



Version 3
@AngeAlbertini

Version history

2017/02/12 v3 - [transformations](#), [shadow](#), [PDF extraction](#)...

2017/02/11 v2 - [spiro spline](#) and pattern along path...

2017/02/10 v1

I draw stuff

- using free software whenever possible
 - Mostly Inkscape, also Gimp, Krita
- I share source files @ <https://github.com/corkami/pics>





RFC791

REMEMBER
Turn your computer off
before midnight on
12/31/99

HOME TAPING IS
KILLING MUSICIt looks like you have no idea
what you're doing...

ocean GUMBALL **Khigan**
X-Kids **WINGS OF FIRE** **WAVY NAVY** **RANDAMN**
PAPERBOY **Lode Runner** **HARD HAT MACK** **Hard Drivin'**
RAD WARRIOR **DI-SD-8 BEER** **BATMAN** **THE CAPE CHASER**
PRINCE & PERSIA **KARATEKA**

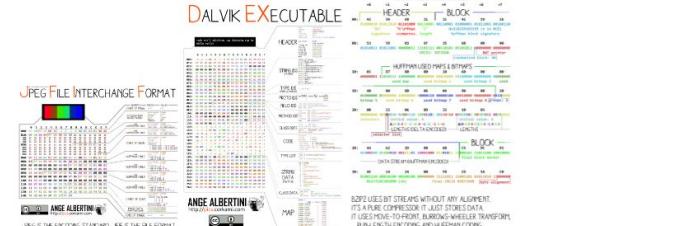


```
COM/HANDLE PE (DOS/Windows) ANGE ALBERTINI
ACTION // data segment <--> code segment
        // data segment <--> code segment
        // print("This program ...");
```

```
DOOLPIN EXECUTABLE PE (DOS/Windows) ANGE ALBERTINI
HEADER
CODE
DATA
```

```
MINDOL
HEADER
CODE
DATA
```

This program cannot be run in DOS mode. (7700)



BZP2 USES BIT STREAMS WITHOUT ANY ALIGNMENT.

IT'S A RARE COMPRESSOR, JUST STORES DATA.

IT USES MORE THAN 100,000 LZW, RUN LENGTH, AND HUFFMAN CODES.

Disclaimer: I have no graphical background

No dogma, no golden ratio, no latin words - I'm a technical person.

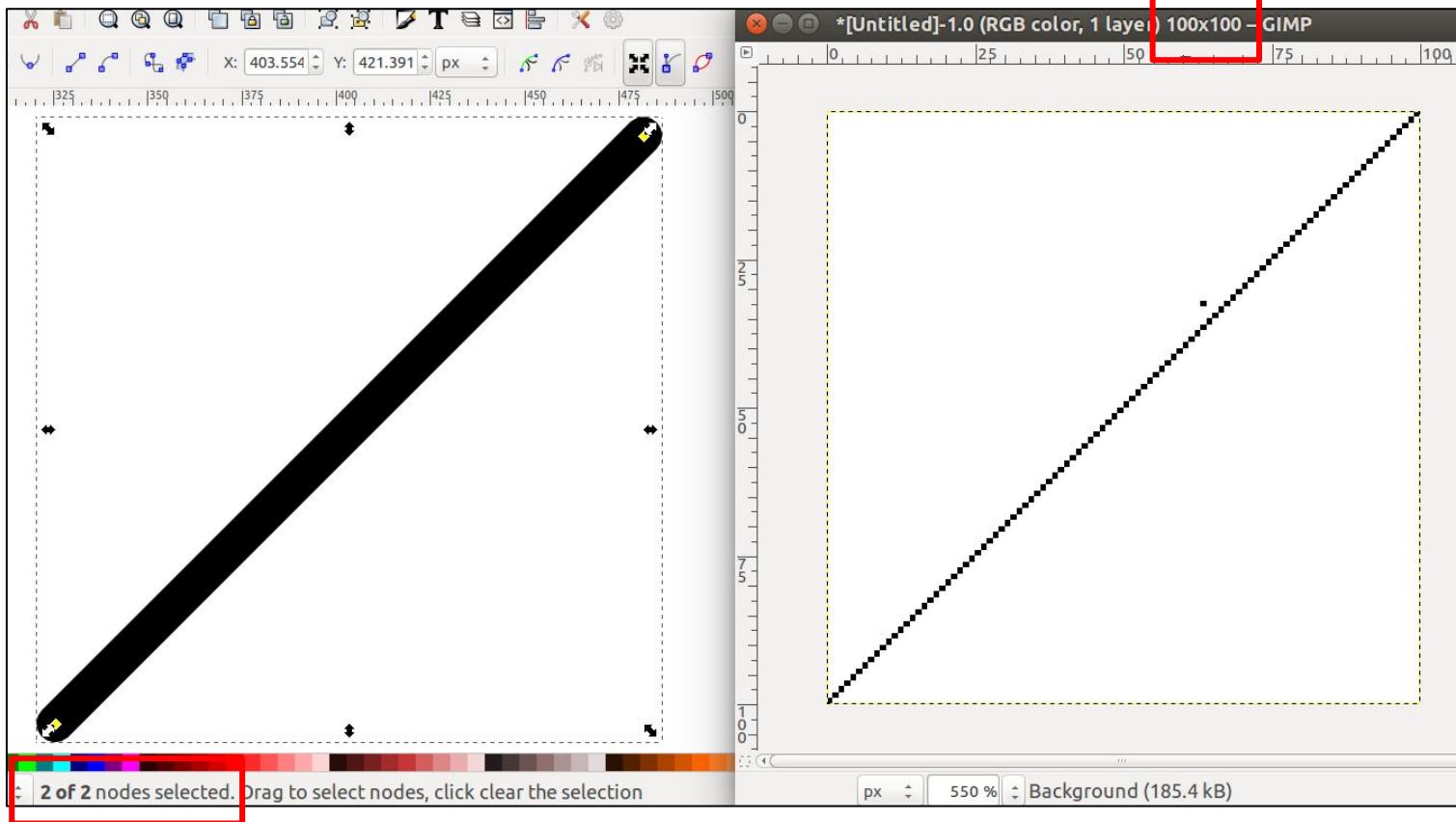
My only advices:

- use your own judgment, create ***your*** own style!
With too much vector tracing, you might feel dependent on other people's styles
- Our brain interprets a lot of things,
so what is mathematically perfect may not look right anyway

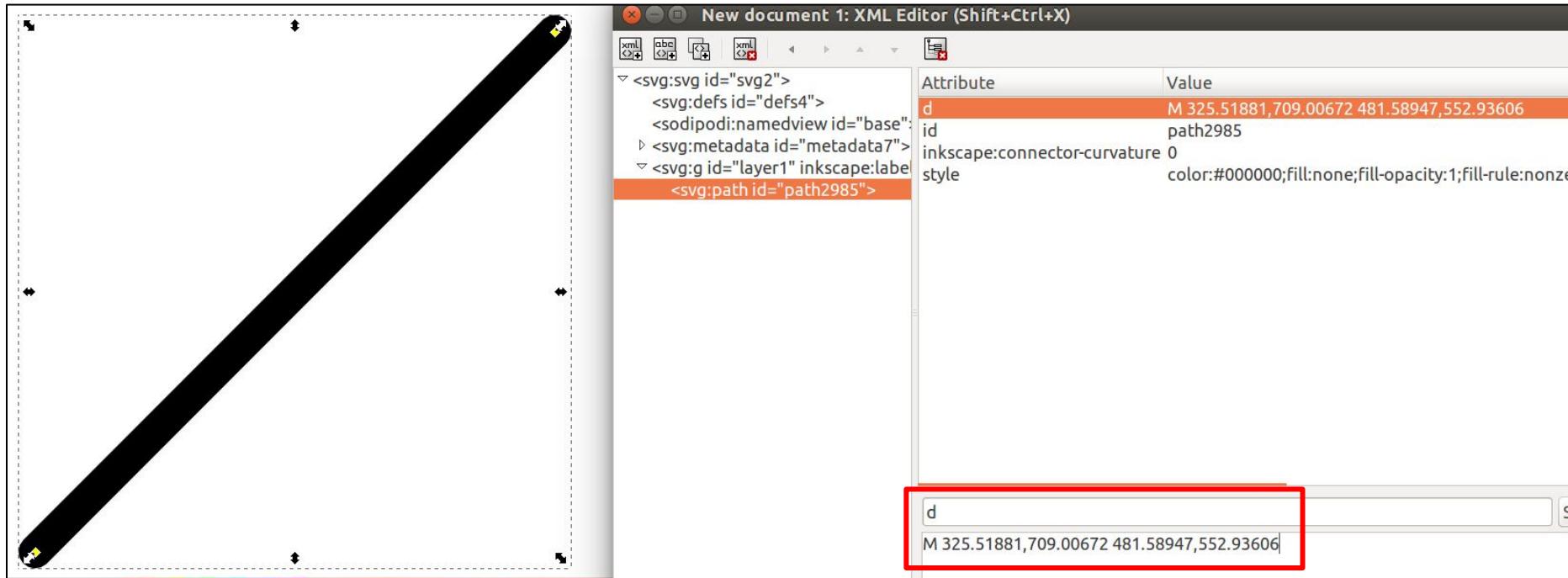
```
Something = new try();
if looks_better()
    Keep();
else
    Revert();
```

Why Inkscape

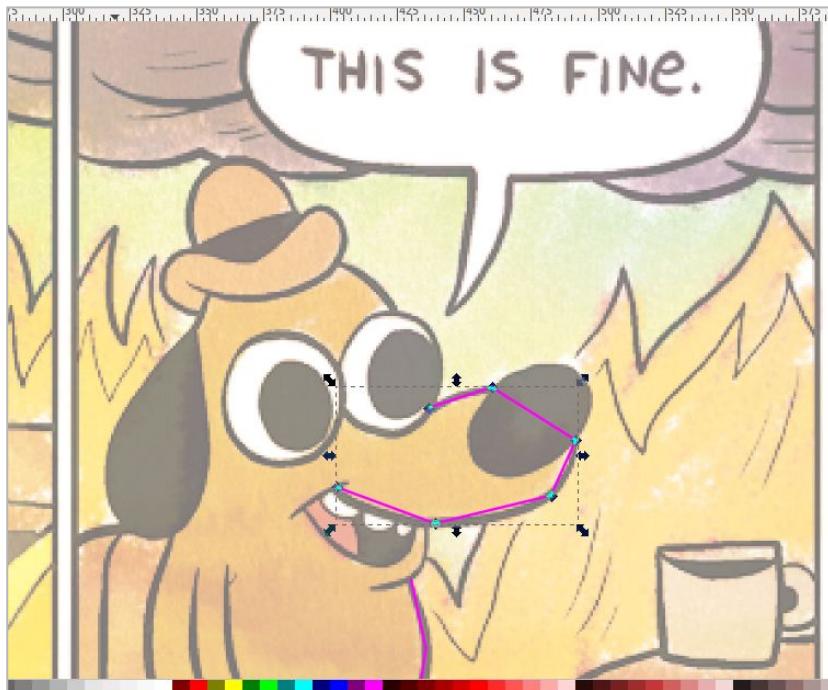
- Free, open source
 - Multiplatform - I do use it on all 3 platforms - see [FAQ](#) for OS X
- "Limited to" [**Scalable Vector Graphics**](#) - vector XML format
 - Generate-able, parsable
 - Not a complete file format disaster
 - pre-/post-processing
 - preservable
 - CSS, JavaScript...
Limitations ⇒ creativity
- Inkscape is not importing/exporting SVG. It ***is*** SVG.
 - It can't do some things, like gradients following a path.
 - It tries to make advanced things, such as Spiro splines and still rely only on SVG.



SVG is vector: nodes, not pixels → lightweight, zoomable, but *limited*



Content remains editable (useful just to draft something complex)
⇒ you can always fix stuff
⇒ you can even work with a trackpad, or just edit the source text



- ⇒ Take your time: draw points *first*, then set curves
- ⇒ Advantage: No need of any special hardware



Even editable without any dedicated software

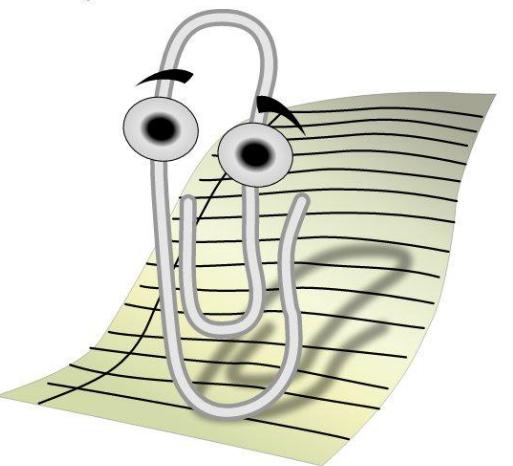
```
6-36.5-35-36.5n-60.594c-16.05-54.966-66.87-95.094-12  
6.88-95.094zm0 22c47.929 0 88.574 30.52 103.78  
73.094h-207.72c15.049-42.763 55.808-73.094  
103.94-73.094z" fill-opacity=".99608" transform=""  
translate(-214.78 371.19)" fill="#004b73"/>  
16 <path d="m-34.372 441.45v-26.065" stroke="#014c74"  
stroke-width="16" fill="none"/>  
17 <text font-size="30px" xml:space="preserve" style=""  
word-spacing:0px;letter-spacing:0px" transform=""  
matrix(.91289 .40821 -.40821 .91289 218.02 63.697)"  
line-height="125%" font-family="Impact" fill="  
#004c73"><textPath xlink:href="#a" font-size="30px"  
font-family="Impact">No need of fancy tools: text  
editor & browser are enough! Try it!</textPath>  
</text>  
18 </g>  
19 </svg>  
20
```

Line 17, Column 342

Spaces: 2

XML

It looks like you know how to
edit content by yourself...



Or even in your browser.

```
<svg xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#" xmlns="http://www.w3.org/2000/svg" xmlns:cc="http://creativecommons.org/ns#" xmlns:xlink="http://www.w3.org/1999/xlink" xmlns:dc="http://purl.org/dc/elements/1.1/" height="851.89" width="966.34" version="1.1">
  <defs>...</defs>
  <g transform="translate(107.7 -112.1)">
    <g>...
      <g stroke="#000" style="color:#000000; font-size:58.364px; line-height:150%; font-family:'Arial'; fill:#000000">
        <tspan x="-56.678379" y="258.11765">It looks like you know how to</tspan>
        <tspan x="-56.678379" y="345.66397" style="color:#000000; font-size:58.364px; line-height:150%; font-family:'Arial'; fill:#000000">edit content by yourself...</tspan>
      ...
    </g>
  </g>
</svg>
```

svg g text tspan

Styles Event Listeners DOM Breakpoints Properties

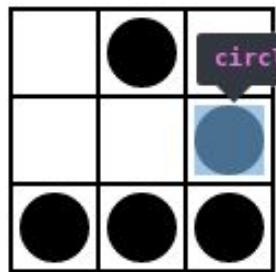
Filter

element.style {
}

tspan, textPath {
 white-space: inherit;

user agent stylesheet

margin -
border -
padding -
auto auto



Elements

Console

Sources

Network

Timeline

Profiles

Application

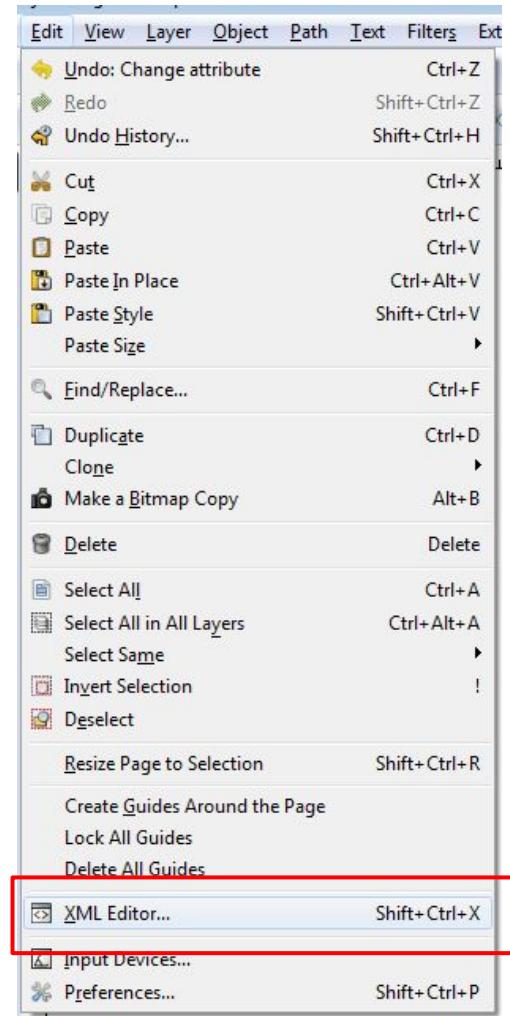
Security

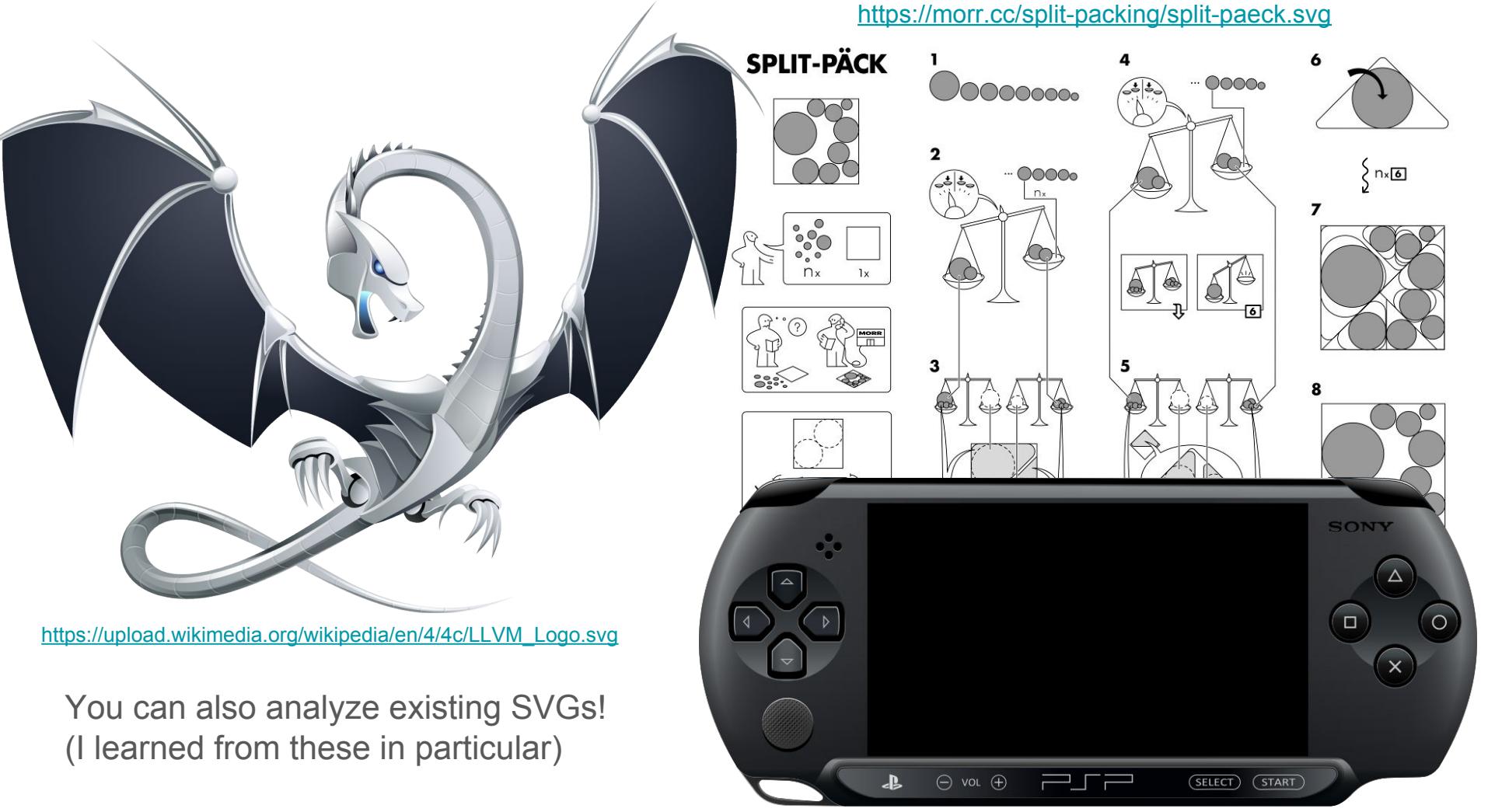
Audits

```
<svg xmlns="http://www.w3.org/2000/svg" version="1.0" width="140" height="140">
  <g transform="matrix(20,0,0,20,10,10)">
    <path d="m0 0h6v6h-6zm0 2h6m-6 2h6m-4-4v6m2-6v6" style="fill:none;stroke:#000;stroke-width:.1;"></path>
    <circle cx="3" cy="1" r=".8"></circle>
    ...
    <circle cx="5" cy="3" r=".8"></circle> == $0
    <circle cx="1" cy="5" r=".8"></circle>
    <circle cx="3" cy="5" r=".8"></circle>
    <circle cx="5" cy="5" r=".8"></circle>
  </g>
</svg>
```

can even be created from scratch,
or generated ([GraphViz](#), [yED](#), JavaScript, D3...)

You don't need to view the SVG source to draw anything with Inkscape, but it can help to understand more, and enable new possibilities.



