
Vector vs. bitmap

Dear Customer

With this explanation we would like to help you understand better the types and properties of print-ready files we use.

We look forward to hearing from you and hope for a good collaboration.

Contact us via
98 80 07 98 or
storm@stormtextil.dk

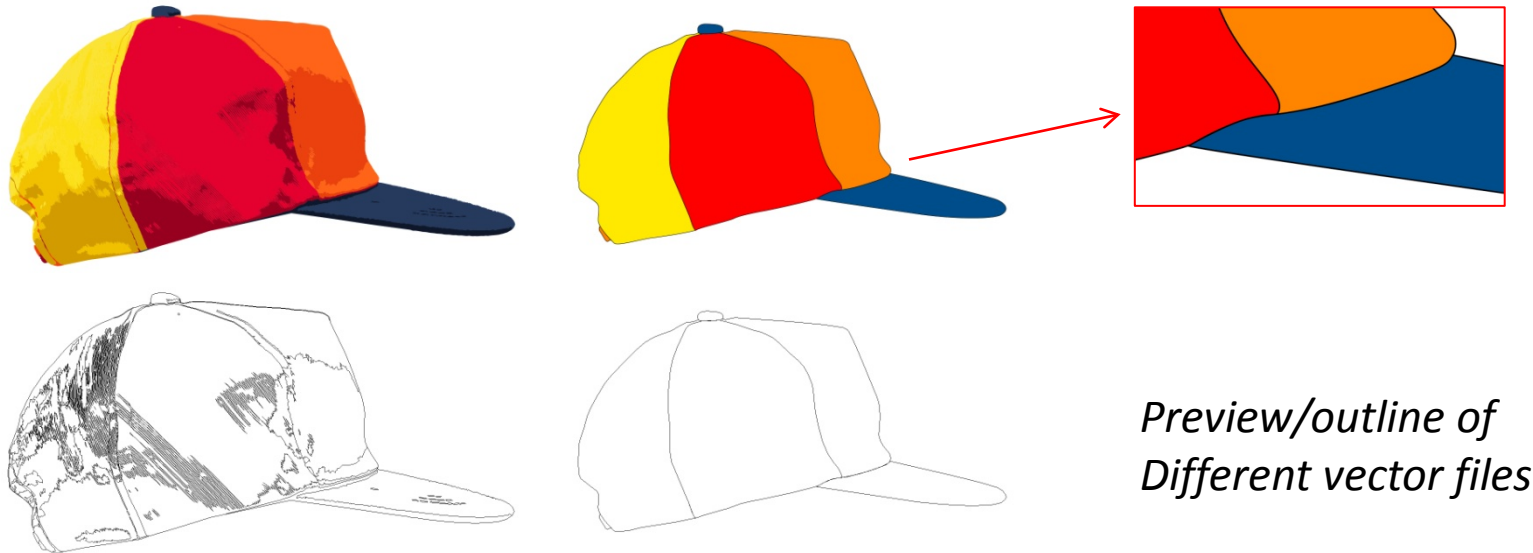
Kind regards,
Storm Textil

Bitmap images (or raster images) consist of pixels (raster), with a defined location and color value. The resolution of the images is measured in dpi, dots per inch, and describes the number of picture pixels per inch.

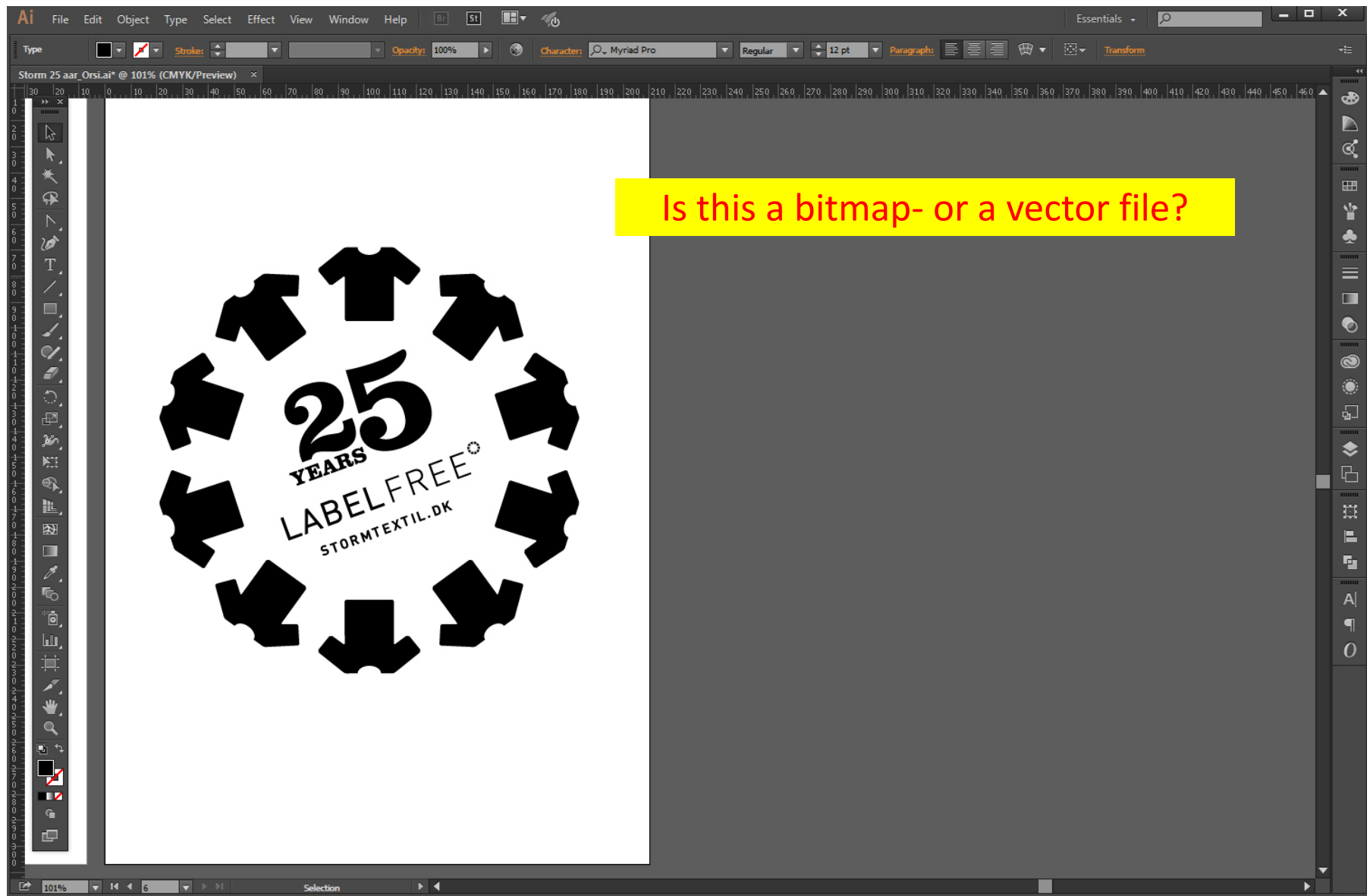


A print file is typically 300 dpi, i.e. there are 300 pixels per inch on the image in 1:1 size. If we enlarge the pictures, the raster becomes visible.

Vector graphics contain mathematical descriptions of points, lines and their relations, which define, how the graphic looks like.

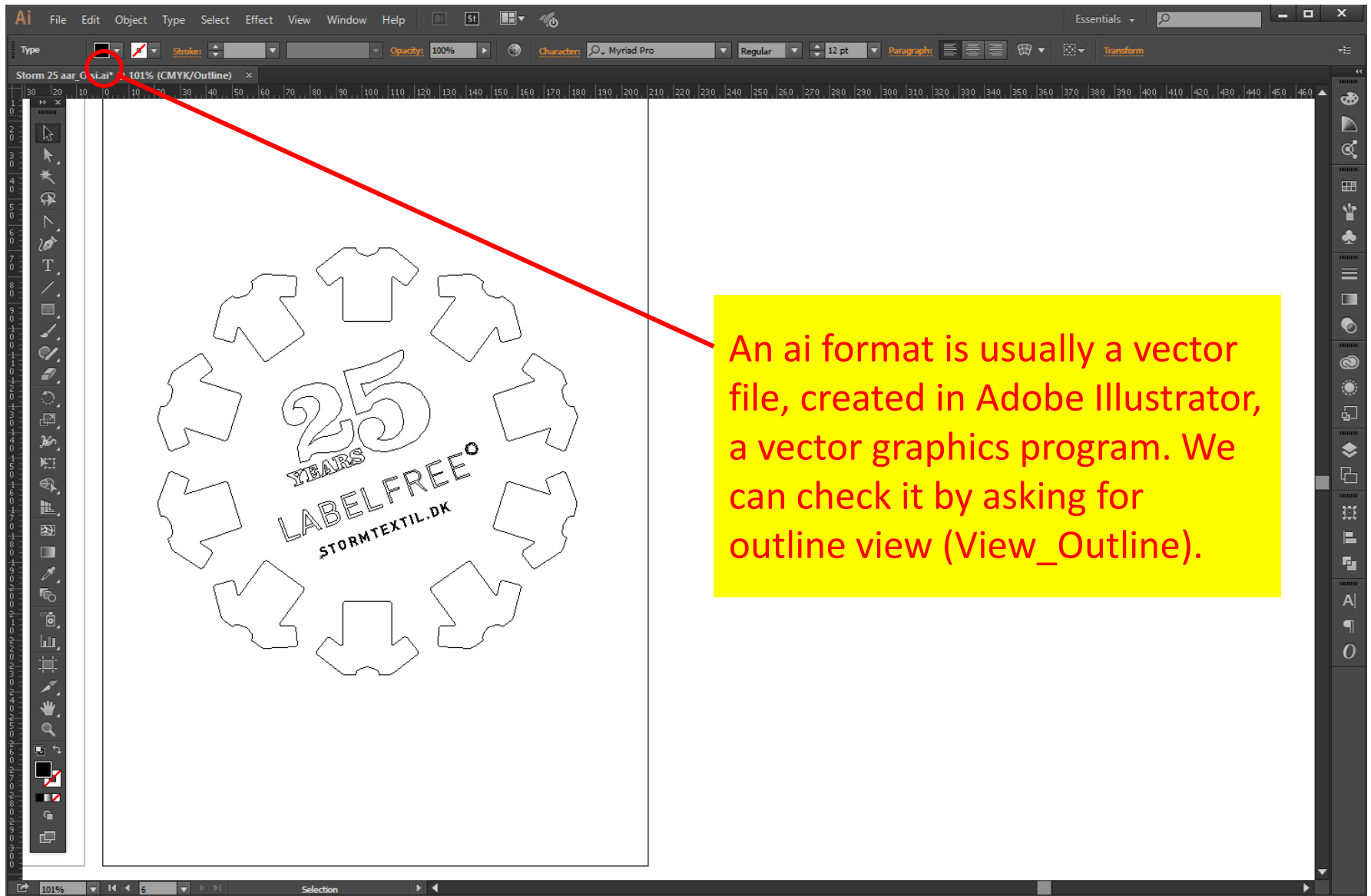


Vector graphic has an advantage: it can be scaled up and down without quality loss; the motif has always the same sharpness. The file size is approximately the same, regardless the width and height of the image. Generally, a vector graphic has a smaller file size than a bitmap graphic. Vector graphics are suitable for logos.



