

Sfumato Stitch

Exercise 1 - Eva Design

This booklet is compilation of an on-line exercise posted to Sfumato Stitch group (<http://groups.yahoo.com/group/sfumatostitch>). I used my screenshots and comments here, organized in 5 lessons just as I have posted them to group. There was usually some discussion of group members after each lesson. I tried to select some most illustrative questions and answers and added them to this booklet. I would like to thank to all who contributed with their comments and suggestions. The EVA photo used in this exercise is included in each installation of Sfumato, so you can practise with it.

Lesson 1

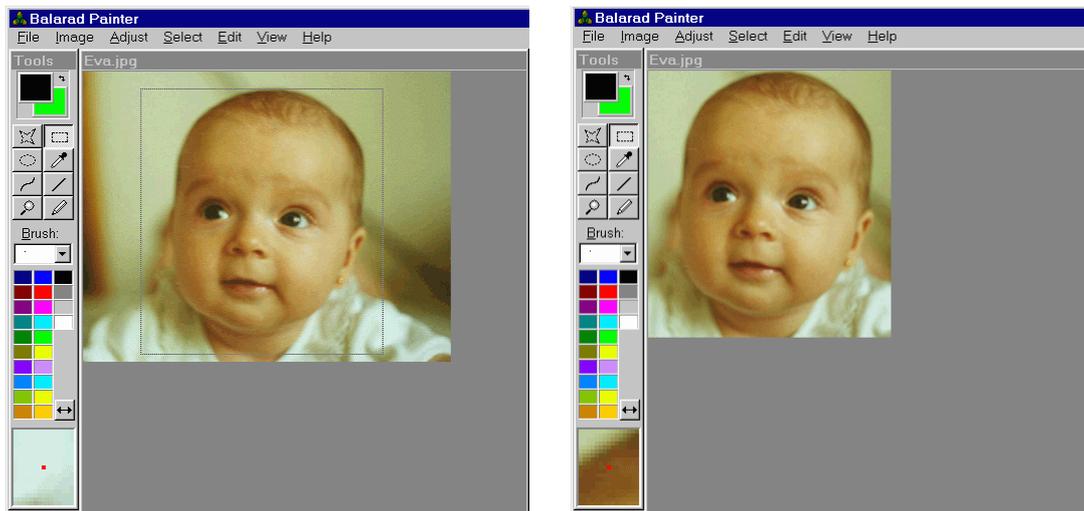
Image Cropping, Resizing and Deleting of Background

Eva 1a

open Eva image in Painter. There is too much background around Eva. Let's crop the image. Select the Rectangular Selection Tool and select the head with part of neck and shoulders.

Eva 1b

Use command Edit>Crop eliminate the image areas outside of selection.

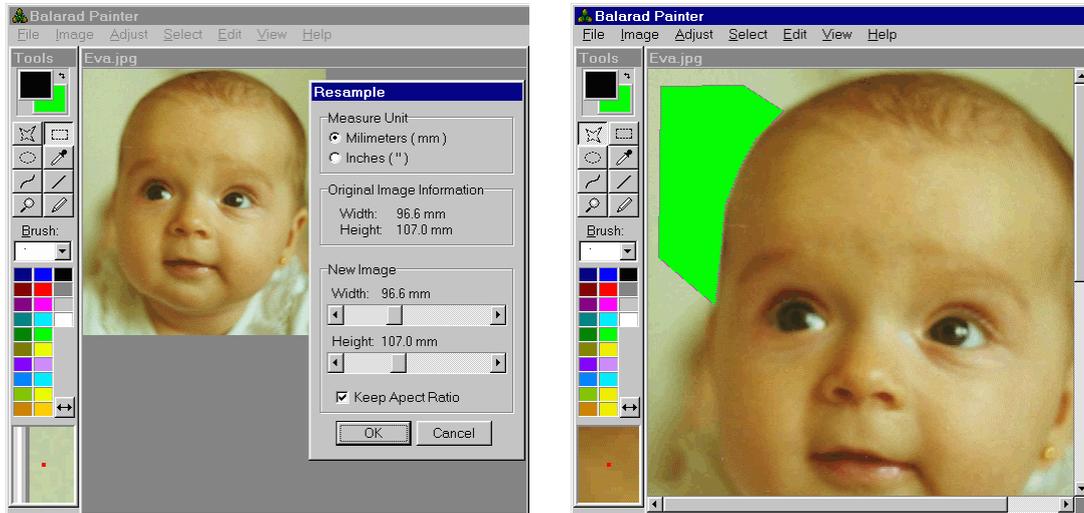


Eva 1c

We need to adjust size of image so that finished design will be of required size. Use command Image>Resample to resize cropped image to about 4 inches (10 cm) height.

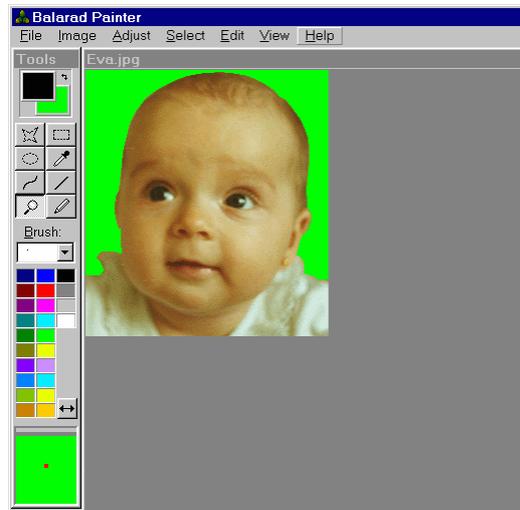
Eva 1d

Let's delete the background so that design will have thin running stitch outline. To achieve this, background should be filled with Lime (light green R=0, G=255, B=0) color. Use Polygonal and Rectangular selection tools to select and delete small parts of background until the whole background is deleted (filled with Lime color).



Eva 1e

You should achieve Lime background like is on this picture.



Please DON'T FORGET to save the image with deleted background to disc.

Discussion to Lesson 1

Question: Which DPI setting do you recommend when scanning photos for Sfumato?

Answer: Sfumato uses 128 pixels for 1 inch of final design size. So, if you want design in 4 inches height, image should be 512 pixels high. This does not mean that you should scan with 128 dpi, because photo is usually

smaller or larger than design that you are going to produce. Scan the photo so that image has 128 pixels per inch of required size of design.

Question: Why do you refer to Painter and Sfumato as though they were two separate programs?

Answer: I do mention Painter and Sfumato separately because I have designed the two programs so that Painter is basic program and Sfumato is additional module with separate controls and windows. It is easier to navigate through menus and other controls when you know whether you should search it image-editing part (Painter) or among design settings and controls (Sfumato).

Tip:

Did you know that you can add and subtract parts of existing selection ?

If you do some complex selection and you make a small error, or you want to add another part of image to selection, you do not need to make it anew.

Just press the left SHIFT key when making new selection if you want to add new selection to previous selection.

Or press ALT key when doing new selection if you want to subtract new selection from previous selection.

The newly added new selection doesn't have to adjoin the previous selection. You can select one eye on image, for example, and then add the second eye, if you want to make the same editing on both eyes at once.

Also, if you make some selection (let's say rectangular selection) and then you make further COLOR RANGE selection, only the pixels lying in intersection of both selections will be selected. It is useful when you want to edit some color, but only on face, for example. You would select the whole face with polygonal selection tool, in such a case, and then make further color range selection to select just the required color from the face.

Tip:

-Sfumato crops image so that whole selected area remains in the cropped image. The cropped image is ALWAYS RECTANGULAR, no matter what was the shape of selection.

In first version of Sfumato, there was a function DELETE OUTSIDE OF SELECTION. This function was mostly used for deleting of background around elliptical selection, while the picture (portrait) remains inside the ellipse.

In Sfumato 2.x, I have replaced above function with INVERT SELECTION function, because it provides more freedom for further work with image. You can not only delete outside of selection now, but you can also do all other editing on it.

- If you want to do portrait in ellipse, do the following:

1. make elliptical selection
2. Selection>Invert Selection
3. Delete background (just hit DELETE key on keyboard)
4. make rectangular selection around elliptical part of image that remained
5. crop the image

Question: I cannot get rid of the background color. I have made sure that my box is closed but when I hit the delete button the whole screen turns green. What am I doing wrong.