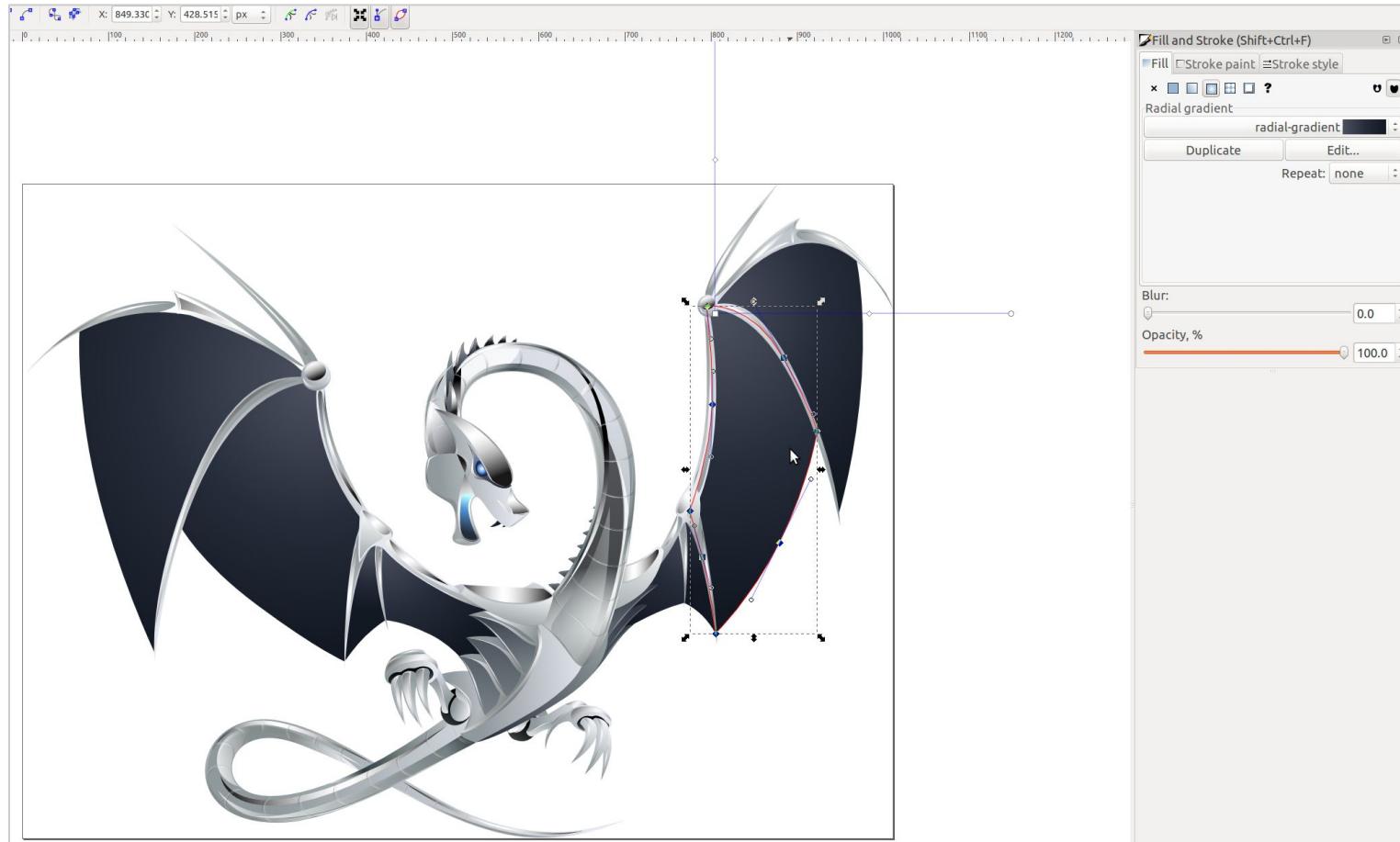


https://upload.wikimedia.org/wikipedia/en/4/4c/LLVM_Logo.svg

You can also analyze existing SVGs!
(I learned from these in particular)

<https://morr.cc/split-packing/split-paeck.svg>

https://upload.wikimedia.org/wikipedia/commons/4/46/PSP_E1000_illustration.svg

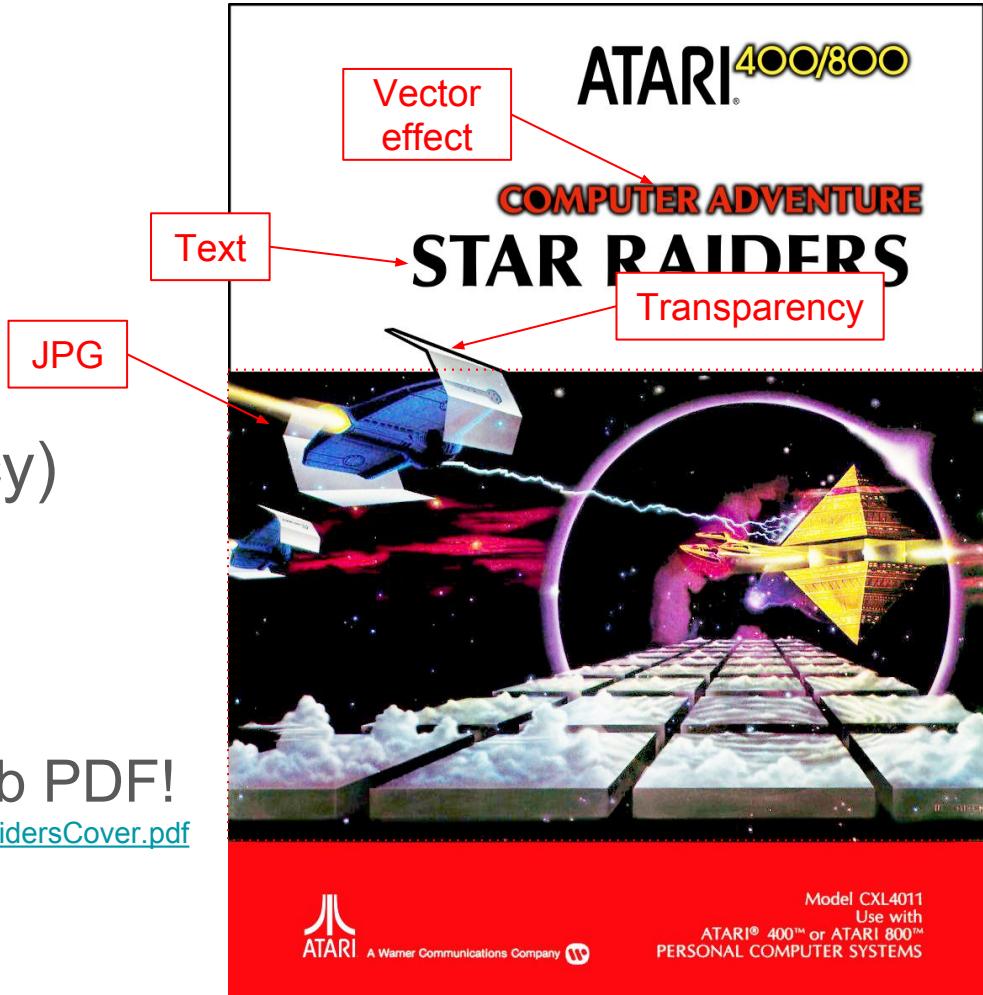


You can study each element and learn by yourself.

- Inkscape can combine:
- Vectors
 - JPEGs
(even with transparency)
 - PNG
 - Text (still selectable)

And export all this as a 254 Kb PDF!

<https://github.com/corkami/pics/blob/master/posters/StarRaidersCover.pdf>



ATARI
A Warner Communications Company 

Model CXL4011
Use with
ATARI[®] 400[™] or ATARI 800[™]
PERSONAL COMPUTER SYSTEMS

Original doc

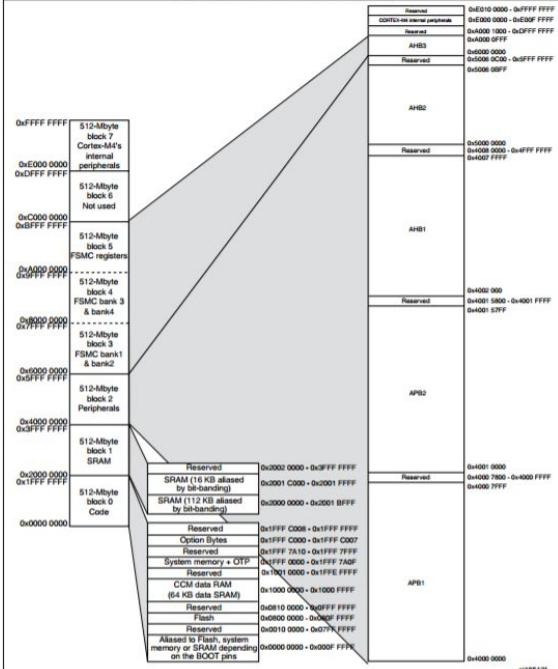
STM32F405xx, STM32F407xx

Memory mapping

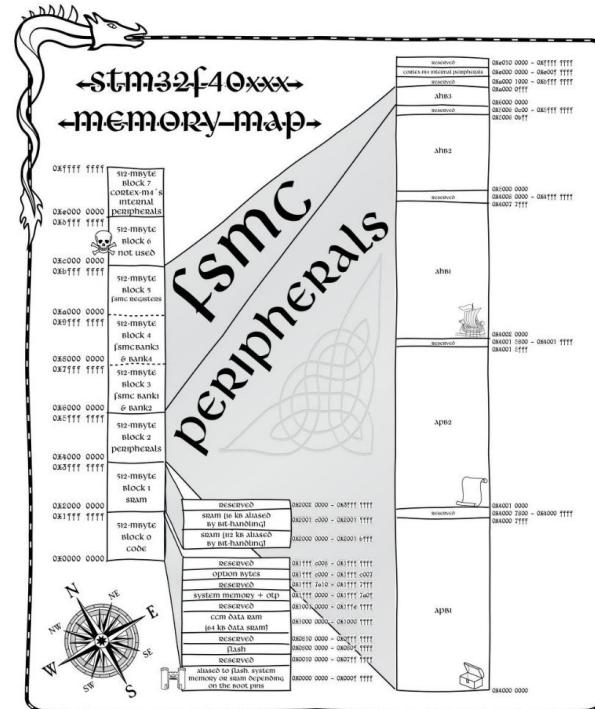
4 Memory mapping

The memory map is shown in [Figure 18](#).

[Figure 18. STM32F40xxx memory map](#)



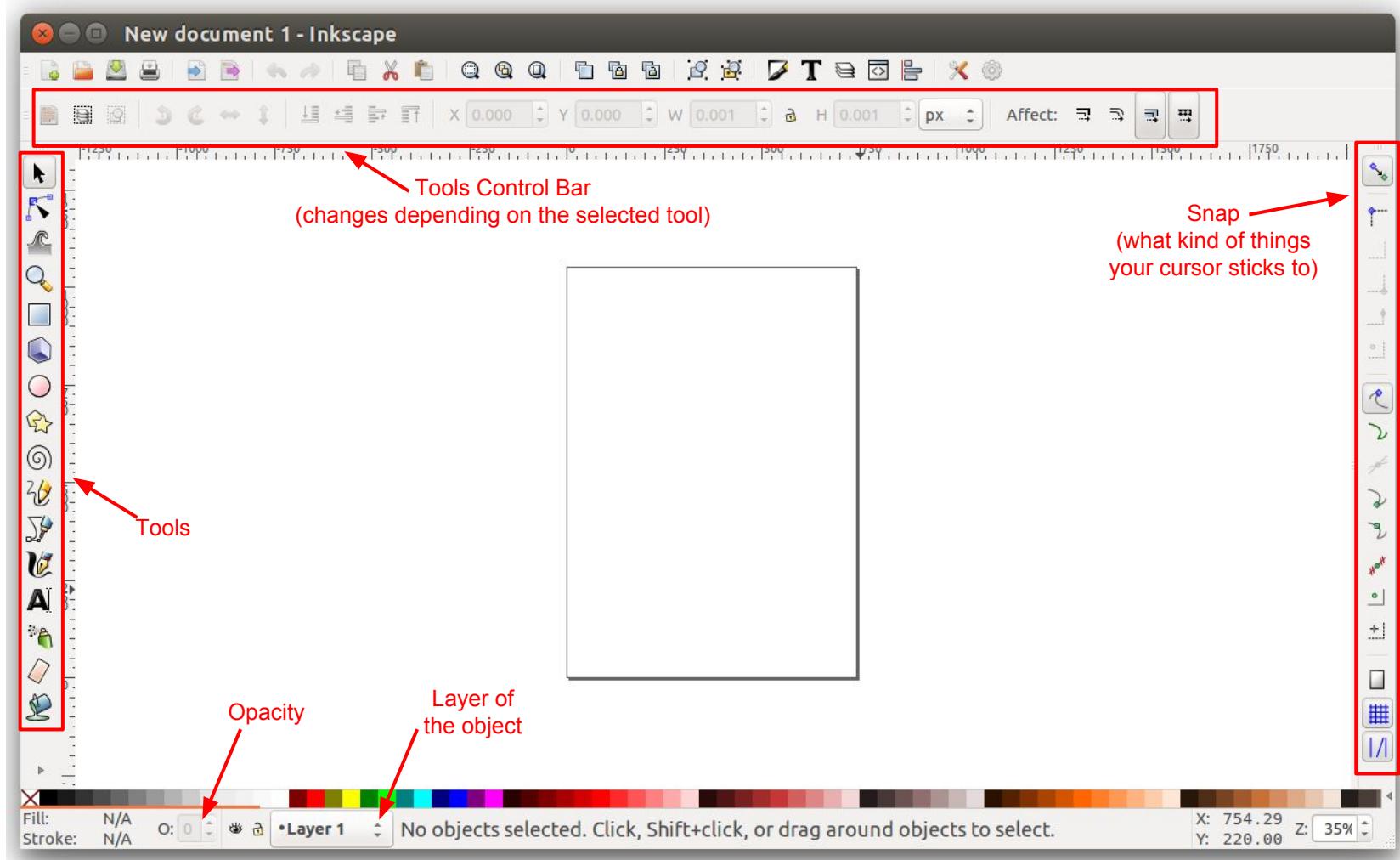
My version Fixed and improved



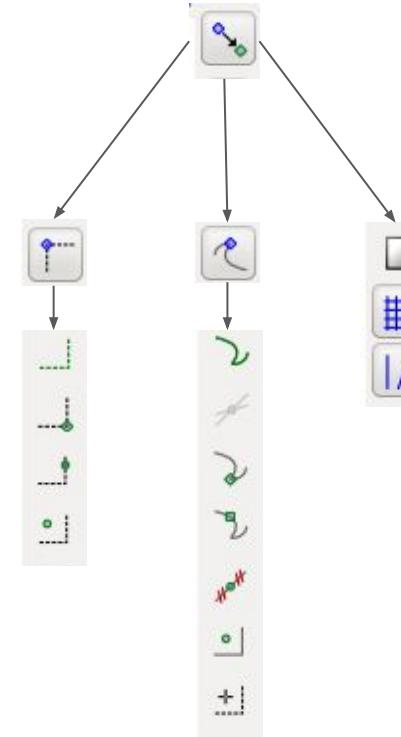
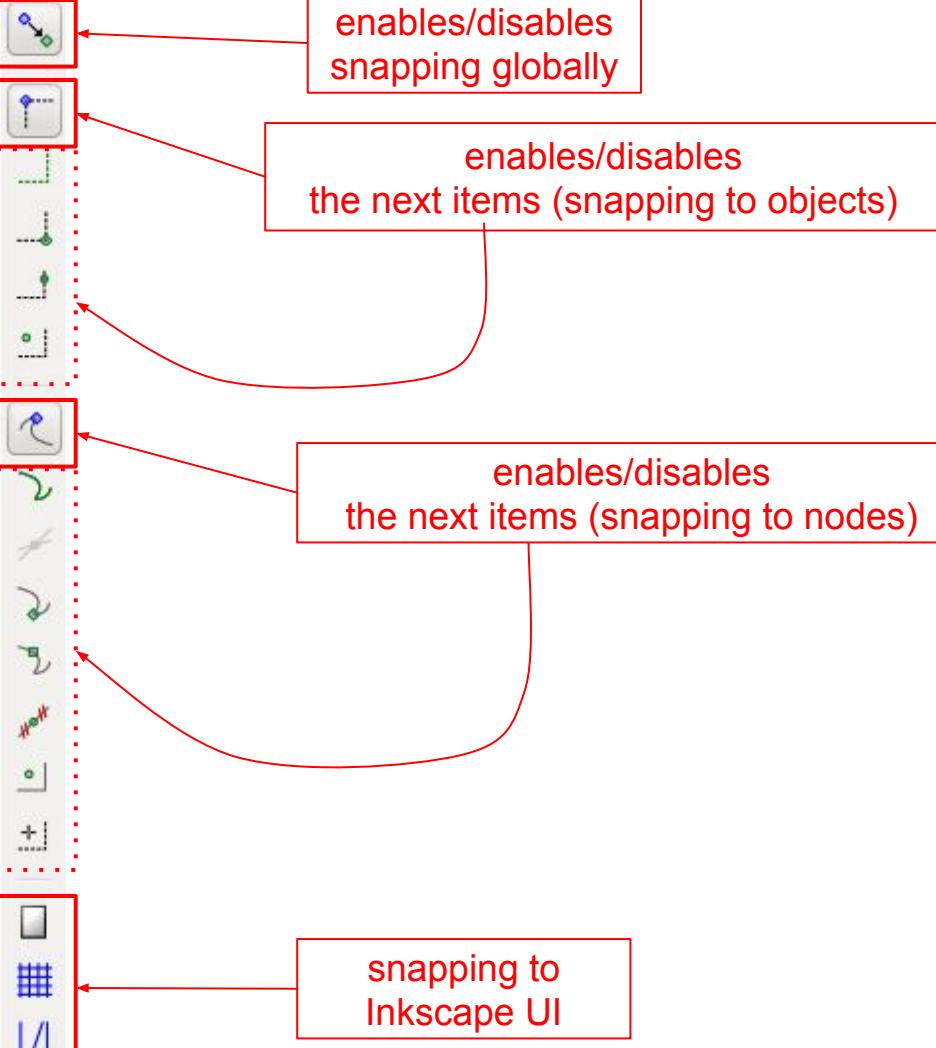
[Figure 3 – STM32F40xxx Memory Map](#)

[PDF](#) ⇒ Inkscape ⇒ [PDF](#)

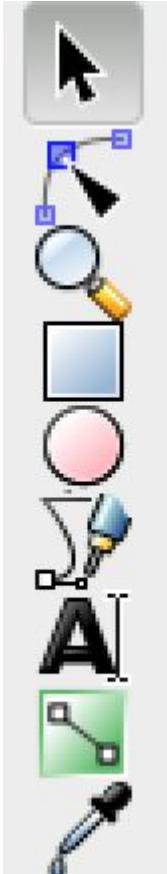
GUI



Understanding the Snap Bar



TBH I only use these tools



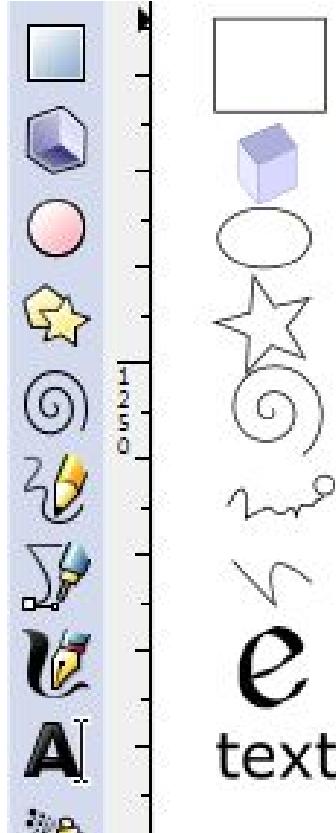
- Object select/transform
- Node select/transform
- Zoom
- Rectangle
- Ellipse
- Curves & lines
- Text
- Gradient
- Pick color

Basic objects

Different tools to create various objects.

Most of them are just paths,
except **rectangle** and **text**.

Inkscape just makes it transparent
for us.

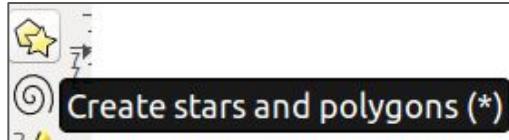


```
<svg:rect id="rect">
[ ] <svg:g id="box">
<svg:path id="path3791">
<svg:path id="path3787">
<svg:path id="path3789">
<svg:path id="path3797">
<svg:path id="path3795">
<svg:path id="path3793">
<svg:path id="ellipse">
<svg:path id="star">
<svg:path id="spiral">
<svg:path id="pen">
<svg:path id="curve">
<svg:path id="calligraphy">
+ [ ] <svg:text id="text">
```

Inkscape's non-standards SVG tools

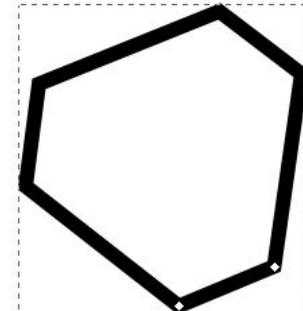
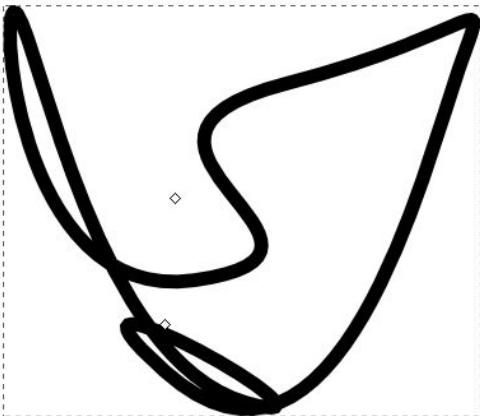
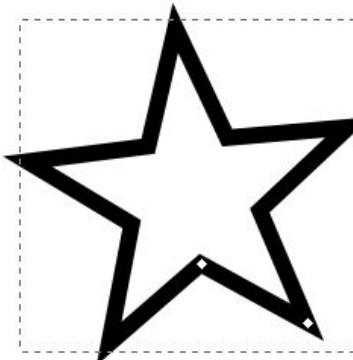
Example:

All these are created with

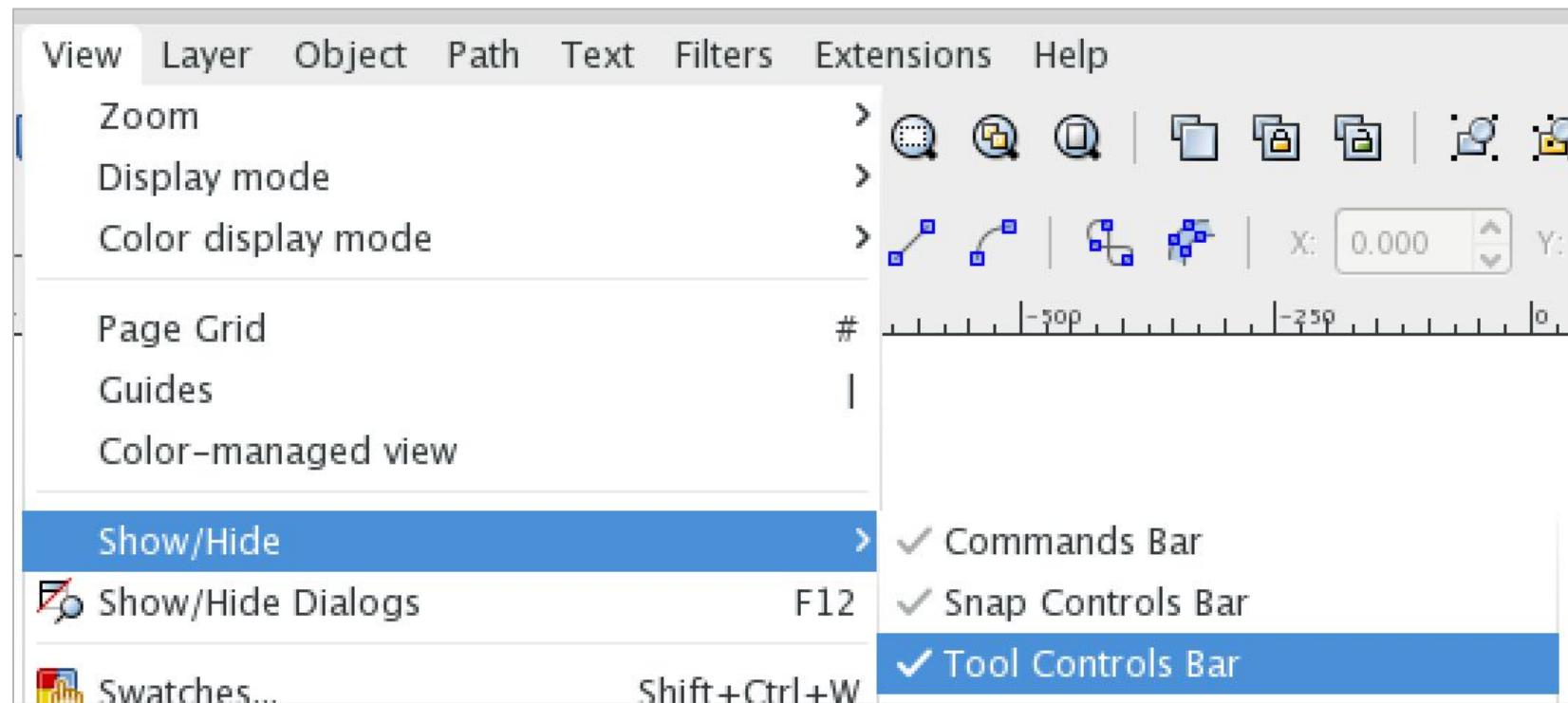


But internally, they are just SVG paths.

