Data 7 Consultancy

Prepare image to convert to embroidery design using ICE

Document Introduction

This guide provides a comprehensive, step-by-step walkthrough on how to prepare any image for conversion into an embroidery design using the innovative features of the ICE app. Whether you're a seasoned designer or a first-time user, this document ensures a seamless experience from start to finish.

Terms used in this document:

- Menu strip: The top screen menu
- Context menu: Menu accessed by right-clicking on the image

Hey! We also have a video of the process for your convenience.

Check it out: Optimise and Prepare Your Images to Create Stunning Embroidery Designs

Choosing your image

Supported formats

Currently, we support many of the most widely use image formats listed below:

- **JPEG (or JPG): Joint Photographic Experts Group** – Common for photographs and web images, known for good quality with smaller file sizes due to compression.
- **PNG: Portable Network Graphics** – Popular for images requiring transparency, offering high quality without compression loss.
- **GIF: Graphics Interchange Format** – Best for simple animations and small graphics, limited to 256 colours.
- **BMP: Bitmap** – An uncompressed format with high quality, often used in older systems.
- **TIFF: Tagged Image File Format** – Frequently used in professional printing and scanning, supporting high-quality images and multiple layers.
- **SVG: Scalable Vector Graphics** – A vector graphic format ideal for designs, logos, and illustrations that need to maintain quality at any size.
- **ICO: Icon File** – Commonly used for icons in applications and websites, supporting multiple sizes and transparency.

Loading an image

To load an image into ICE, click the Open Image icon, or use the file on the menu strip, as shown below:

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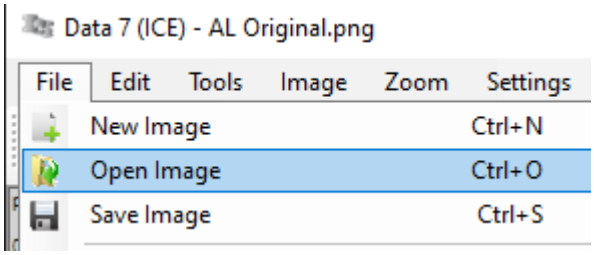
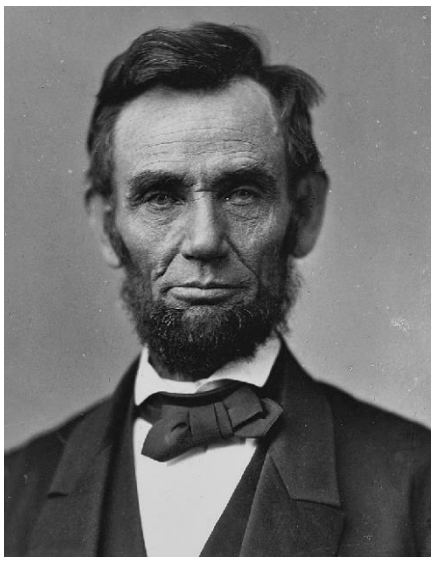
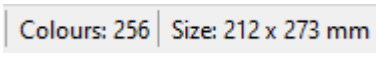


In this example, we'll use an image of Abraham Lincoln.



This image has 256 different colours in it and is 21.2x27.3 CMs in size



Preparing your image for conversion to embroidery design

What does it mean to prepare your image for embroidery?

An image may appear clean and ready for conversion to an embroidery design; however, in many cases, the design contains multiple colours due to shading. It may also have numerous pockets or regions of colour pixels. Converting this type of image directly into an embroidery design could complicate the sewing process, resulting in more colour changes than the machine can handle or necessitating frequent rethreading with different coloured threads.

Additionally, multiple pockets or regions of pixels, even in a few colours, would lead to numerous jump stitches between these areas.

And lastly, the image size may not be the size of the final design output you desire.

Therefore, ICE offers tools designed to reduce both colour, region counts and size according to your specific requirements, thereby facilitating the creation of the desired final product.