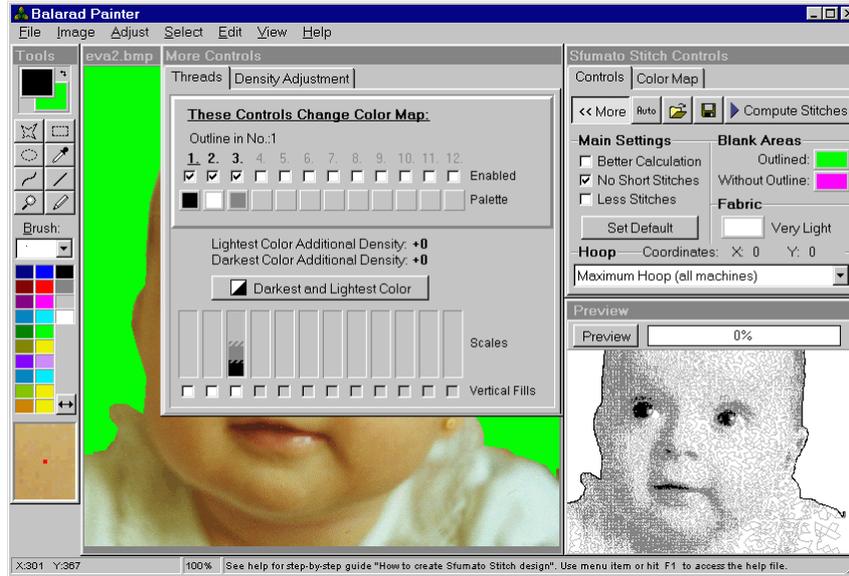
Answer: Sounds like you are forgetting to double click when you close the box, and then hit delete. When you use the star tool and you are sure it is connected you must click again to see the box turn to dashed lines and then hit delete. I experimented by making a connecting box and just hitting delete without first double clicking and sure enough the entire screen turns green.

Lesson 2

Colors, Density and Thresholds

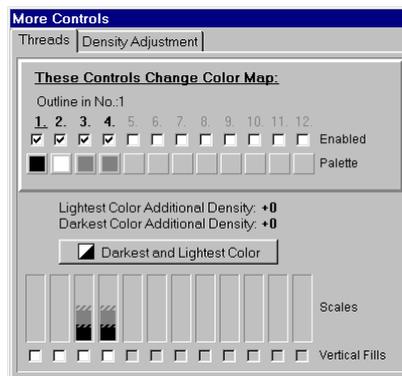
Eva 2a

Open the Eva image with deleted background (you should have done it in previous lesson). Hit the Preview button. The previewed design will be in gray tones - this is default color setting. Click on <<More button to open more controls window. We should enable more colors. Let's use two shades for face and two shades for shirt. This makes 2 color scales plus black.



Eva 2b

We will need two color scales. So far we have black (darkest color), white (lightest color) and one scale. White color will not appear in design, because the fabric is white. Check the box no.4 to enable another color scale. There are just gray colors still. Click on color box no.3 to access palette and histogram window.

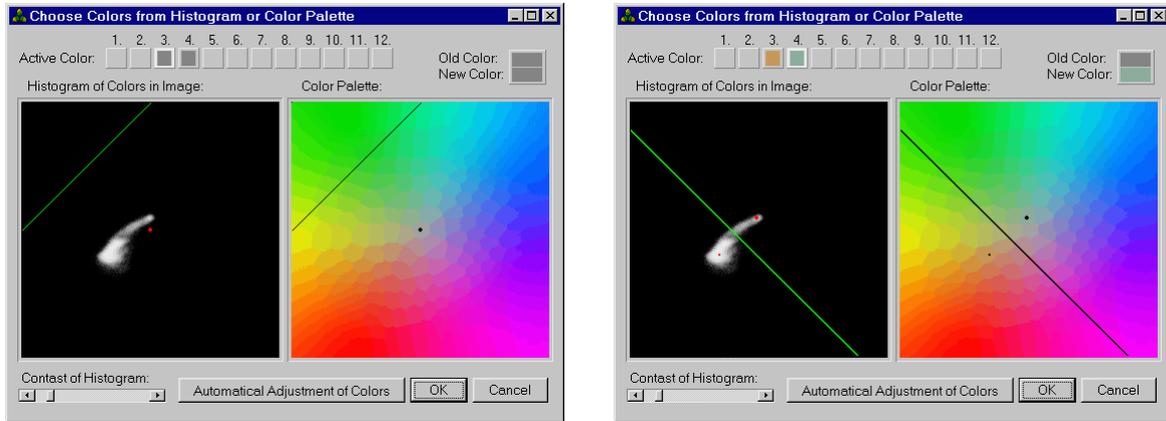


Eva 2c

In histogram and palette you see that both red dots (both palette colors) are just in the center (because they are grey) one on top of the other. Histogram shows large cloud of yellow-brownish colors and thin strip sticking to green-bluish area of palette. Let's place the palette color no.3 into center of yellow-brownish cloud. Then click on box no.4 to switch to next color and place its red dot on the strip that goes to green-bluish area.

Eva 2d

You see how I have placed the red dots. Green line was placed automatically between the red dots dividing the whole color space into two parts. All image colors that are at the same side of green line as the first red dot will be sewn in Color SCALE 3. All colors that are at the same side as second red dot will be sewn in Color SCALE 4. Hit OK.

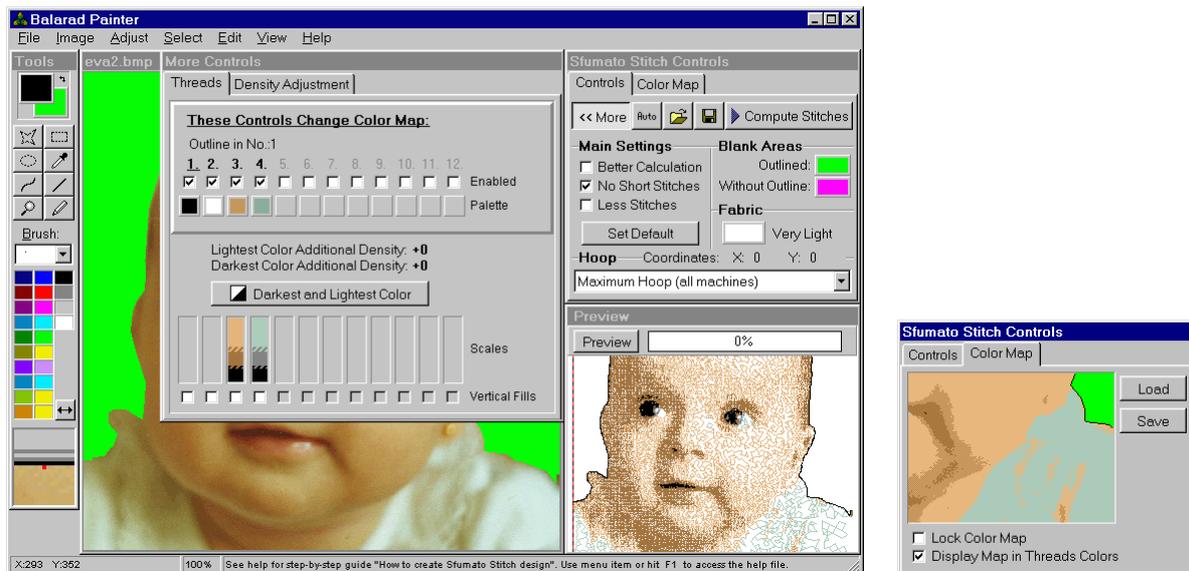


Eva 2e

You see that new colors have appeared in both scales. Hit Preview button to see result. The colors of face run into collar of shirt. We will have to edit it in next lesson. Also, the stitches are rather loose on the shirt. We should increase their density. Let's have a look at Color Map. Click on Color Map page in Controls window (above Preview window).

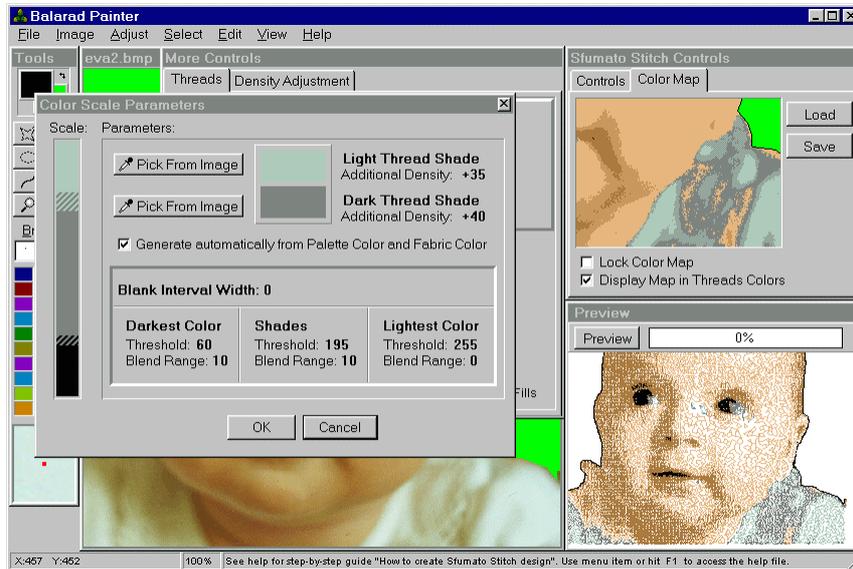
Eva 2f

The Color Map shows that the face colors have appeared also on shirt. Also, the darker shade of green is not used on shirt. We should adjust its threshold to get it there and achieve more realistic look of shirt.