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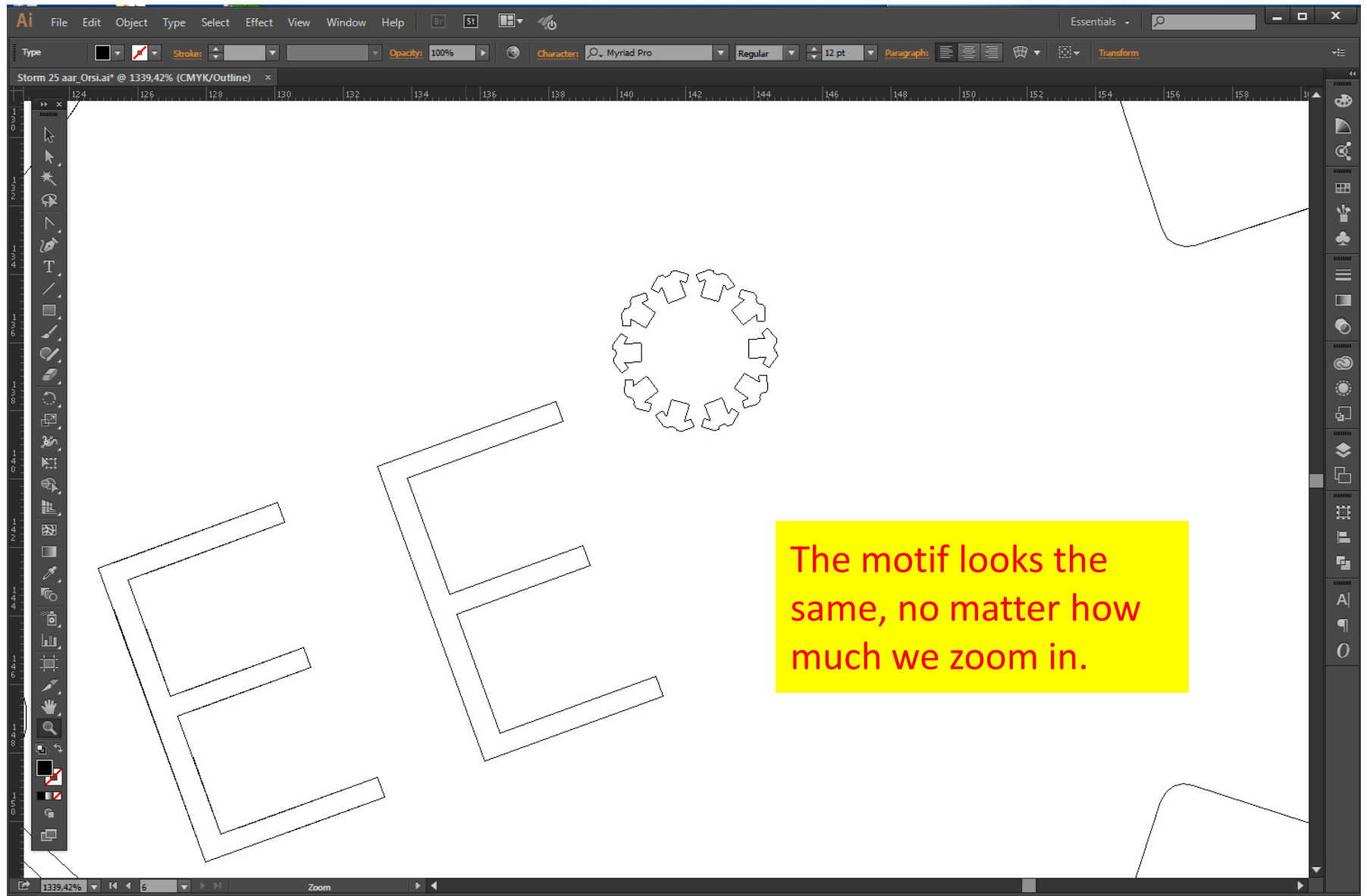
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An ai format is usually a vector file, created in Adobe Illustrator, a vector graphics program. We can check it by asking for outline view (View_Outline).

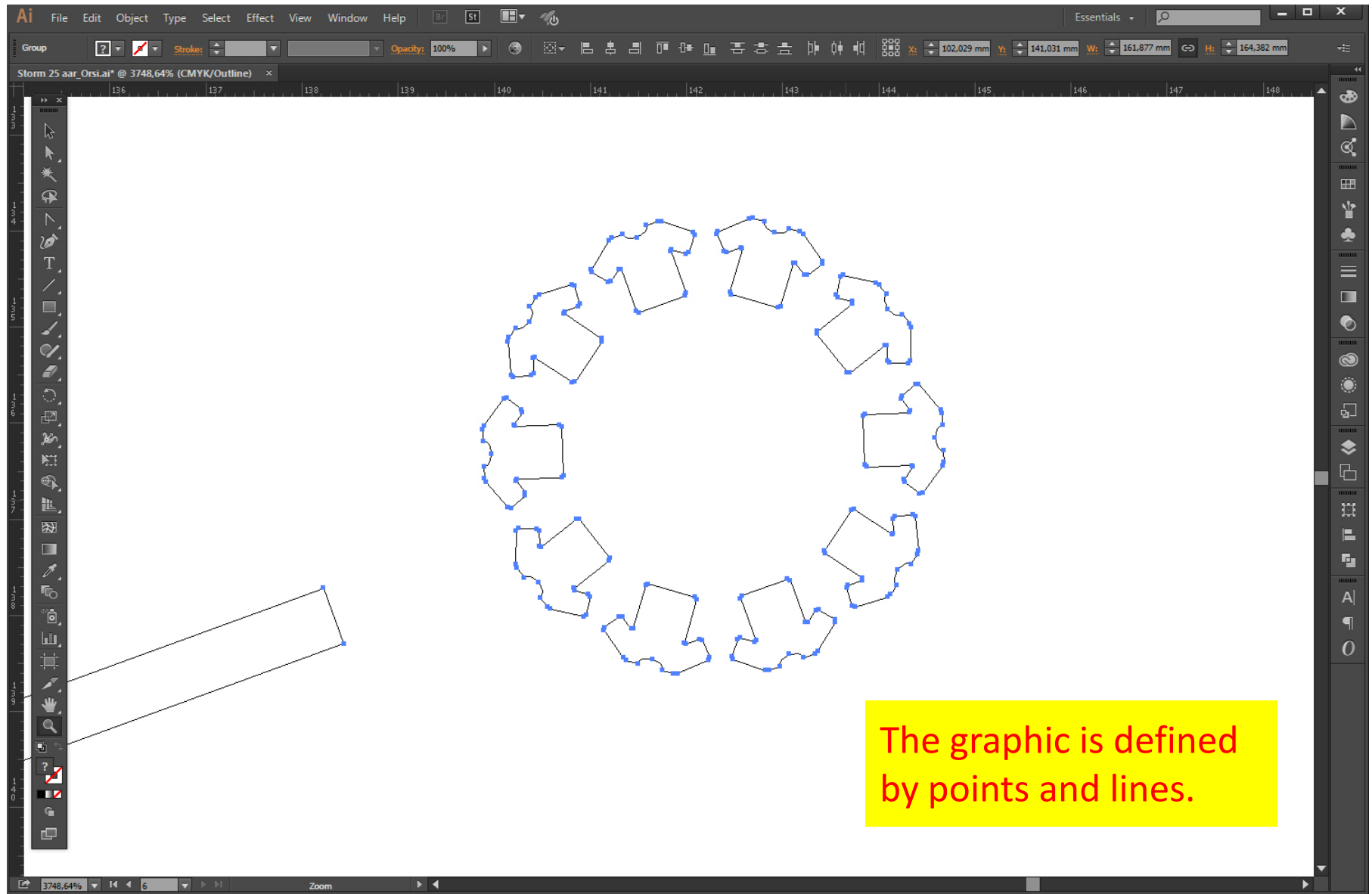
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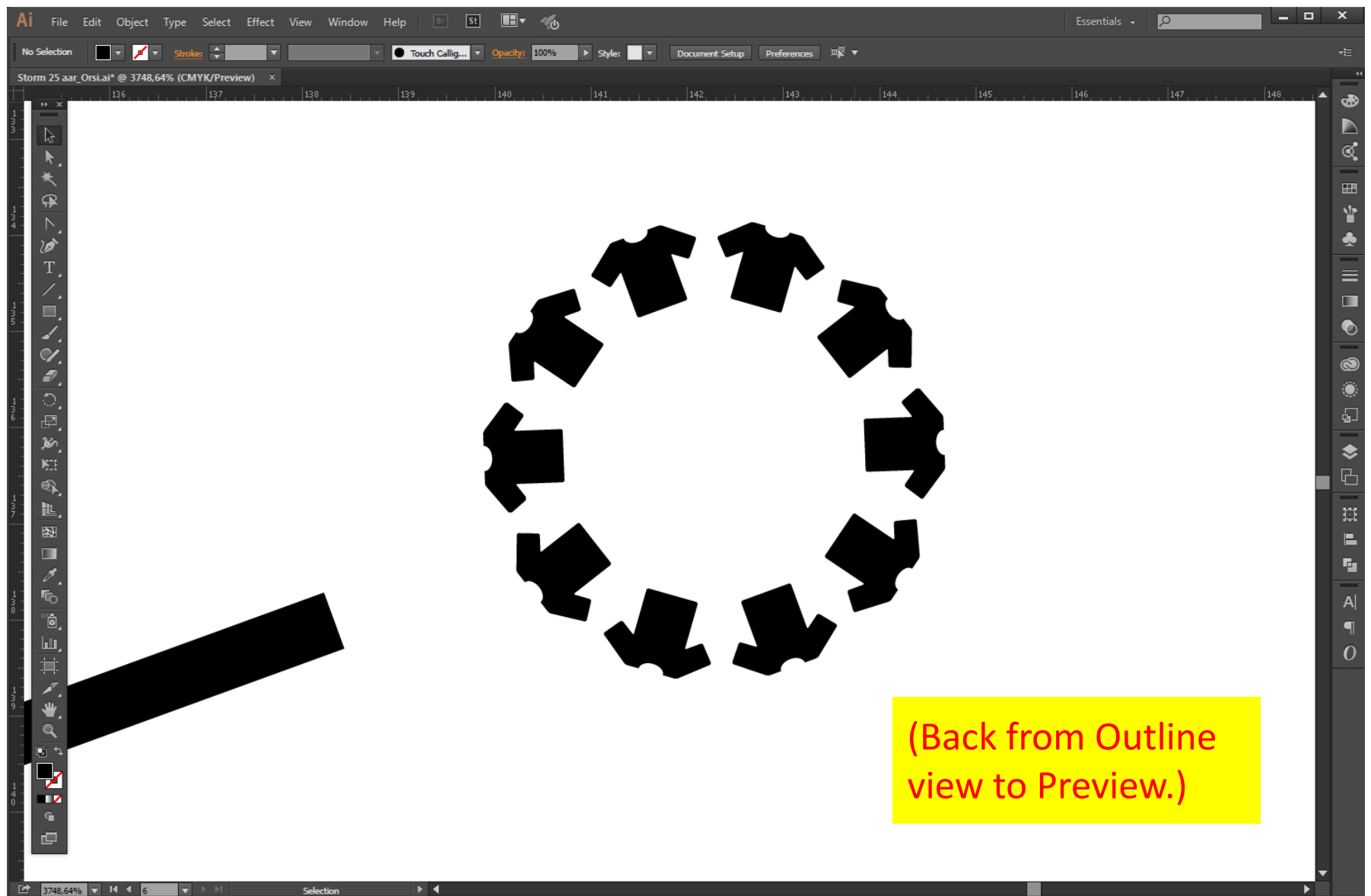
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The graphic is defined by points and lines.

