Freestyle art

By Dennis Pennekamp

Introduction

One of the most useless features of office suites is the clipart library. Eager to put some playfulness between the text of a brochure or book you'll soon find that you cannot use most of the clipart as they don't fit the color scheme, have incompatible styles or are too low resolution.

Koffice should have artwork which can be effortlessly rendered in different colors schemes, different art styles and different resolutions.

It needs to be both clean, clear and small and at the same time big and detailed.

It needs to prevent writers from wasting time on collecting compatible clipart and trying to make it them fit into the layout or to endlessly fiddle with the layout to match well with the artwork.

It needs to be so strictly designed that the entire style, layout and artwork of the document can be switched with a single click.

How can these seemingly contradicting demands be achieved?
By starting with basic shapes and strict limitations to make artwork moldable into an unlimited number of rendered styles without the shape being able to break the confines of the rendering styles.

This shape resembles a paper cutout. You could also name it outline art.

This shape would be created in a Karbon plug-in which would limit the artist into making a compliant shape. Not only can the freeform art be freely used in software such as Koffice it should just as easily be usable in the real world especially if one is familiar with the metric system.

After some deep thought I have come up with the following guidelines:

Freestyle art

No line can cross another line
All lines have one single thickness
The distance between two lines is at least 1x the line thickness
A line has a beginpoint and an end point
A line can have the end point at the begin point making it closed
A closed line is a filled shape
A filled shape within a filled shaped is an unfilled shape
The shortest line is a point.
A point is a dot or a hole depending on the fill.
The entire shape is 2 dimensional but can be rendered 3 dimensional.
The lines end and start at a grid-point in a metric grid

The artist is given the following advice:
The lines define the artwork, the filling is dependant on the style.
The lines can simply be the borders of a cut out shape.
The lines can vary in thickness.
The lines can simply be lines.

Artwork complying to these rules can be rendered in very different styles which anybody can easily relate to.

Rendering examples:
The lines can be followed as if by a knife cutting out cardboard shapes and being stuck to an unseen glass plate. Easily rendered as PNG in any color and with optional paper texture and shadows being cast. The line rules also mean corners can be rendered sharp or rounded without having to check for line interference. The fonts of chapter headings could have the same color and texture and shade

effects, meaning you can change the style of the entire document with a single click.

The lines can be followed by a computer simulated paintbrush. There are many types of brushes available in Koffice by the virtue of Krita. Imagine for example all used clipart looking as if Japanese or Arabic brush using writers had some extra time on their hands.

The lines can be raytraced as if constructed from thick steel wire bent into shape and filled with a metal grid plate. The begin point of the closed line marked visible as the soldered together ends of the steel wire. Corrosion and brown rust can be added to make it look as if the artist photographed custom artwork after leaving the stuff outside to go to a heavy metal concert.

The lines as a lovely trail of rose petals or as gothic thorny stems. Ok you get the picture; clipart which is just a confined shape which can be rendered to look good for professional or personal styles. But to be truly free the lines of these simple forms should just as easily be plotted by a drawing pen, a knife or, a dril bit.

The lines can be traced by a human hand, without carbon copying, using a millimetre grid and a 1 mm pen or using a 5 mm grid and a 5 mm marker. Our office shops are filled with metric sized supplies let's make them easy to use and combine.

The lines can be traced with a fret-saw in wood, perhaps after having them traced with a pen.

The Karbon plug-in

The grid which helps you create these shapes is metric. A 10 x 10 spine-line square and a 1 sized round tip making it spil over to a 11 x 11 sized square with rounded corners. The advantage of using spine-lines (i.e. calculating based on the axis or midpoint of each line as used in technical drawings) is that the line thickness can be changed without affecting the coordinates or distance between the line axis's. By starting with a big drawing tip we reduce the the number of obvious (or natural) coordinates, and increase the likeliness of art being compatible with each other and being easily expandable by users using simple geometric shapes. The outmost set of coordinates are ready for overlapping just as the grid on grid-paper can be seen as overlapping squares. Some art can be build up as blocks of freestyle art. As added bonus freestyle art may help students see usefulness in their geometric math lessons as they scribble art between their notes on grid paper.

The grid
A trick learned from the map of the Netherlands, many construction workers found it hard to draw or work with negative numbers therefore the point of origin was placed well outside the country borders so you never have to deal with negative numbers when measuring the land. The lower left grid corner is not simply 0,0 but 1,1 metre keeping the grid positive when working in millimetre or centimetre and effectively 0,0.

Did you just make up the word spine-line?
Yes, using axis seemed confusing and I don't know if midpoint or centre-point is commonly used or understood as translation for hartlijn.

Freestyle fonts
Freestyle art is a spin off of the more complex concept of metric fonts. My main idea for metric fonts is that you start with a basic 1 mm round tip path. A base height of 5 mm, a Capitol height of 10 mm. When using the limited coordinates suggested by the grid this gives you basic font shapes as used in Dutch and German learning to read books. If we view the grid as a grid of wooden cross-bars (planks) nailed together we can freely adjust the vertical angle while the horizontal stays the same, we skew the font elegantly up to perhaps 50 degrees left or right. Instead of a font being italic or not we can adjust the skewing freely with a simple slider. A simple slider could also gradually reduce its boldness, that's more complicated to implement as the spreading of the used coordinates needs to increase to keep the font from seemingly shrinking. Another slider could grow ornaments as thorns on a rose stem turning the font into Serif. Perhaps a custom slider would actually grow thorns when dragged to negative but grow rose petals or hearts when dragged into a positive value.

Freestyle fonts would do away with fonts merely being scaled and stamped as a rigid shape. It would open the world of calligraphy to a software which plots paths. The suggested coordinates used during design would ease the ability for characters to be connected together in a fluid manner, enabling character linking. An elegance slider could fluidly reposition an overabundance of markers to make straight lines become curly loops, like the character l getting properties like the character e when written by hand. A line-shaver slider would activate markers along the line to let the character be plotted with variable line thickness. Further thinning would be done with the boldness slider. Combinations of slider settings could be named much like current font families for easy selection.

As connected characters may use different connection paths depending on how they can elegantly connect there may be alternative paths. 2 markers can project the possible connection angle of one alternative. Marker 2 can have a cousin marker to present a range of angles for this alternative, allowing smooth increase in the spacing between connected characters.

Ornaments such as serif can be added and connected at the spine of a line or by a growing detour in a line as the slider is increased.

Designing a freestyle font would be like designing a morphing animation of lines. First the designer must pay respect to the grid based path at 1, 0.5 and 0.25 line thickness. On which the computer can optionally apply general rendering rules of typografi such as 'horizontal and vertical lines should be drawn at different thickness to appear in balance' and 'a line parallel to a border appears to be crossing that border when compared to a line ending at that border therefore an ending line should cross the border to make a paragraph look like its adhering to the border.

Then the designer can apply or surpass these rules manually by creating adjusted paths for the shave slider and the six visual border adjustment sides. Giving the user the option to adjust how pronounced this effect should be, even if the designer cringes at the thought of someone using anything between fully stylized or simplistic round tip.

Any designer can then pick it up and add different adjustments to the other style sliders.