<u>Resizing the image to the required size:</u>

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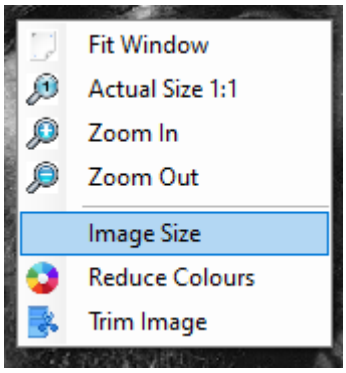
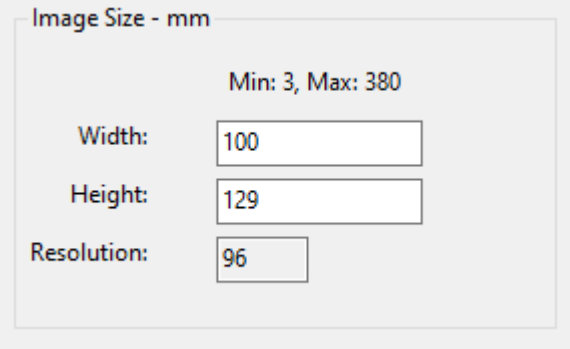


OK, so the first change we need to make is to resize the image to be the size of the embroidery design we require. The Image Resize option is on the menu strip under Image, or you can use the context menu, then choose the Image Size option

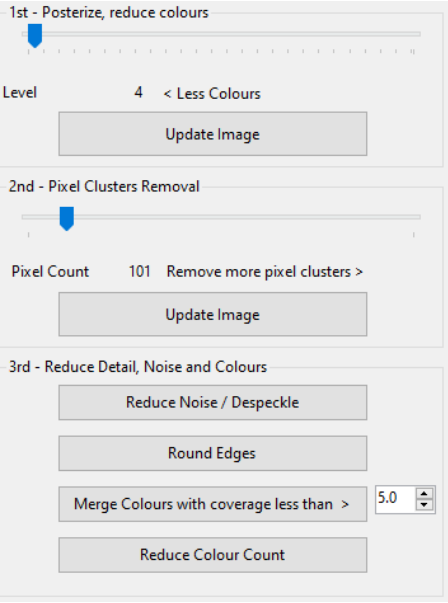
In this example, I'll change the image to be 10 x 12.9cms.



Now that the image is the right size, let's reduce its colours and complexity.

Image Utilities

A variety of image tools are available in ICE. To assist you in utilizing them effectively, we have arranged these tools in the sequence we recommend for optimal use. See below:



1st, use Posterize to change the gradient between colours and reduce the count.

2nd, use Pixel Cluster Detail to reduce cluster of pixels. Try changing the Pixel Count and click the "Update Image" button to see the results.

3rd, use the Reduce Noise, Round Edges and reducing colours utilities to simplify the image.

Try using the above utilities multiple times and in different orders to obtain the best results for you to produce a better embroidery design.

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You can explore various options with different settings that meet your specific needs. There is no single group of settings that fits all, as each image will be unique. Experiment until you achieve the desired results.

OK, let's get started, select the Image utilities icon.

Posterize

This function will reduce the number of colours or tones in the image, resulting in a simplified and flat visual effect. The process segments the image into distinct colour regions or bands instead of maintaining a smooth gradient.

It is advisable to begin with level 4; the lower the setting, the fewer the colours presented. You can try different options until you achieve the desired result. Once the level has been configured, proceed by clicking the "Update Image" button.

For the Abraham image, this has reduced the image colours to just 4, see the results below. 😊

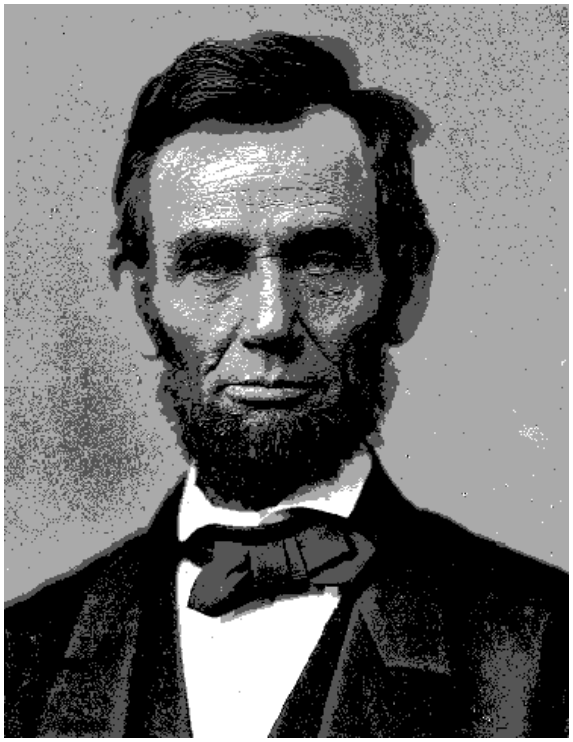

Image after using Posterize.