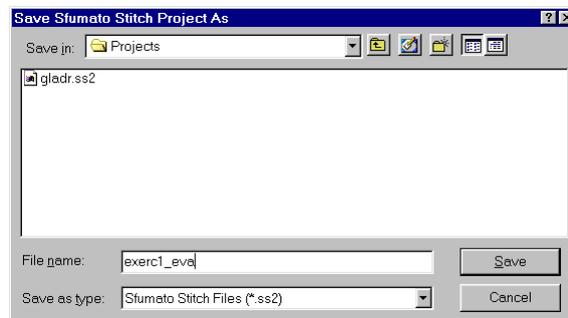
Eva 2g

Click on Color Scale 4. and set the threshold of Shades to greater value. The Dark Shade will appear on the shirt (see color map in top right corner). Also, increase the density of both Light and Dark Shades. Hit Preview to see result. We will edit the face colors running into shirt in next lesson.



Eva 2h

Save your project file (settings and link to image). Click on floppy disc icon in Controls window to save the project file. We will continue with this file in next lesson.



Discussion to Lesson 2

Question: Can I use two distinctively different colors in ONE scale? Not just shades of one color?

Answer: yes, you can.

Tip:

Clouds in histogram mean that image contains many similar colors. If your image contains just few exact colors, there will be just as many little (hardly visible) dots in histogram (no clouds). You could possibly see these small dots by adjusting the Contrast of histogram. Example: if image contains lot of greenish colors, there will be CLOUD in histogram area that corresponds with green part of palette. But if your image contains just ONE green color, there will be just ONE DOT and no clouds in histogram.

Question: The outline is black by default. Can it be changed? If so, how? I think it would be nice to be able to use another color (ex. Dk Brown)...besides just substituting Dk Brown for Black during stitch-out.

Answer: if you want the outline to be other than black color, do the following:

- Click on any enabled Palette color box just as if you want to see the histogram window. However, click with right mouse button and not with left.
- The pop-up menu will appear.
- Use "Set Outline Color" command from this pop-up menu.

You will see that outline color was changed in More Controls window (there is a label saying "Outline in color..."). Also, the number of scale that contains the outline color is UNDERLINED. Of course, you should see the impact of change also in Preview window.

Tip: There is an "optimum" number of colors for each design. If you use less colors, design is not so nice and realistic. If you use more colors than optimum, the stitches layout is worse and embroidering requires more effort.

Tip:

Usually, you would decide to change threshold of shades when you feel that balance of dark and light shade is not right. Then, you can see in Color Map how the balance changes along with threshold. So, you have immediate feedback and you can adjust threshold interactively to desired value (desired balance of shades in Color Map). Moreover, you can hit Preview in any instant and see how threshold affects the design.

The situation with density is similar. You simply look at preview and feel that density of some color is too low (or too high). Then you would adjust Additional Density a little, hit Preview and see what effect it makes on design.

However, there are no strict rules as to when and how much adjust threshold and density - it is up to your artistic feeling. The Preview and Color Map window just try to provide you as much interactive feedback as possible.

Tip:

Sfumato uses three types of files:

- 1 .bmp or .jpg image file
- 2 .bmp Color Map file (it is image too)
- 3 .ss2 project file that contain settings and links to image and color map

The reason why I did not joined them to single file is that wanted to leave images as separate files that you can edit also in other painting programs. Now, what happens when you open any of these files:

1. when you open image file or color map in Painter, no other file is opened automatically
2. when you open (load) the edited color map in Sfumato, no other file is opened automatically
3. when you open project file in Sfumato, it will also load the image and Color Map (if previously saved to disc).

It is necessary to save color map separately to avoid of spoiling the previously edited map accidentally.

You can save/open Sfumato Project file that contains all settings in Sfumato Controls window. There are two icons just next to MORE and AUTO button. One icon is for opening project file and one is for saving project file.

Tip:

There are several controls in the Scale Parameters window. In this lesson, only three of them are important for us:

1. SHADES THRESHOLD - it defines how much Dark Shade and how much Light Shade of this scale is used in design. Changing the threshold you change the balance of Light and Dark Shades and you see its effect immediately on the Color Map.
2. ADDITIONAL DENSITY for Light Shade - with this control you can increase/decrease thread density of those parts of design that are of Light Shade of this scale. When you change its value, hit Preview button to see its effect.
3. ADDITIONAL DENSITY for Dark Shade - similar to previous control.

You can change all values in this window by clicking on them with left button (to increase) or right mouse button (to decrease).

In this lesson, you are supposed to add more dark green (Dark Shade of scale no.4) to design and to increase density of both dark and light green. Just press the left button on Shades Threshold value, then on Add. Density of light shade and then on Add. Density value of dark shade until you achieve similar values as are on Eva 2G picture.

Tip:

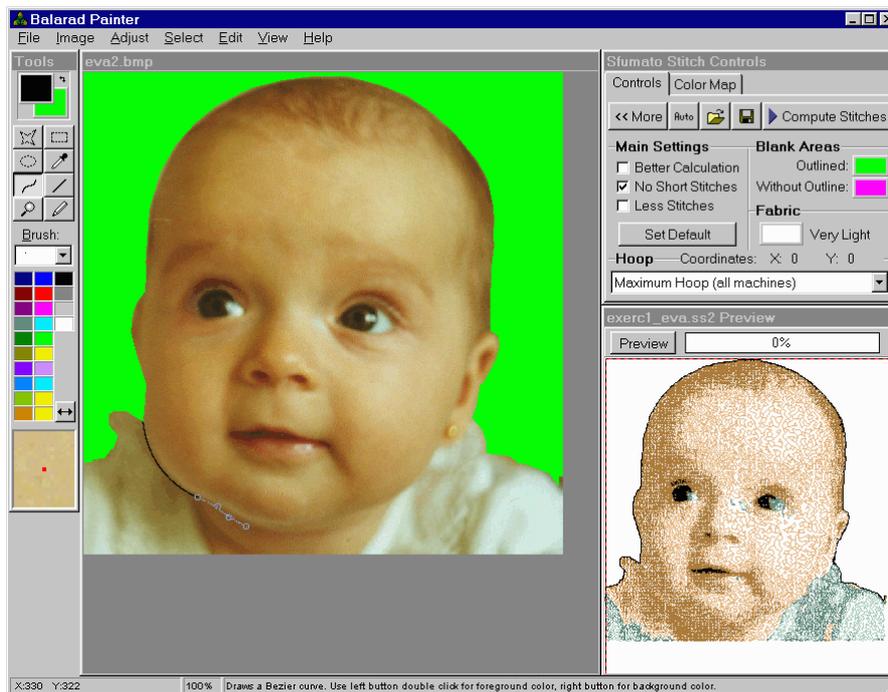
You can move around the color map by just putting the cursor on top and moving the picture. This also works in the preview screen.

Lesson 3

Work With Color Map

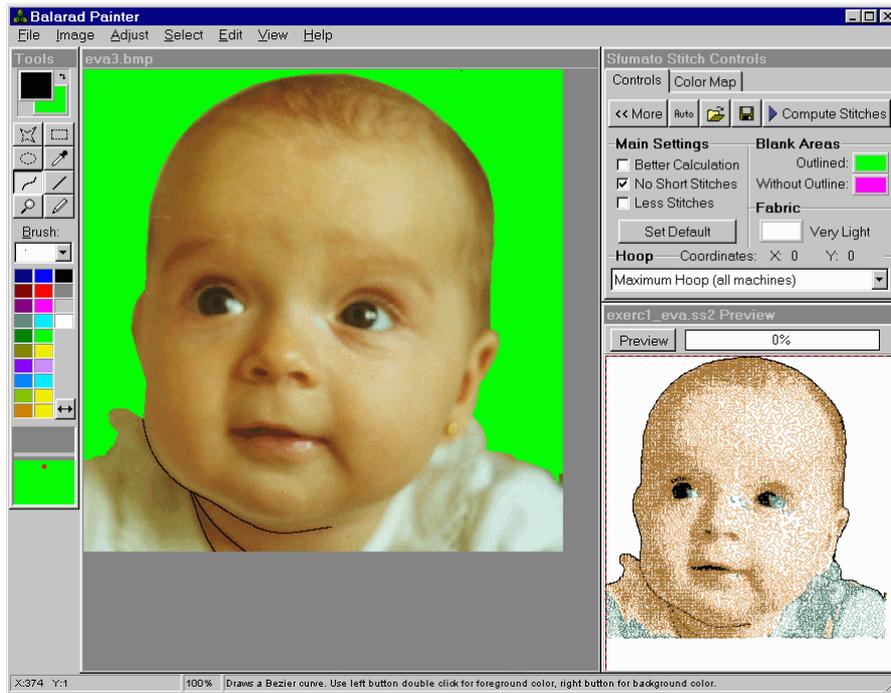
Eva 3a

We have prepared design with brown and green colors in the previous lesson. We will have to edit the Color Map of design, because face colors run into shirt and shirt colors are also on nose (see Preview window in this picture). But first of all, I would like to add some black lines to left chin and neck to emphasize the edge of shirt. Use Draw Curve Tool to draw black curves as shown on this and next picture.