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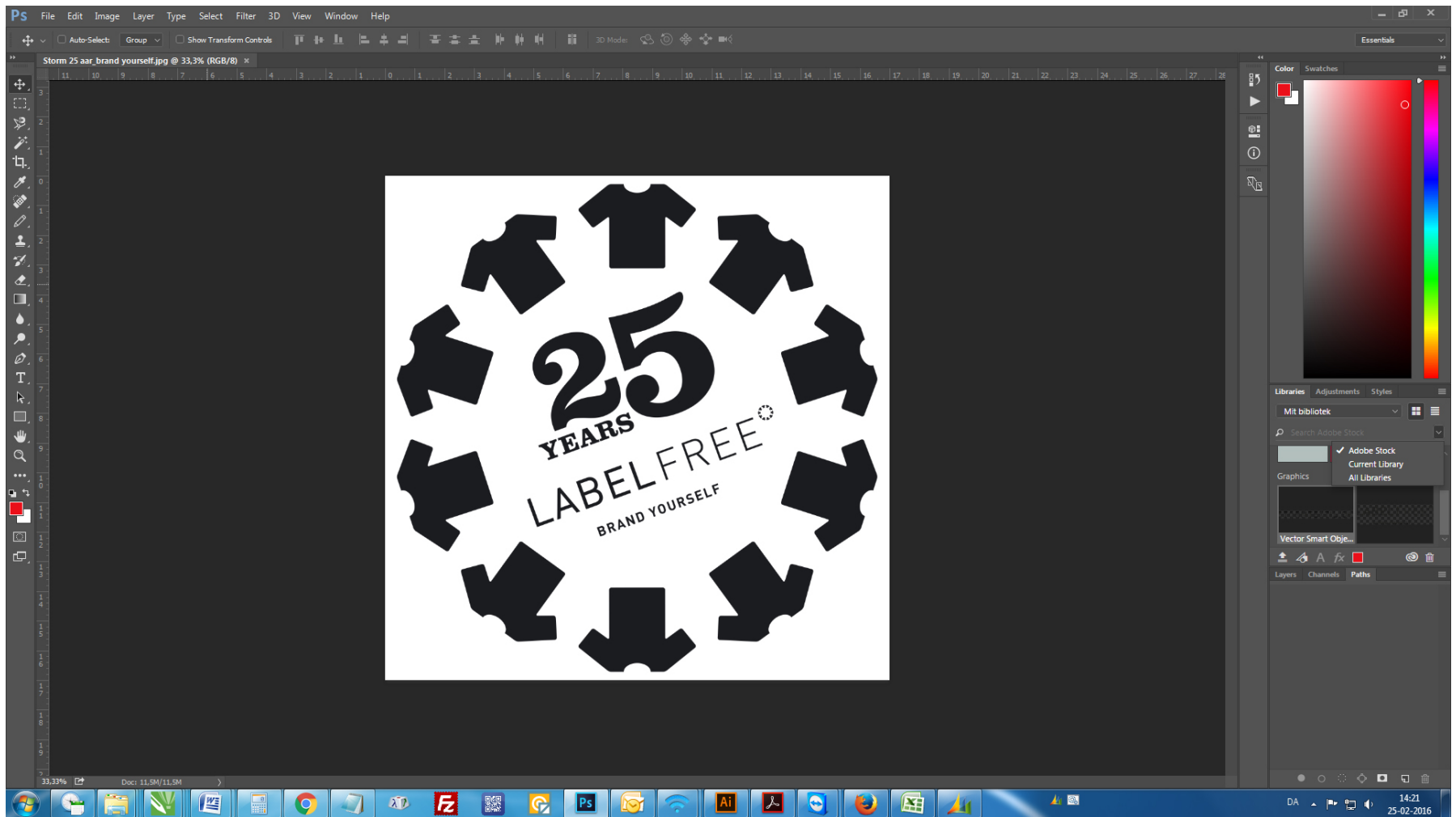
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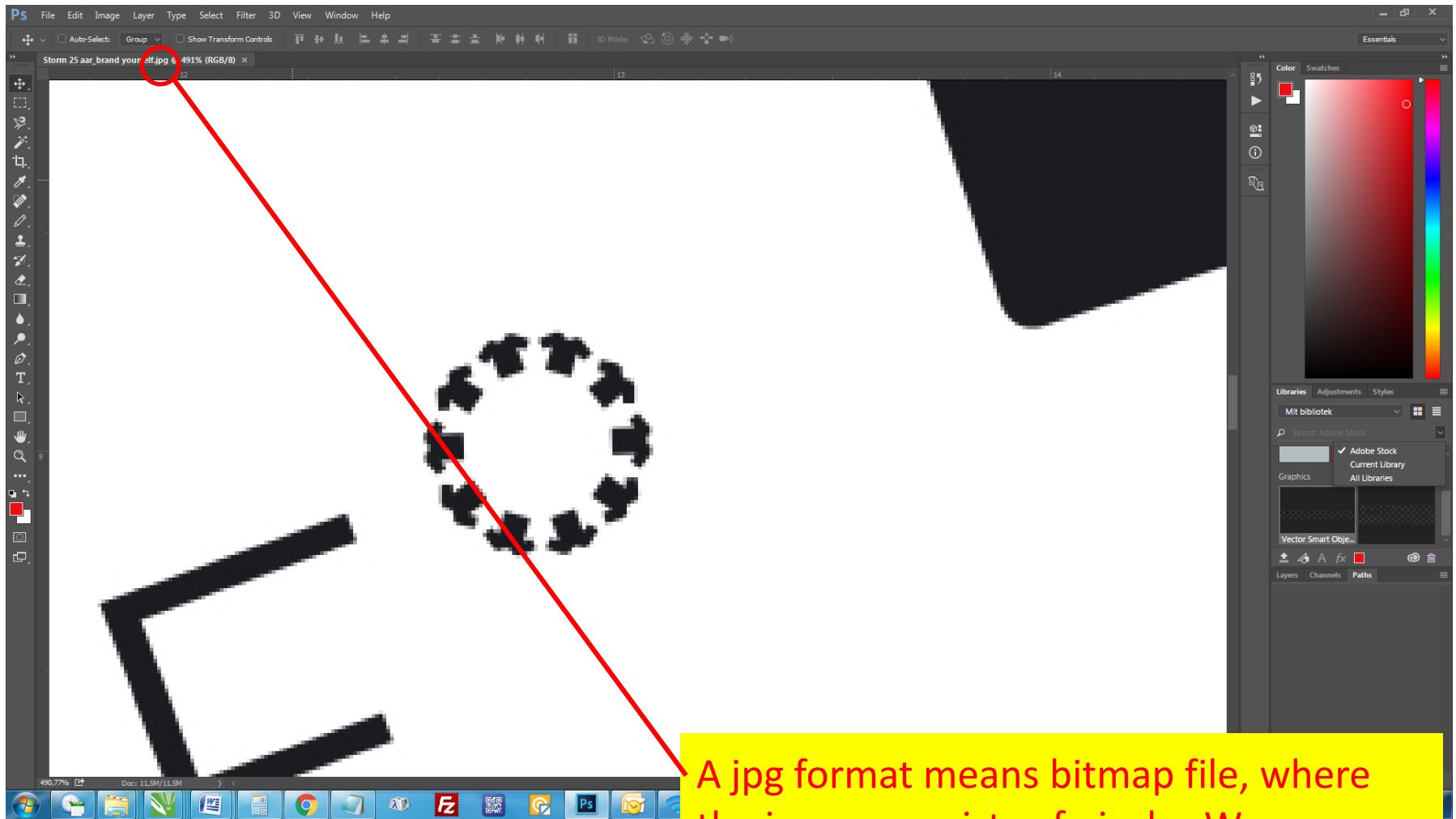
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Is this a bitmap- or a vector file?



