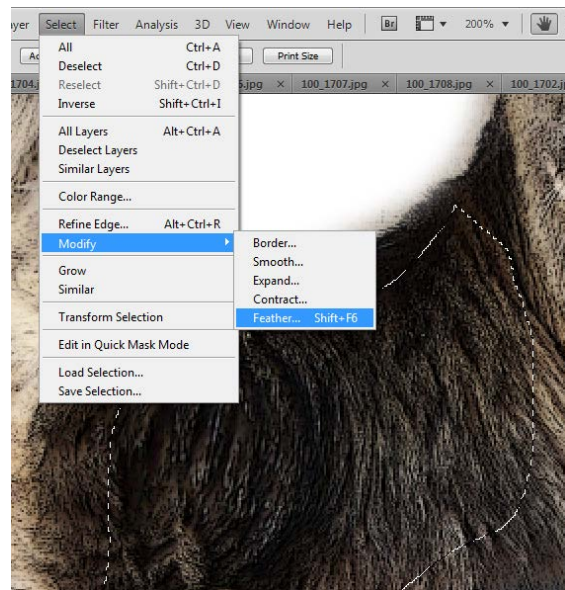
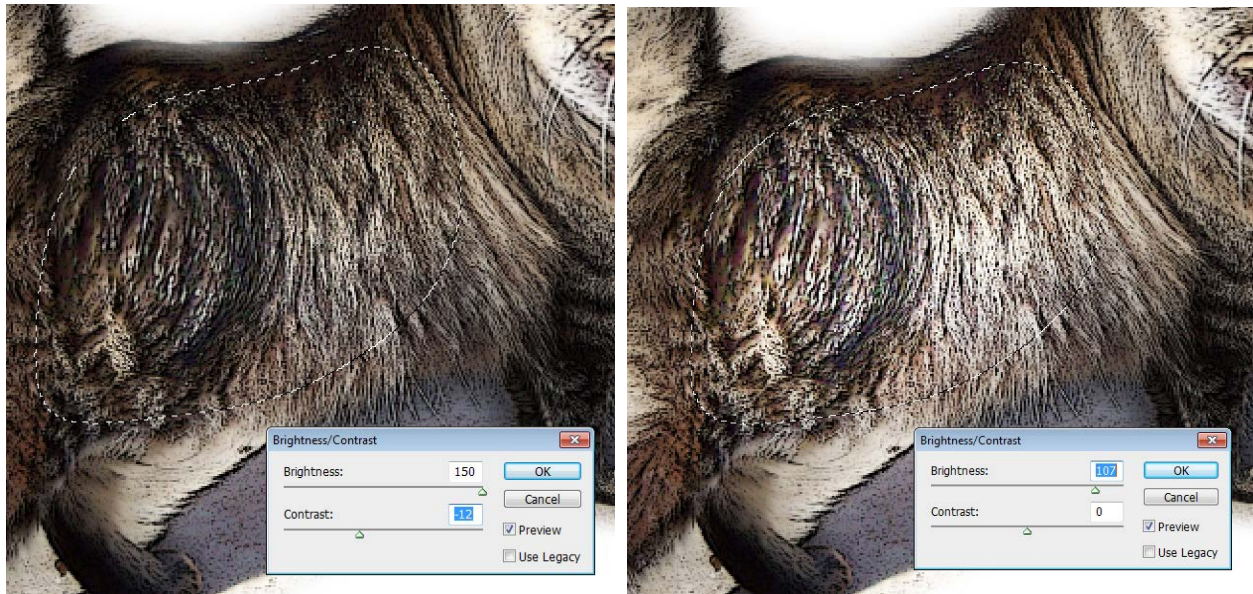


Figure 20N. Selecting the dark portion of the cat's body with the Lasso Tool and applying a 30-pixel Feather to prepare for lightening action.



*Figure 20P. Using the Brightness/Contrast Tool twice to the maximum value of Brightness.*



*Figure 20Q. Using the Forward Warp Tool again to curl up the cat's tongue and eye brows slightly more. The cartoon is thus completed.*

## Mini-Project Two: The Majestic Tiger

Photoshop tools and setting explored in the previous portion of this Research Paper will be used to create a cartoon-looking line-art work of a majestic tiger out of a normal digital photo of one (*Figure 21A* through *Figure 21R*).

In addition, a “work-around” method to overcome the limitation of Photoshop’s Poster Edges Tool in term of increasing the maximum value for Edge Thickness, will be explored (*Figure 22A* through *Figure 22R*).



*Figure 21A. The original digital photo of the tiger shot at the Zoo of the City of Louisville, Kentucky, around March 2009.*

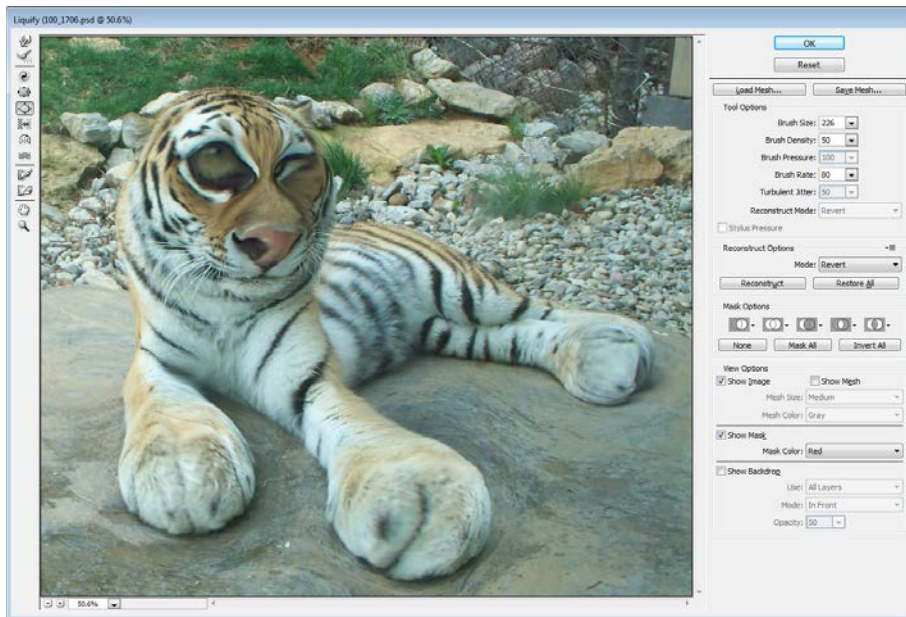


Figure 21B. Using the Bloat Tool from the Liquefy submenu of the Filter menu to increase the sizes of both eyes and the paws of the tiger, with the Brush Size set at different values for each of the bloating actions.