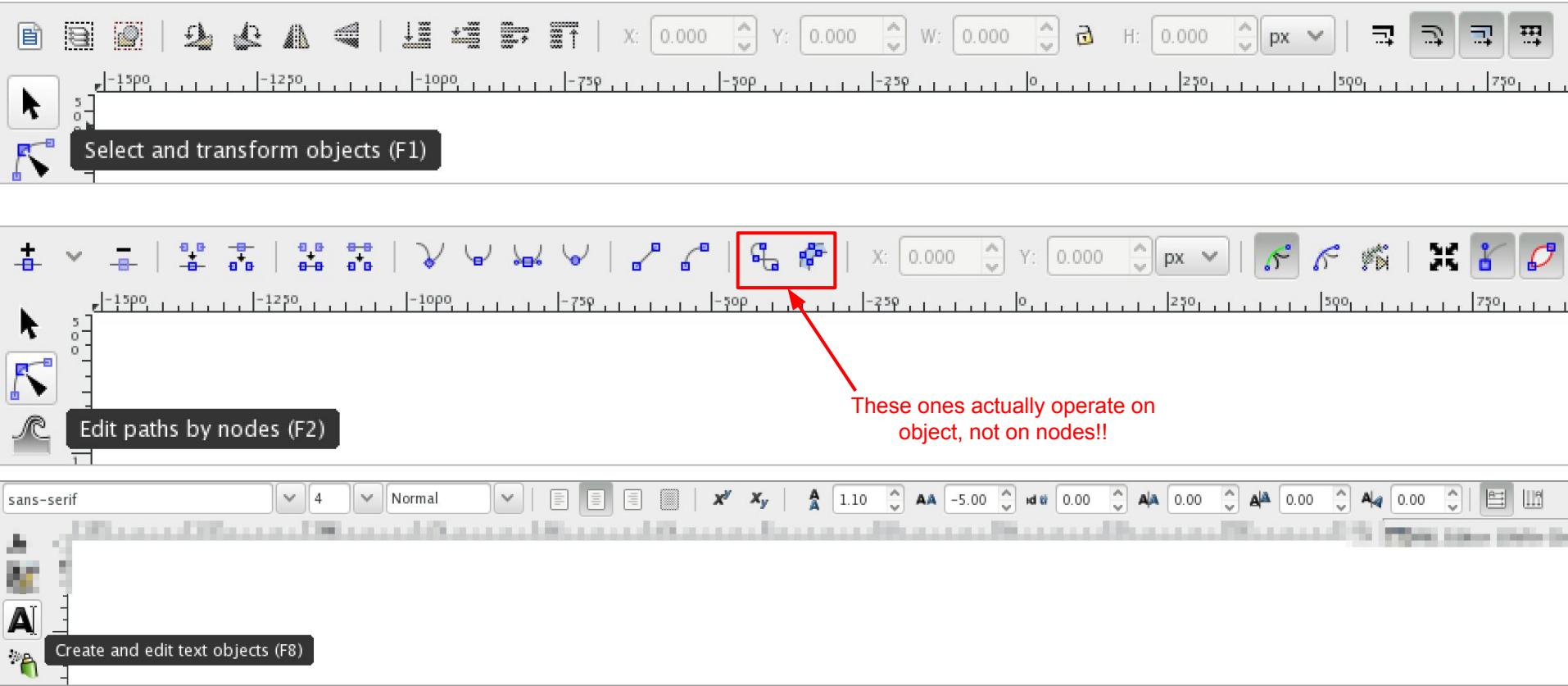
Inkscape just adds control points
and parameters for us.



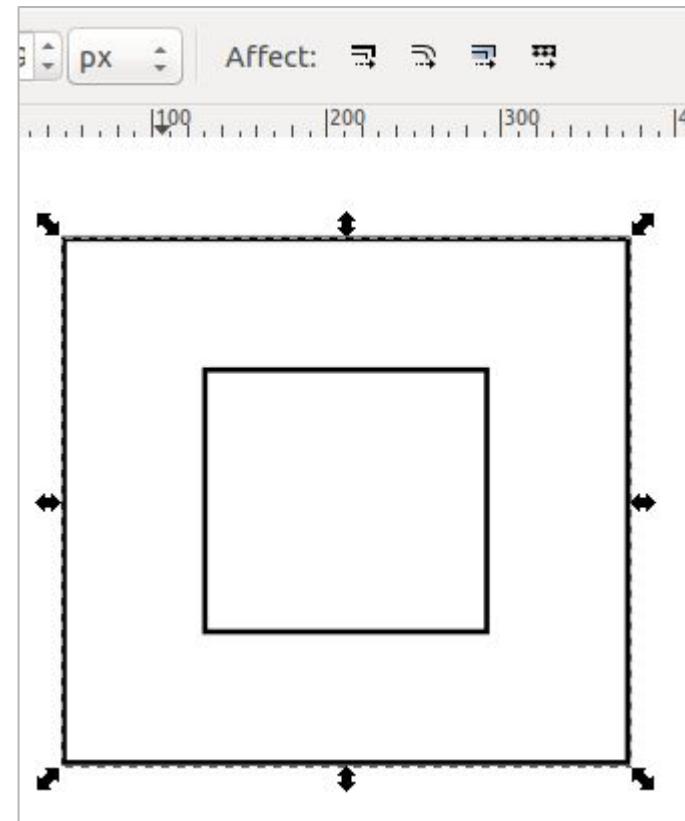
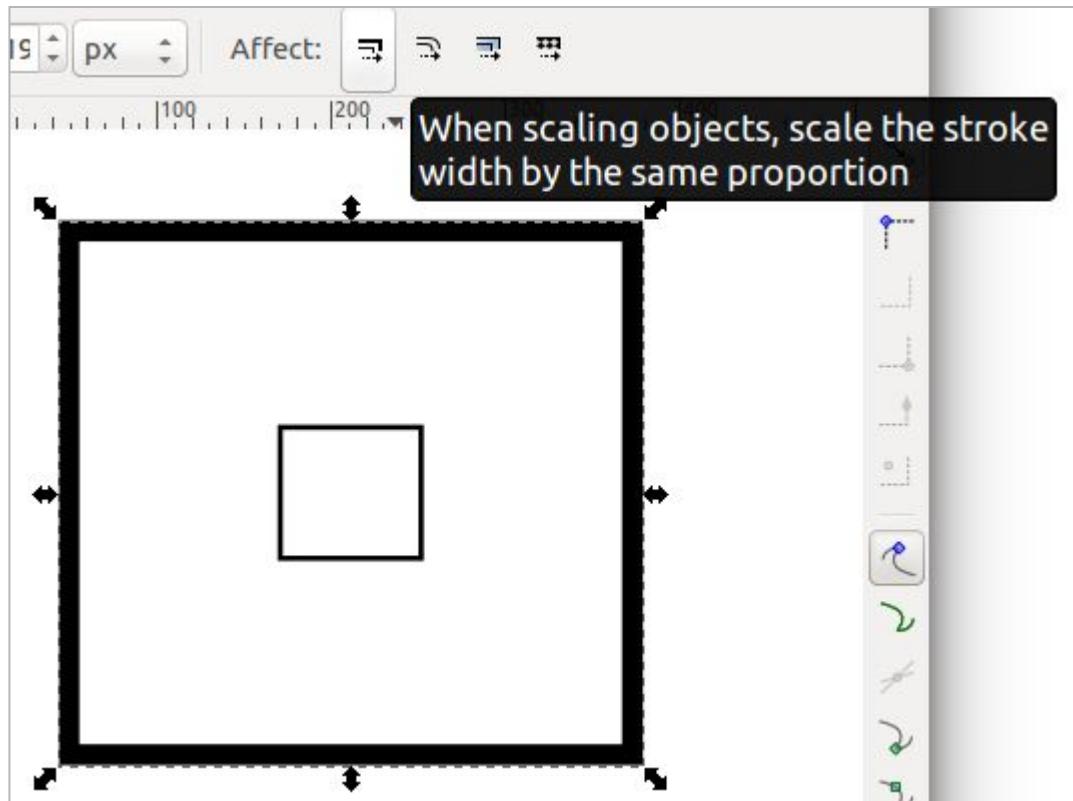
Important: the Tool Controls Bar changes with the selected tool.



Examples (try it!)

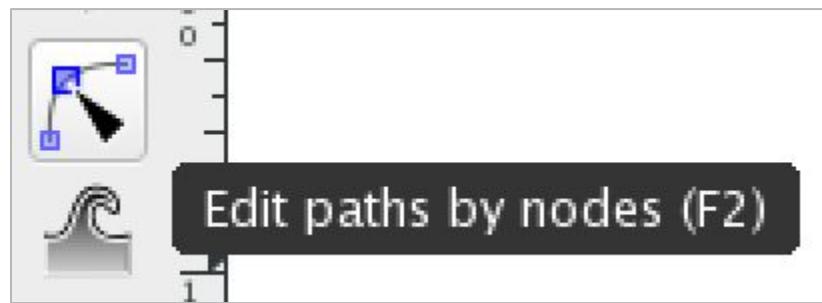
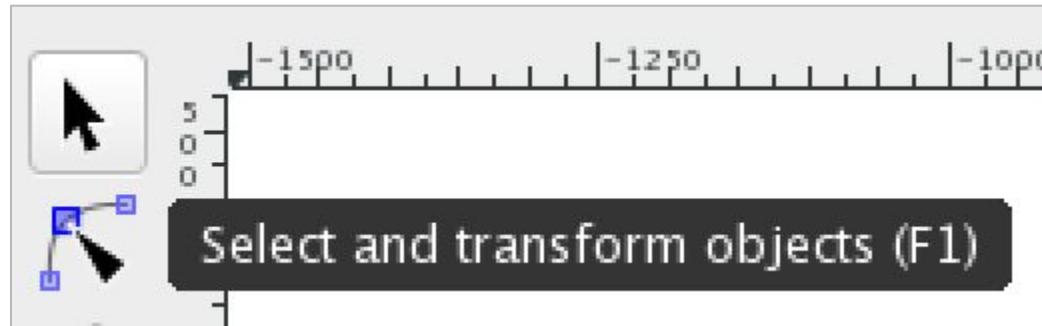


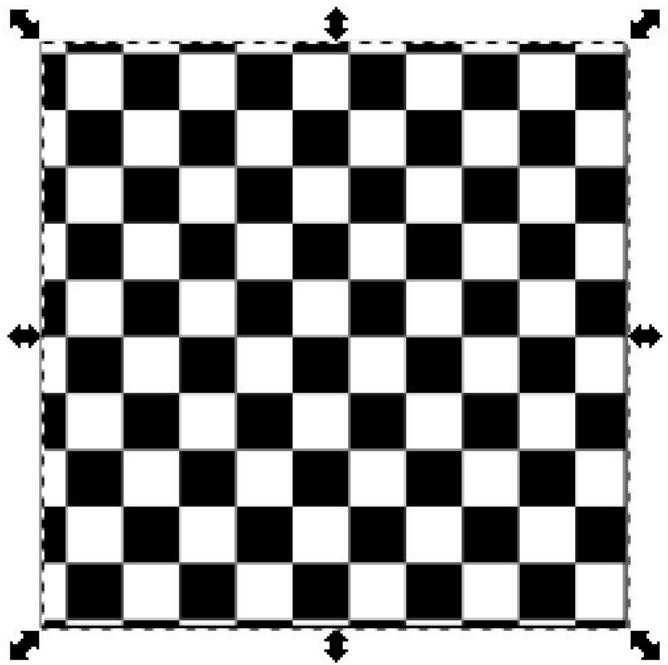
Should stroke increase with size ?



Object \Leftrightarrow node

The 2 main transform tools





[-] <svg:svg id="svg2">

[+] <svg:defs id="defs4">

[+] <sodipodi:namedview id="base">

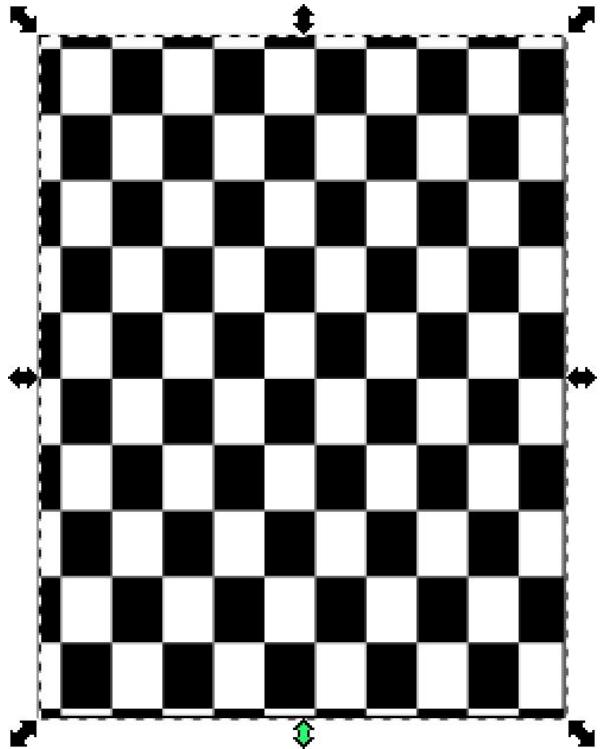
[+] <svg:metadata id="metadata7">

[-] <svg:g id="layer1" inkscape:label="Layer 1">

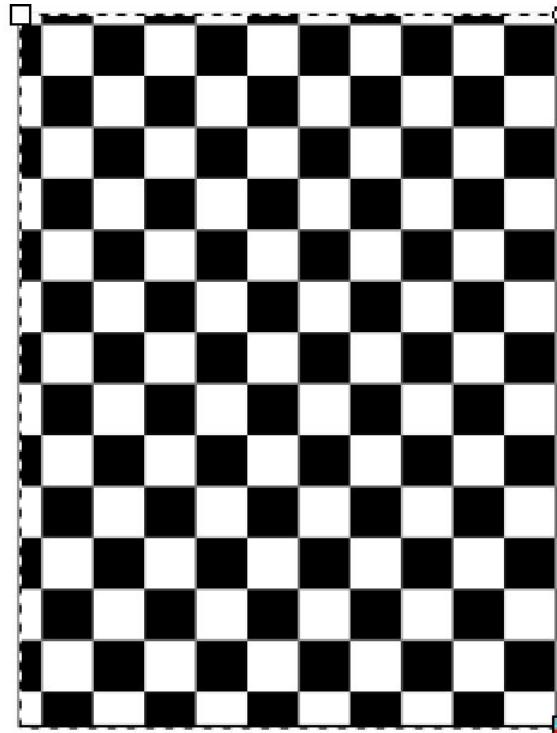
[+] <svg:rect id="rect4136">

Name	Value
height	103.15623
id	rect4136
style	color:#000000;clip-path:inset(50% 50% 50% 50%);fill:none;stroke:#000000;stroke-width:1px
width	103.15623
x	145.71428
y	278.07648

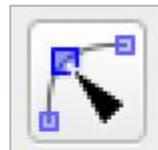
If you edit such a square with a pattern...



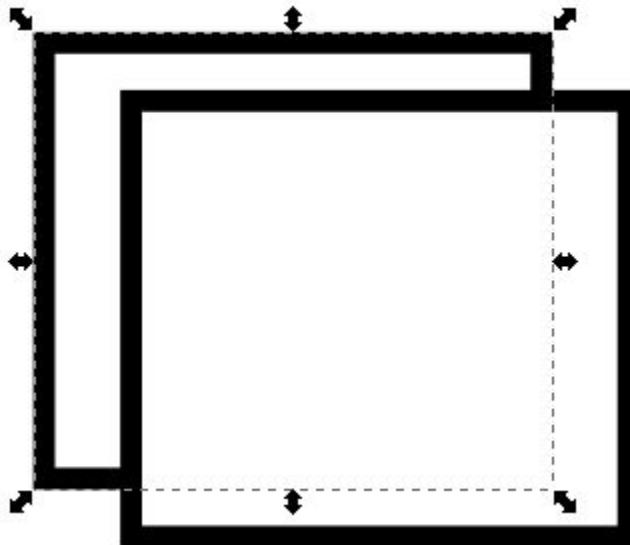
Applies to the whole thing



Modifies only some points

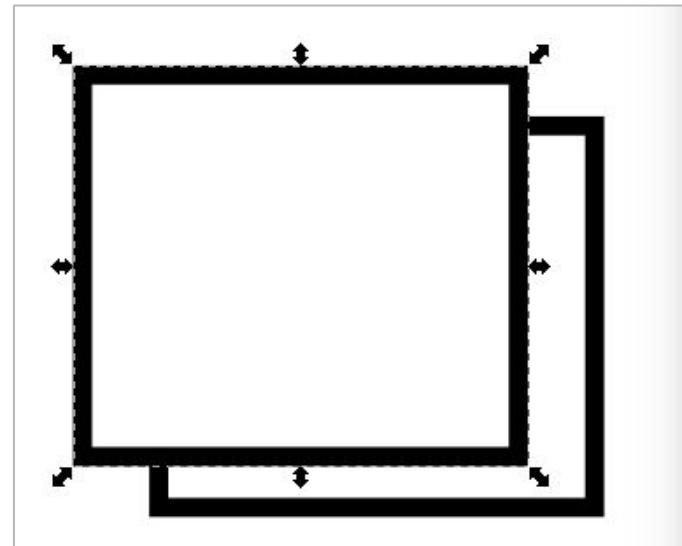
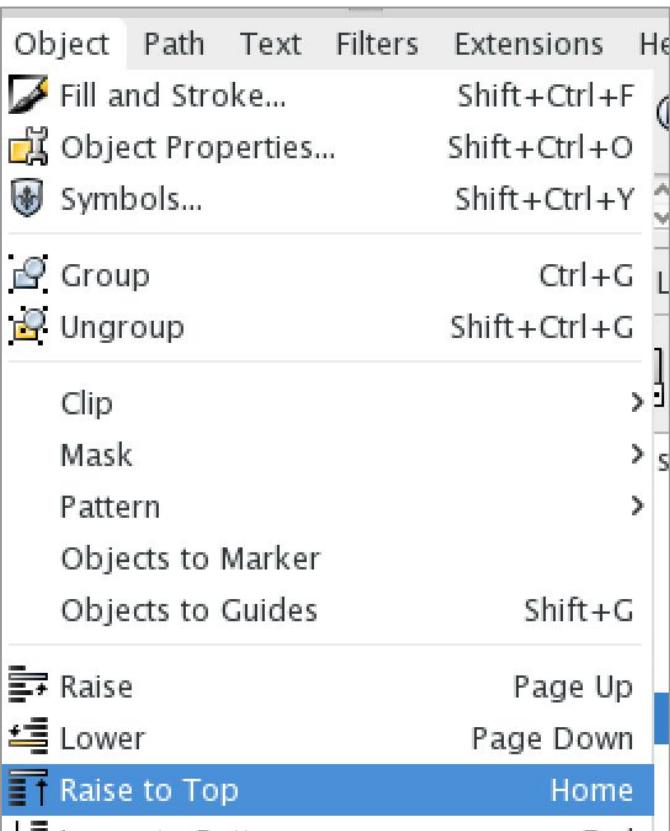


Drawing order



```
▽ <svg:svg id="svg2">
  <svg:defs id="defs4">
    <sodipodi:namedview id="ba...
  ▷ <svg:metadata id="meta...
  ▷ <svg:g id="layer1" inkscape:l...
    <svg:rect id="bottom">
      <svg:rect id="top">
```

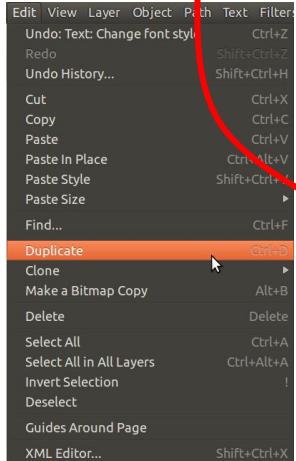
New objects are created after the existing ones in the source.
They are rendered on top of the others.



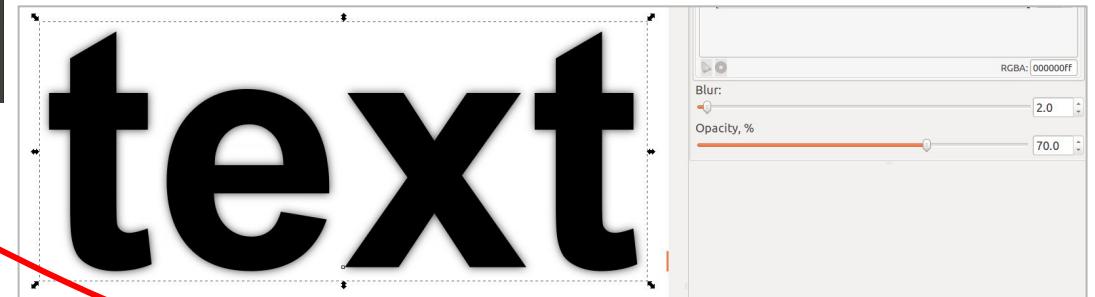
```
<svg:svg id="svg2">
  <svg:defs id="defs4">
    <sodipodi:namedview id="b">
      <svg:metadata id="metadat">
        <svg:g id="layer1" inkscape:>
          <svg:rect id="top">
            <svg:rect id="bottom">
```

You can change the order (or edit the SVG source).

text



Ex: make a shadow

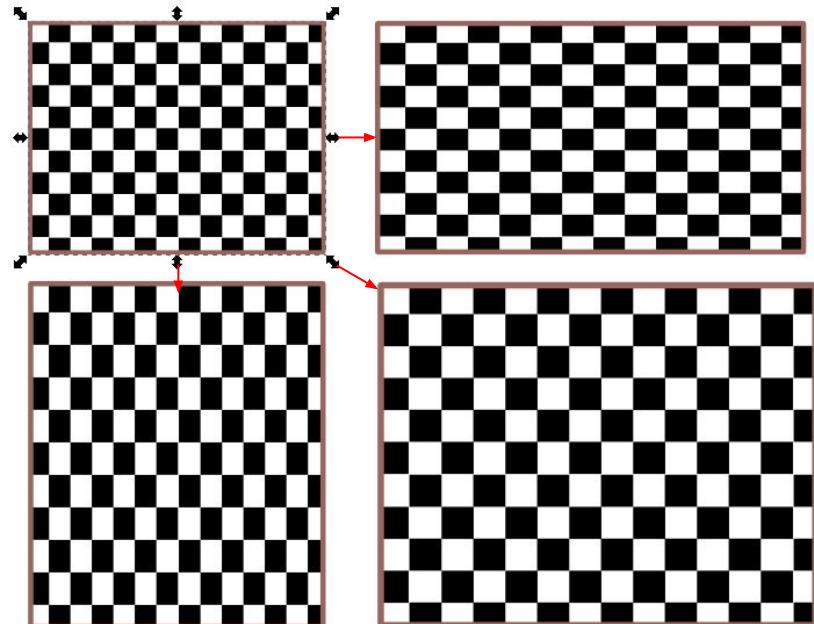


Move and lower

text

Transformations handles 1/3

Typical resize handles.



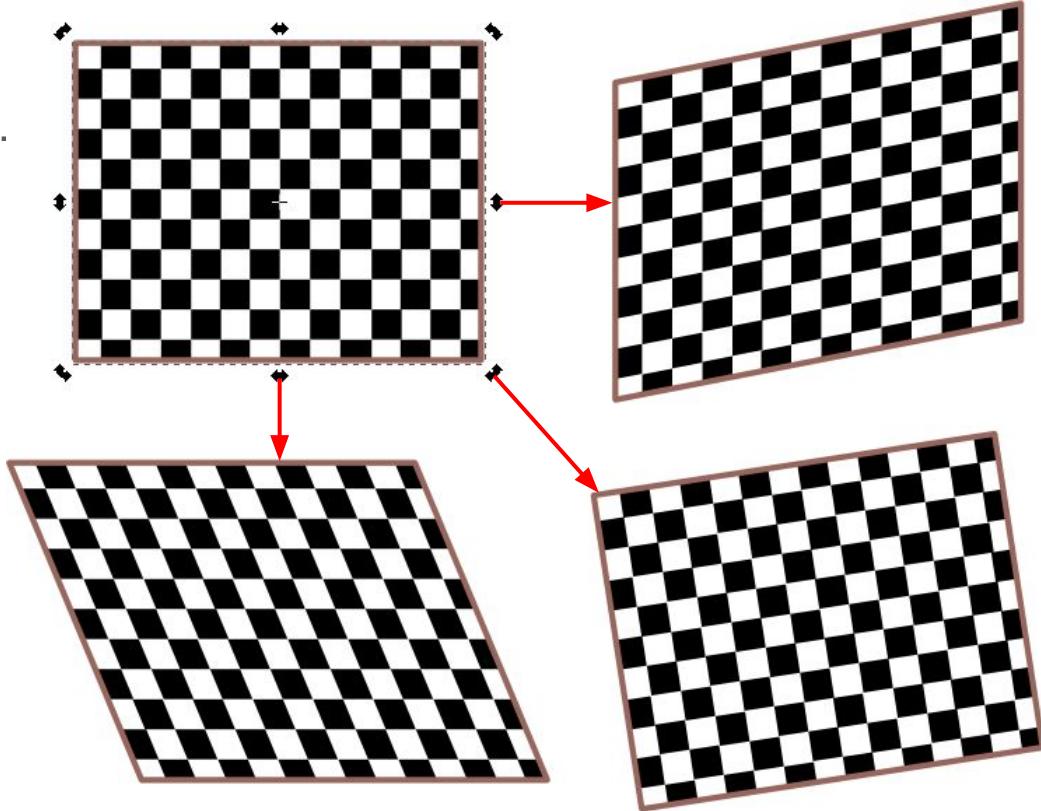
Keep **Ctrl** pressed to keep ratio

Keep **Shift** pressed to resize symmetrically

Keep **Alt** pressed to resize only with fixed amount

Transformation handles 2/3

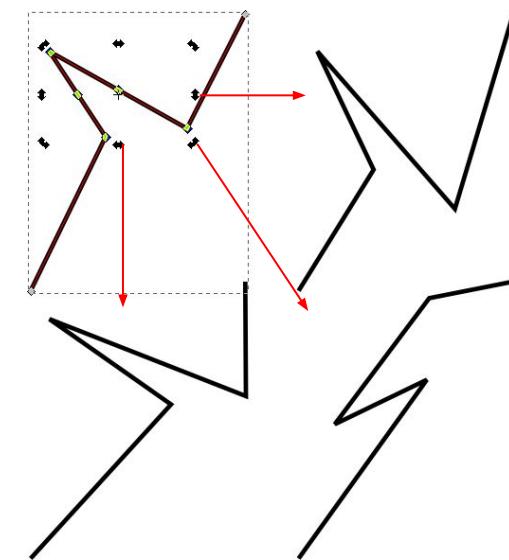
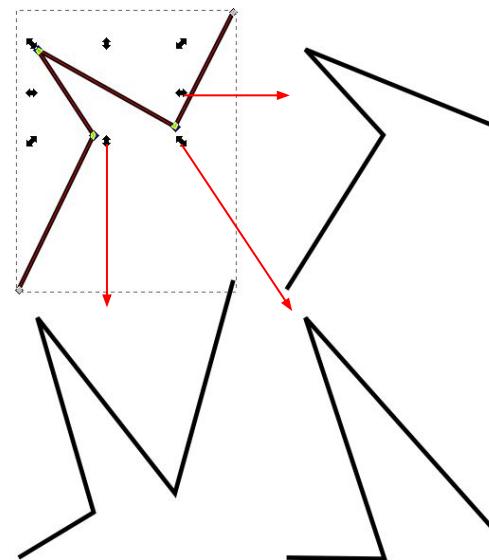
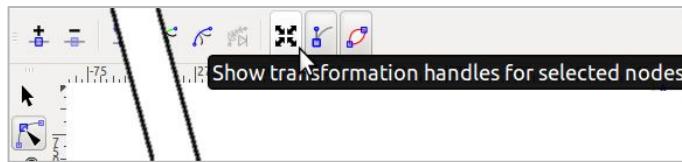
If you reclick the object,
the handles change to rotation/skew.