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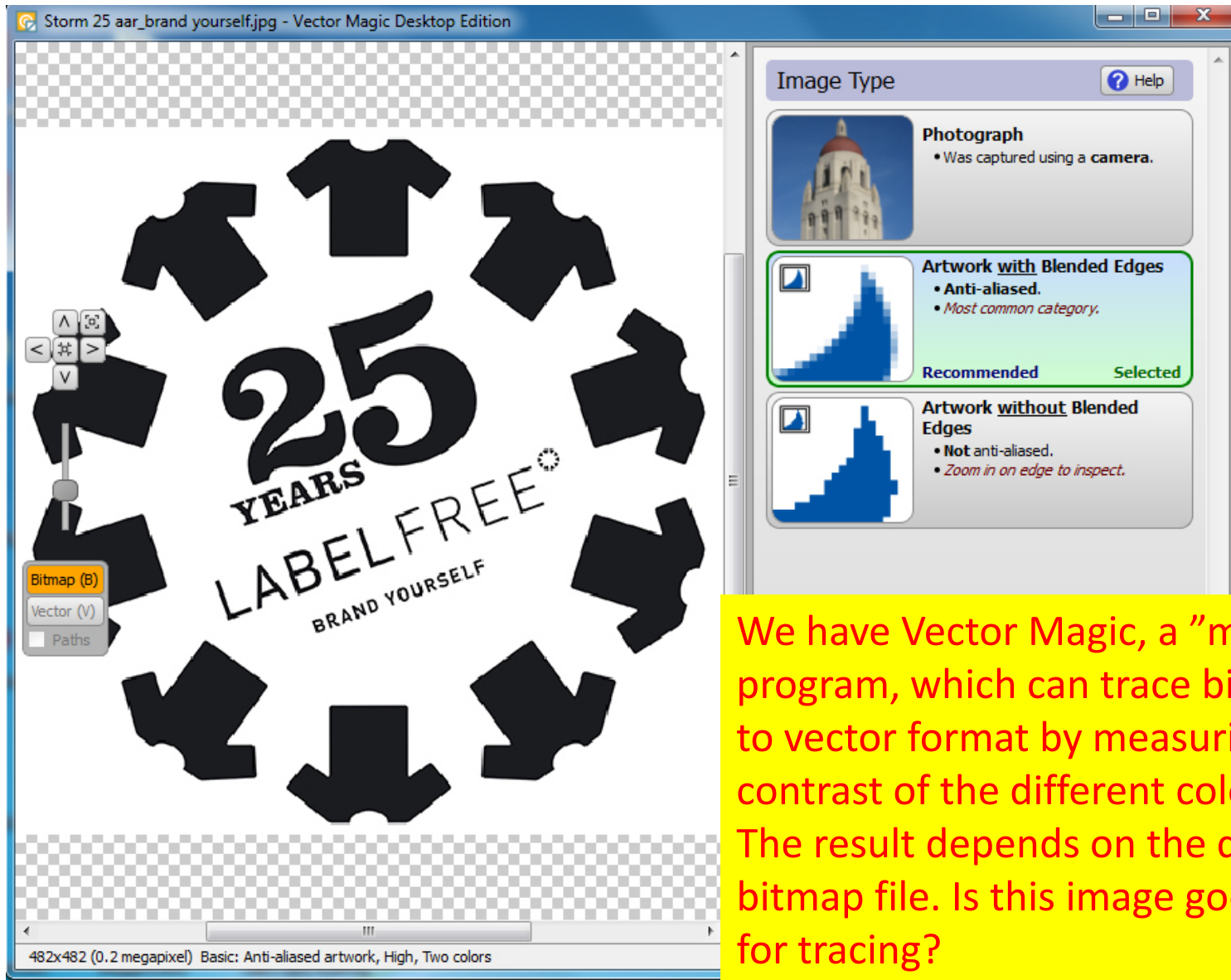
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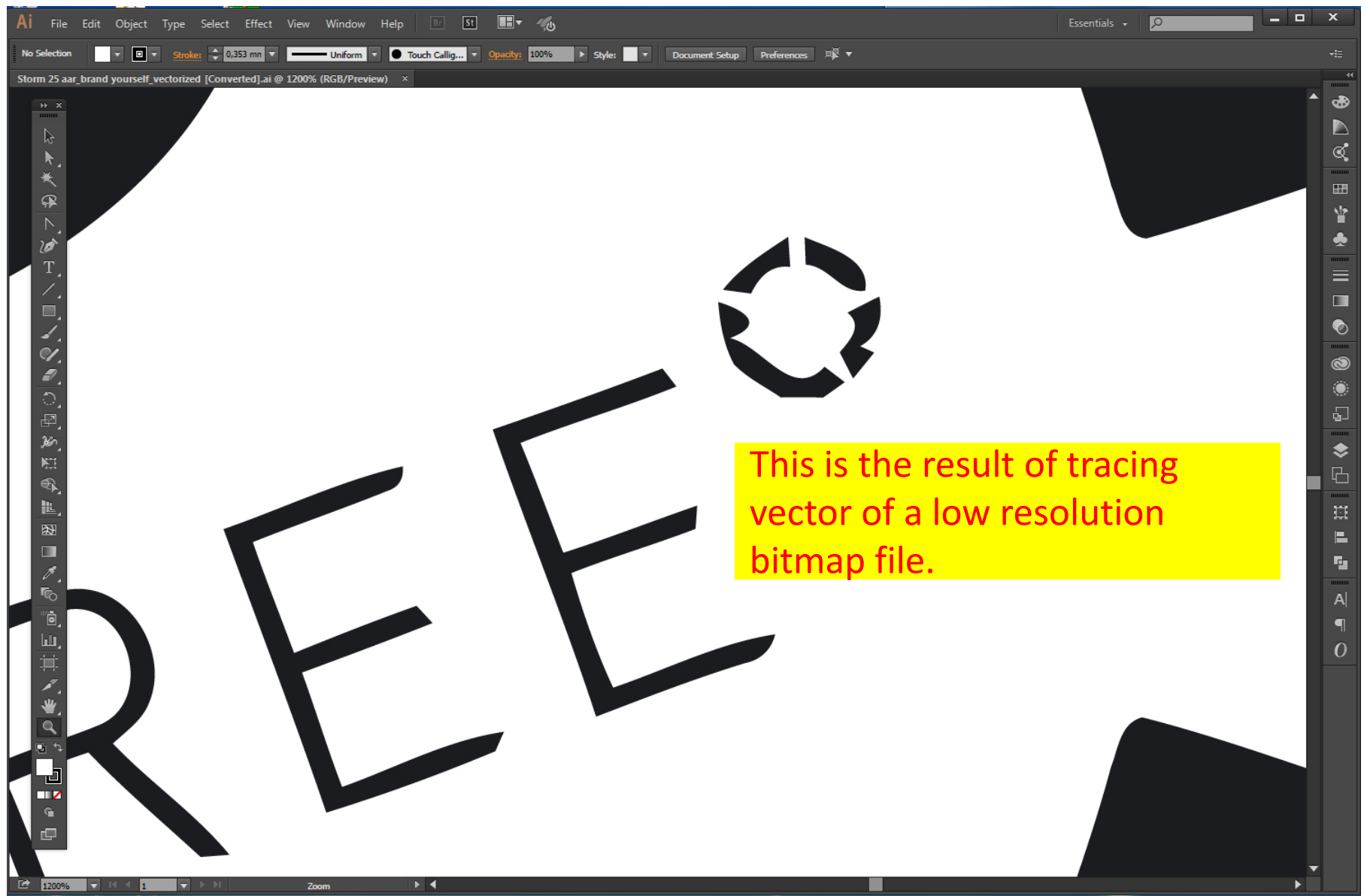
A jpg format means bitmap file, where the image consists of pixels. We can check it by zooming in.

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We have Vector Magic, a "magic" program, which can trace bitmap files to vector format by measuring the contrast of the different color fields. The result depends on the quality of the bitmap file. Is this image good enough for tracing?

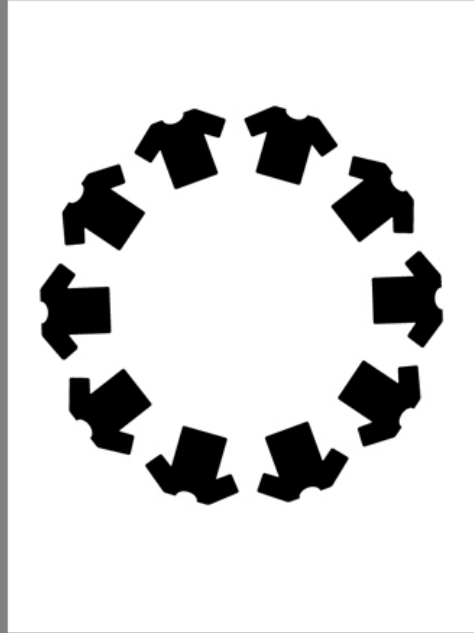


This is the result of tracing
vector of a low resolution
bitmap file.

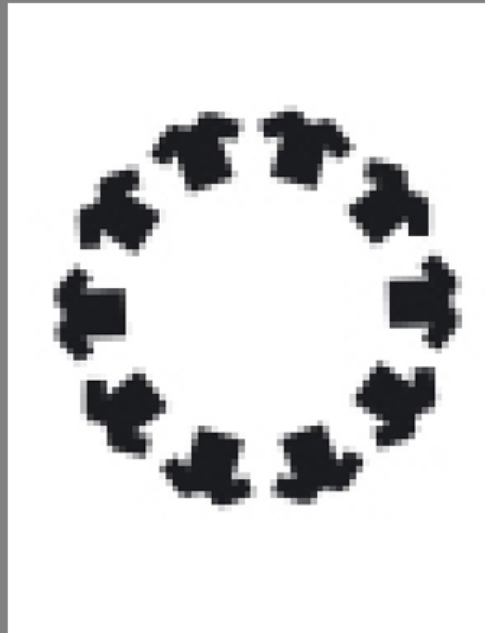
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Comparison



Vector file, made in Adobe Illustrator.

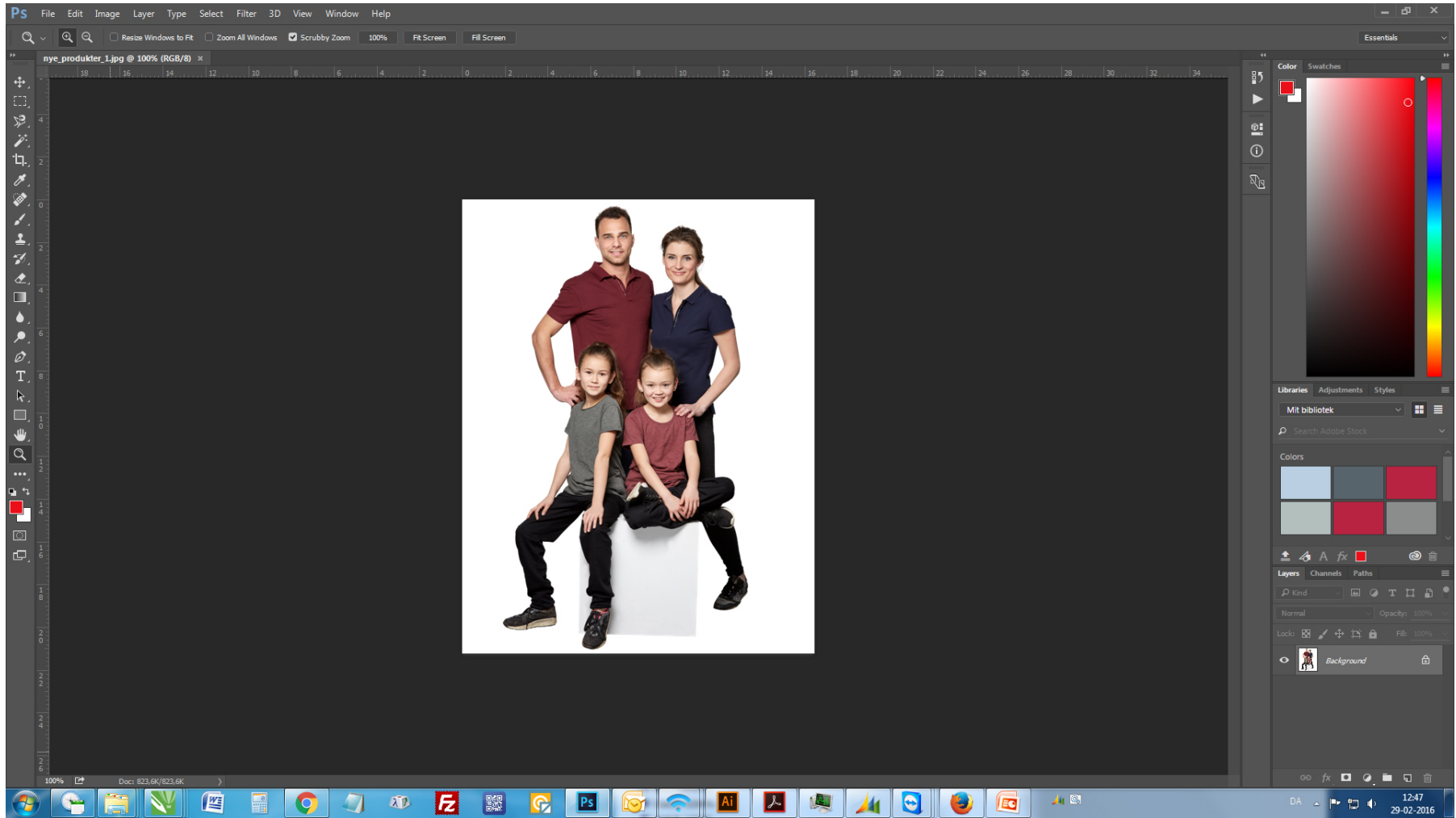


Bitmap file, poor resolution.