Pixel Clusters Removal

Next, we use the Pixel Clusters Removal tool. Depending on the setting, I'd recommend starting with 100, it will replace pixel clusters with the surrounding colour. Experiment until you achieve the desired result. Click "Update Image" a few times to ensure all clusters are removed.

Here's the result of removing pixel clusters less than or equal to 100.

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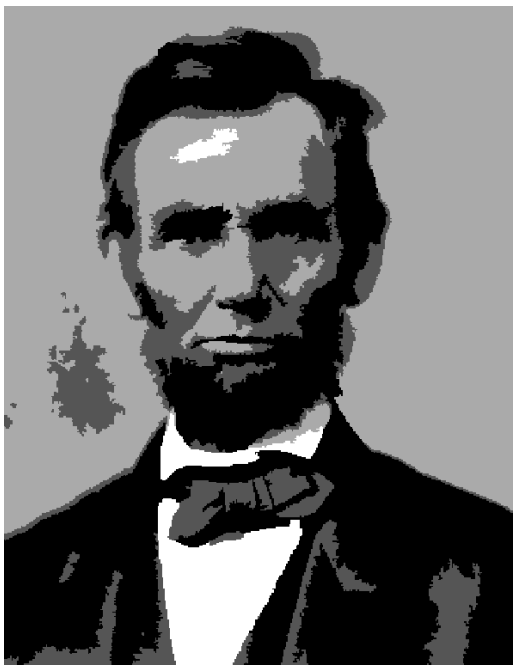
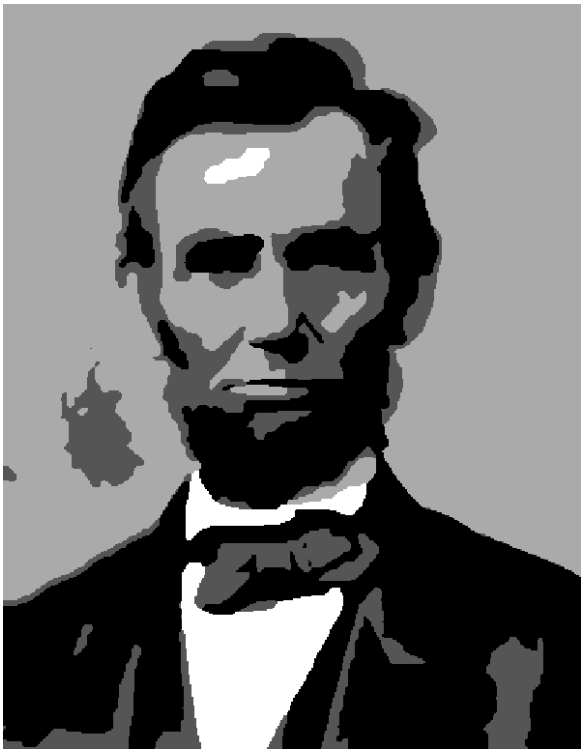


There are still 4 colours but fewer regions or pockets. The detail and edges now require smoothing or rounding to avoid having too many cul-de-sacs around the edges in the design.

Reduce Detail, Noise and Colours

Again, like with the above tools, you can use these as many times as you need to until you get the desired results.

First, I'll click the "Reduce Noise / DE speckle" button a few times to remove the single jagged pixels in and around the image.



Next, I'll click the "Round Edges" button, just once in this case, which is provided the results I need.

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Merge Colour with coverage less than option

This tool identifies colours that cover less than or equal to the specified percentage. For instance, if the threshold is set at 5%, any colours comprising 5% or less of the image will be merged with the closest matching colour.