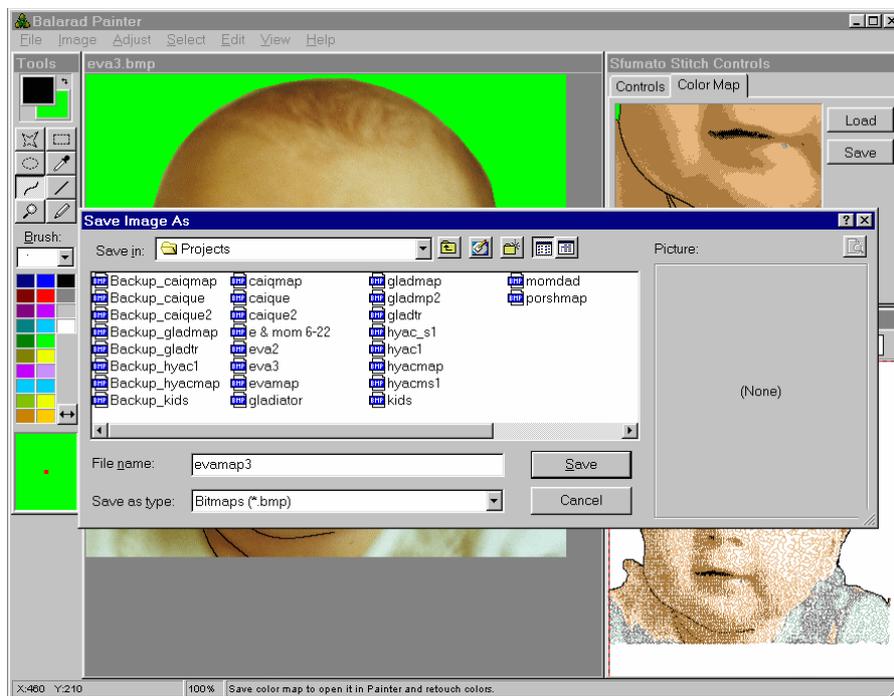
Eva 3b

See the black lines that I draw with Draw Curve Tool. They will be not so much visible on real design, because black is sewn first and the lines will be partly covered with next colors. (You can change order of colors, but we will not do it now).



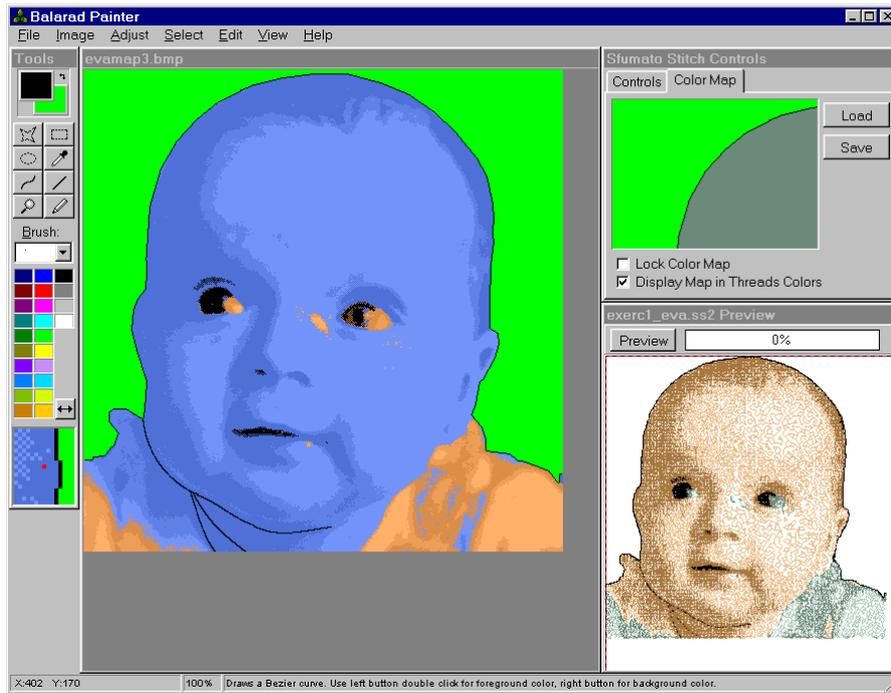
Eva 3c

Now it is time to save the Color Map.



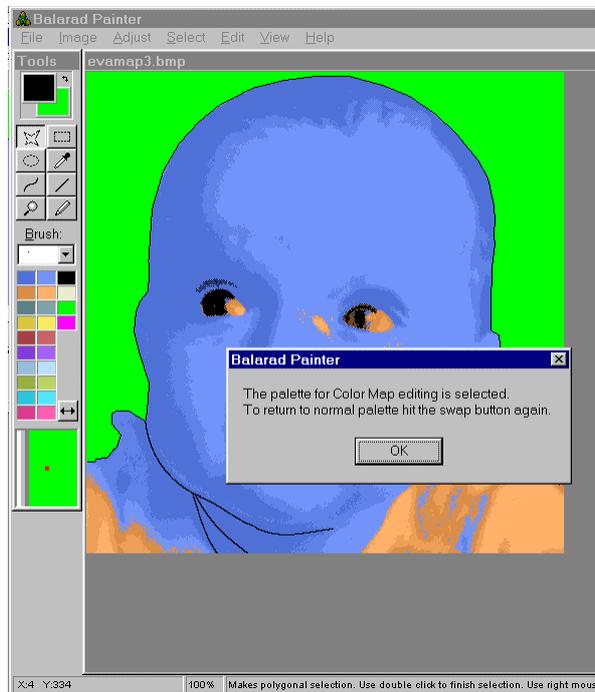
Eva 3d

Open Color Map in Painter. Of course, it is in untrue colors. You see the blue (face) color running into shirt area and brown (shirt) color on the nose and mouth.



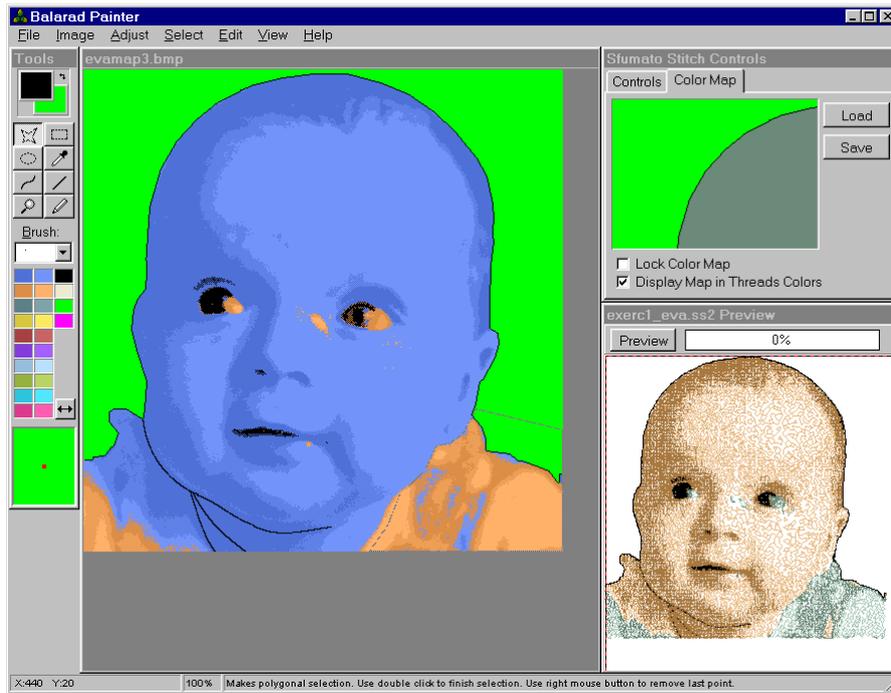
Eva 3e

Switch palette to Color Map palette by clicking on button with arrows. You need to have Sfumato 2.02 to have this palette. If you have Sfumato 2.01, you can use Pick Color Tool for picking colors from map instead of palette.



Eva 3f

We are going to replace light and dark blue colors on the right shoulder with dark brown. Use Polygonal Selection Tool to select right shoulder area.