Transformation handles 3/3

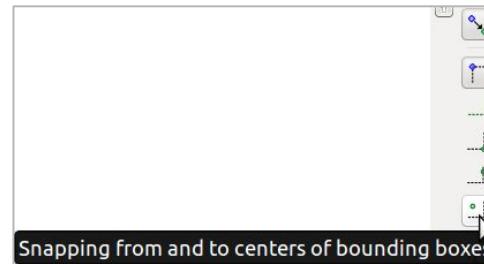
Nodes also have transformation handles!

You can show/hide them (they're useful, but sometimes they're in the way)

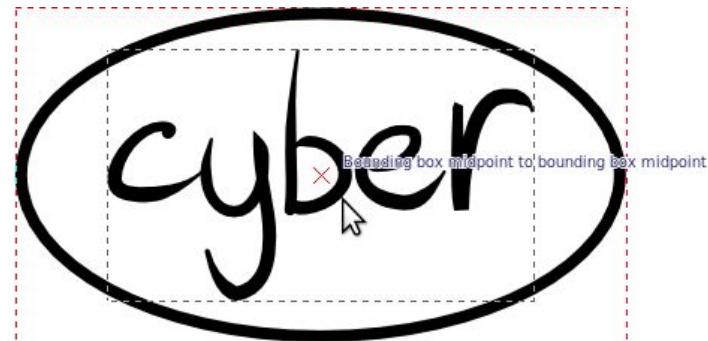


Snapping: useful to center objects

Enable snapping to centers,



then objects will auto center with others.



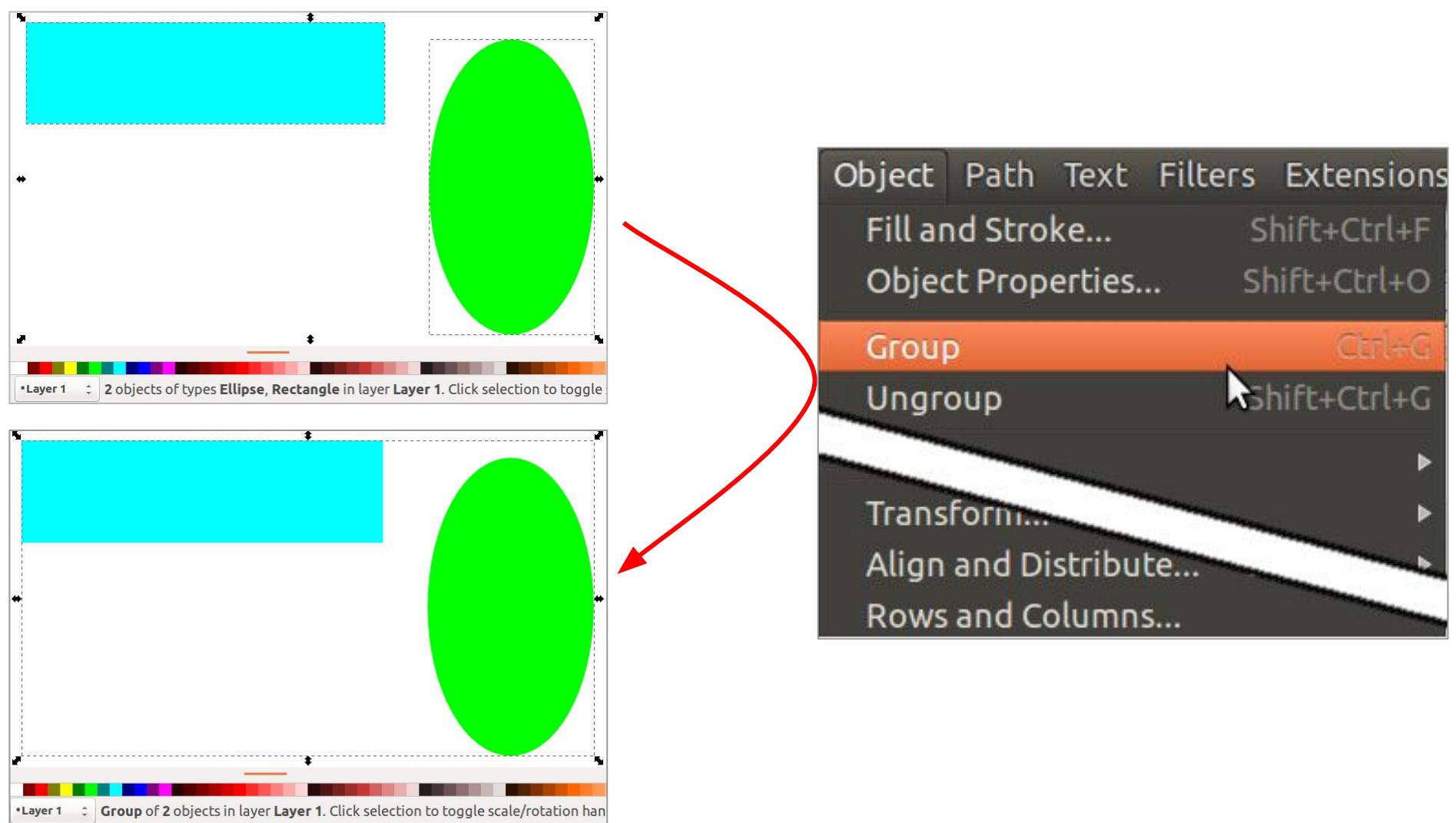
Grouping

Select objects, group them.

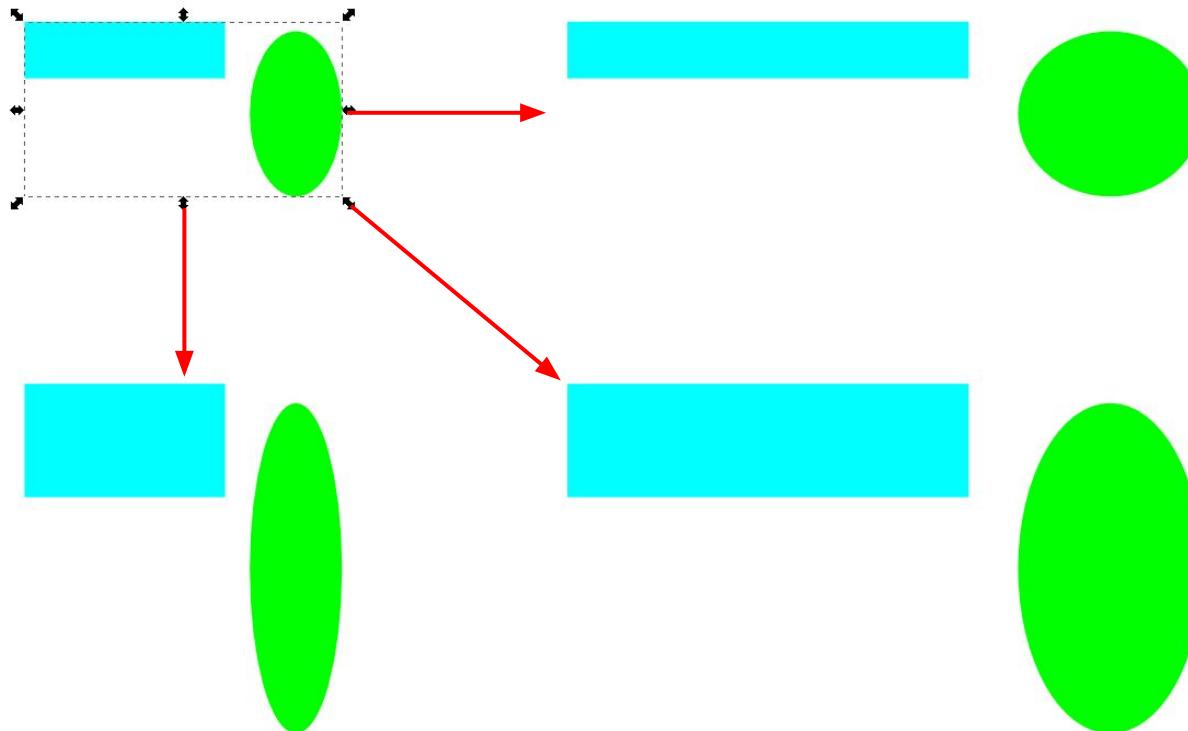
You can apply transformations or settings to the whole group.

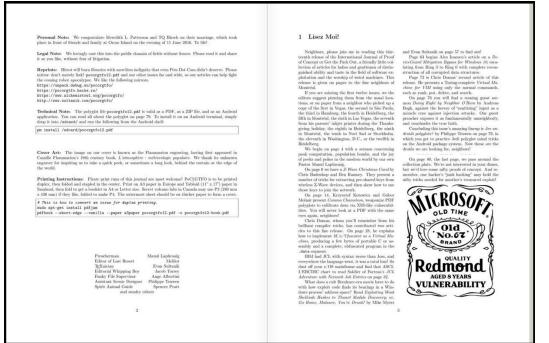
You can temporarily enter a group, edit/create/delete objects, then leave the group.

Warning: Inkscape behaves differently with filters (ex: blur) if you apply it to several objects or to one group made of the same objects.

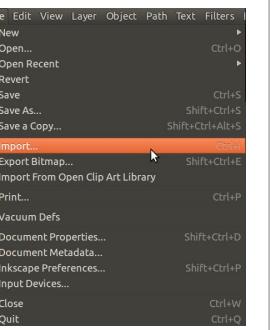


Group transformations

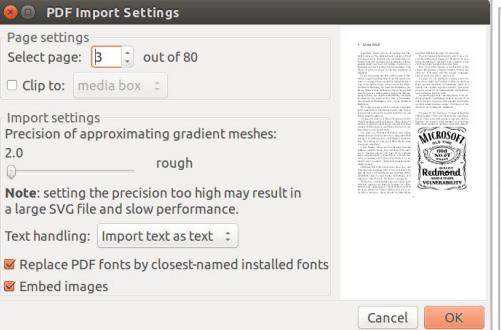




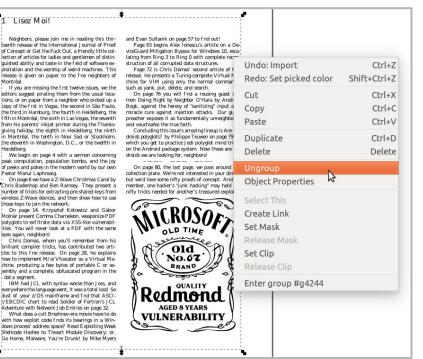
<https://archive.org/stream/pocorgf12#page/n1/mode/2up>



Import

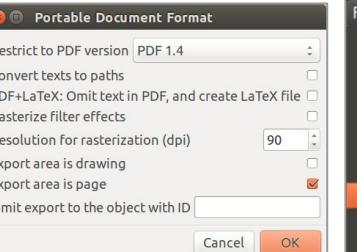


Select page

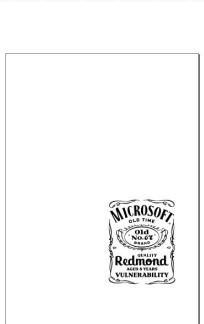
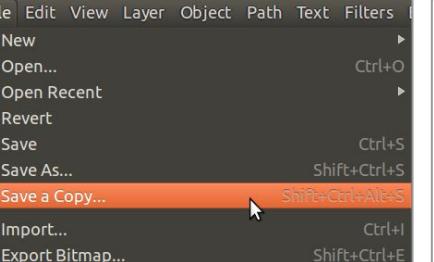


Ungroup, delete...

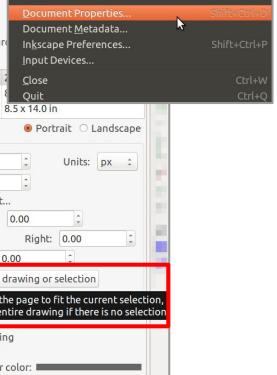
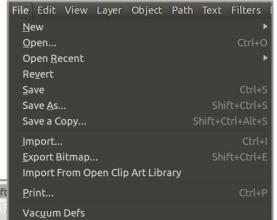
Extract PDF contents (and keep them as vectors)



Export



Resize



Layers

Layers are just Inkscape using groups in a special way.

You can lock layers, preventing objects to be edited, selected, or snapped to (very useful!).

You can also change layers opacity - very efficient to see through a model.

Draw a path

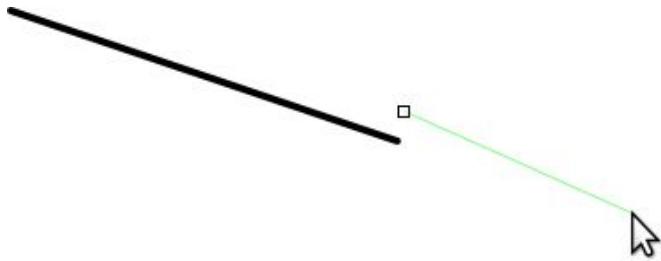


Draw Bezier curves and straight lines (Shift+F6)

Click, click... **backspace** to delete previous point.

Enter or **double click** to finish drawing.

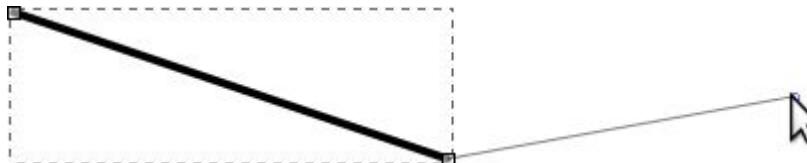
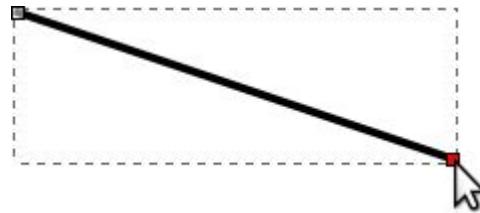
To take a break, just finish the current drawing:
starting from ending point resumes the path.



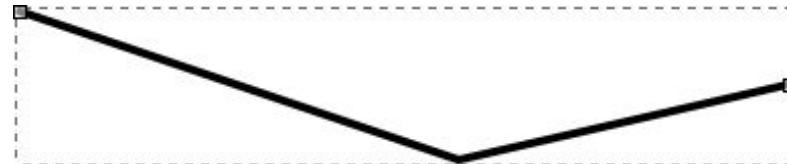
Start normally

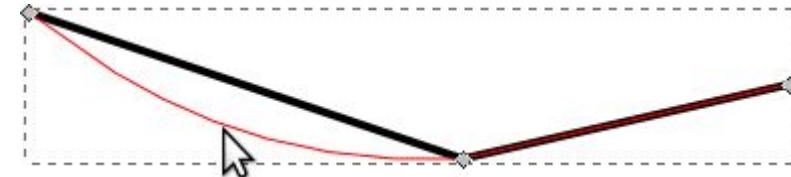


2 paths

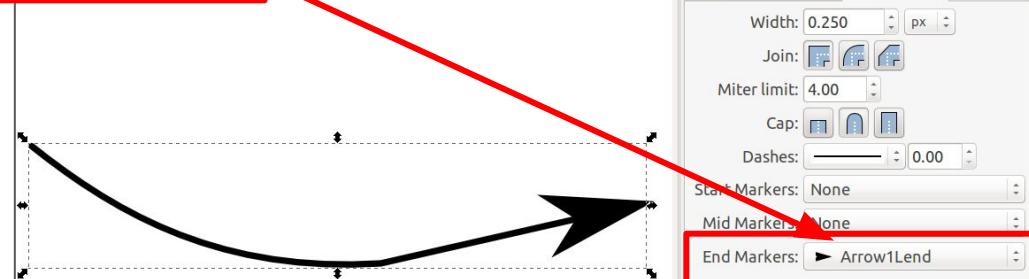
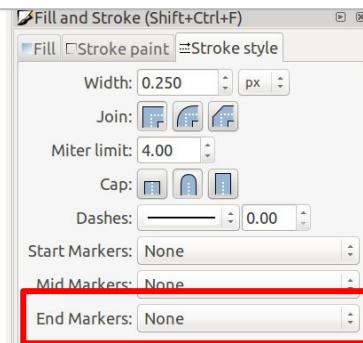
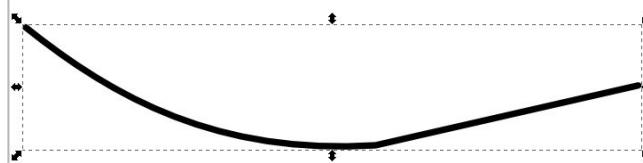
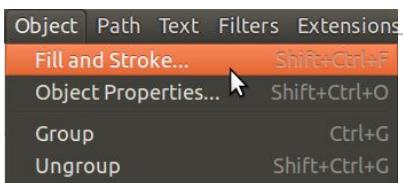


Start from an end point ⇒ a single path





Make a curve: drag a segment



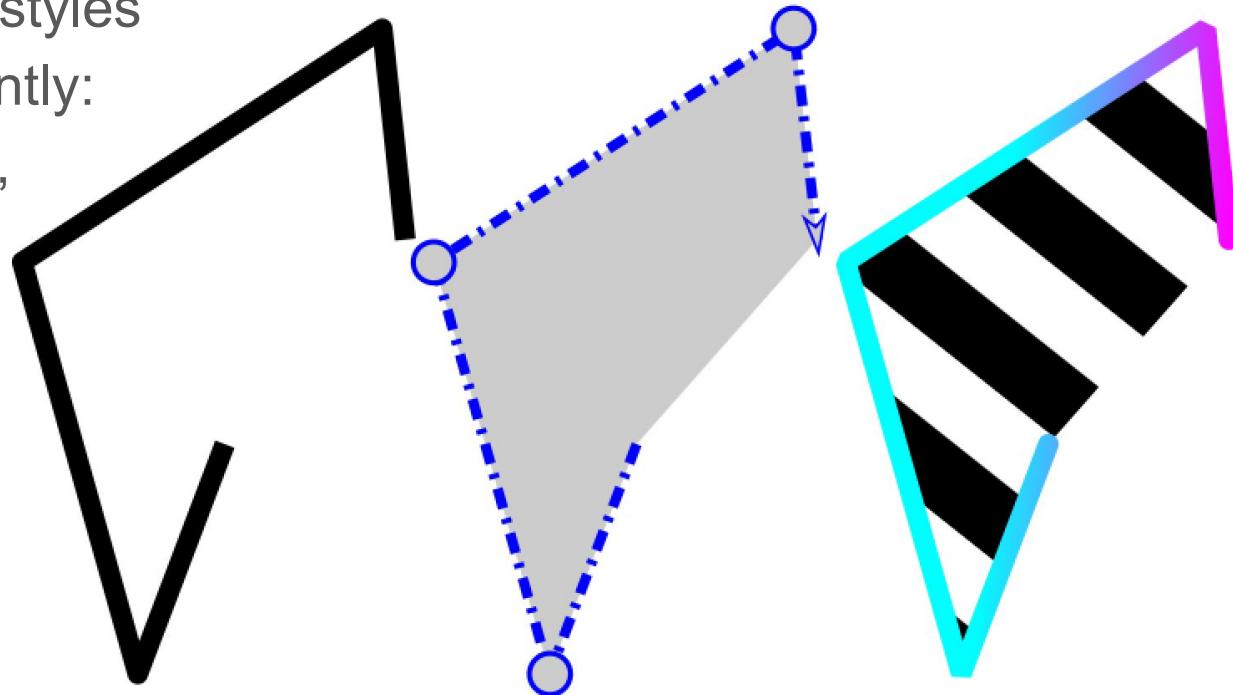
Make an arrow: change Stroke marker

Filling and stroke

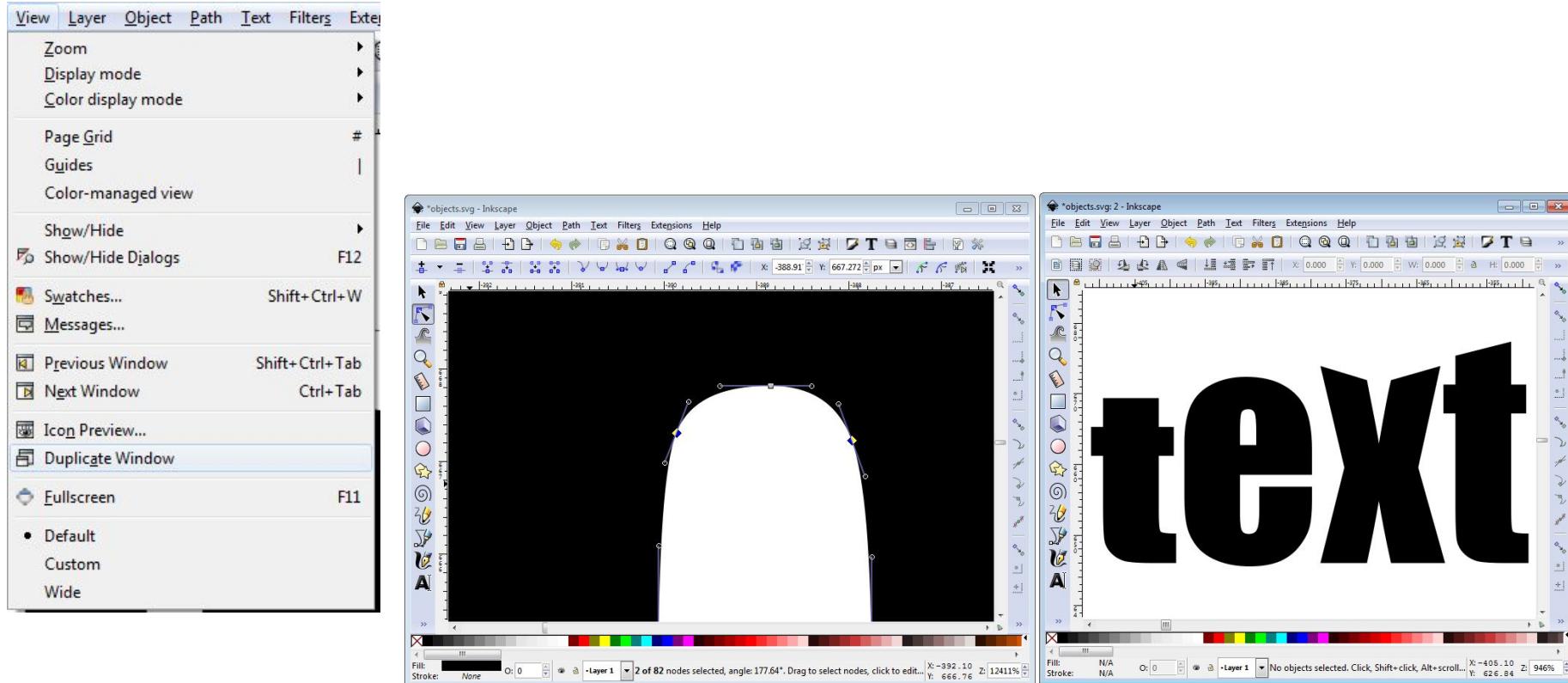
A path is defined by nodes.