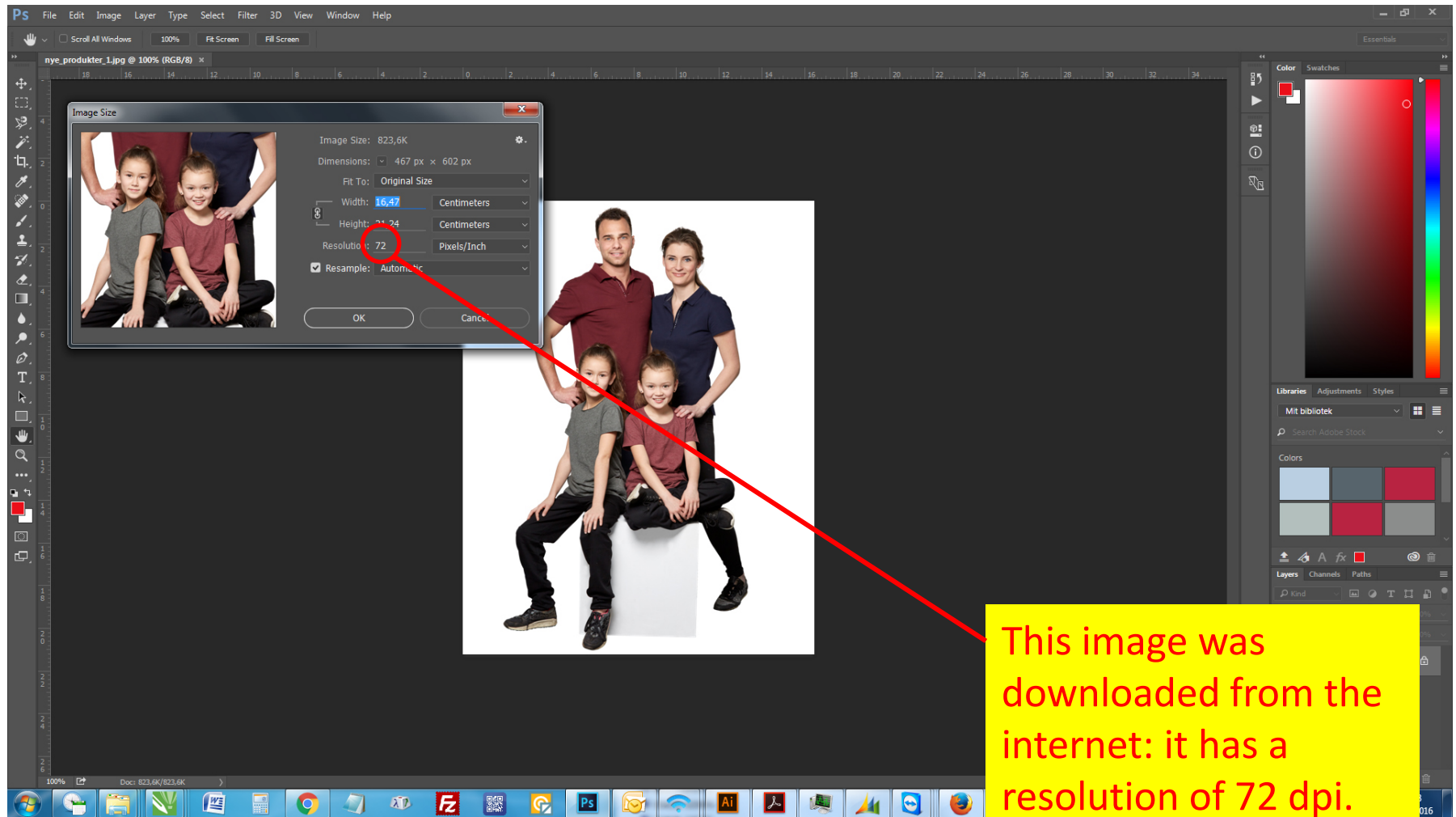
Bitmap file with poor resolution, after vectorizing.

Is it possible to make a small bitmap image bigger?



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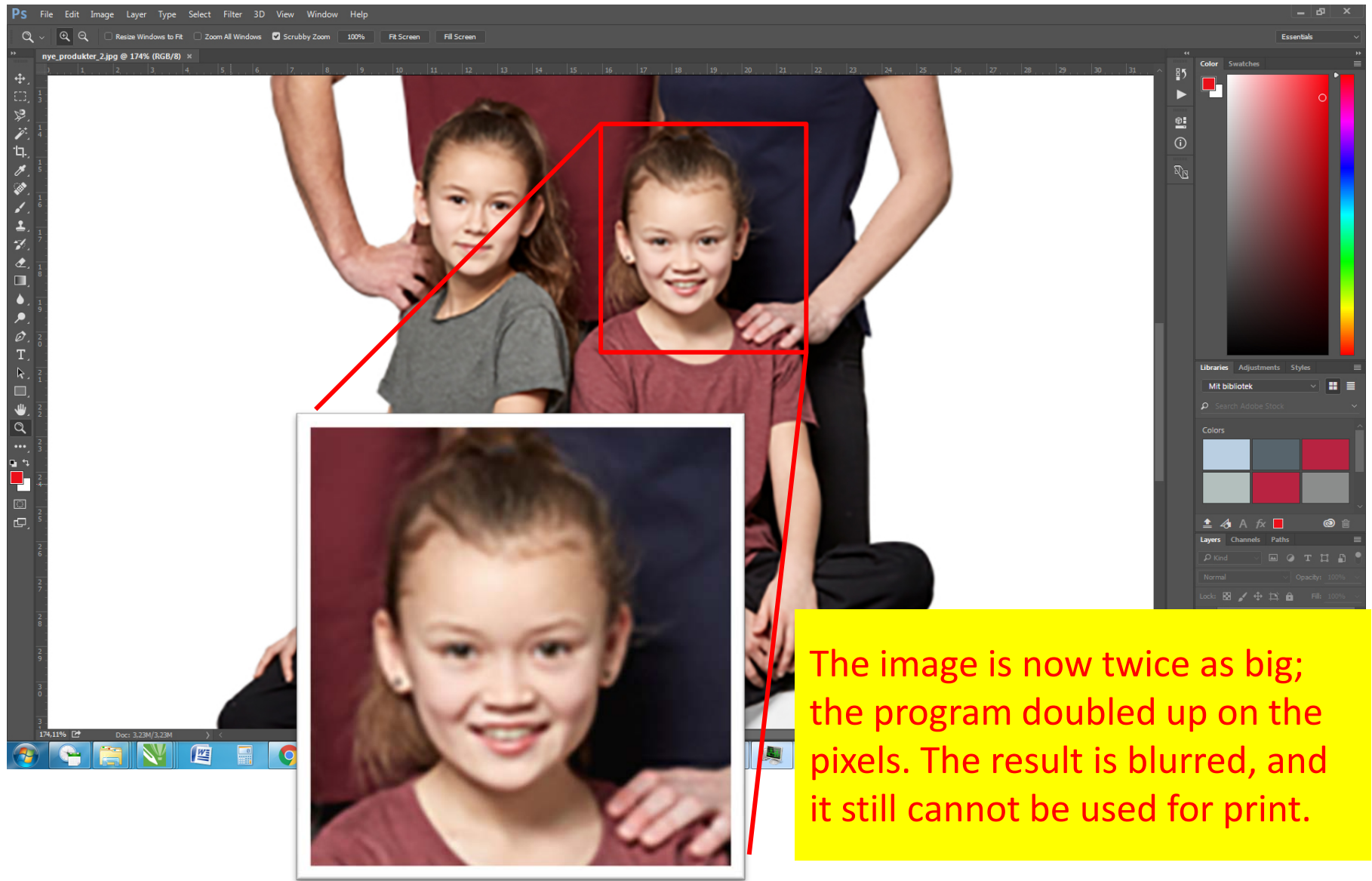
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This image was downloaded from the internet: it has a resolution of 72 dpi. What happens if we try to make it bigger?

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The image is now twice as big; the program doubled up on the pixels. The result is blurred, and it still cannot be used for print.

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This is also a jpg file. Can we use it for print?