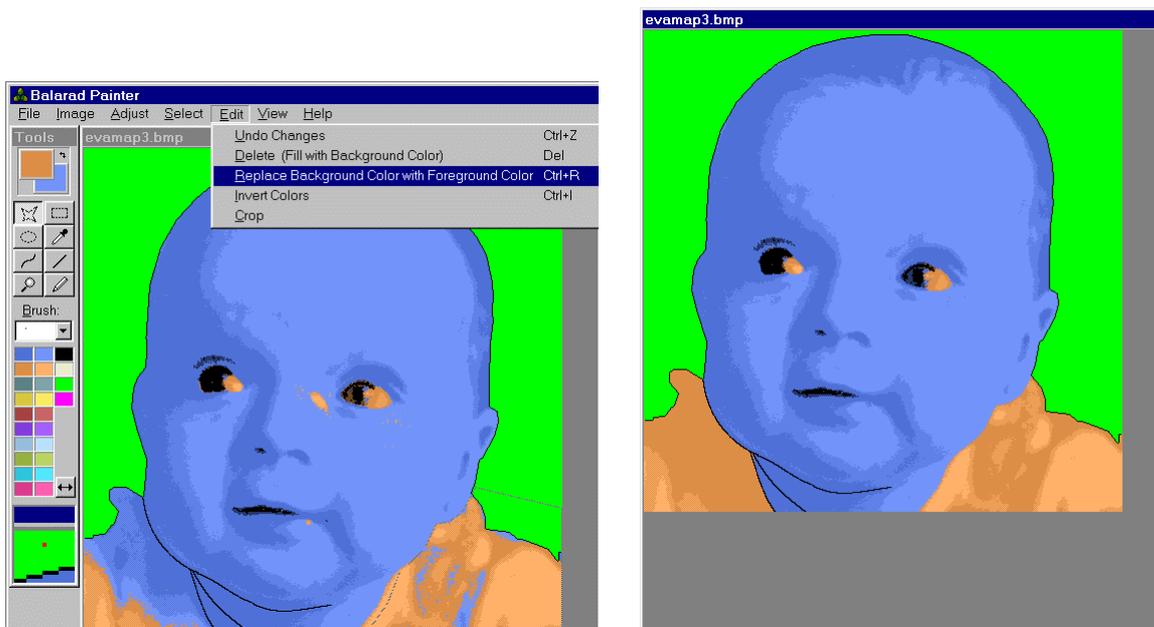


Eva 3g

Pick light blue as background and dark brown as foreground color either from palette or from map (image) with Pick Color Tool. Use Replace Background Color With Foreground Color command from Edit window, or just hit CTRL+R. Light blue will be replaced with dark brown. Do the same for dark blue.

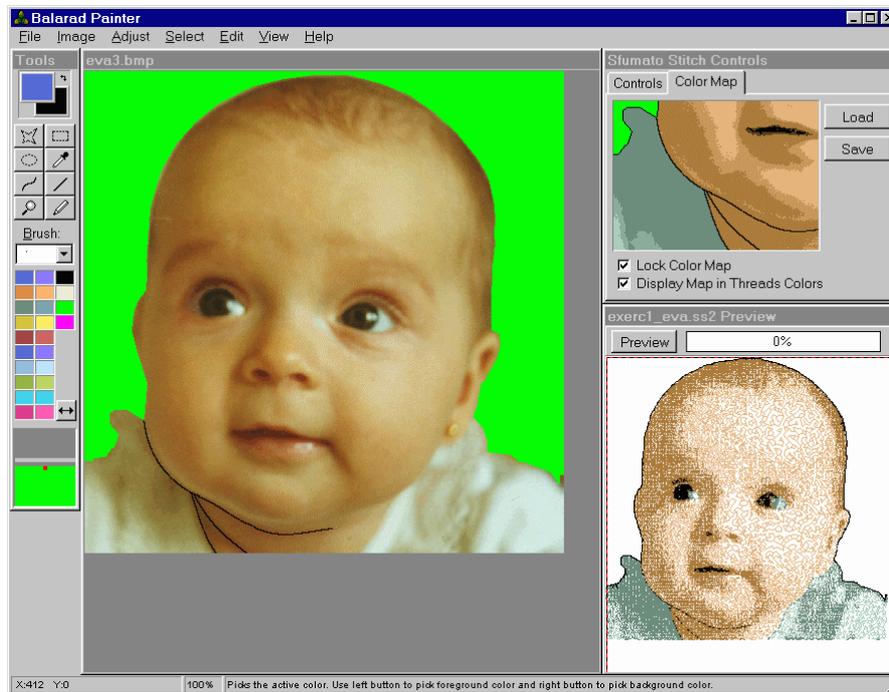
Eva 3h

Replace light and dark blue with dark brown on the left shoulder. Also, replace brown color on nose and mouth with blue. Thus, we have achieved the right color layout. Your map should look like this picture. Save map to disc.



Eva 3i

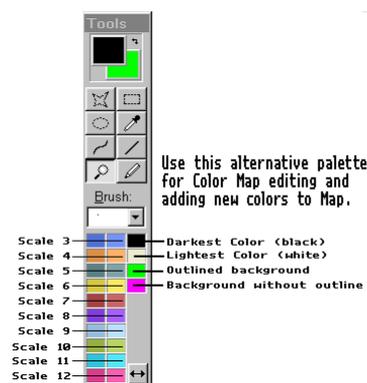
Open Eva image in Painter and load edited map into Color Map window. Hit preview to see result. See the layout of colors in previewed design.



Discussion to Lesson 3

Tip:

The meaning of colors in Color Map Palette is as shown on this picture:



Tip:

When the Color Map is open in Painter, do not use Preview. Nothing bad happens, but design in preview will look ugly. Preview takes image that is actually opened in Painter and displays it as design with use of all colors and density all setting. So, you cannot preview design when Color Map is in Painter. You need to load it back to Sfumato and also you need to reload the image to Painter.

Tip:

I realize that you make a great effort to select/adjust palette colors so that hair, face, shirt ... etc. are of separate color. It is NOT REALLY necessary. You can achieve this more effectively by editing of color map.

Really necessary is to:

- Adjust photo so that there is good contrast, shadows and highlights.
- Enable the appropriate number of scales usually one scale for hair, one for skin, one scale for shirt ... etc. Do not enable too much colors.
- Place the palette colors ROUGHLY - there is no need to play with these colors forever. In most cases you will need to edit the color map anyway. It usually doesn't matter very much whether you place palette colors (red dots) more or less precisely.
- Edit the color map and replace colors to right places. It is quite easy, especially on portraits, because there are no complex shapes.
- In fact, the RIGHT NUMBER of colors and their placement during color map editing is really CRUCIAL. The thresholds of dark and light shades in Scales are far more important than shades themselves, because thresholds define the border of shades, which is hard to edit in Color Map, but shades themselves can be replaced easily.

I would like to suggest to you to pay more attention to enable just the necessary number of colors and to editing of color map, than to placement of red dots (palette colors) in histogram.

Question: I have tried 3 times to load version 2.02 to my 7.01 version of Sfumato program and it will not load. I have checked "about" in Sfumato program and it is still saying V7.01.

Answer: It sounds like you are in Embird, and have not made the trip to Sfumato Plug-In. 7.01 is the Embird Version #...Sfumato is only upto V2.02. When you first open Embird, you are in Embird Manager. Rt click on Editor found in the Menu. The screen will flicker, now you are in Embird Editor. If you do not see full screen, hit the restore/maximize icon in the uppermost right corner of the Windows Screen.

Now go to Insert/Sfumato on the Menu OR rt click on the Sfumato Icon in the upper rt corner (between the A (Alphabet Plug-Ins) and the Needle (Icon for Thred Plug-in).

Now, Sfumato should load, go to the Help/About Sfumato to view Version.

Tip: When you finish editing of the map in Painter, save it FROM PAINTER as any other image. Do not use Save Map button in Sfumato, because you create Map of the Map this way.

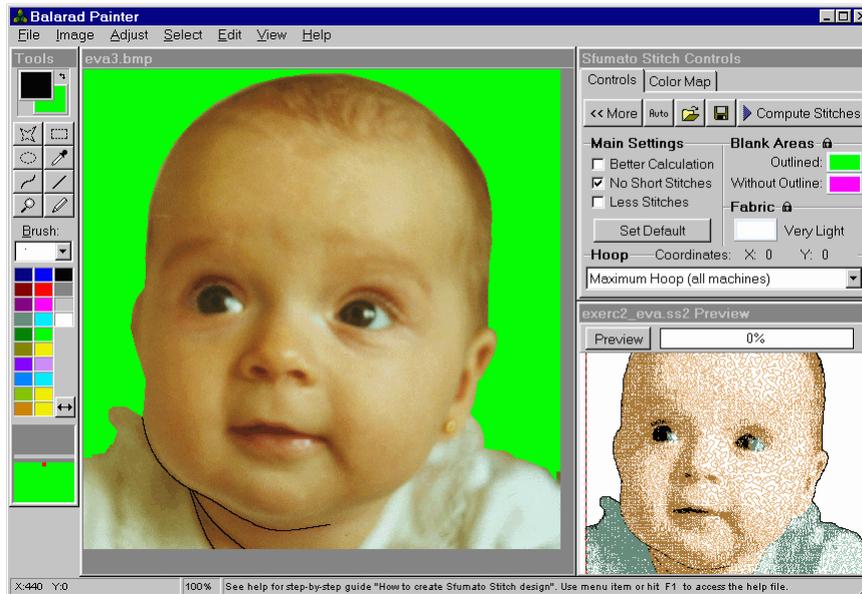
Lesson 4

Adding Colors to Color Map

Eva 4A

This is the current state of project. Looking at Preview I think that following changes should enhance the design:

- the right eye has an "eagle" look because there is too much brown in iris. Let's make whole iris black.
- the "white" part of eyes is green in fact. Let's make these parts another (very light blue) color.
- Lips should be of separate (pink) color.
- The black outline is too dark. Let's make it other (separate) color.