Then filling and stroke styles
are defined independently:
width, angles, markers,
gradients, dashes,
patterns.

Draw any path,
and experiment!



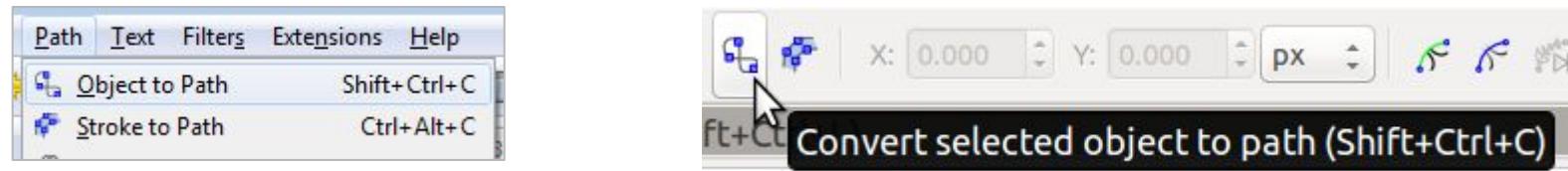
Advice: duplicate windows to have a permanent overview
and then just trust your own judgment.



Objects to path

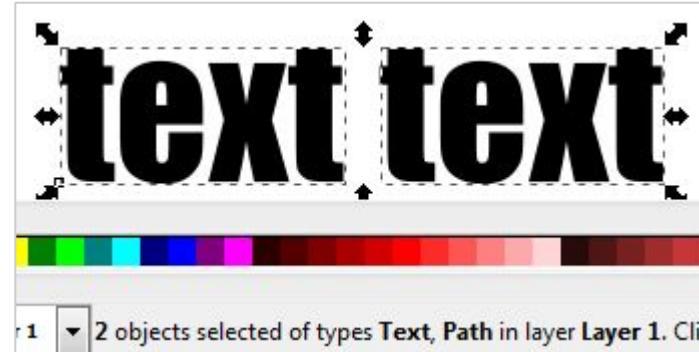
You can convert an object to paths. You **can't** revert! (so **keep** the original)

Visually, it's the same thing. But it loses its original properties (ie: editable text)



Ex: convert text to path

They look the same, but:



Text is

- still editable, extractable in PDF, bound to a specific font



Paths are fully modifiable. No font required anymore.

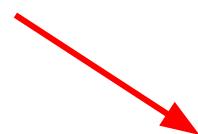


My advice:
If you turn something complex
into a path,
keep a copy of the original
in your own version of the SVG
(ie, maybe not in the distributed one)

Text and fonts

Common mistake with stroked text

Stroke eats the inside of the filling.
So if the stroke is very thick,
your characters can look (very) bad.



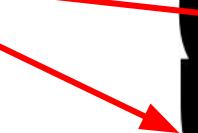
FILLED

STROKED

⇒ duplicate the text object:

- Front = only filled
- Back = stroke (filling optional)

(and it's still editable text)



STROKE

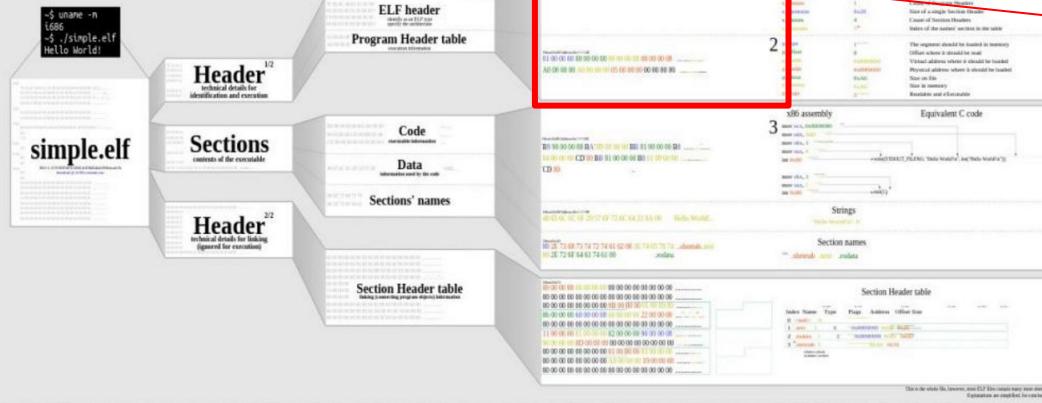
SVG = pure text

No font data - it's installed on your system.

If you just share the SVG,
the text appearance will be lost
⇒ Inkscape will use a default font.

When you export to PDF,
a part of the font is embedded
(only the characters used in the picture)

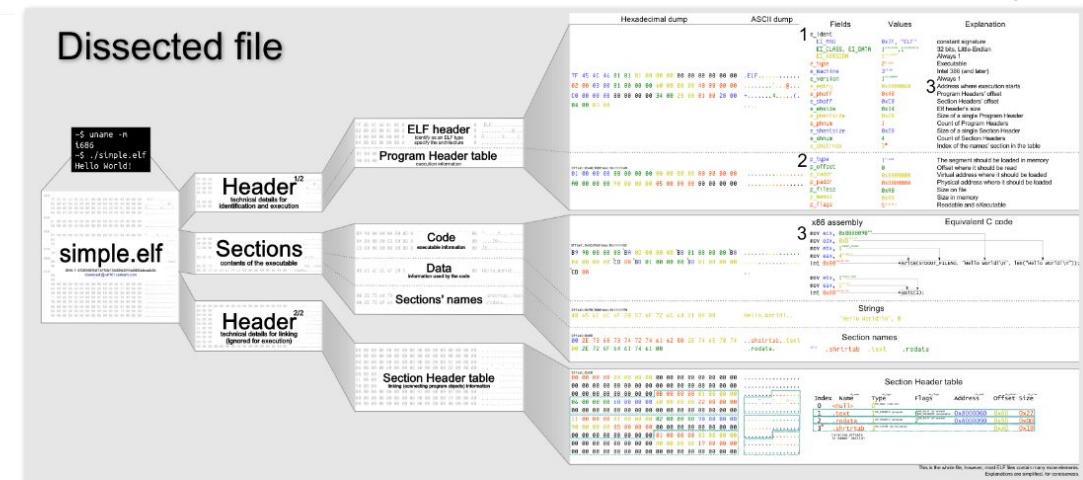
Dissected file



Incorrect font
ASCII dump not aligned :(

ugly

Dissected file



original

*New document 1 - Inkscape

File Edit View Layer Object Path Text Filters Extensions Help

Arial 8 Normal

XML Editor (Shift+Ctrl+X)

some text

Click to select nodes, drag to rearrange.

Name Value

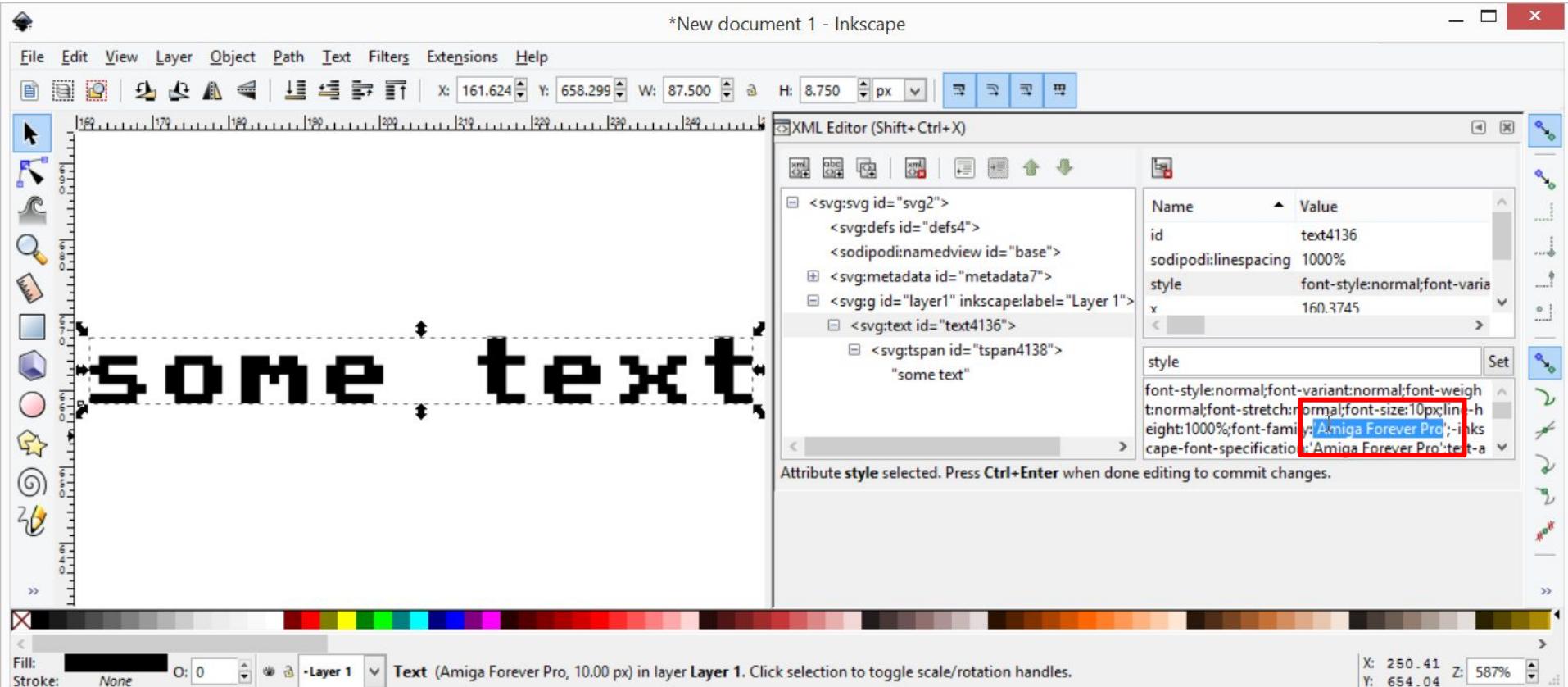
Name	Value
id	text4136
sodipodi:linespacing	100%
style	font-style:normal;font-varia
x	160.3745

Fill: Stroke: None O: 0 Layer 1 Click to edit the text, drag to select part of the text.

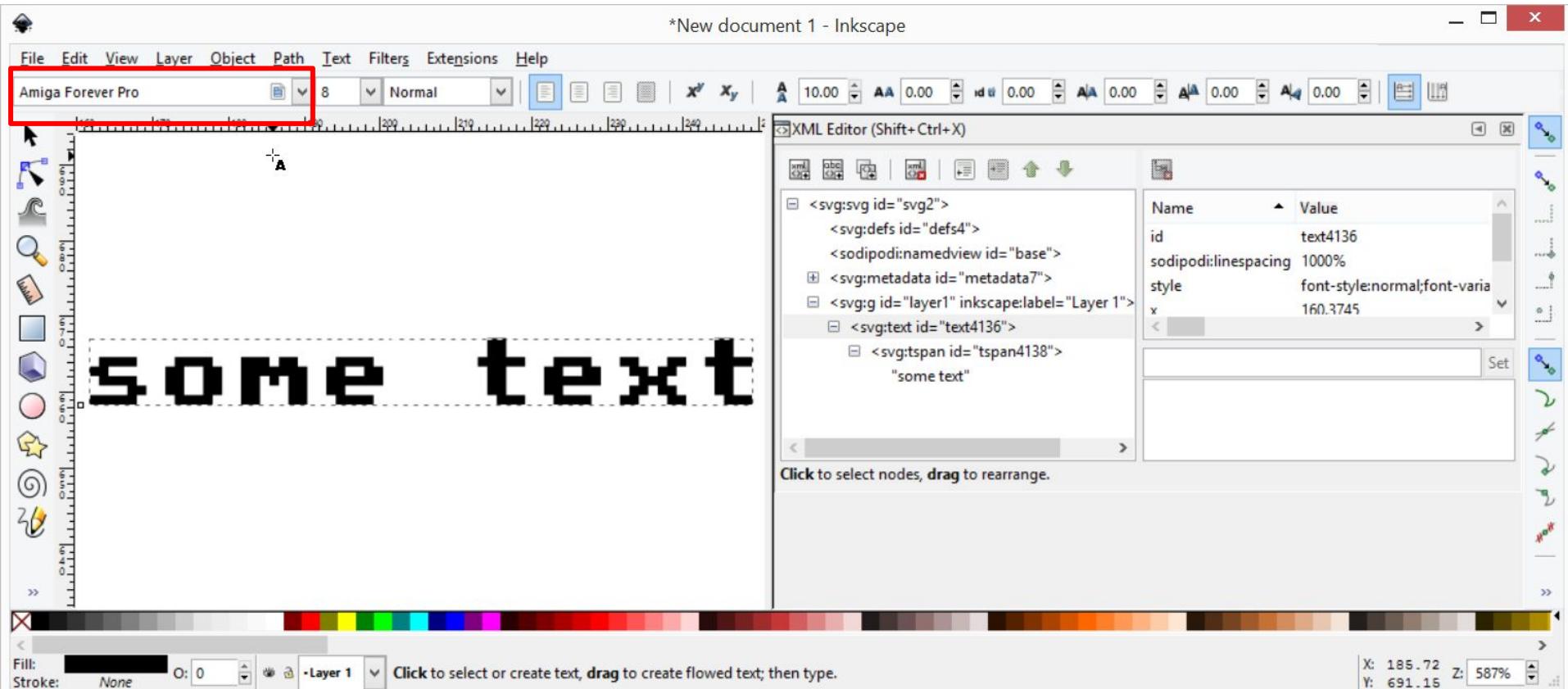
X: 186.63 Y: 661.19 Z: 1152%

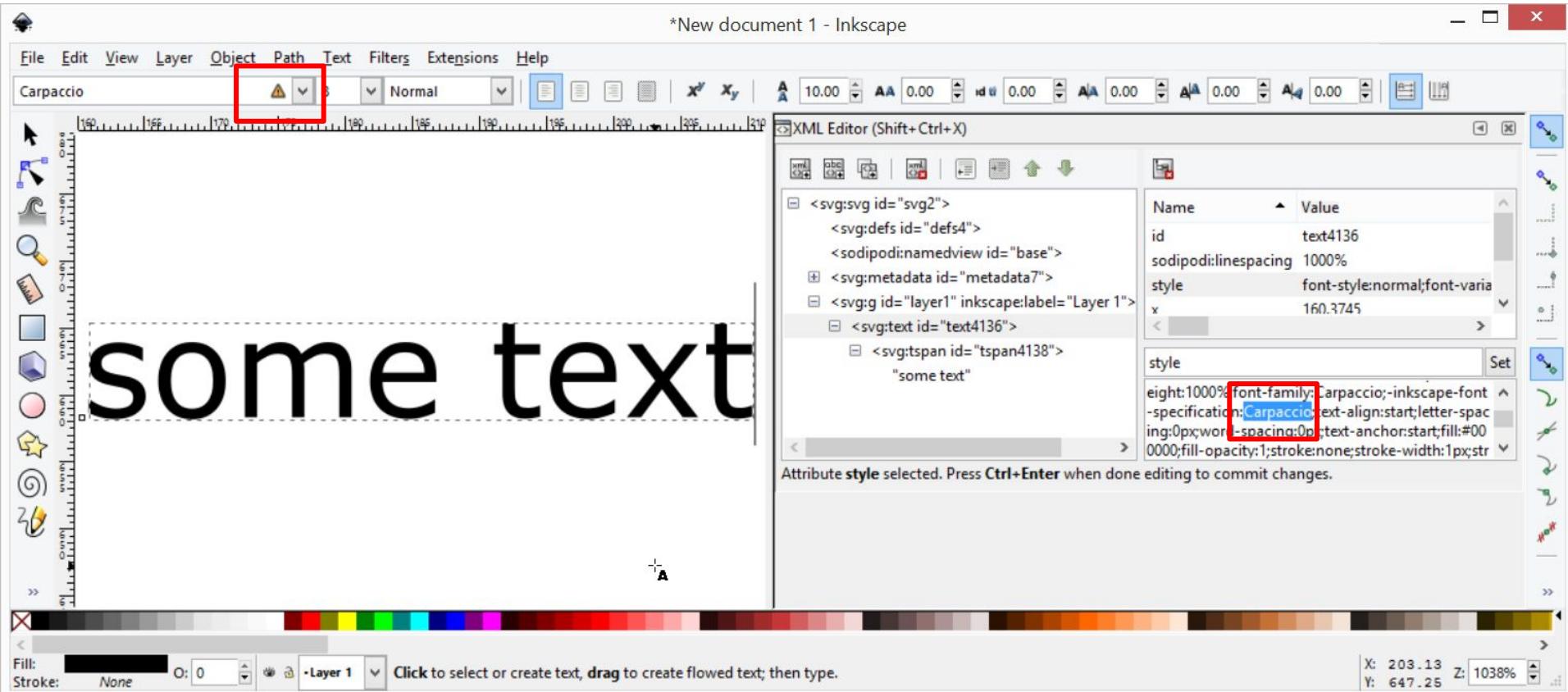
Text with a standard font.

*New document 1 - Inkscape



Now using a specific font installed on the system.





But if you use a font not present, it will revert to a standard font.

Either:
share the font (if you legally can)
or

Turn text into paths
(but then no more text copy-paste in PDF)
or
Expect people to extract fonts from PDF :)
(well, Fontforge does that...)

Tutorial: easy manual tracing

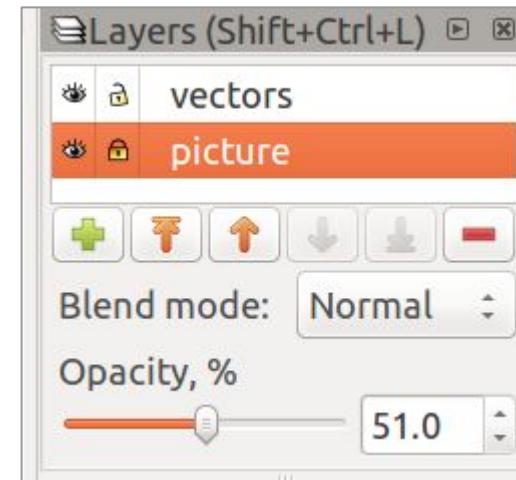
<http://gunshowcomic.com/648>

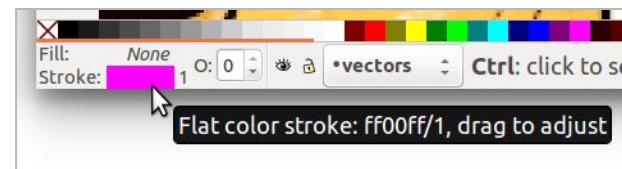
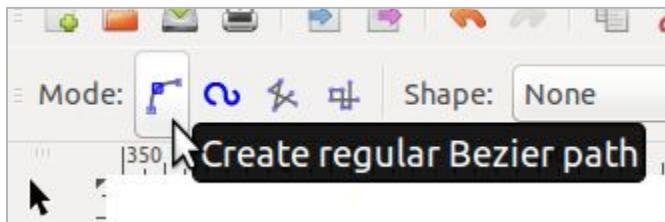
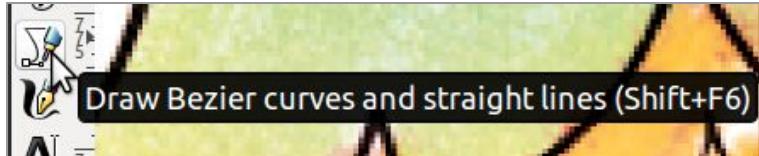
(that's the original page for that meme)



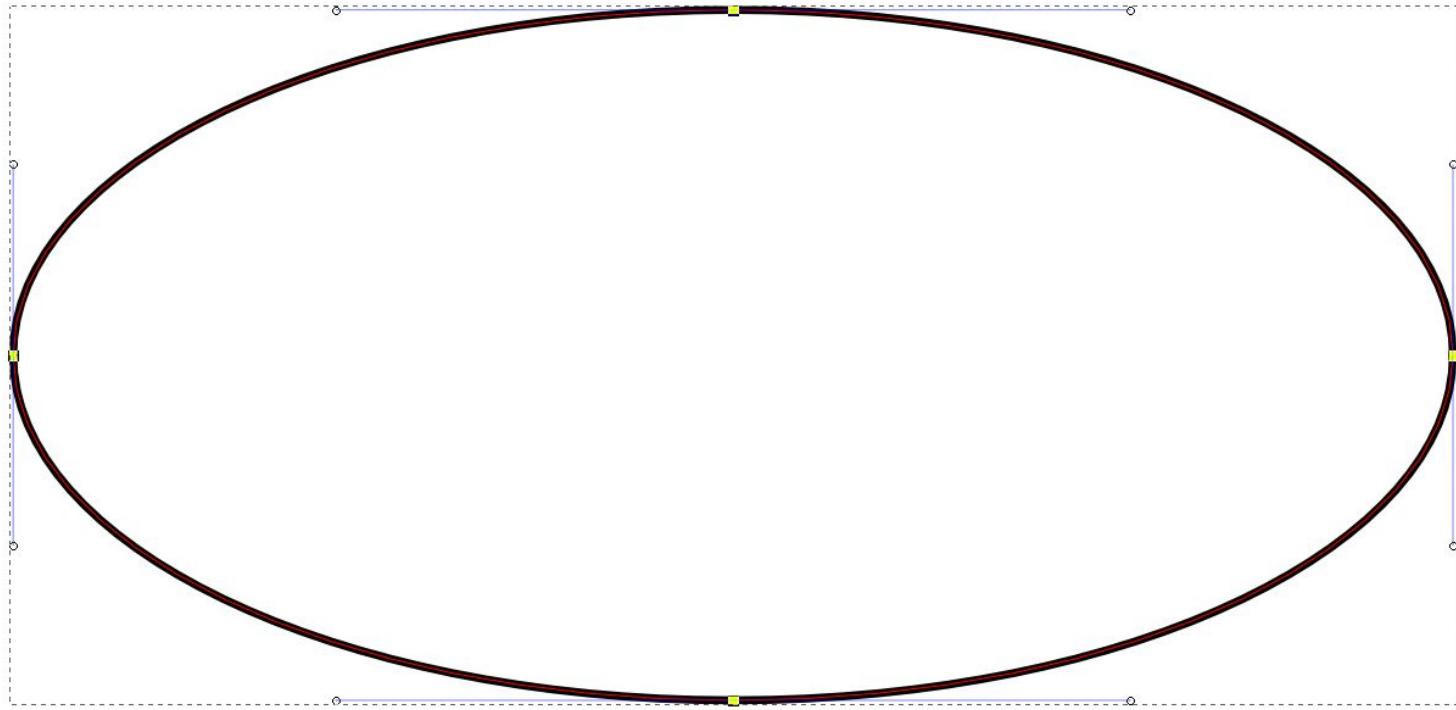
Setup

- Get a picture
 - Isolate what you want to vectorize if required
- Import it (embed or link)
- Put it in its own layer, locked (⇒ can't be selected)
 - partially transparent for more visibility
 - Use a flashy color for your strokes

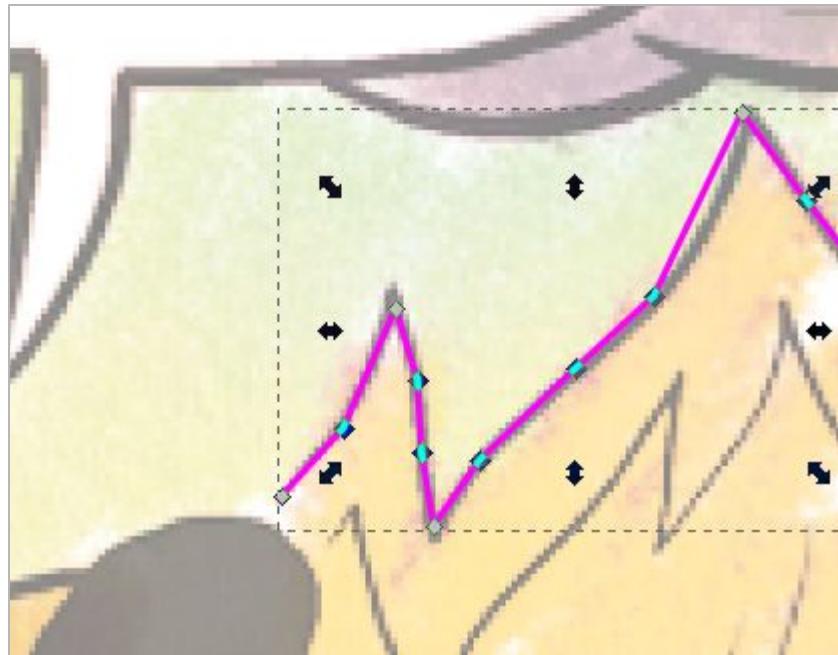




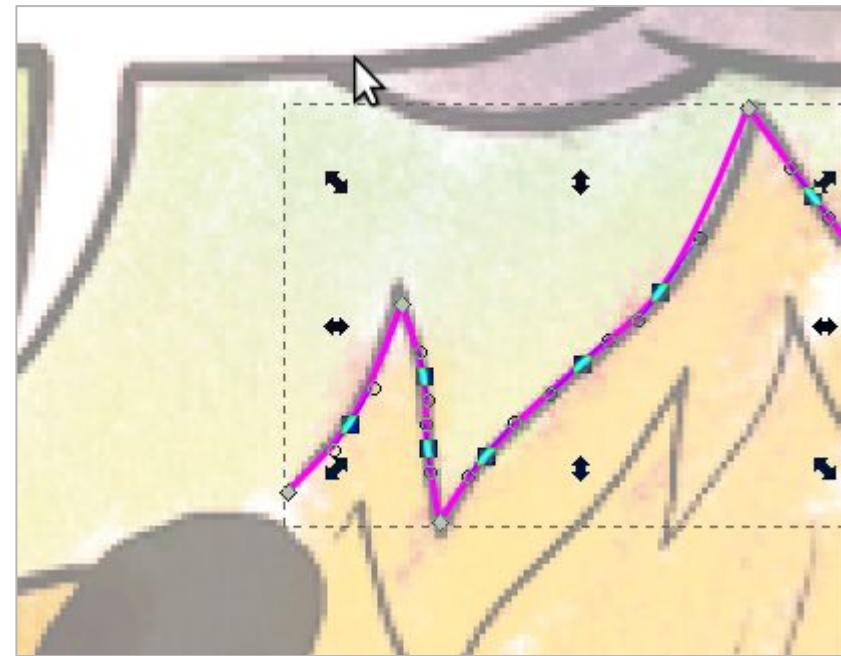
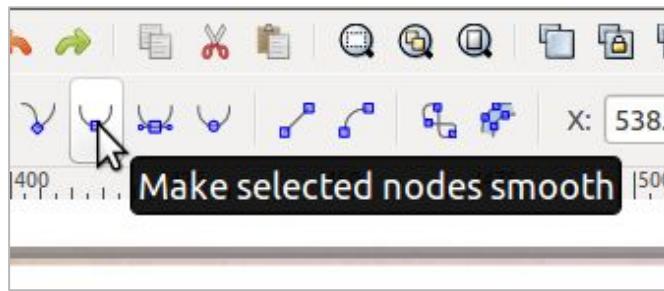
Just draw straight lines:
points at angles and when tangent changes.