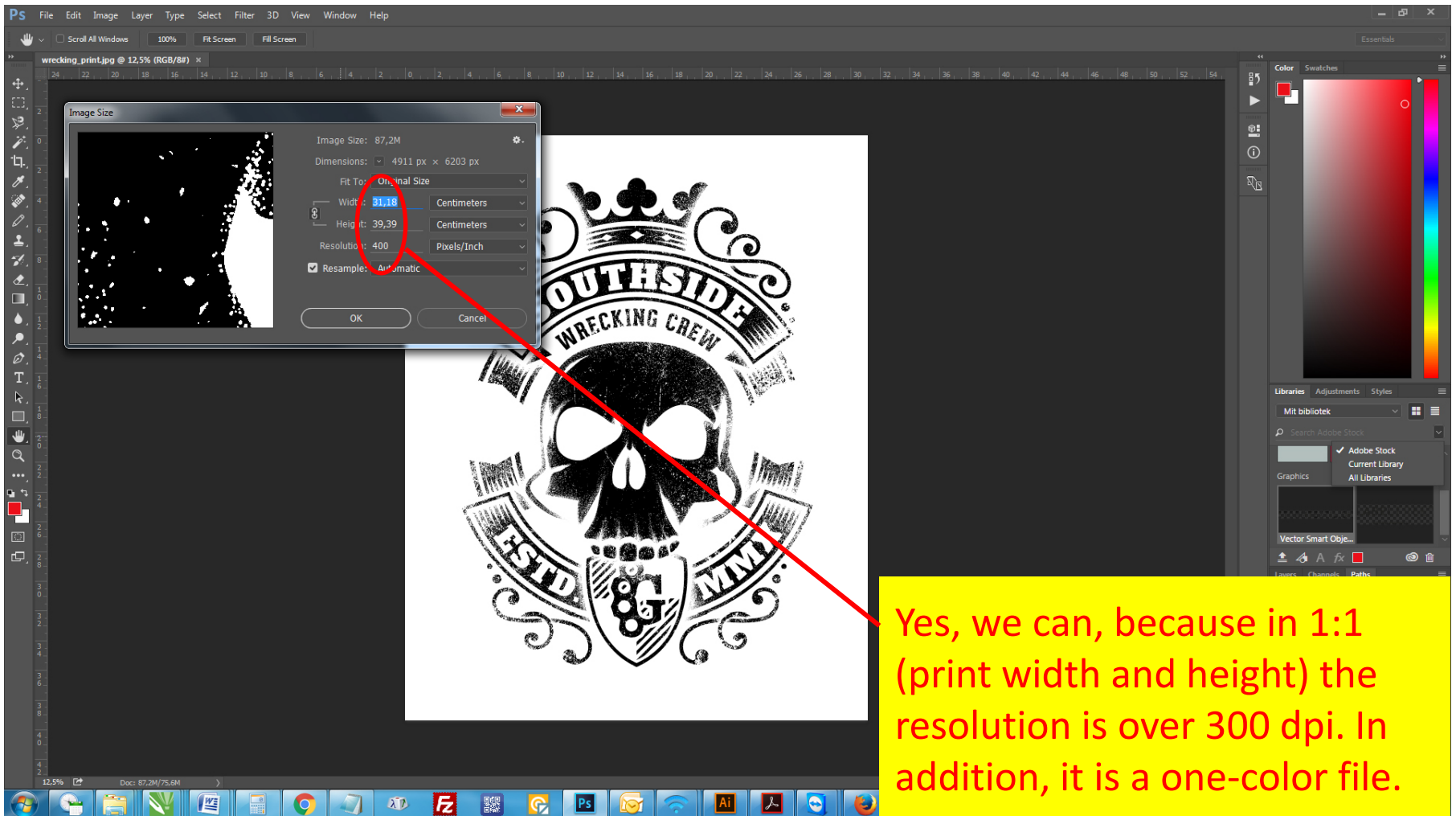


Image Size

Image Size: 87,2M

Dimensions: 4911 px x 6203 px

Fit To: Original Size

Width: 31.18 Centimeters

Height: 39.39 Centimeters

Resolution: 400 Pixels/Inch

☒ Resample: Automatic

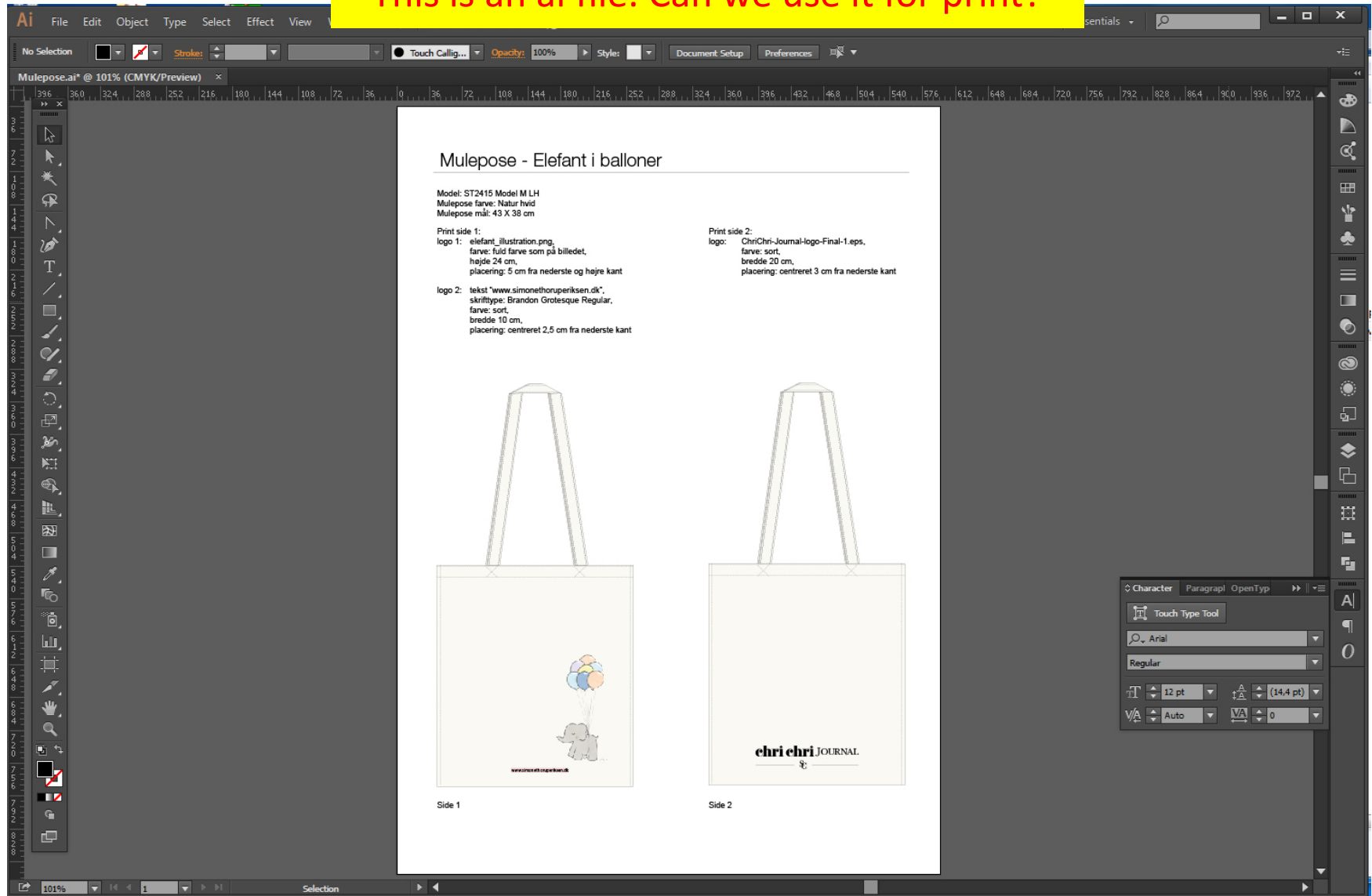
OK Cancel

Yes, we can, because in 1:1 (print width and height) the resolution is over 300 dpi. In addition, it is a one-color file.

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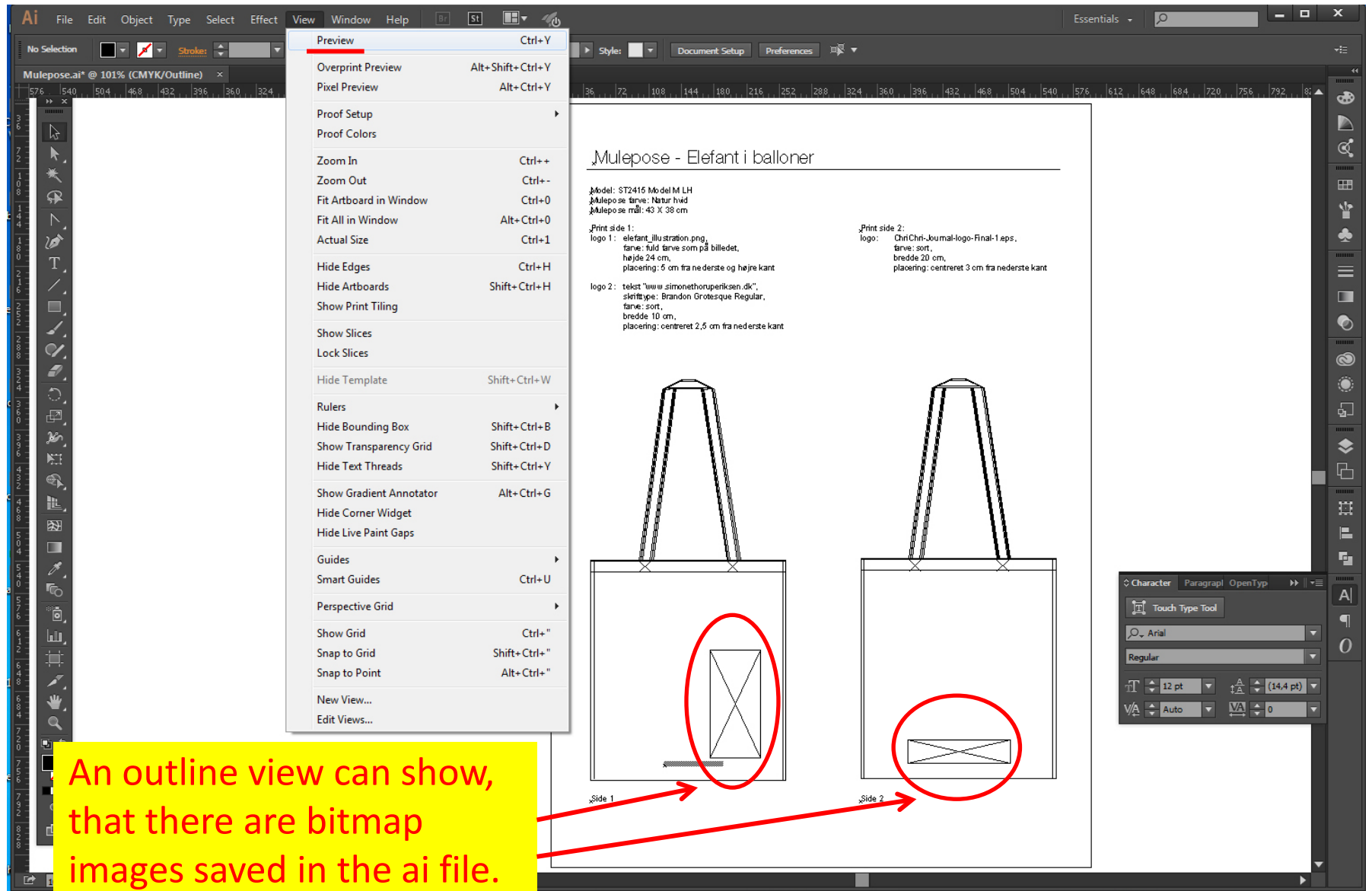
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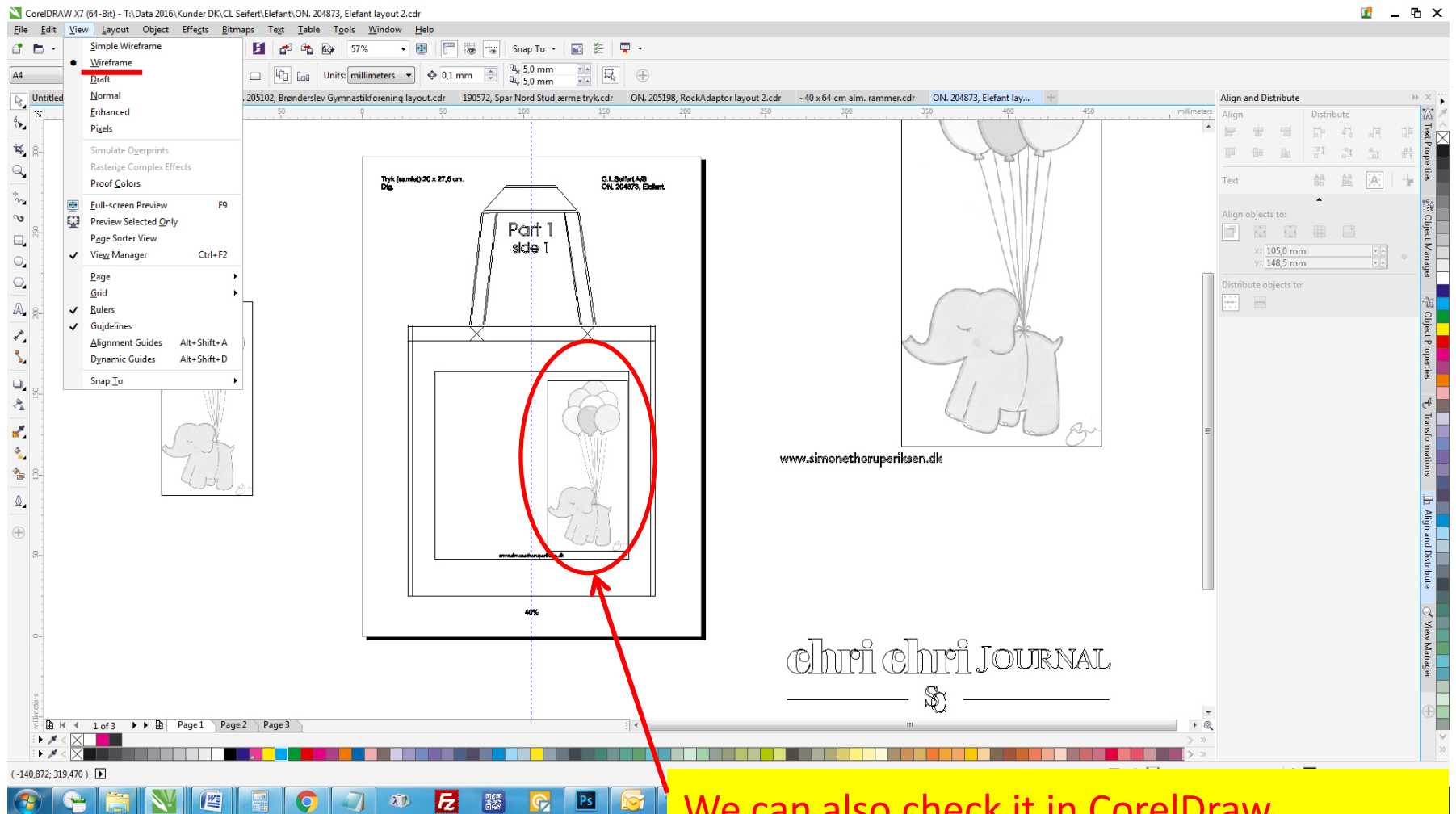
This is an ai file. Can we use it for print?