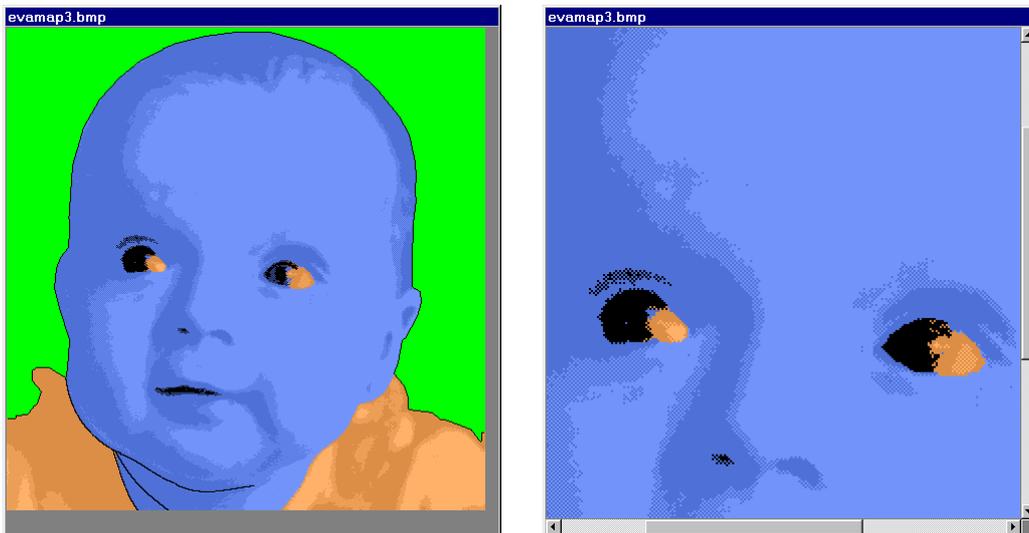
So, we will have to add three new colors. All above changes can be done in Color Map.

Eva 4B

Load the Color Map into Painter. You should have it from previous lesson. This picture shows the Map.

Eva 4C

See how I replaced the brown color in IRISES with black.

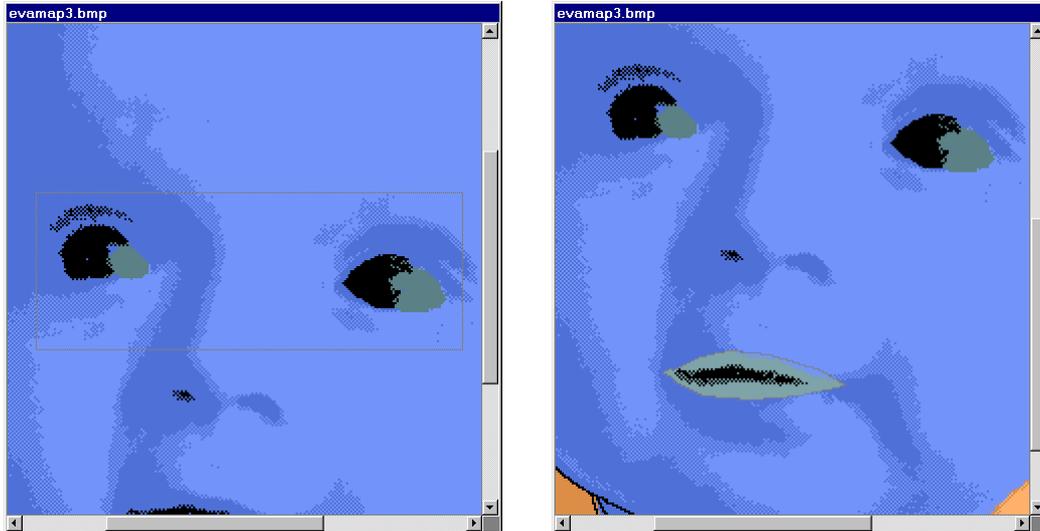


Eva 4D

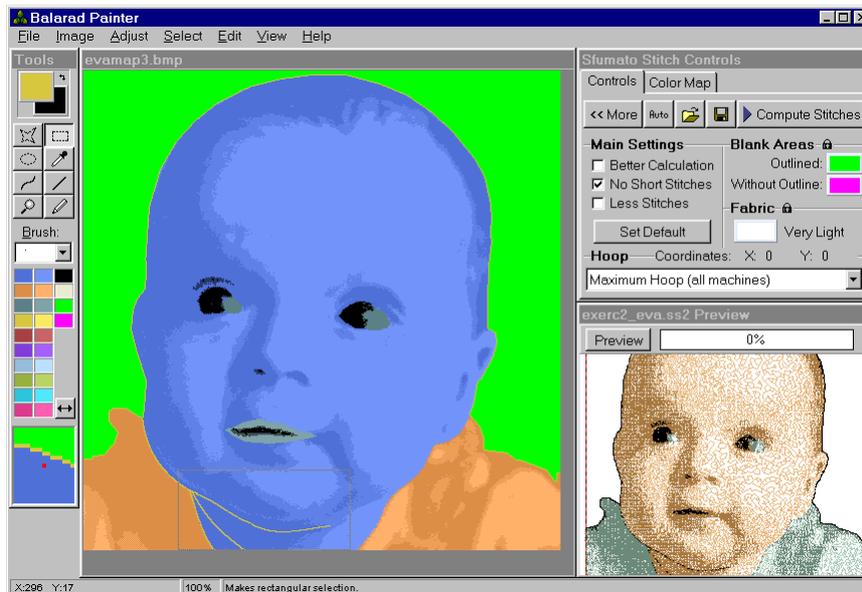
Now I picked the unused (dark teal) color from Color Map palette and I have replaced the brown (white parts of eyes) with dark teal. Thus, I have added new color to Map. I have used the Rectangular Selection Tool to select roughly both eyes at once, as there is no need to select them more precisely.

Eva 4E

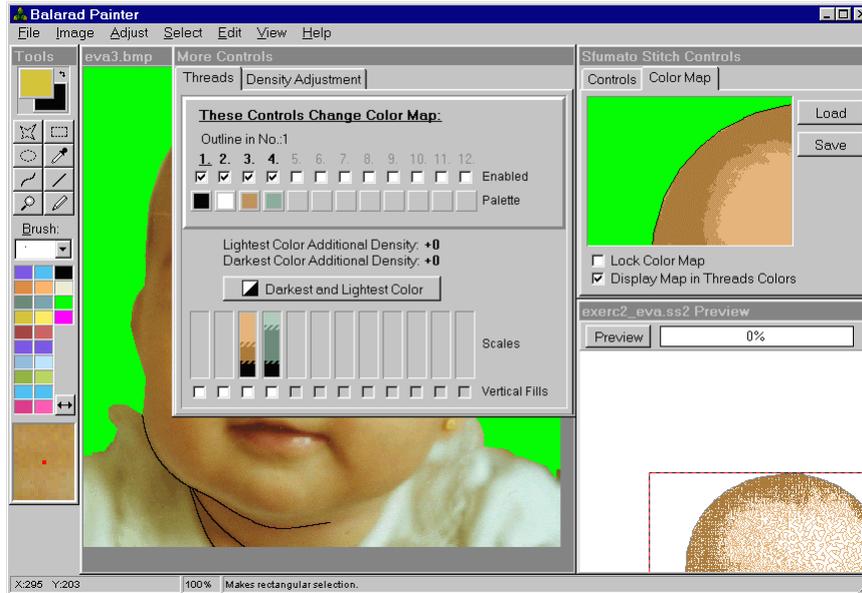
I made the lips a new color. I have picked the unused light teal color and I have replaced blue color on lips with this light teal. Both dark and light teal belong to Scale no.5. I will have to enable this scale later.

Eva 4F

I made the outline of design a new color. I have picked the unused color again (dark yellow) and I have replaced black outline with dark yellow. Dark yellow belongs to Scale no.6. Again, I used the Rectangular selection tool and I have roughly selected outline in three or four steps, each time replacing colors inside selection.