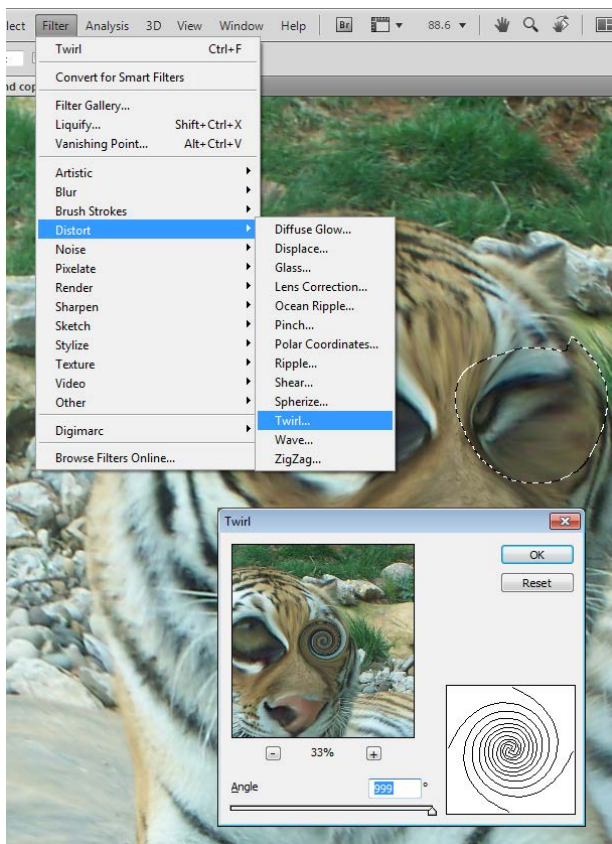


Figure 21C. Selecting the right eye with the Lasso Tool, applying a 30-pixel Feather, and using the Twirl Tool from the Distort submenu of the Filter menu to create a twirling pattern.

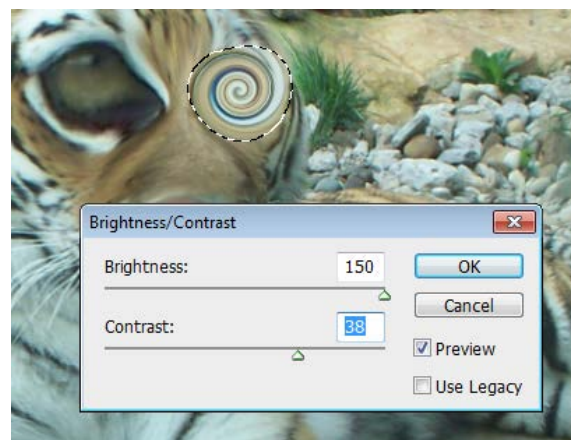


Figure 21D. Brightening up the twirled pattern with the Brightness/Contrast Tool from the Adjustments submenu of the Image menu.

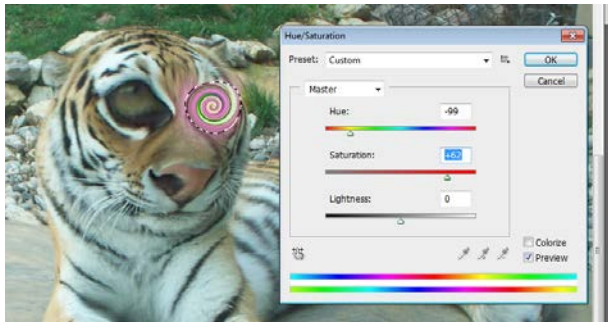


Figure 21E (left). Using the Hue/Saturation Tool from the Distort submenu of the Filter menu to change the hue of the twirled eye.

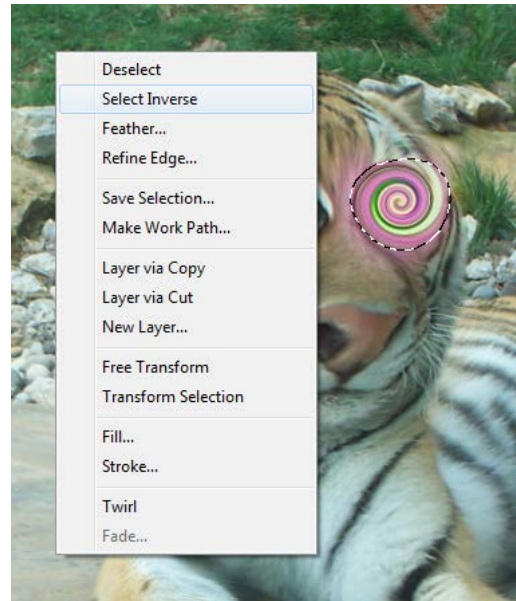


Figure 21F (right). Using the Select Inverse option to select the rest of the image.

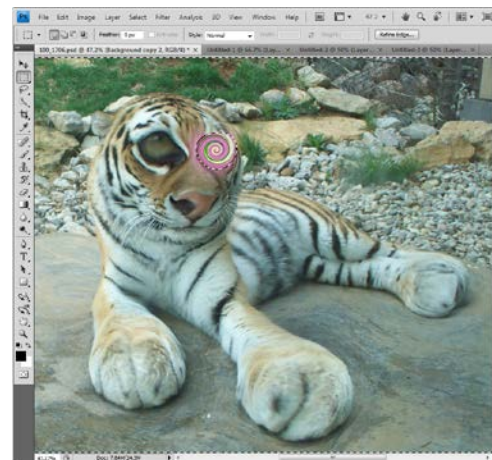
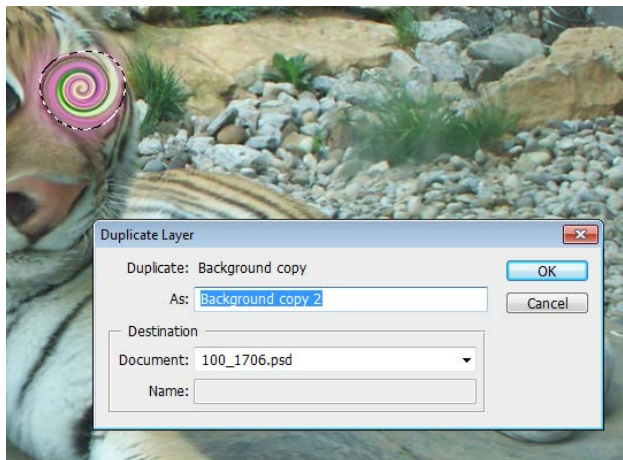


Figure 21G. Duplicating the layer, and selecting the original layer.