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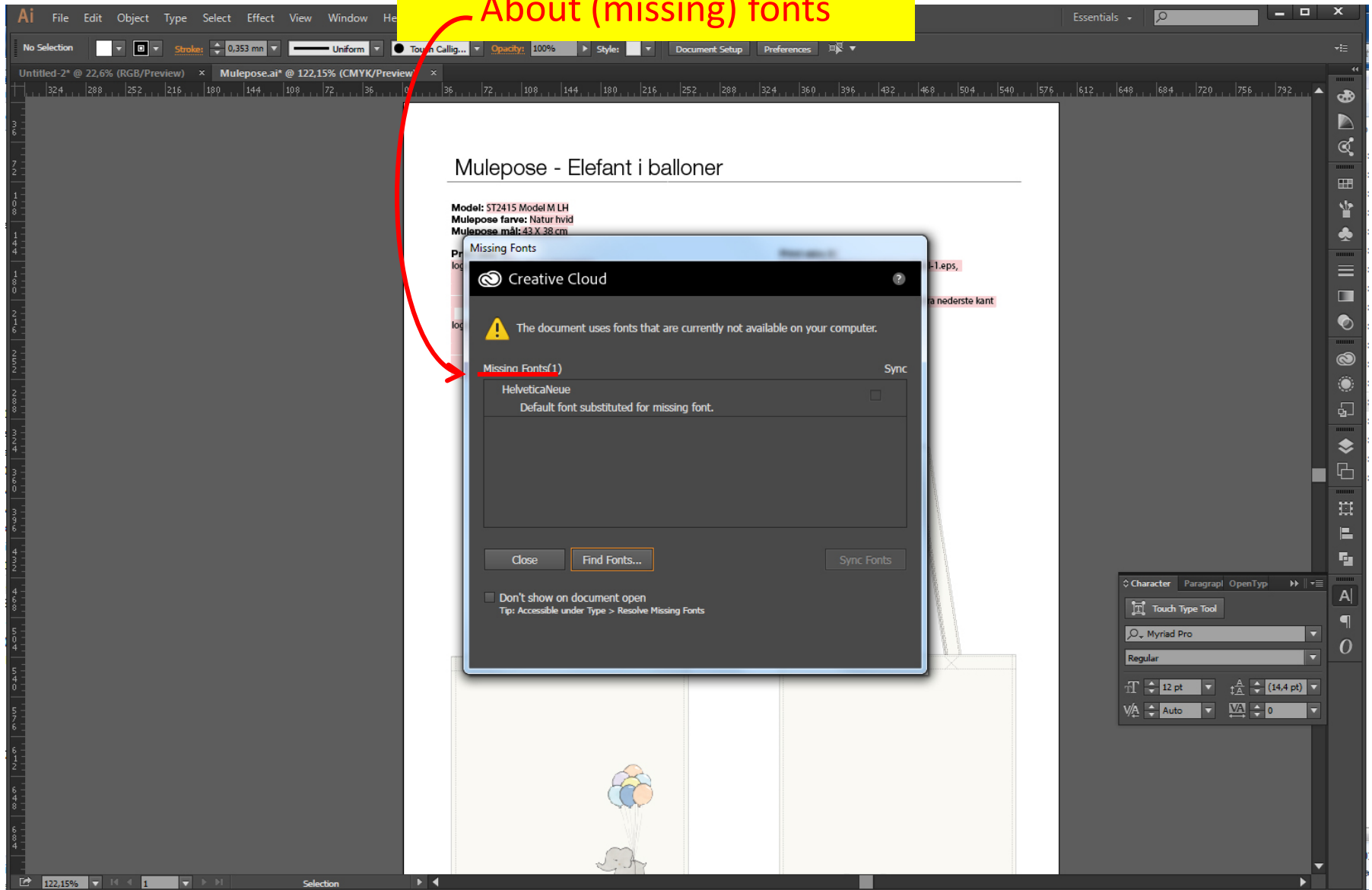


We can also check it in CorelDraw.
"Wireframe" view shows that there are
bitmap motifs in the file.

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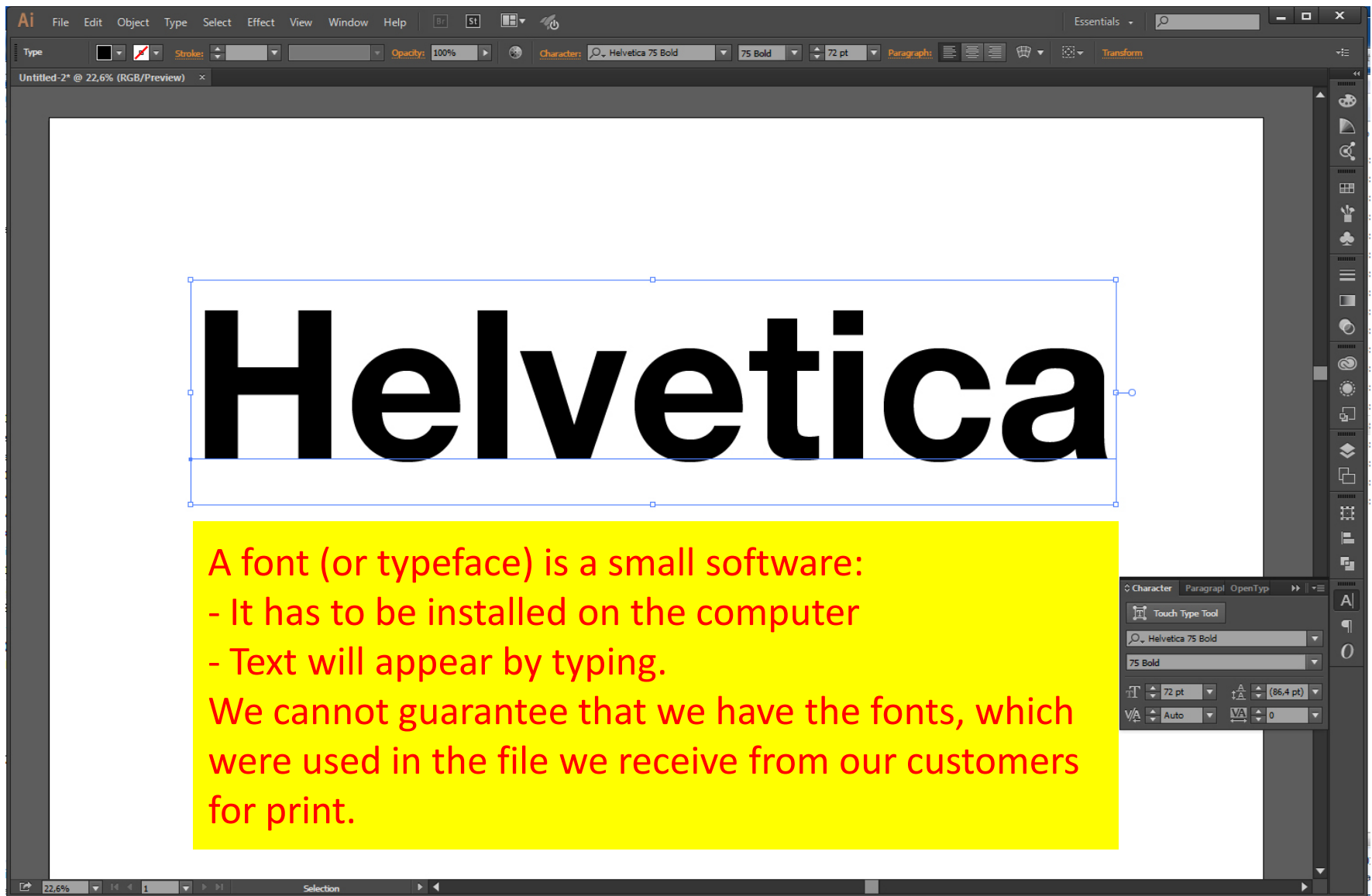
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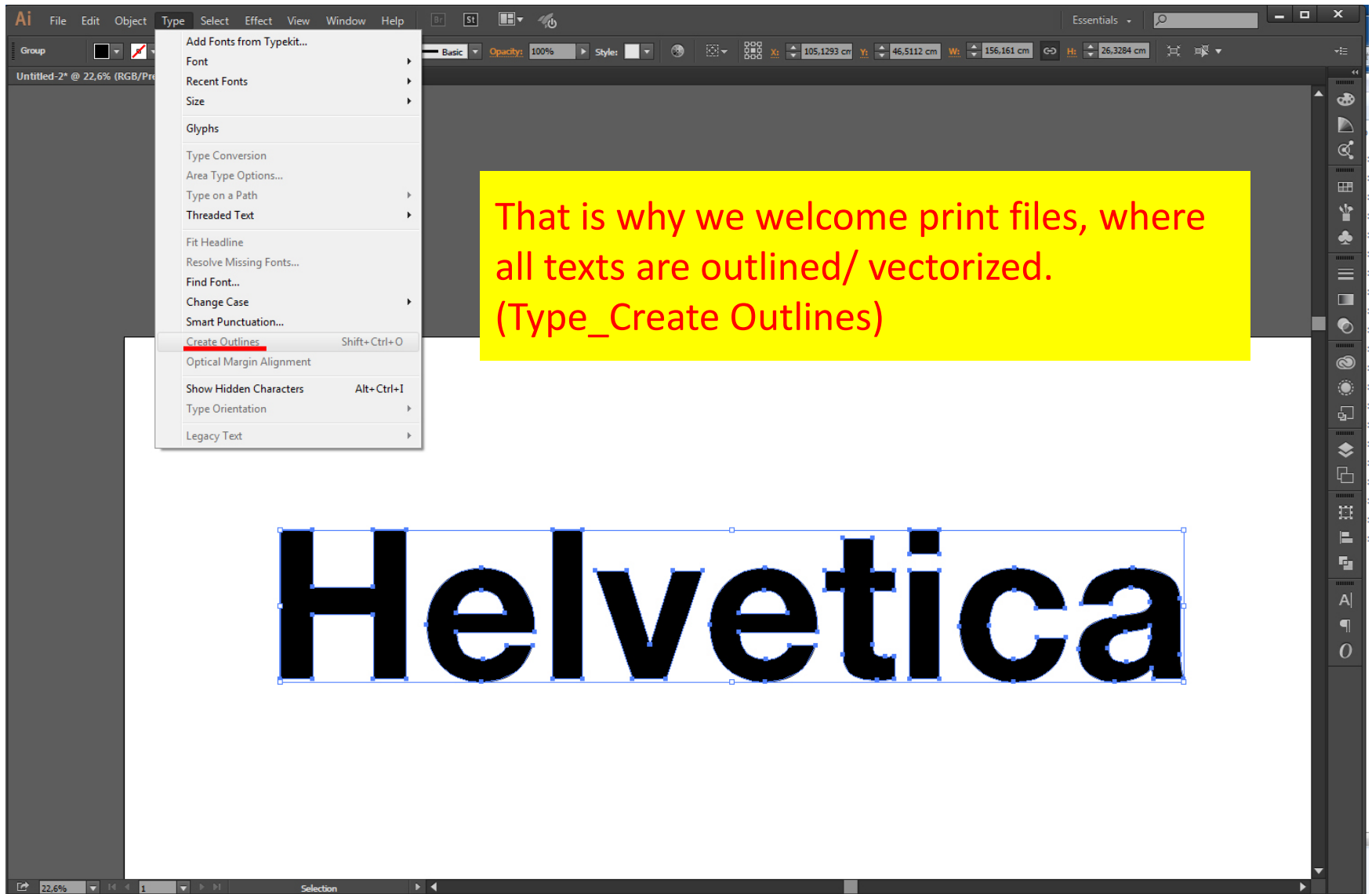
About (missing) fonts