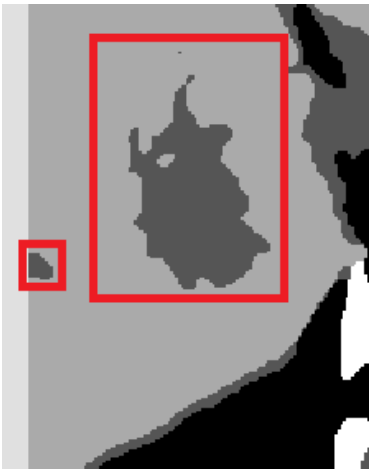
Reduce Colour Count option

This function reduces the number of colours in an image to the specified value. Acceptable values range from 2 to 256, inclusive.

As the design only has 4 colours in at this point, we don't need to use the "Merge Colours" or "Reduce Colour Count" tools.

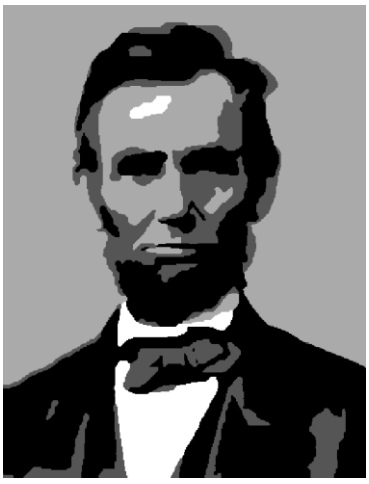
Fill Tool

At this stage, the image is almost ready to be converted into a embroidery design, requiring only a few final adjustments. I'm going to utilize the fill tool here, to eliminate larger clusters of unwanted colours from the design. So, we'll click the Fill tool icon as shown above.



n.b. Here you can see a couple of pixel clusters larger than 100. We could have used the pixel cluster tool and increased the tolerance to more than 100 but that may risk removed parts of the image we want to keep, for example, it could remove eye pupils on some images so this is where the Fill tool is idea.

Now, I click the colour picker tool and select the surround colour as my fill colour. Then, simply click the clusters to fill them with the selected colour.



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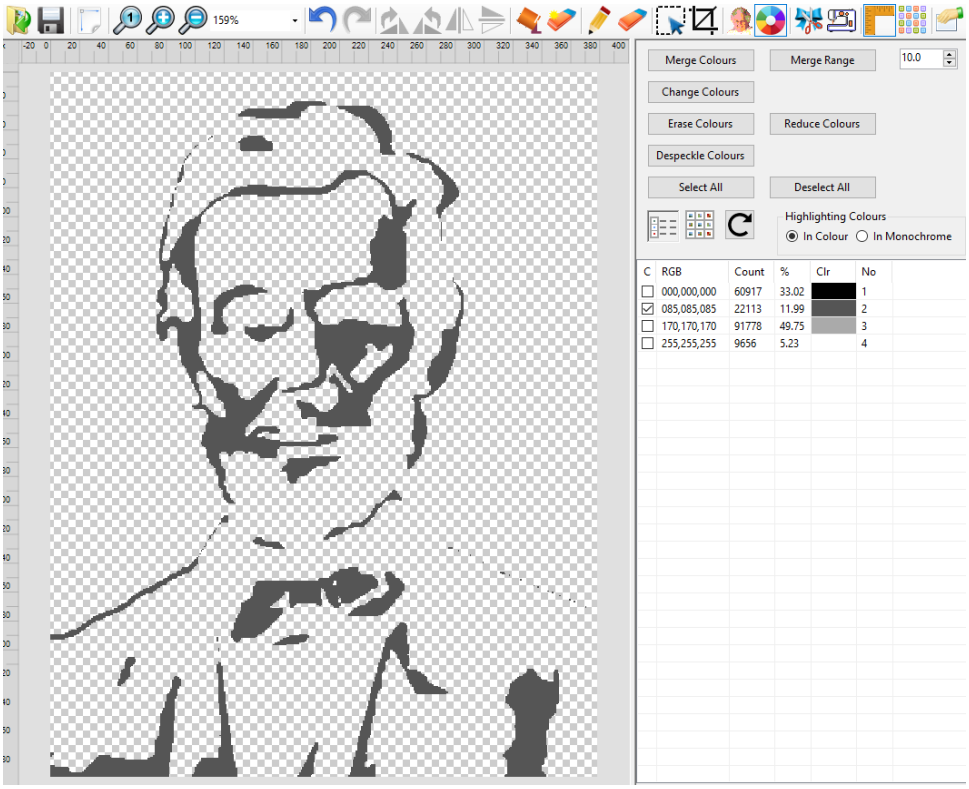
And just like that, the unwanted pixel cluster is gone 😊

Colour Utilities

Finally, just before I convert this image to a design, I want to remove one last colour which has too many regions for my requirements which would cause jumping to too many different areas of the design. For this, I can use the Colour Utilities tool, so let's head on over and click on it.