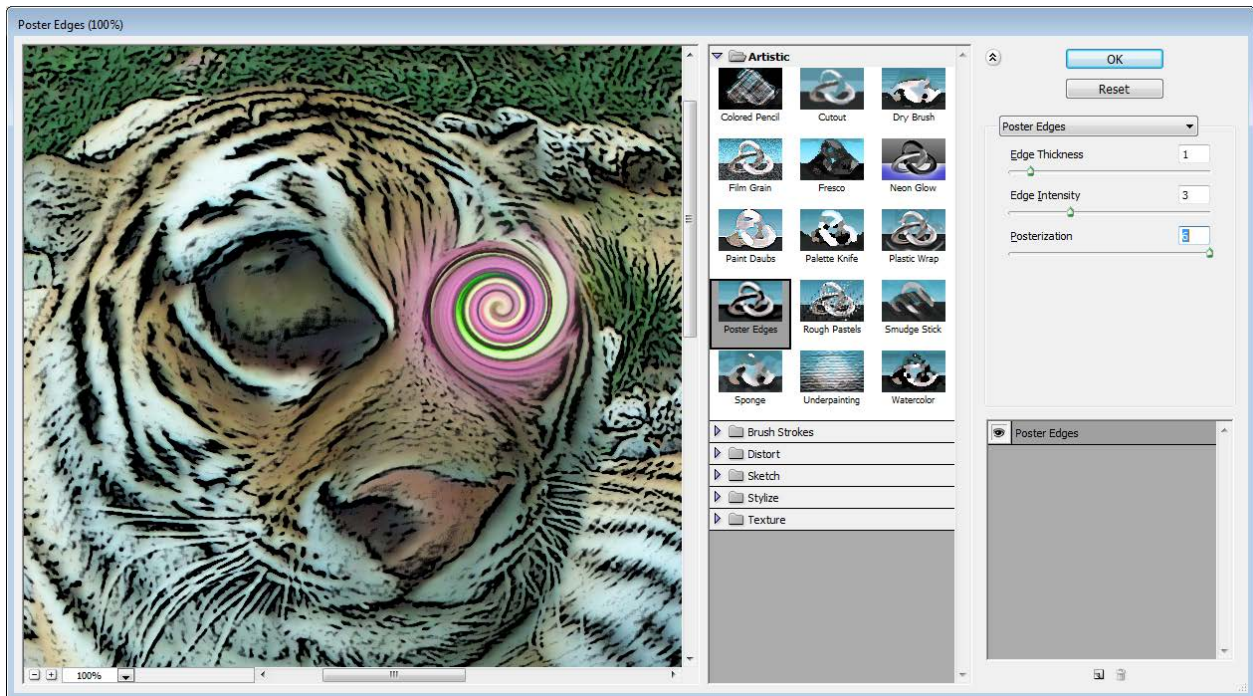


Figure 21H. Using the Poster Edges Tool from the Artistic submenu of the Filter menu to convert the photographic image (except the right eye) into flat line art with black outlines, with Edge Thickness set at 1, Edge Intensity set at 3, and Posterization set at 6 respectively (the values depend on particular situations. In general, the layer to show the inside body of the main image must have smaller Thickness and Intensity values).

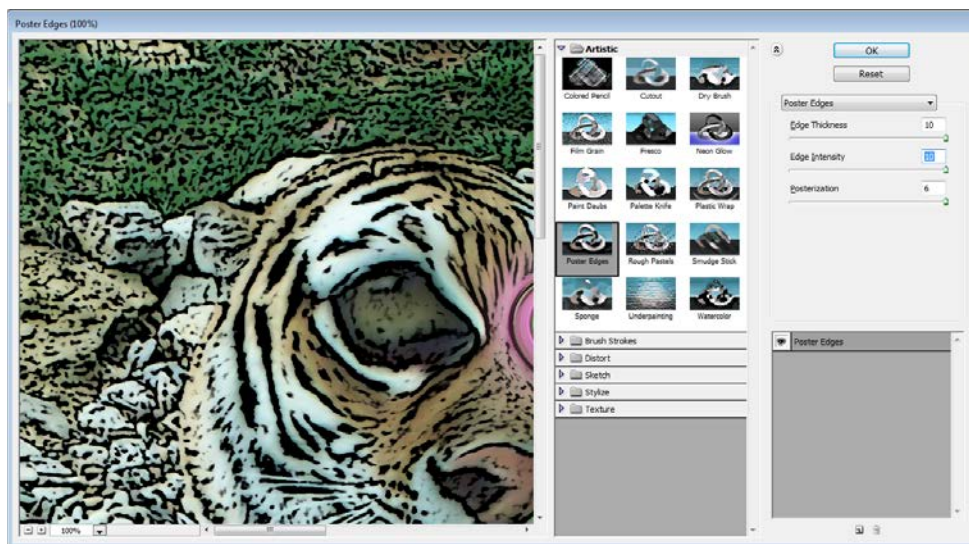


Figure 21J. Selecting the duplicate layer which is on top of the original layer, and using the same Poster Edges Tool to convert the photographic image in the layer into flat line art, for the areas of the tiger closer to the edges, with Edge Thickness set at 10, Edge Intensity set at 10, and Posterization set at 6, respectively (the values depend on particular situations. In general, the layer to show the portion of the body closer to the edges of the main image must have greater Thickness and Intensity values).

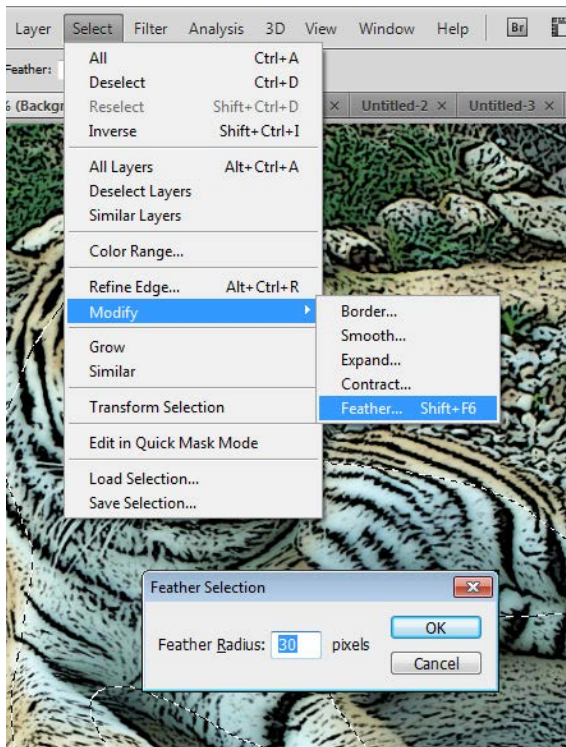


Figure 21K. On the duplicate layer, selecting the interior portion of the tiger's body with the Lasso Tool and applying a 30-pixel Feather; pressing the Delete key on the keyboard to delete it and to show through the original layer with more subtle outlines.