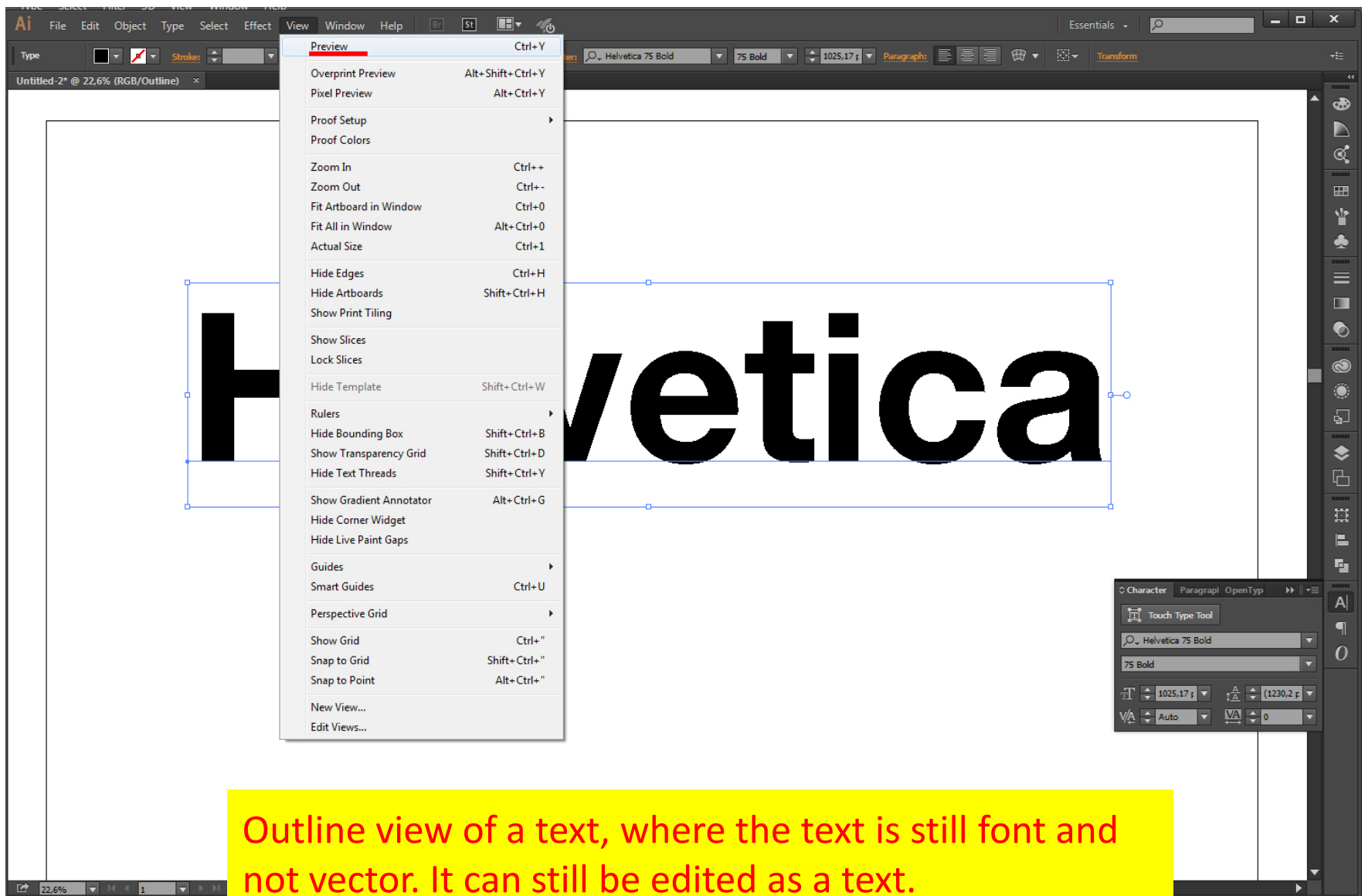


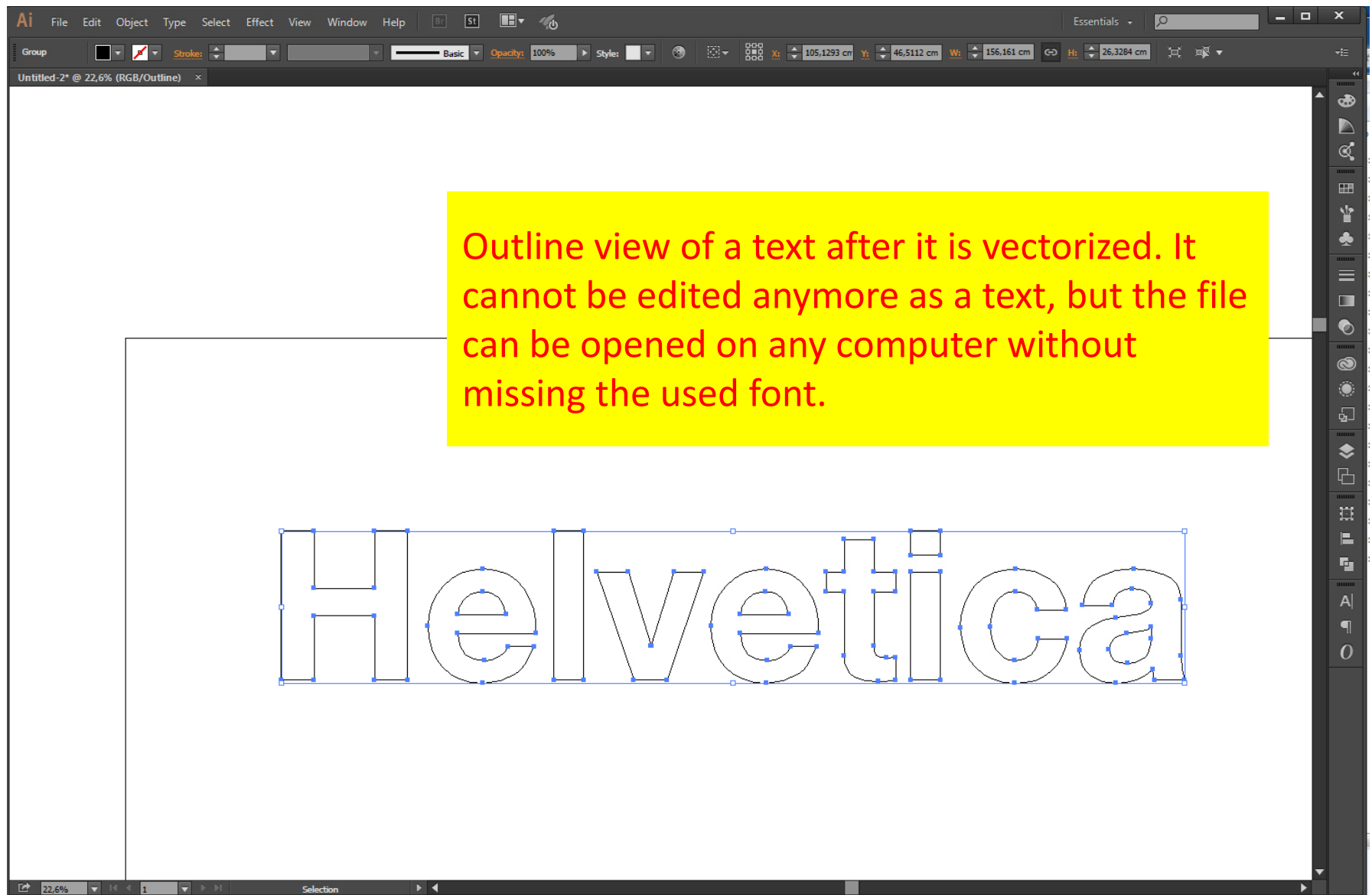
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Outline view of a text after it is vectorized. It cannot be edited anymore as a text, but the file can be opened on any computer without missing the used font.

Helvetica

About the most used file formats:

- Ai**: Adobe Illustrator's format, basically vector graphic, but can contain bitmap elements.
- Jpg**: Bitmap/raster image. Often used on the internet. Resolution has to be controlled (min. 300 dpi).
- Cdr**: CorelDraw's format, basically vector graphic, but can contain bitmap elements.
- Pdf**: "It is like a lady's handbag– you can never know what it contains." (Quote from Kim.) Several programs (for example Photoshop, Illustrator, CorelDraw, World, PowerPoint, etc.) can save or export pdf, that is why a pdf should ALWAYS be checked. It can contain both vector and bitmap motifs.
- Png**: Bitmap file, often with transparent background.
- Bmp**: Bitmap.
- Tif**: Bitmap/raster image.
- Eps**: can contain both vector and bitmap motifs, since several programs (for example Photoshop and Illustrator) can save eps files.
- Psd**: Photoshop document, bitmap/raster image.
- Gif**: Bitmap/raster image, mostly used on the internet, often animated. Can NOT be printed.