Below is the colour I want to remove or merge to make the image resemble embroidery more closely.



As I've already highlighted the colour, I can simply click the "Merge Colours" button, as shown below. This will merge the selected colours with their respective closest colour.

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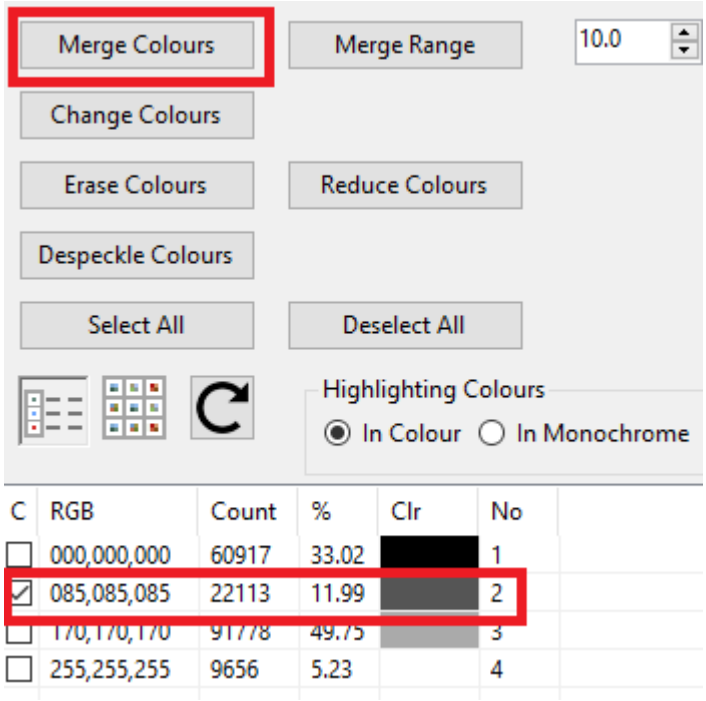
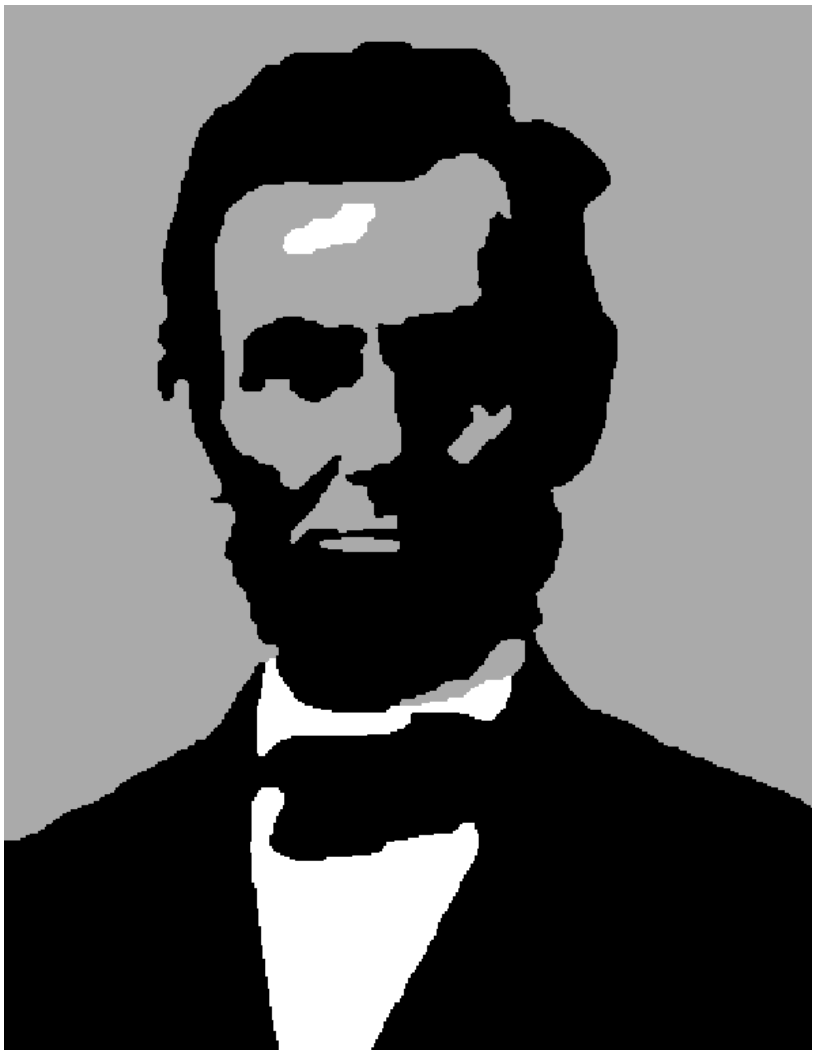