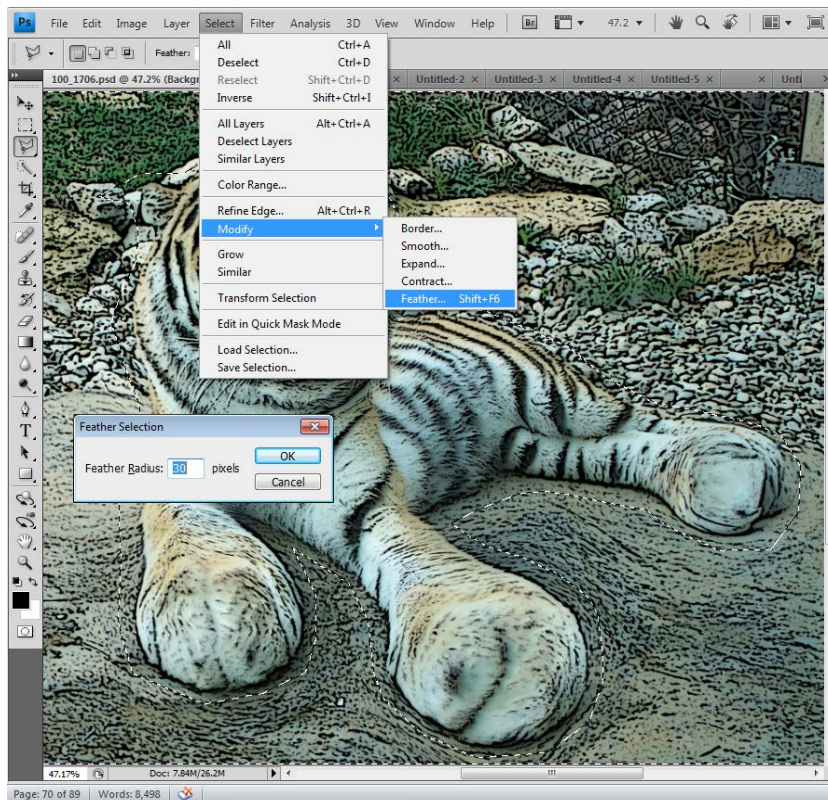


Figure 21L Selecting the ground areas with the Lasso Tool and applying a 30-pixel Feather.



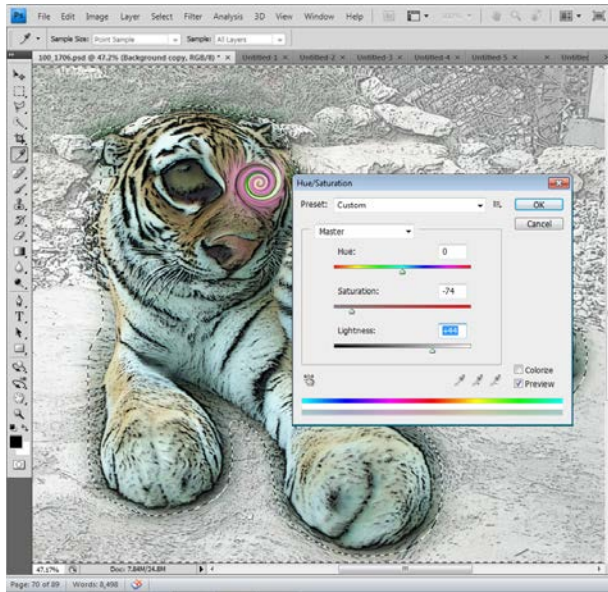


Figure 21M. Decreasing the Saturation and increasing the Lightness of the colors in the ground areas with the Hue/Saturation Tool from the Adjustments submenu of the Image menu (the colors of the background need to be subdued so as to make the main image stand out).

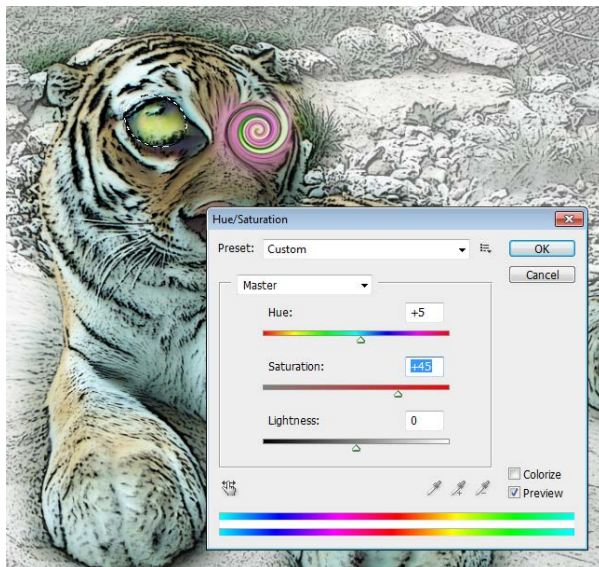


Figure 21P. Increasing the Saturation value of the left eye area, with the Hue/Saturation Tool from the Adjustments submenu of the Image menu.

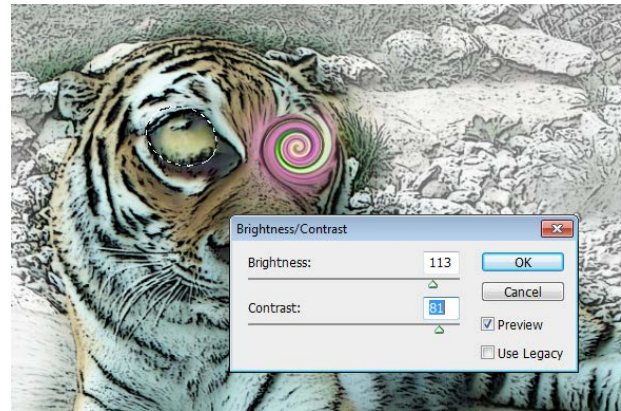


Figure 21N. Selecting the left eye of the tight with the Lasso Tool and applying a 30-pixel Feather; brightening it up with the Brightness/Contrast Tool from the Adjustments submenu of the Image menu.