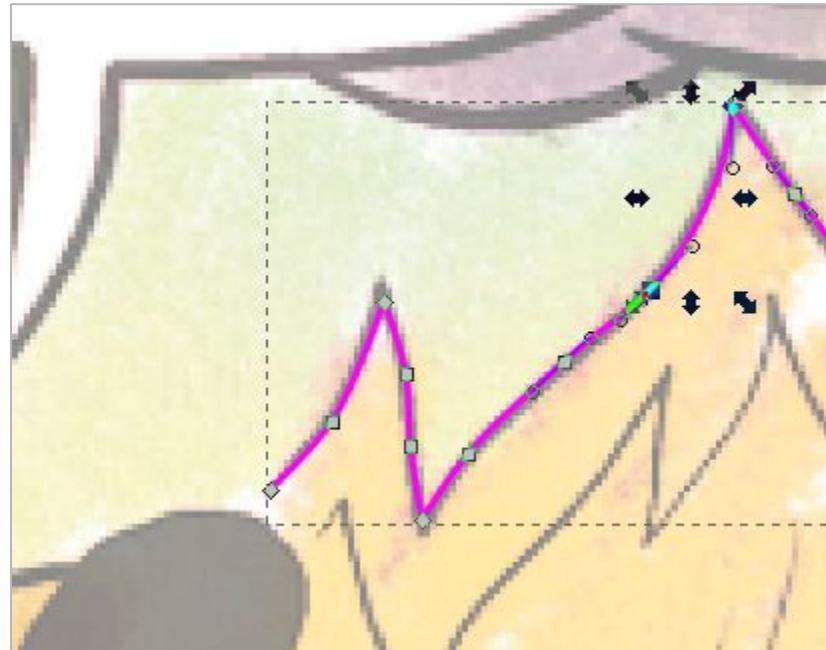
Don't draw too many points:
For example, a perfect ellipse is only made of 4 points.



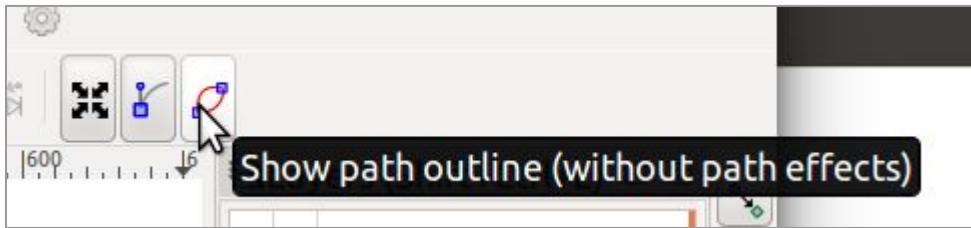
Select all nodes that should be smooth.



Make them smooth
(it's not strictly required but will just make the next steps easier).

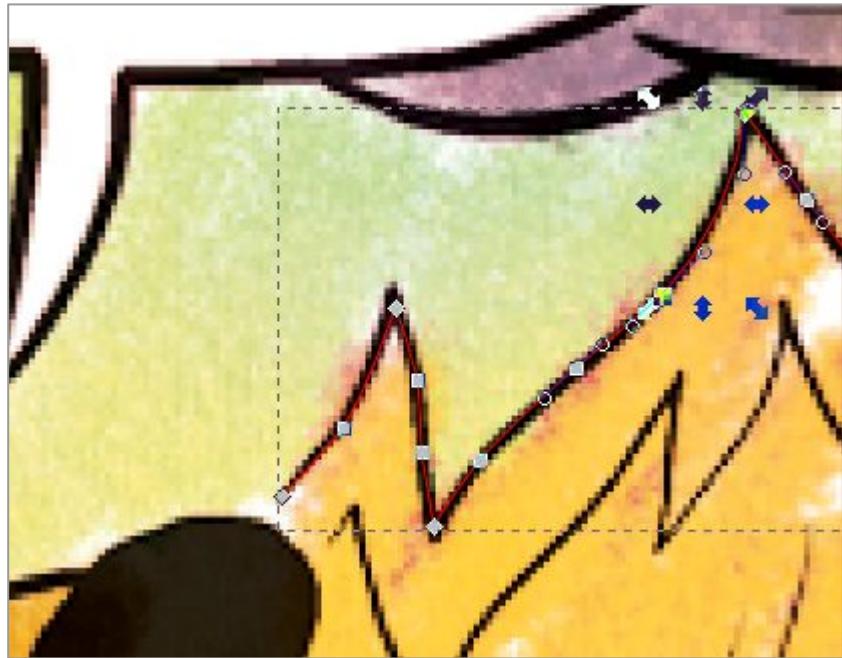


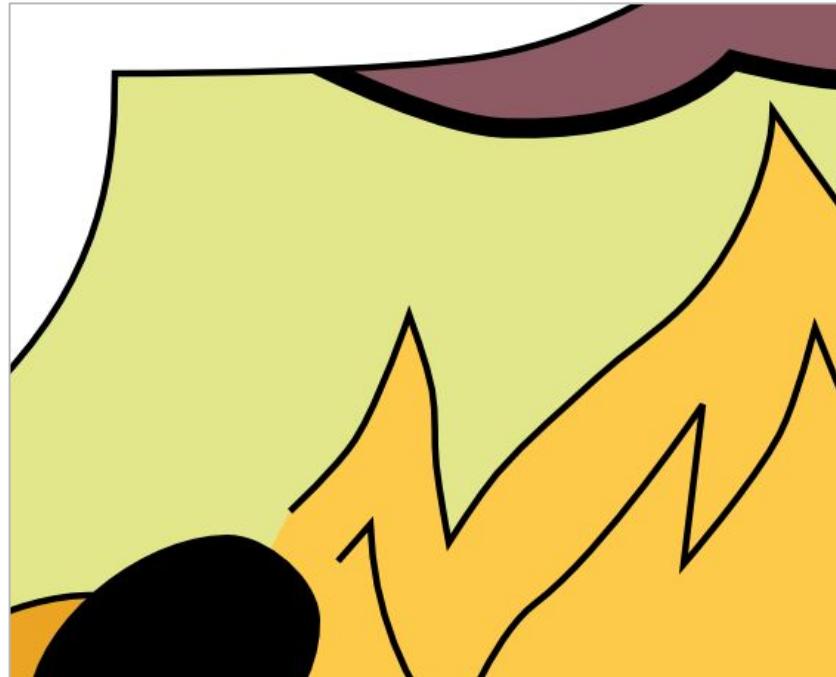
Adjust tangent vectors directions
(then lengths if required)



To double check your drawing:

1. Put pictures in front, opaque, but locked (not selectable)
2. Enable all information for your paths
⇒ You can still see paths outlines underneath and adjust things precisely



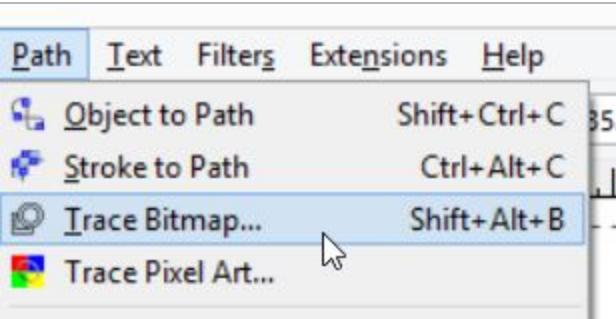


Rinse, repeat...
(vectorized and lightweight, but looks less 'human')

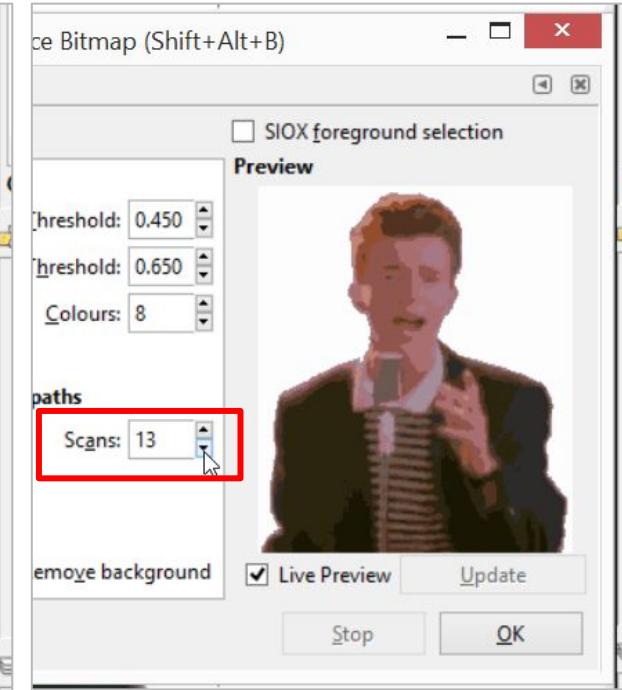
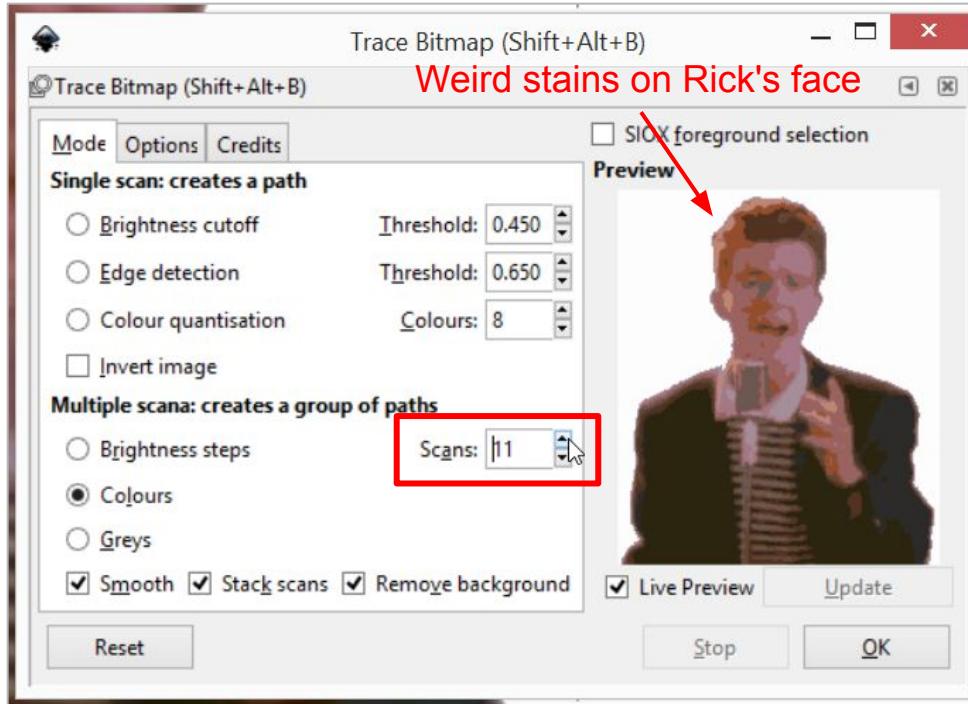
Tutorial: Auto-tracing



Quick vector portrait:
Clean up background with GIMP if needed.



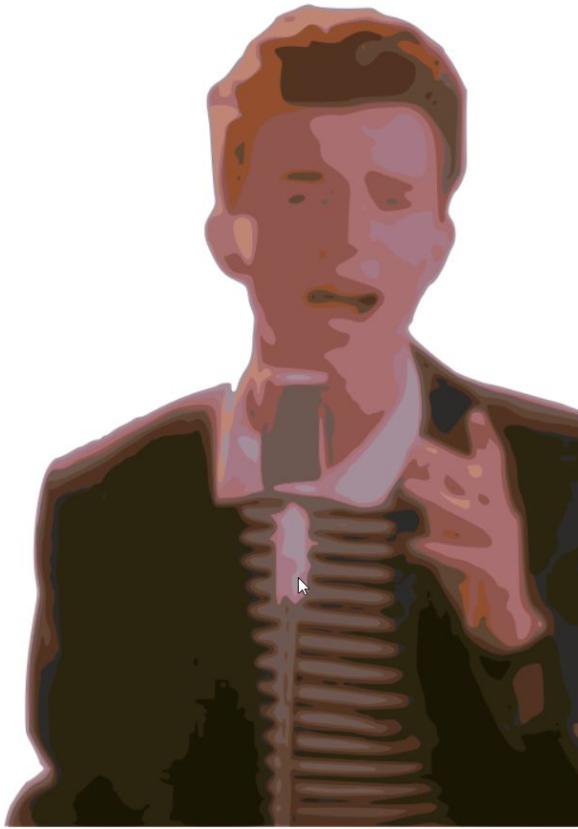
Select the right amount of scan



Weird stains on Rick's face

Preview





It's fast and "works" but it's not that great when zooming.
⇒ doing by hand gets better result

PALCOM™
SOFTWARE

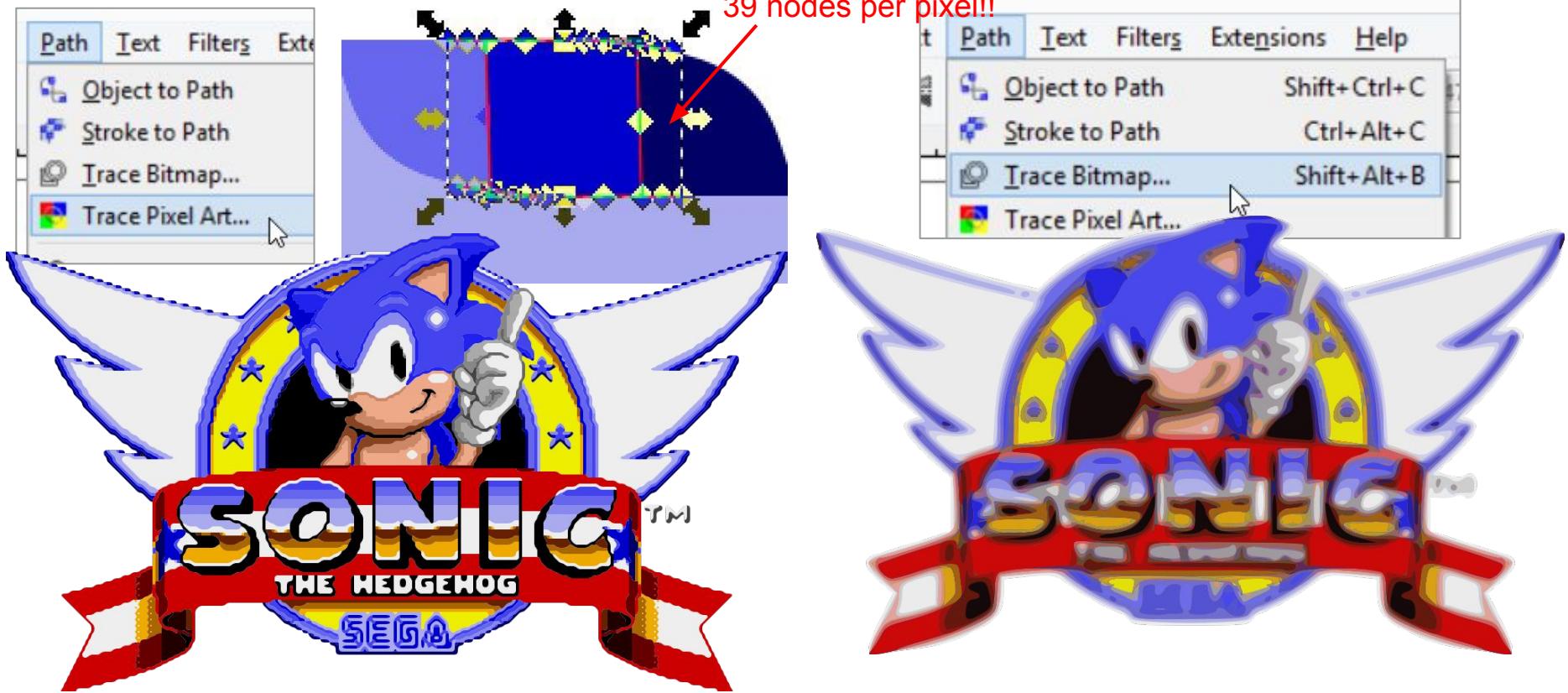
SKATE OR DIE®



It works well with plain colored objects.



Here is a manual tracing, in which you can give your own artistic touch.



Automatic techniques return 'something', but can be over-complex,
and very tedious to modify afterward.

Fonts

- Either
 - clean up graphics (w/ Gimp) then [WhatTheFont](#)
 - Answer questions via [Identifont](#)
- Auto-trace

Or Buy them ! seriously, not so expensive!

The all-caps Aracne collection features tall, slightly scrawled letterforms, and is available in regular, condensed and ultra condensed styles for maximum functionality. With a spirited quality and casual character, it will add a personal style to your work.

Aracne was created as an extended version of the font Aracne, a regular full of energy handwritten font, with light and regular styles, including italics. It provides a wide range of possibilities, including the Aracne Soft and Stamp, which offer softer and cleaner edges. Its glyph coverage supports languages such as English, Spanish, French, German, Polish, Czech, among many others. Its recommended usage is for display titles, and small amount of text, because of its good legibility and quality of glyphs.

Check out her sisters [Aracne Condensed](#) and [Aracne Ultra Condensed](#)!

Designer: Julia Martínez Diana
Design Date: 2013
Publisher: Antipixel
Imagery design: Julia Martinez Diana

This font is free for personal use only. For commercial use, please contact me or purchase the license you require at one of these links. To learn more about the type of license and amount of users needed, contact me via [e-mail](#).

Aracne Regular: 9.5 EUR



CAPCOM®

CAPCOM

WhatTheFont

Your image:

CAPCOM

Character selection:

Look at each image below and make sure the text box agrees with the character highlighted in the image. Leave character boxes blank if no valid character is highlighted.

C A P
C O M

Continue →

ITC Korinna

by ITC

[Overview](#) [Webfont](#) [Gallery](#) [Buying choices](#) [Licensing](#) [Alternate cuts](#)

About this font family

Designers: Edward Benguiat, Victor Caruso

Publisher: ITC

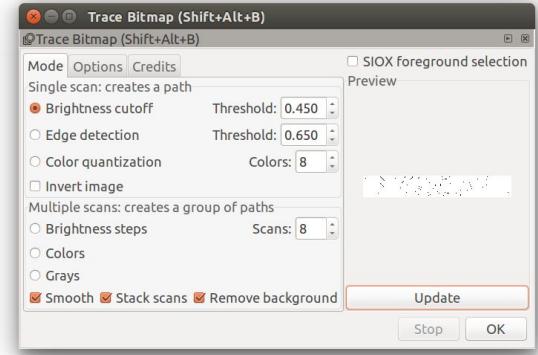
MyFonts debut: Jan 1, 2000

Your text fit to width

ITC Korinna Std ExtraBold

INKSCAPE

INKSCAPE



Tutorial: Poster 101

Important points

A poster has a fixed layout.

- Which depends on your content, and which font you use
- It's not easy to make things fit - in a comfortable way

A poster has to be readable:

- Can't put everything ⇒ very important to limit yourself

It seems that perfection is attained not when there is nothing more to add, but when there is nothing more to remove - Saint Exupéry

- Define a minimum of info you want.

Find out the minimum font size

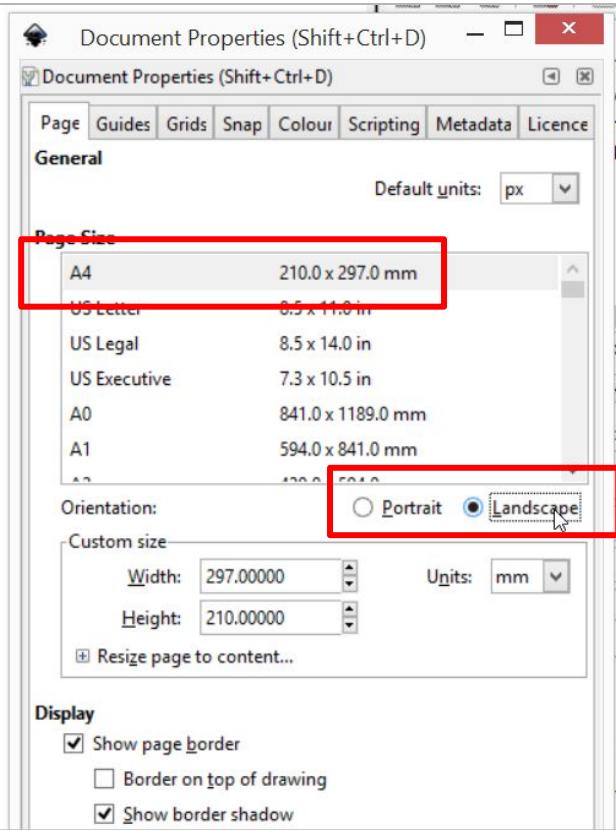
Then you can roughly determine the minimum paper size.