This provides the final result, prepared for design conversion. 😊



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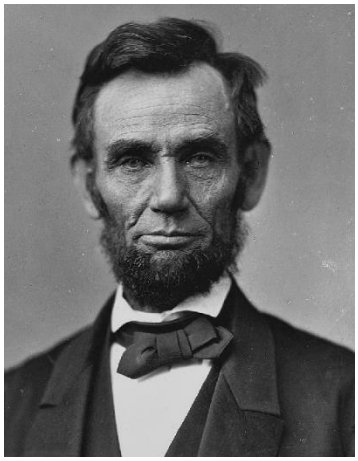
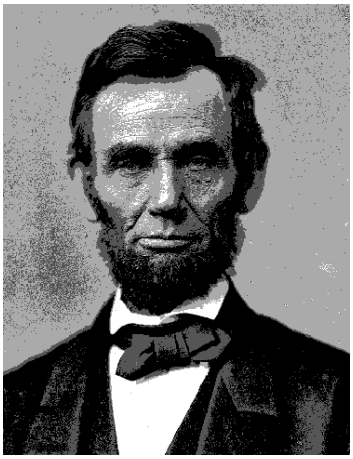
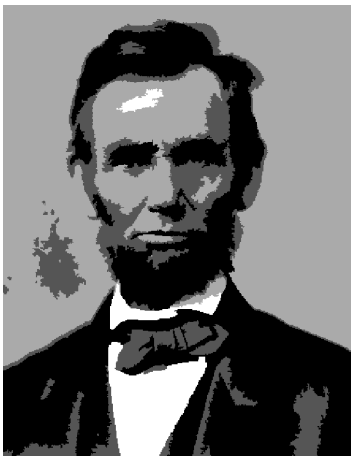
So, lets summarise the image transformation that took, in real time, literally seconds.



Original Image

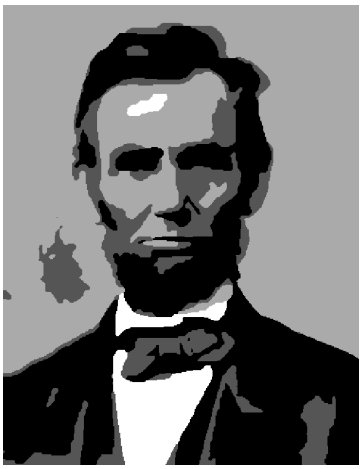


After using Posterizing tool



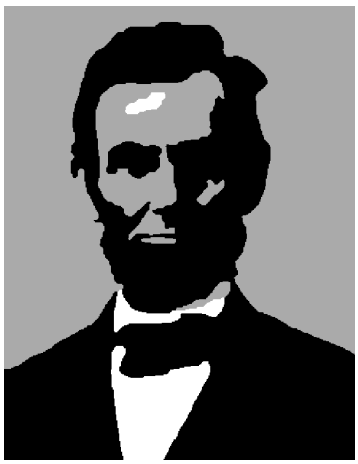
After using Pixel Cluster Removal tool

After using Noise Reduction tool



After using Round Edges tool

After using Fill tool



This is the final result after merging the last unwanted colour using the Merge Colours tool in Colour Utilities.

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Converting Image to Embroidery Design

For a detailed explanation of how to convert images to designs, please see:

"How to convert an image to embroidery design"

Or see the online YouTube video:

Check it out: Converting an Image to an Embroidery Design: A Quick Guide

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