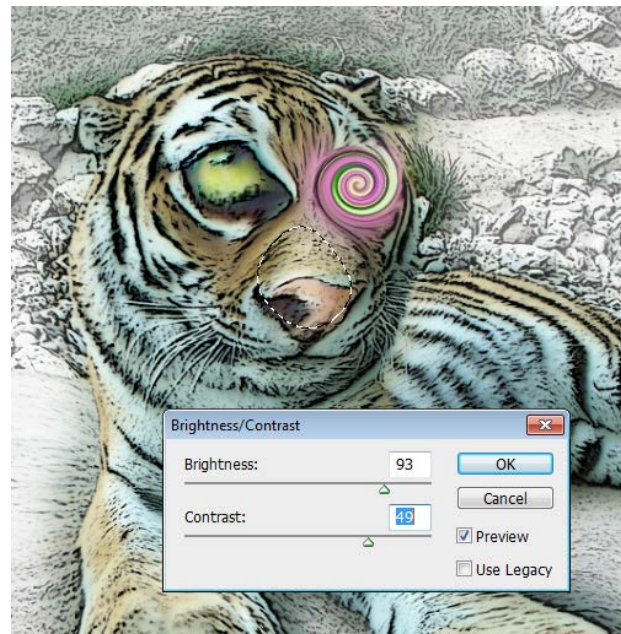


Figure 21Q. Selecting the nose of the tight with the Lasso Tool and applying a 30-pixel Feather; brightening it up with the Brightness/Contrast Tool from the Adjustments submenu of the Image menu.



*Figure 21R. Here it comes! The cartoon of a majestic tiger is completed.*

In *Figure 22A* through *Figure 22R*, the steps for overcoming the limitation of the Edge Thickness value in the Poster Edge Tool will be explored as a “work-around” method. Detailed explanations are in the footnotes attached to the *Figures*.

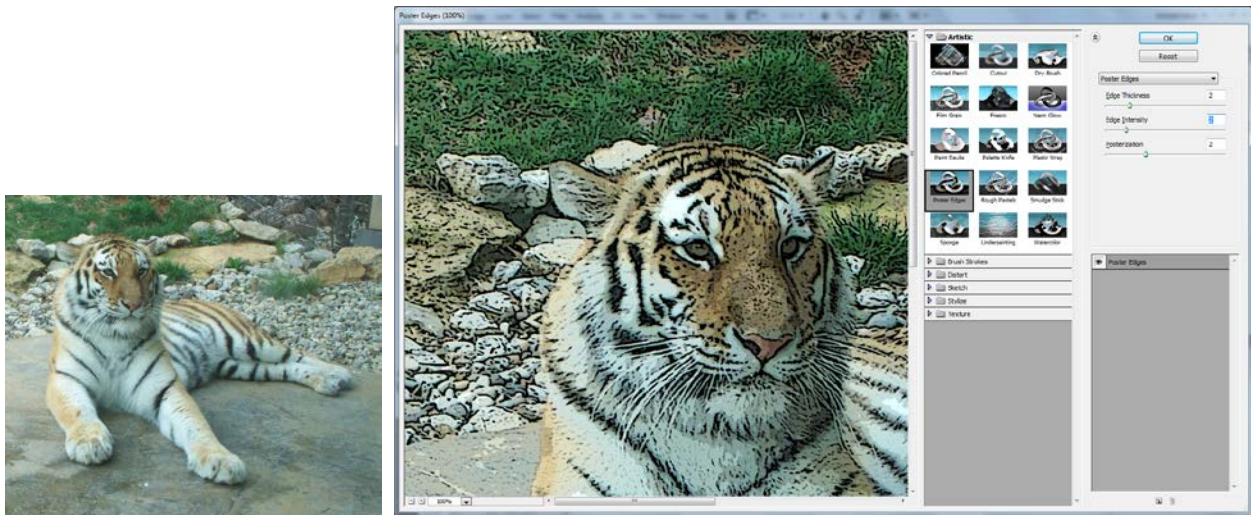


Figure 22A. The original digital photo of the tiger as shown in Figure 21A (left); duplicating the layer, and selecting the original layer; applying a Poster Edges effect with the values of Edge Thickness, Edge Intensity and Posterization all set at 2, for the interior portion of the main tiger image (right); copy the original image into a new file.



Figure 22B. The outcome of the Poster Edge effect on the original layer.

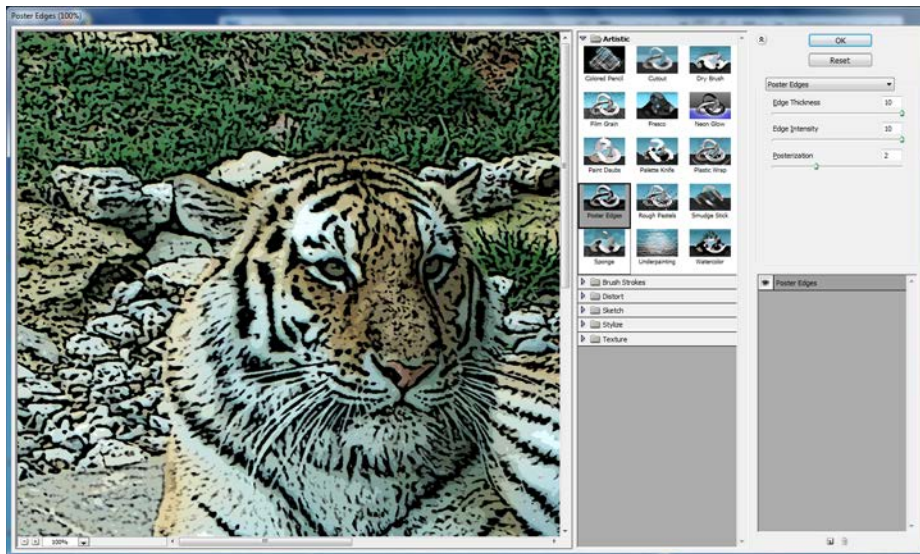


Figure 22C. Selecting the duplicate layer, and applying a Poster Edge effect with both Edge Thickness and Edge Intensity set at the maximum values of 10(top); the outcome is not so encouraging; even the maximum values for both Edge Thickness and Edge Intensity, the edges are rather thin (bottom).

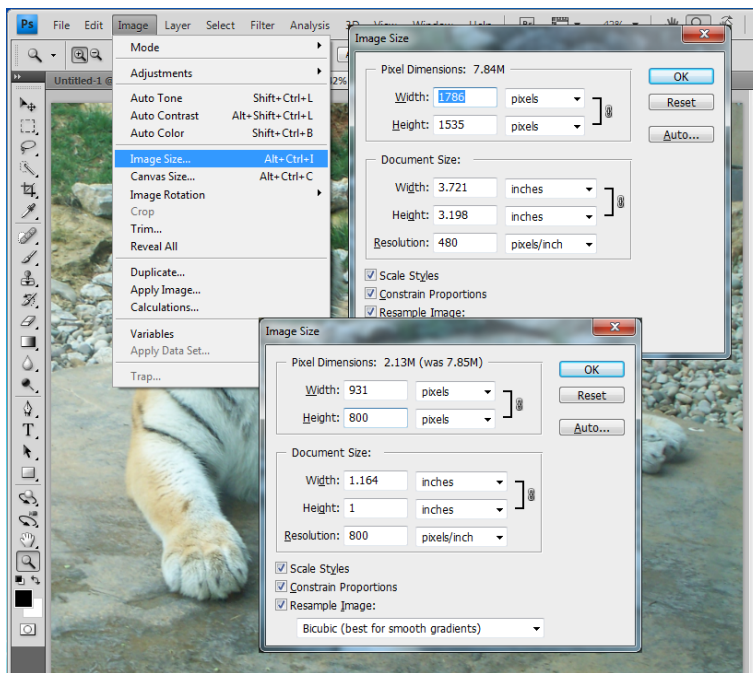


Figure 22D. Switching to the new file with the intact original image, selecting the Image Size Tool from the Image menu, increasing the Resolution from the original value of 480 pixels/inch to 800, making sure that the Constraint Proportion option is checked; and decreasing the values of the Height from 1535 pixels to 800 pixels, the value of the Width automatically adjusts; clicking the OK button to apply the changes.