Eva 4G

The editing of Color Map is finished, therefore I reloaded the original image. Before I loaded the edited map, We will have to enable scales no. 5 and 6. Also, we need to set desired thread shades to scales 5 and 6, because default shades are gray.

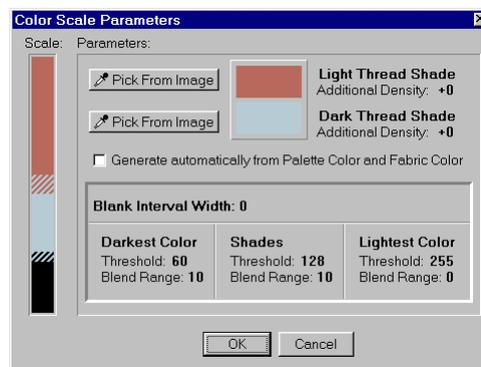
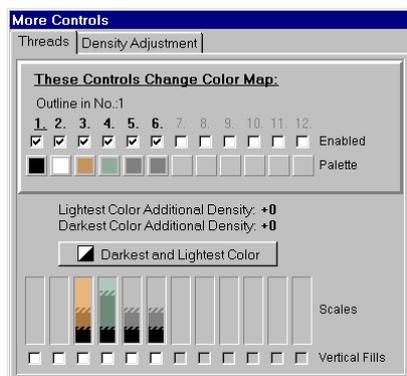


Eva 4H

Enable the Color Scales 5 and 6. Just check the boxes under numbers 5 and 6. Then click on Scale no.5 color bar to edit thread shades.

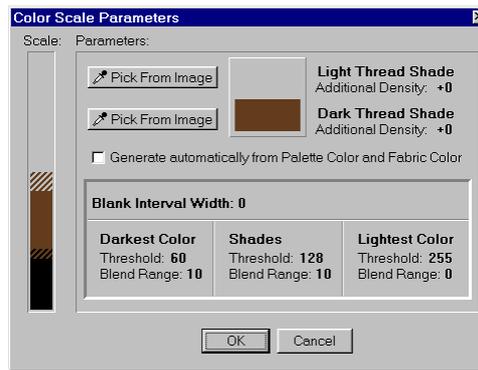
Eva 4I

Change Dark Shade to light blue (eyes) and Light Shade to dark pink (lips). Dark teal in Map represented dark Shade of this scale and light teal represented the Light Shade.



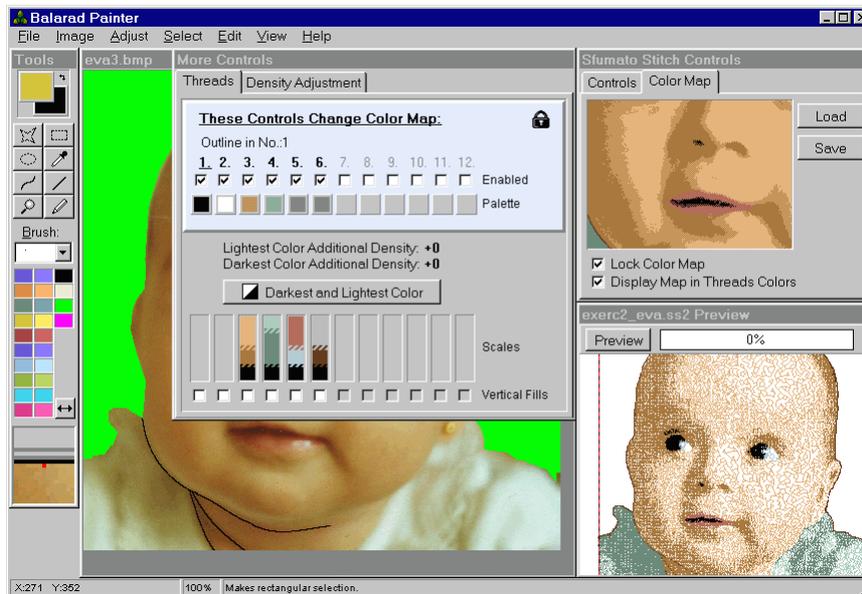
Eva 4J

Using the same approach, change the Dark Shade of next (no.6) scale to dark brown (this will be used for outline). Dark Shade of this scale was represented by dark yellow in color map.



Eva 4K

Load the edited color map and hit Preview button. You can see the new colors in preview window. Irises are black, whites of eyes are light blue, outline is dark brown and lips are dark pink. Do not forget to save current state to project file. We will continue from it in next lesson.



Discussion to Lesson 4

Tip: Did you know that you can change the order of color scales by simple drag-and-drop operation? Just press left button on scale number and drag it to other number. Then release the button. The two palette colors and their scales will change their order. However, this works only for enabled colors.

Tip: Did you know that when you edit the shades of Color Scale, you can copy Dark Shade color into Light Shade color and vice versa? Just drag and drop one color onto other. You may need this function if you have chosen the one shade and you want to make the second shade the same, but darker or lighter. In such case, copy color to second shade, double click it and adjust just its brightness.

Lesson 5

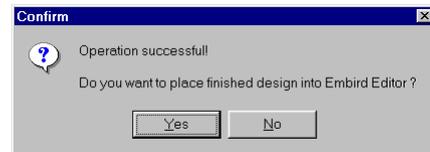
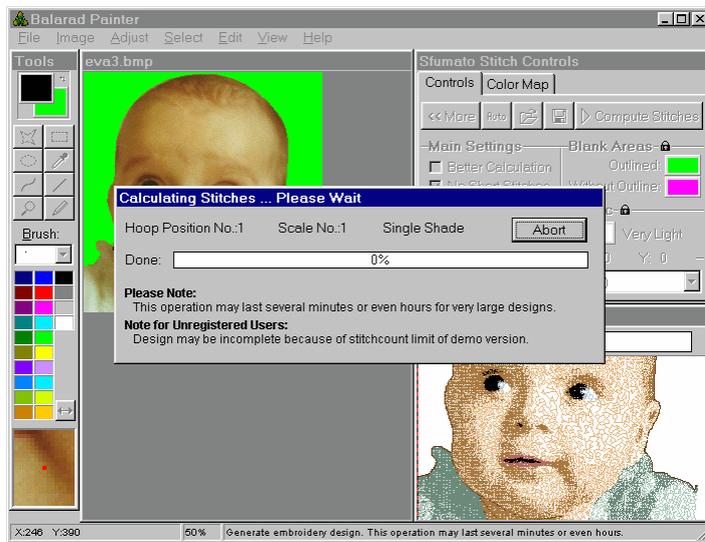
Finishing Design

Eva 5a

Open project from lesson 4. Hit the Compute Stitches button to generate design. Wait until the calculation is finished.

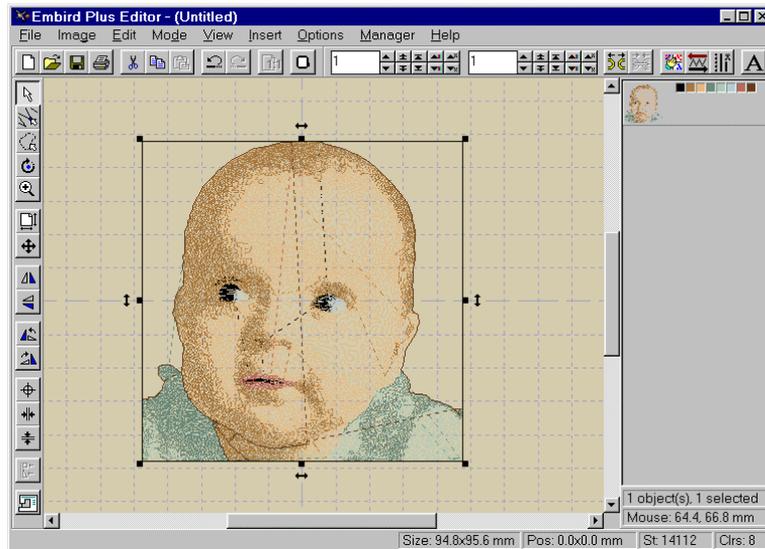
Eva 5b

Click YES when this window appears. Design will be transferred to Embird Editor for further adjustment and saving.



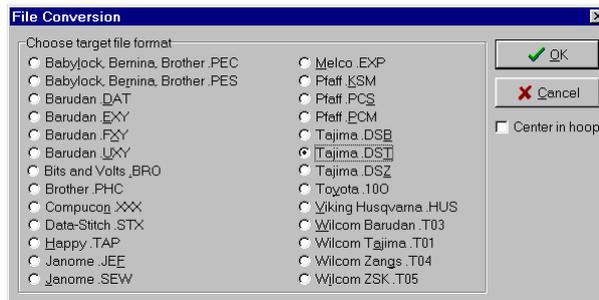
Eva 5c

Design will appear in the Embird Editor window. It happens sometimes, that design is somewhere out of screen. However, the small icon in the top right corner should be visible. Click on this icon to select design and then center it within hoop. Use scroll bars and zoom tool to bring design to visible area.