And eventually add details once you get a first decent draft.

```
e_ident
  EI_MAG          0x7F, "ELF"
  EI_CLASS, EI_DATA 1, 1
  EI_VERSION      1
e_type          2
e_machine       3          0 1 2 3 4 5 6 7 8 9 A B C D E F
e_version        1          00: 7F .E .L .F 01 01 01
e_entry         0x8000060 10: 02 00 03 00 01 00 00 00 60 00 00 08 40 00 00 00
e_phoff         0x0000040 20:                      34 00 20 00 01 00
e_ehsize        0x0034     40: 01 00 00 00 00 00 00 00 00 00 00 08 00 00 00 08
e_phentsize     0x0020     50: 70 00 00 00 70 00 00 00 05 00 00 00 00
e_phnum         0001
                                60: BB 2A 00 00 00 B8 01 00 00 00 CD 80

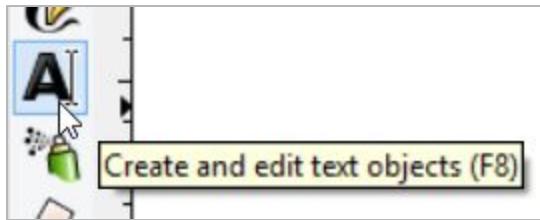
p_type          1
p_offset         0
p_vaddr        0x8000000
p_paddr        0x8000000
p_filesz        0x0000070
p_memsz        0x0000070
p_flags          5
```

Prepare text snippets in your usual text editor

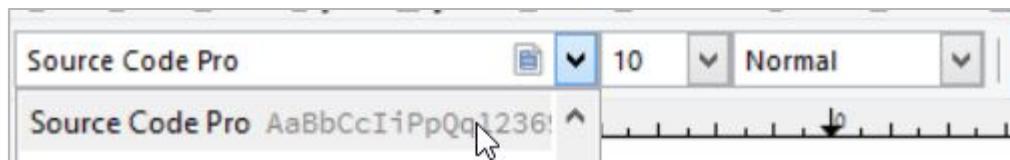


Select a A4 landscape format

Choose the Text tool



Select a “code” font (monospace)
([Source Code Pro](#) is a free monospace font)



Make sure the other parameters are ‘reset’ to avoid surprises ;)



	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00:	7F	.E	.L	.F	01	01	01									
10:	02	00	03	00	01	00	00	00	60	00	00	08	40	00	00	00
20:									34	00	20	00	01	00		
40:	01	00	00	00	00	00	00	00	00	00	00	08	00	00	00	08
50:	70	00	00	00	70	00	00	00	05	00	00	00				
60:	BB	2A	00	00	00	B8	01	00	00	00	CD	80				

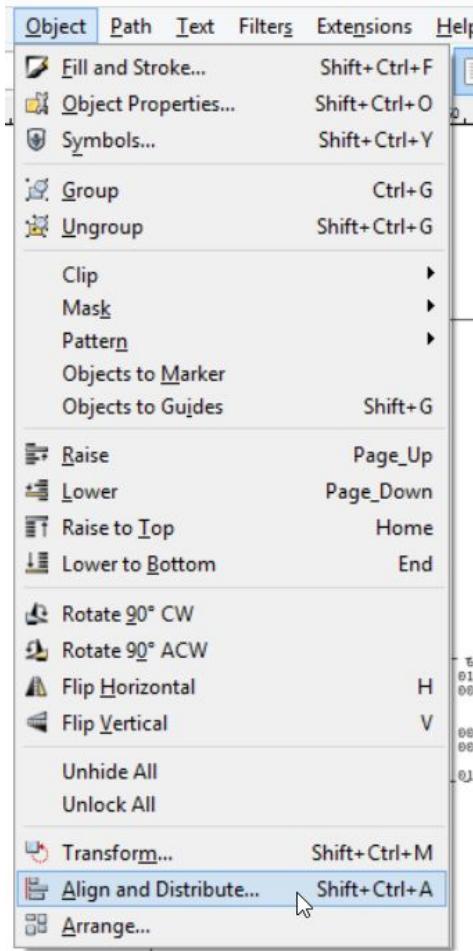
Prepare your snippets in a text editor.

0 -- 8 - I - Z - 3 - 74 - 5 - 6 - 7 - 8 - 9 - A - B - C - D - E - ?
b8: 7F .E .L .F 01 01 01
10: 02 00 03 00 01 00 00 00 60 00 00 00 40 00 00 00
20: 34 00 20 00 01 00
30:
40: 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
50: 70 00 00 00 70 00 00 00 05 00 00 00 00
60: 00 20 00 00 00 00 01 00 00 00 CD 00

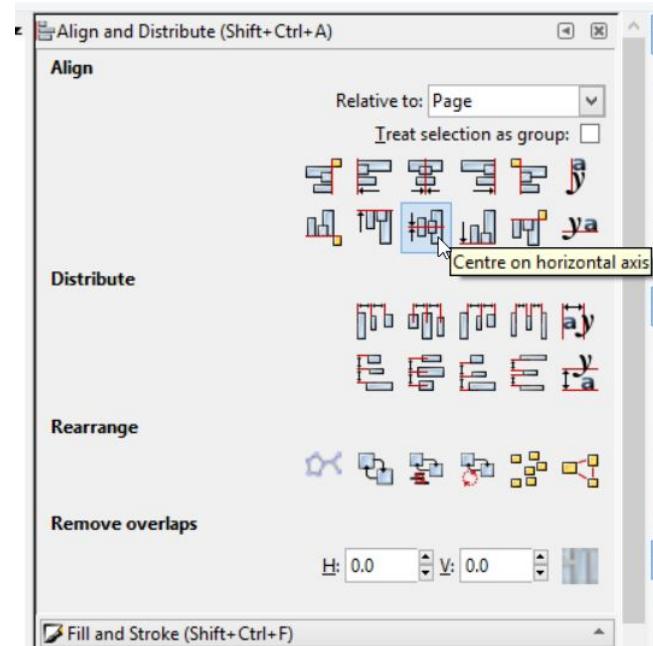
+
A

Copy-paste it on the page.
(sadly, copy-pasting from PDF will f*ck up the spacing)

Open the Alignment window

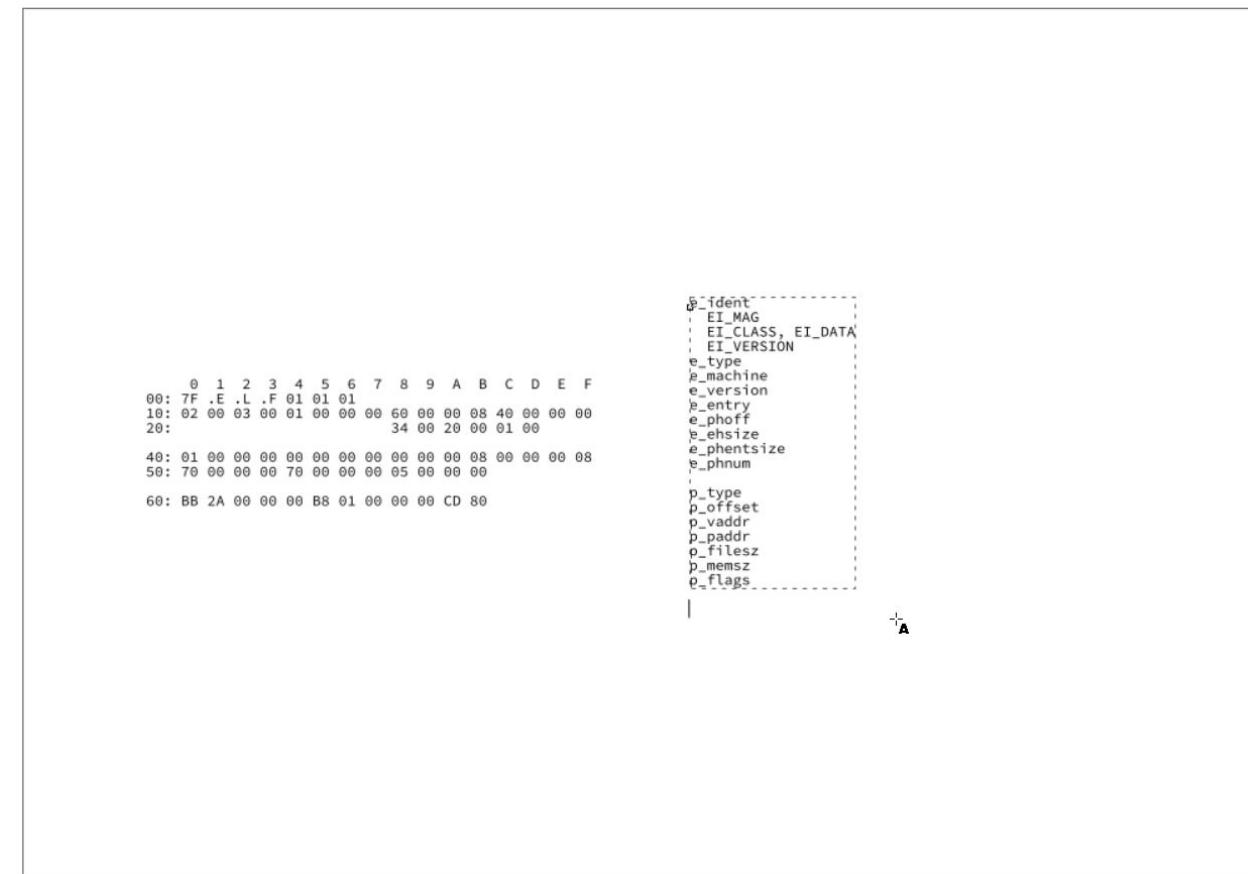


Center the text on the page

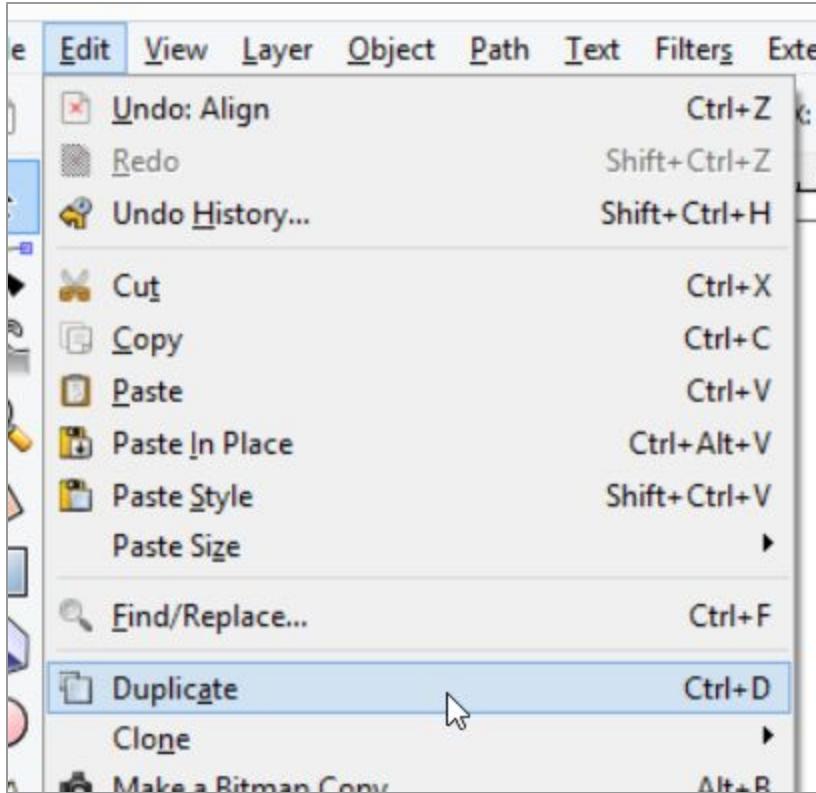


```
e_ident
  EI_MAG
  EI_CLASS,
EI_DATA
  EI_VERSION
e_type
e_machine
e_version
e_entry
e_phoff
e_ehsize
e_phentsize
e_phnum

p_type
p_offset
p_vaddr
p_paddr
p_filesz
p_memsz
p_flags
```

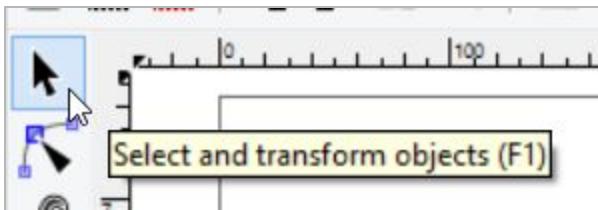


Paste that text, center it vertically too.

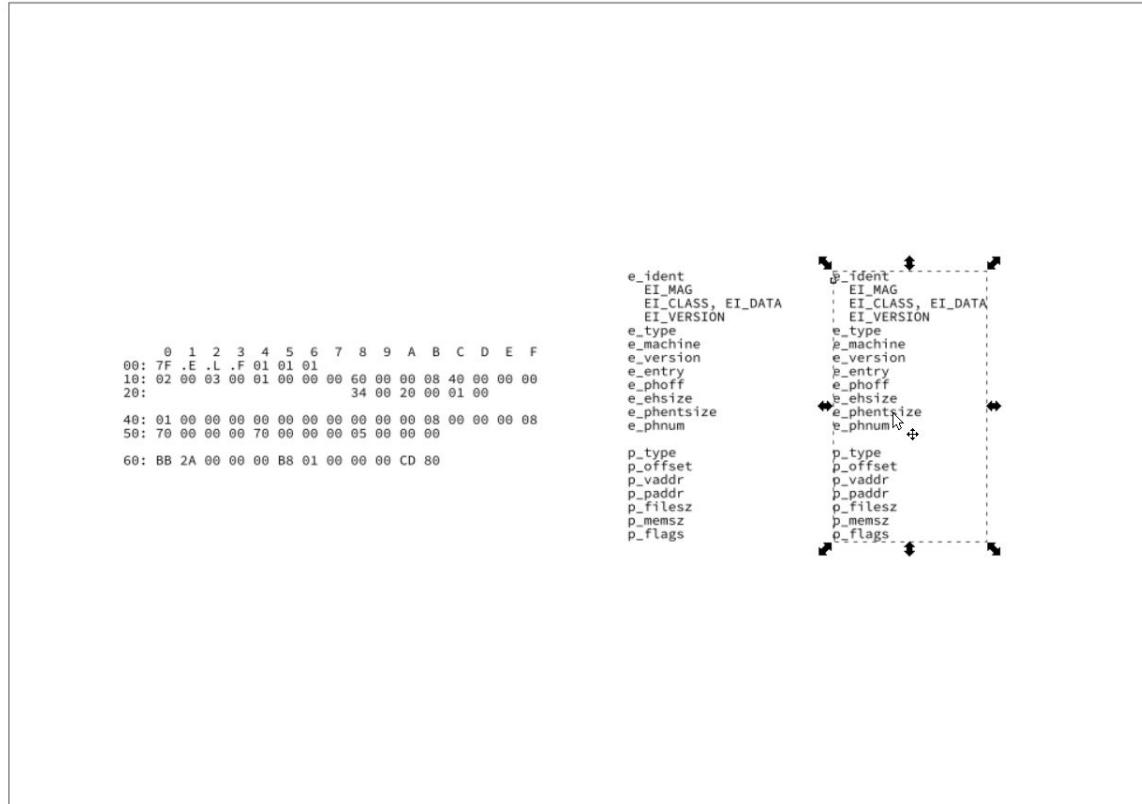


Duplicate the new text

Select object tool



Move the new text horizontally
(use arrow keys or press **Ctrl** while moving the mouse)



0x7F, "ELF"

1, 1

1

2

3

1

0x8000060

0x0000040

0x0034

0x0020

0001

1

0

0x8000000

0x8000000

0x0000070

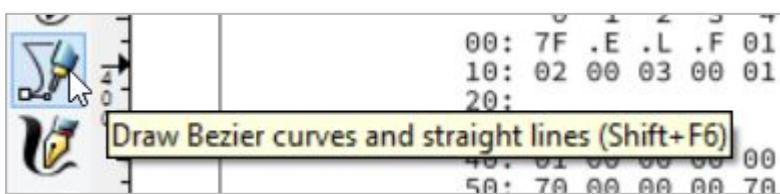
0x0000070

5

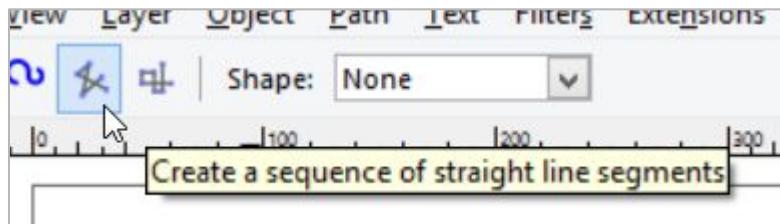
e_ident	0x7F, "ELF"
e_mag	1, 1
e_class	1
e_data	1
e_version	2
e_type	3
e_machine	1
e_version	0x8000060
e_entry	0x0000040
e_phoff	0x0034
e_shoff	0x0020
e_shsize	0x0010
e_phnum	0x0001
p_type	,
p_offset	1
p_vaddr	0
p_paddr	0x8000000
p_filesz	0x0000070
p_memsz	0x0000070
p_flags	A

Re-use the text tool to paste new content in the 2nd box.

Now we'll draw the frame - the draw tool



In straight mode



And press **Ctrl** to make only fixed angles lines.

Press Enter when finished

The diagram illustrates a memory dump and its corresponding ELF header. A green box highlights the first 16 bytes of memory, which are the ELF magic number and section headers. A red box highlights the ELF header structure. Annotations with arrows point from specific fields to their definitions.

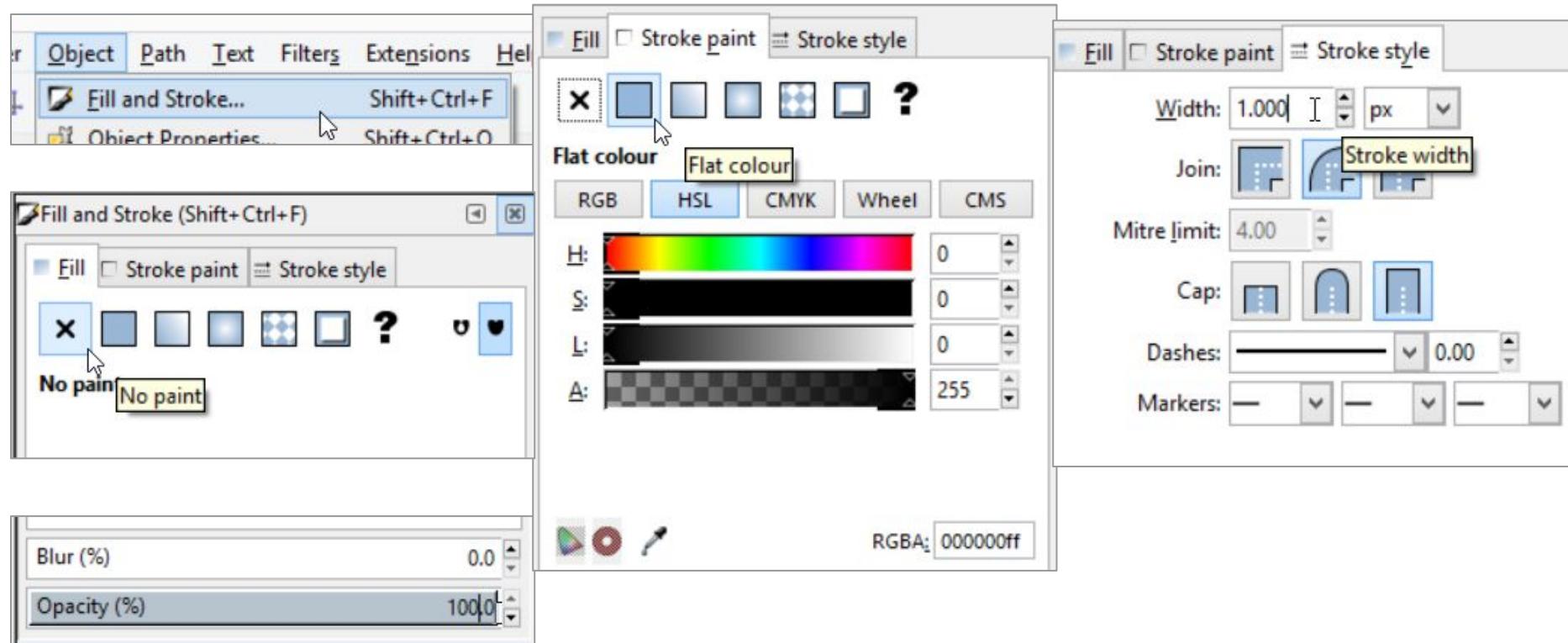
Memory Address	Value	Description
00: 7F .E .L .F	01 01 01	ELF magic number
10: 02 00 03 00	01 00 00 00	Section header table entry
20: 34 00 20 00	01 00	Section header table entry
40: 01 00 00 00	00 00 00 00	Section header table entry
50: 70 00 00 00	70 00 00 00	Section header table entry
60: BB 2A 00 00	B8 01 00 00	Section header table entry
70: CD 80		Section header table entry

ELF Header Field	Value	Description
e_ident.ei_magic	0x7F, "ELF"	Magic number and string
e_ident.ei_class	1, 1	Object file class
e_ident.ei_data	1	Object file data
e_ident.ei_version	1	Object file version
e_type	2	Object file type
e_machine	3	Object file machine
e_version	1	Object file version
e_entry	0x8000000	Entry address
e_phoff	0x0000040	Program header offset
e_ehsize	0x0034	Elf header size
e_phentsize	0x0020	Program header entry size
e_phnum	0001	Number of program headers

Program Header Field	Value	Description
p_type	1	Type
p_offset	0	Offset
p_vaddr	0x8000000	Virtual address
p_paddr	0x8000000	Physical address
p_filesz	0x0000070	File size
p_memsz	0x0000070	Memory size
p_flags	5	Flags

Draw something like this
(accuracy doesn't matter, we'll fix that later)
Then center it on the page.

If it looks weird, double-check the Fill and Stroke properties:



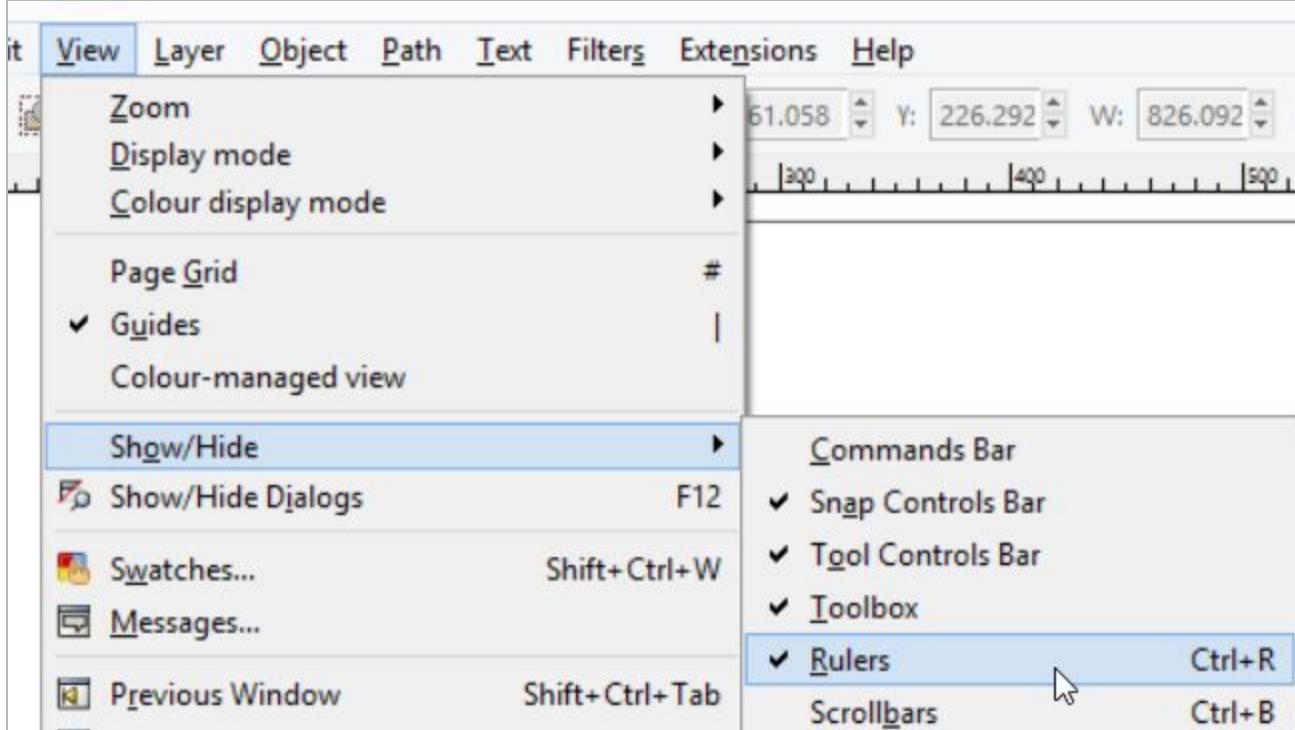
Align the nodes

Either

- Click on a node, copy the right coordinate, paste into another node's.
- Use snapping, move a guide to snap to a node, move the other node to snap to the guide.