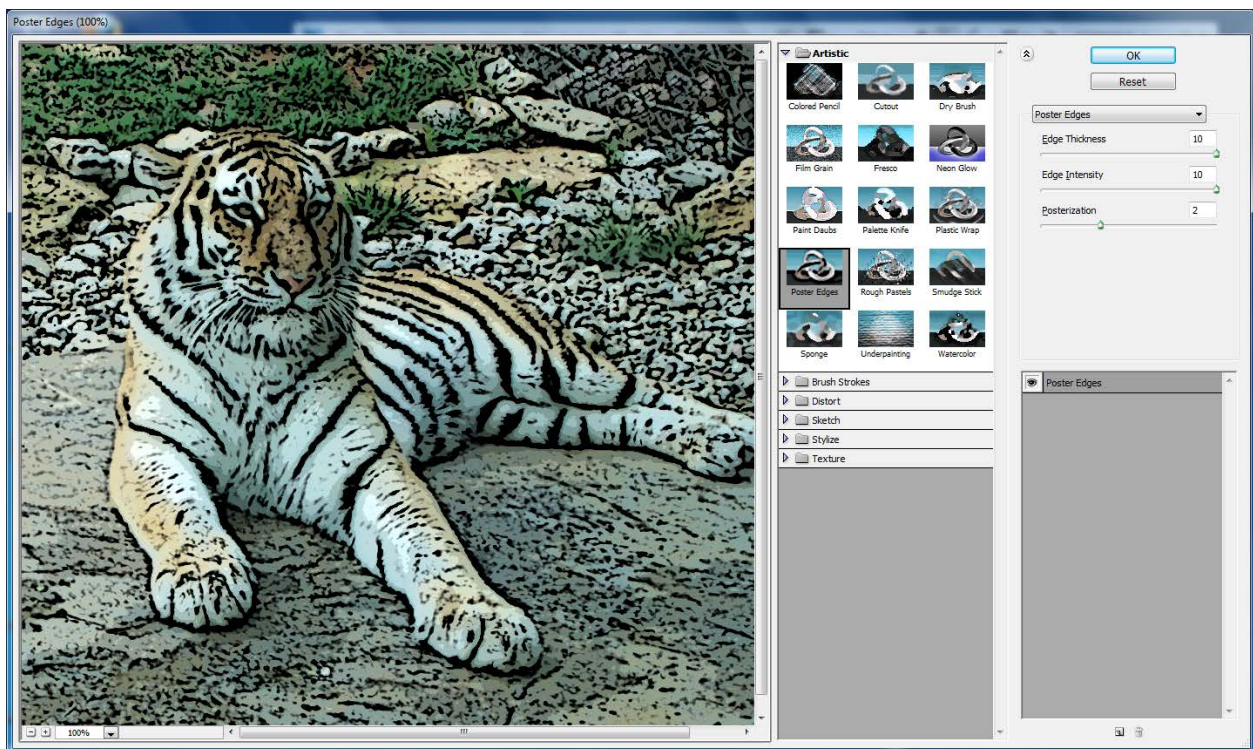


Figure 22E. Applying the Poster Edges effect to the image with the Edge Thickness and Edge Intensity both set at their maximum values of 10; the edges appear fairly thicker than before.

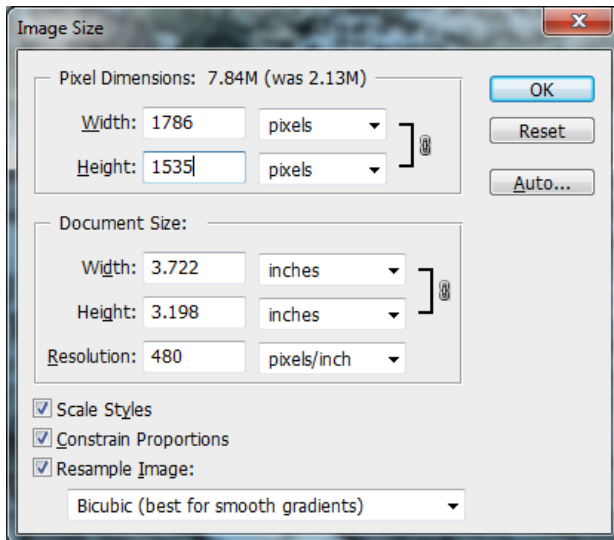


Figure 22F. Changing the file size back to the original one; and copy and paste the image into the original file.



Figure 22G. Selecting the silhouette of the tiger with a small outward margin, with the Lasso Tool.