Eva 5d

Save design to hard disc in desired format.



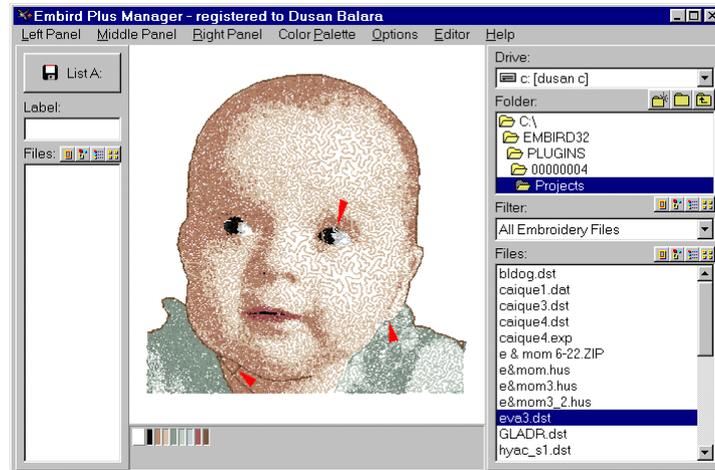
Eva 5e

Close Editor. The Embird Manager window should open automatically with preview of design. In this case, 3D preview was used (preview mode can be defined in Options menu).



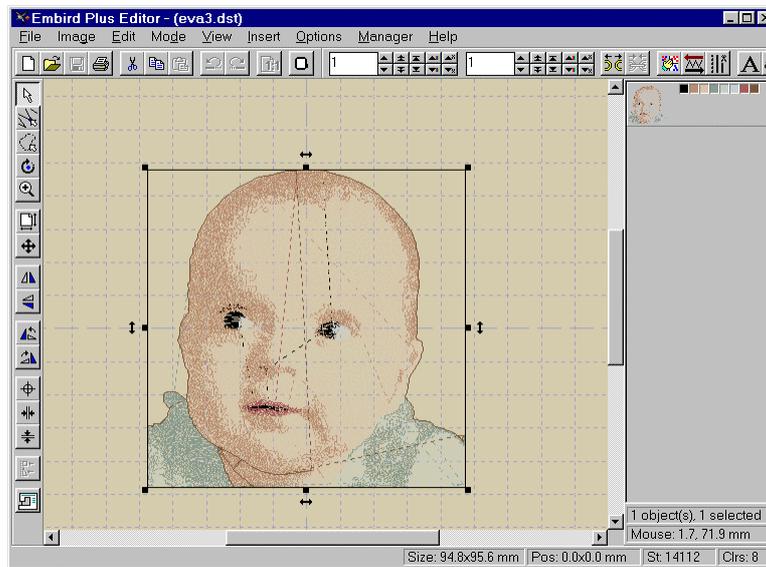
Eva 5f

I have adjusted all colors to look more natural (in my opinion). Now I noticed that stitches on some places should be edited (see the red arrows). There is still too much blue on right eye iris. There are some short cut stitches on the neck that need to be edited. Also, I would add a bit of outline to right ear. Let's place design into Editor and make this editing. Click on Editor item in main menu.



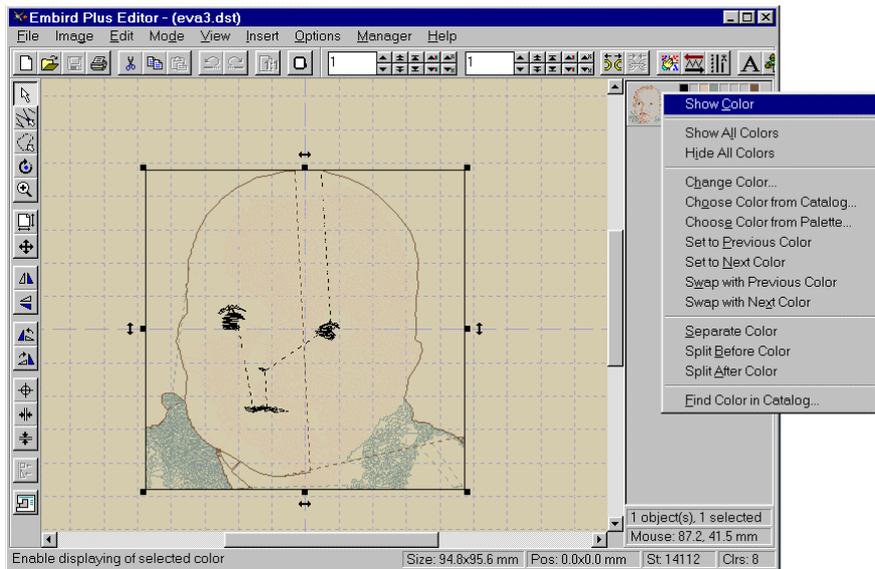
Eva 5g

Design is opened in Editor again.



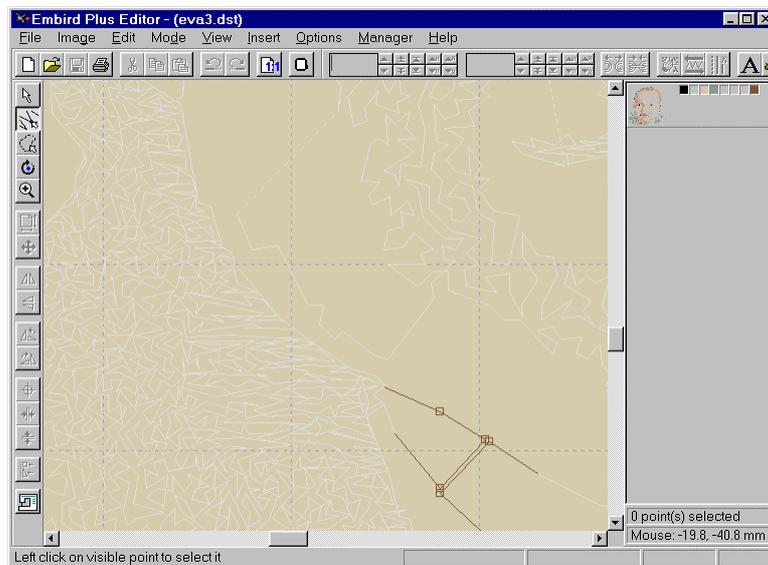
Eva 5h

Hide as much colors as possible to clear the working area. Click right button on small color boxes in top right corner to invoke pop-up menu for hiding/showing colors.



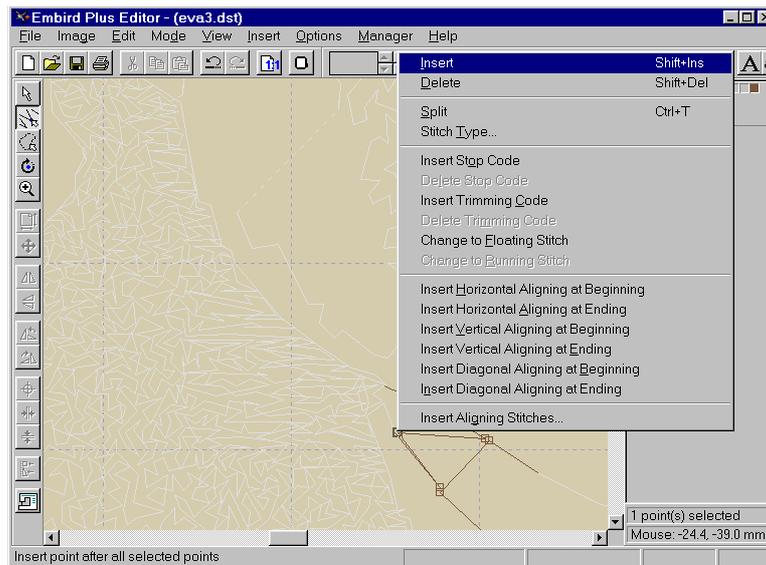
Eva 5i

We will use "Points Editing Mode" to adjust stitches. Select this tool and then draw rectangle around area that you want to edit. Selected stitches are highlighted and the rest of design changes to gray color. You can move single stitches now. You can also add/delete stitches by clicking right button on small squares that represent ends of stitches.



Eva 5j

When you click right button on little square, the pop-up menu for adding/deleting of stitches appears.



Eva 5k

When all editing is done (it takes just few minutes), save design again and close the Editor window. Design is put back into Manager. You can see that there is more black in iris, there is no short cut on neck outline and there is little more of outline on right ear. Design is now ready to sew.



Discussion to Lesson 5

Tip: You can decrease number of stitches of design somewhat by checking the "Less Stitches" box in Sfumato Controls window before generating design (before computing of stitches).

Tip: When sewing design, avoid of touching the hoop when you change threads. Even the lightest touch may move the hoop a little and cause the gaps in design. Machine cannot recognise that hoop was moved and it cannot move it back.