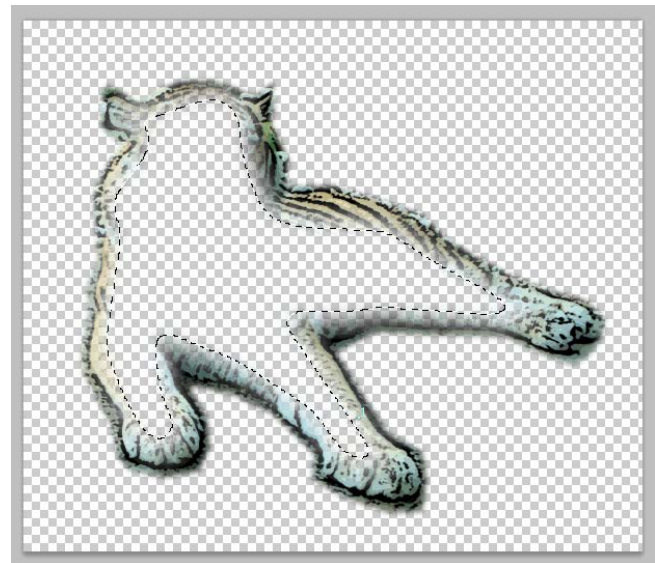
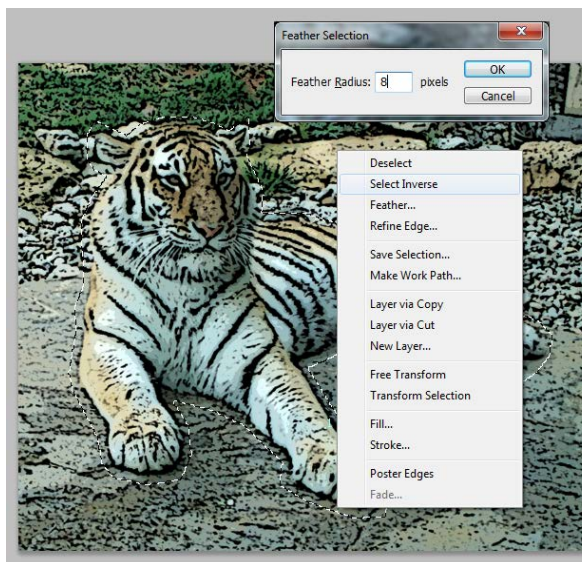
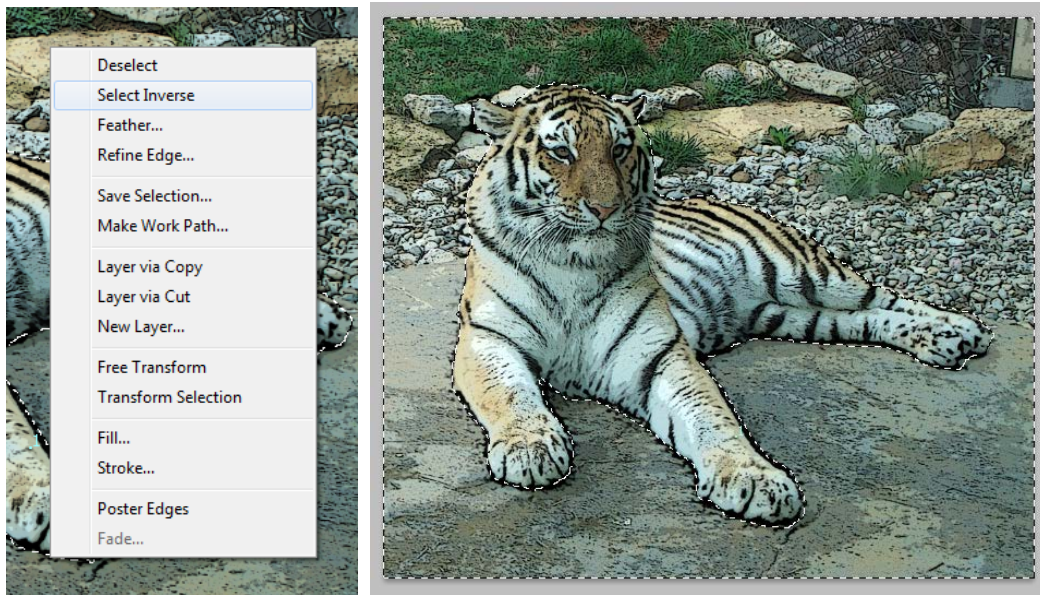
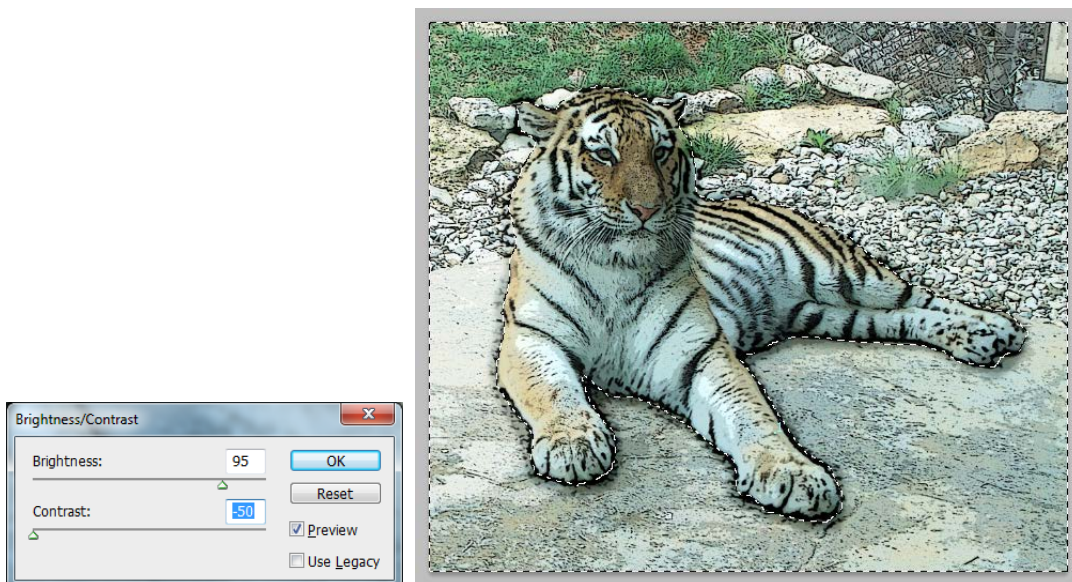


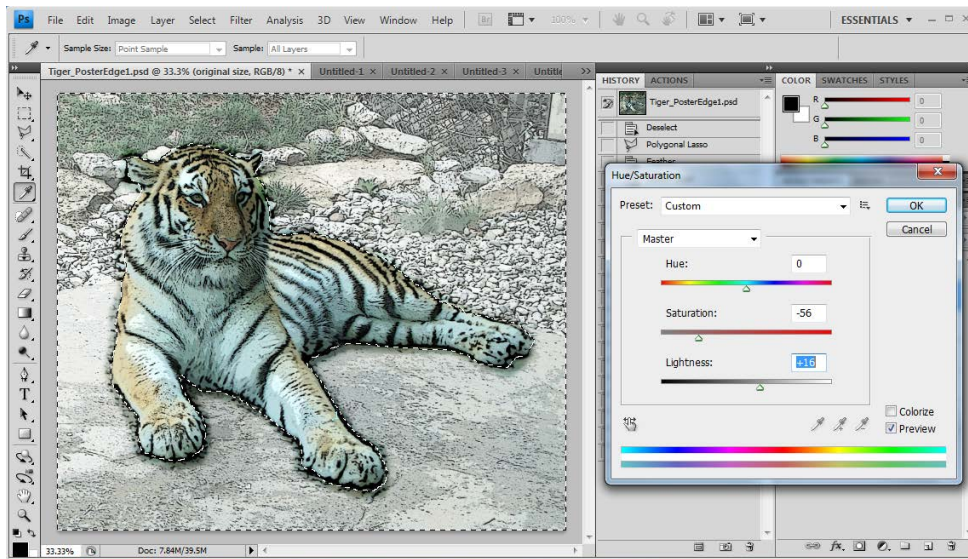
Figure 22G. Applying a 8-pixel Feather effect to the selection and inverse the selection to choose the background area (left); pressing the Delete key on the keyboard twice to delete the outside portion surrounding the tiger from the pasted layer (left); using the same tools and settings to delete the interior portion of the tiger from the pasted layer (right).



*Figure 22H. Selecting the original layer containing the image with thinner edges, relatively tightly close to the tiger's silhouette, applying a 8-pixel Feather effect (left); using the Select Inverse option (left), to choose the surrounding ground area (right).*



*Figure 22J. Using the Brightness/Contrast Tool from the Adjustments submenu of the Image menu (left) to lighten up the ground (right).*



*Figure 22K. Using the Hue/Saturation Tool from the Adjustments submenu of the Image menu to di-saturate and to lighten up the ground further.*



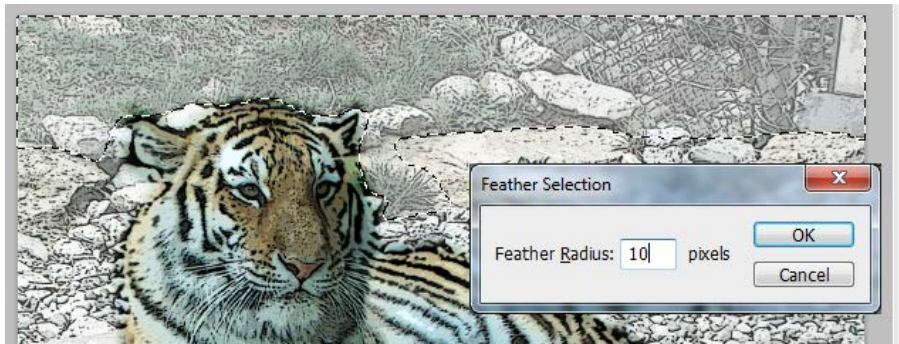


Figure 22L. Selecting the darker area of the ground on at the upper portion of the image and applying a 10-pixel Feather effect, applying another Brightness/Contrast effect.

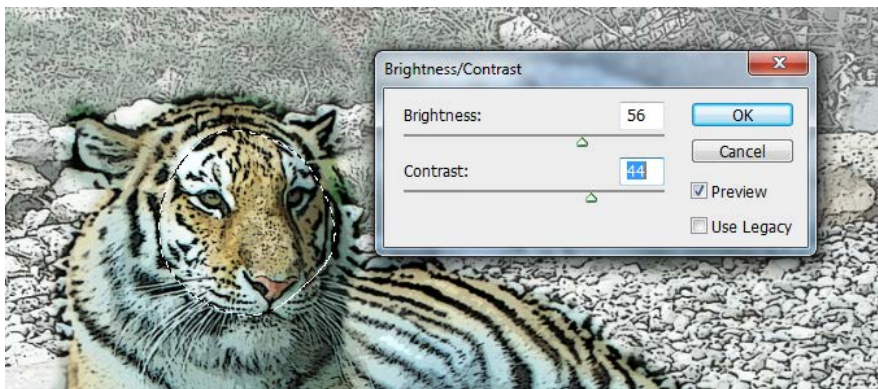
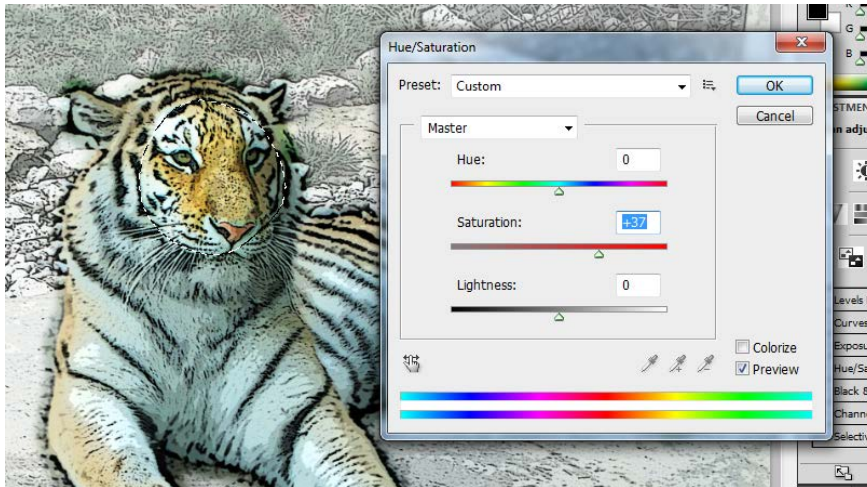
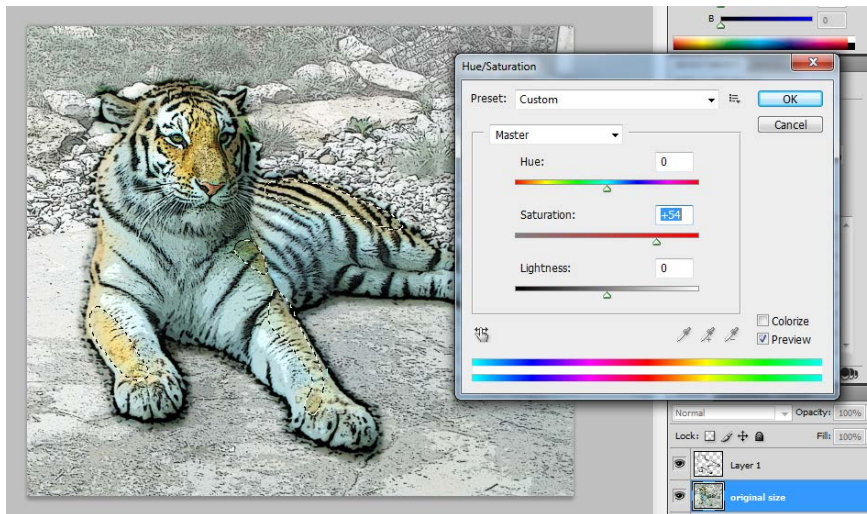


Figure 22M. Selecting the central yellow portion of the Tiger's head with the Lasso Tool and applying a 30-pixel Feather effect (top); Increasing the Brightness and Contrast values (bottom).



*Figure 22N. Increasing the value of Saturation.*



*Figure 22P. Selecting other yellow portions of the tiger's body and applying a convenient increase of Saturation value.*



*Figure 22R. The final version of the line art of the tiger with both thin and thick black outlines.*