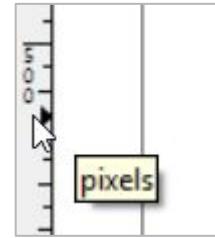


Turn on Cusp Nodes Snapping.

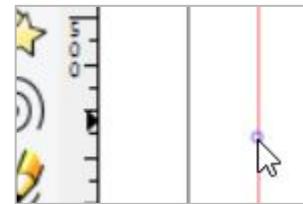


If rulers aren't visible, turn them on.

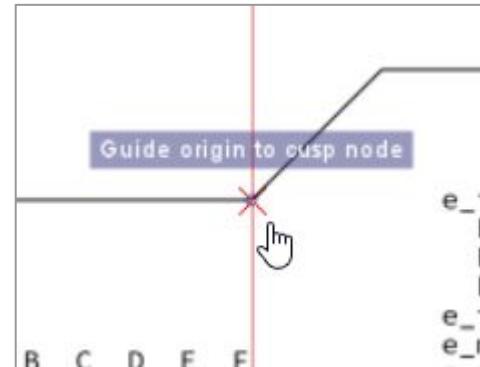
Put your cursor on the vertical ruler.

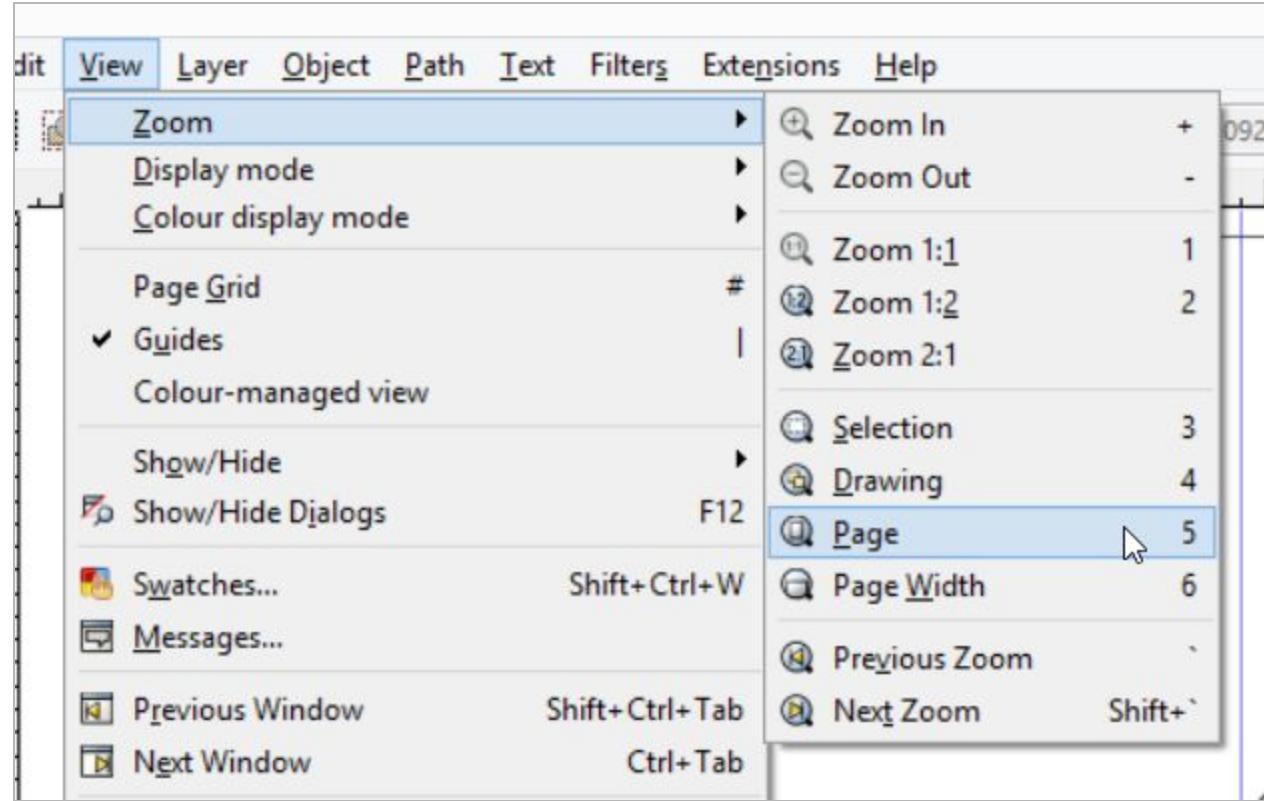
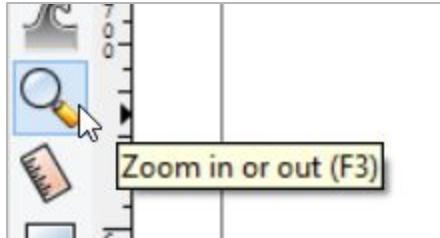


Pull a guide

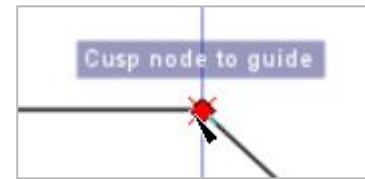
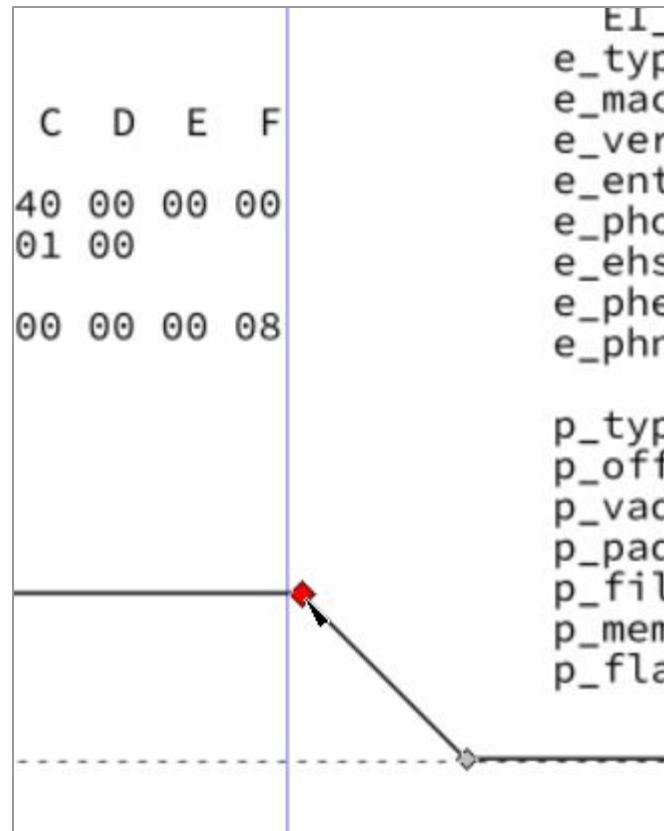
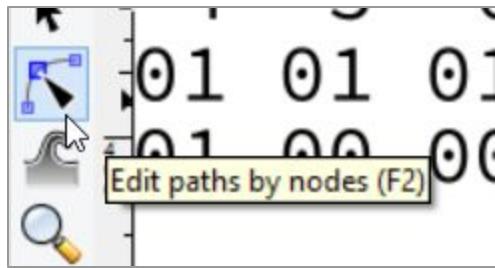


Move it until it snaps





Feel free to use the Zooming tools, Menu, shortcuts.



Select the node tool

Move the bottom node with Ctrl pressed

Until it snaps to the guide.

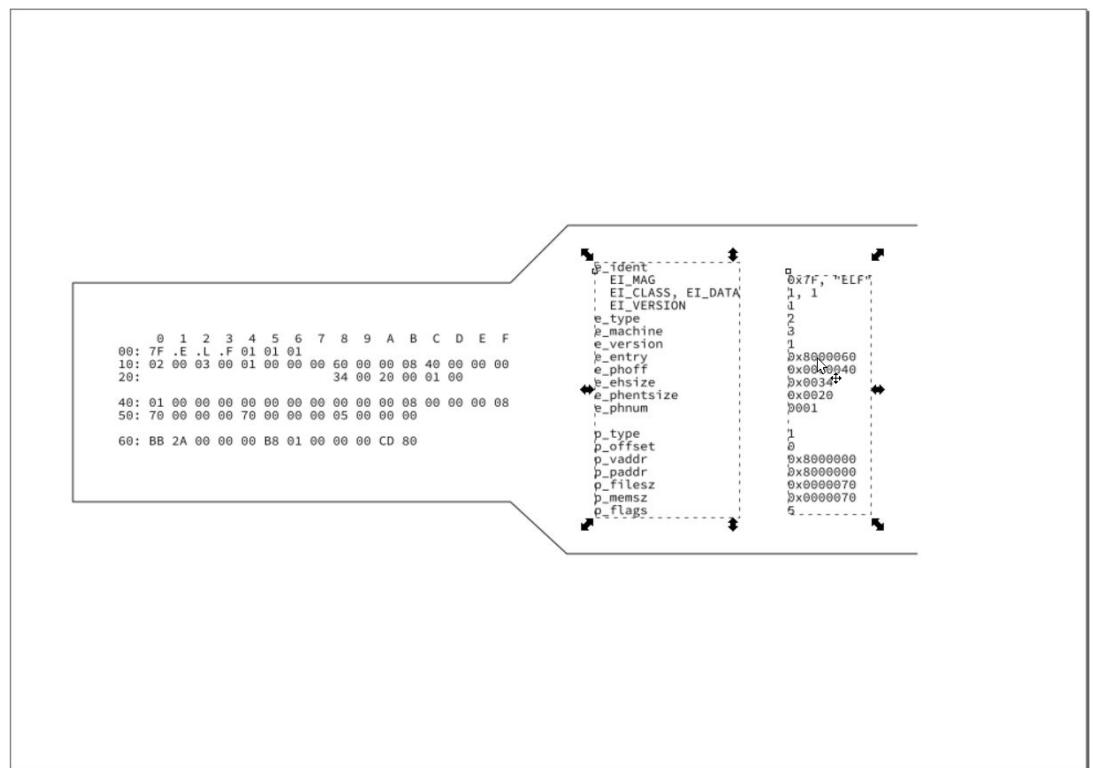
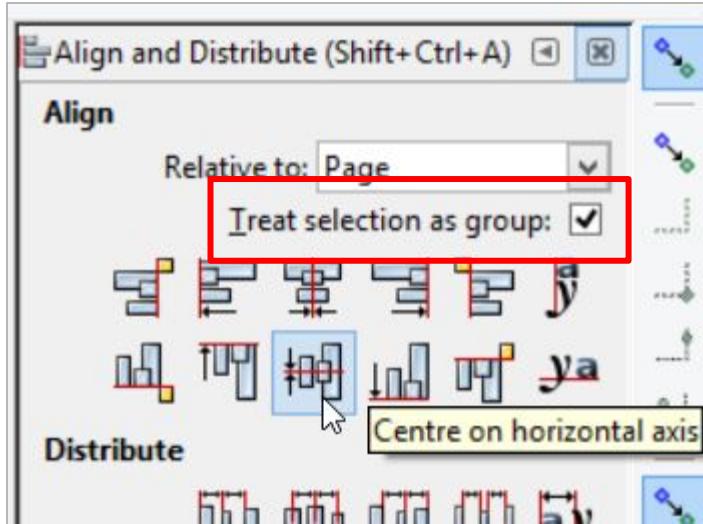
Now both nodes are aligned!



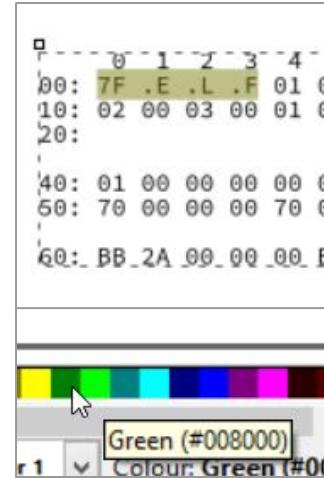
Align all other nodes - you can move the current guide around.

To discard a guide, either hover it and press Del (when it's highlighted red), or drag it back on the ruler.

You can drag horizontal guides out of the horizontal ruler.



Select both texts, align them on the page
together by clicking 'treat selection as group'



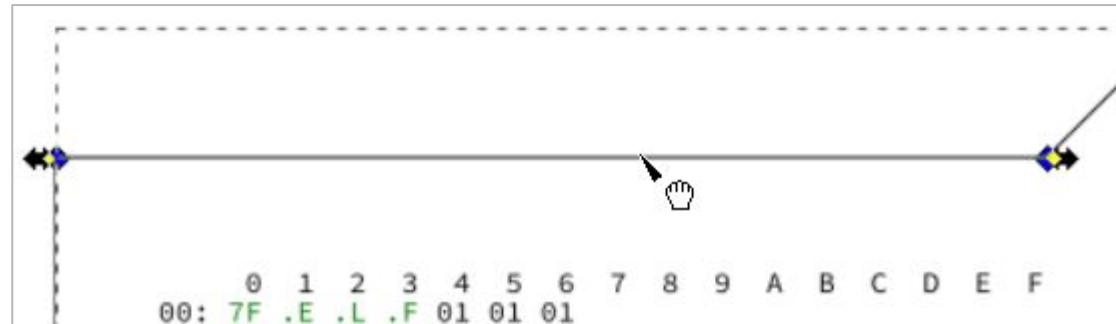
Select some text with the text tool,
then click on a given color

A screenshot of a debugger interface showing assembly memory dump and variable dump. The assembly dump at the bottom shows memory starting at address 00 with various bytes. The variable dump on the right lists fields like e_ident, EI_MAG, EI_CLASS, EI_DATA, EI_VERSION, e_type, e_machine, e_version, and e_entry. The values for EI_MAG and e_entry are colored green. A color palette is visible at the top of the screen.

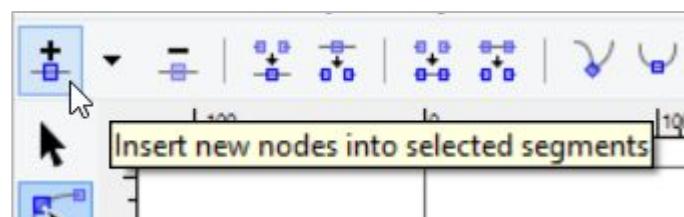
Field	Type	Value	Color
e_ident	string	ELF	Green
EI_MAG	string	ELF	Green
EI_CLASS	int	1	Black
EI_DATA	int	1	Black
EI_VERSION	int	1	Black
e_type	int	2	Black
e_machine	int	3	Black
e_version	int	1	Black
e_entry	int	0x8000060	Black

Repeat until all matching elements have the right color...

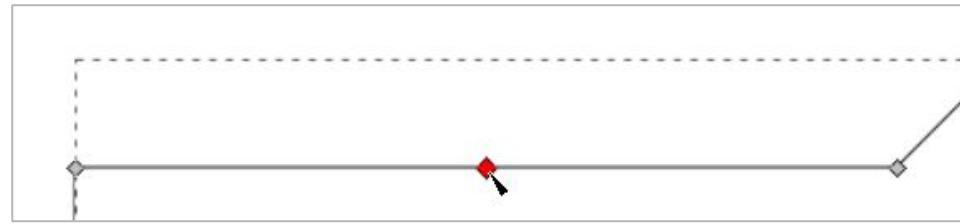
Select the segment
with the node tool



Insert a node in the middle
(or double-click on the segment)



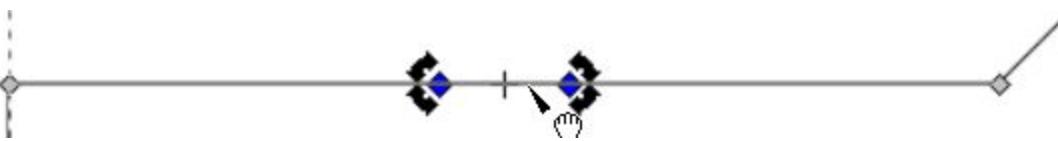
Select that node



Duplicate the node (**Shift-D**)
Move the duplicate with the arrows

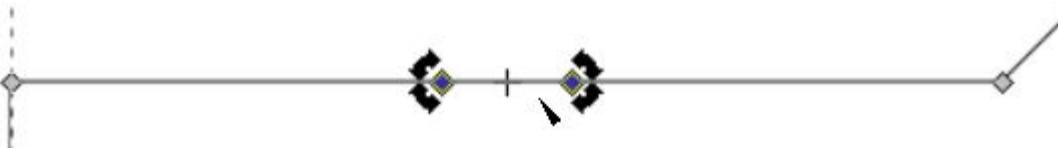


Select the segment



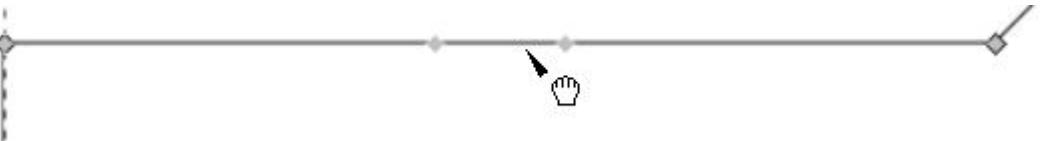
Duplicate with **Shift-D**

(Shift-D duplicates nodes, Ctrl-D duplicates objects)

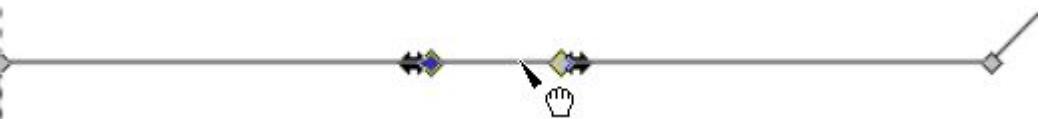


Remove selection

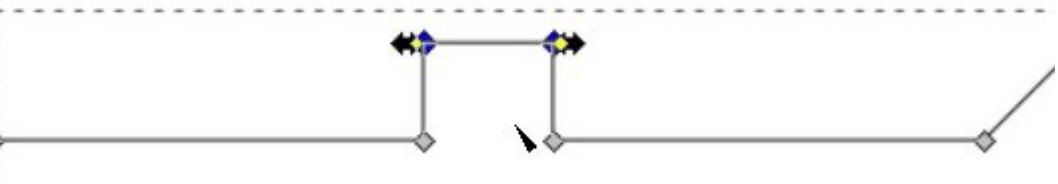
(otherwise you'll move the wrong nodes)



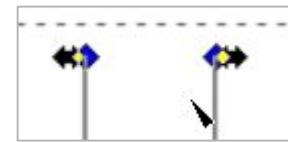
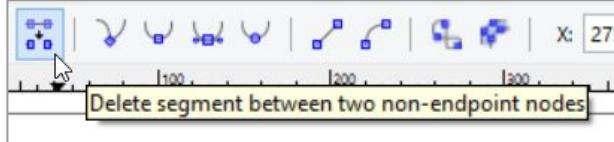
Select the segment again



Move nodes up
with keyboard arrows

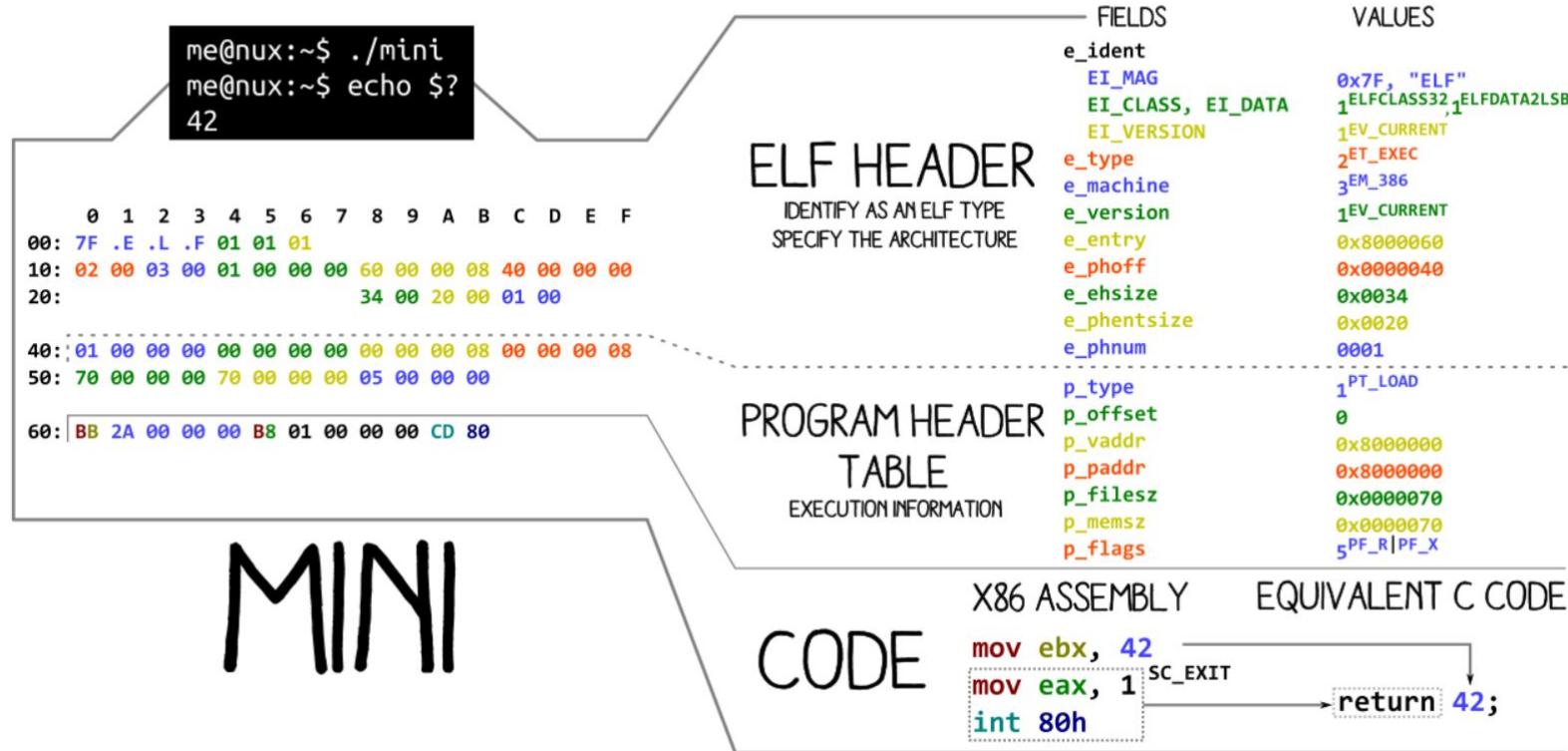


Cut the segment



Straight lines, text, guides, alignments is all you need
FWIW I use keyboard shortcuts a lot to move objects & nodes.

EXECUTABLE AND LINKABLE FORMAT



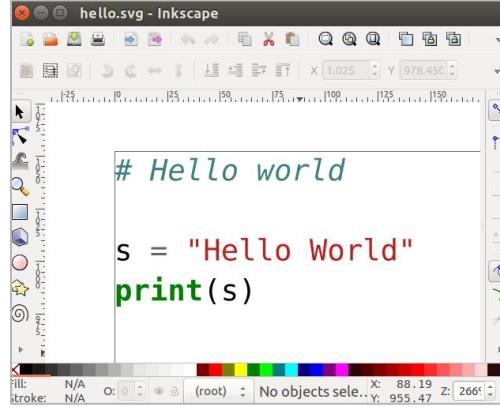
How to:
from highlighted code to SVG

With pygmentize



```
hello.py
1 # Hello world
2
3 s = "Hello World"
4 print(s)
5
```

```
pygmentize -O full -f svg -l python -o hello.svg hello.py
```



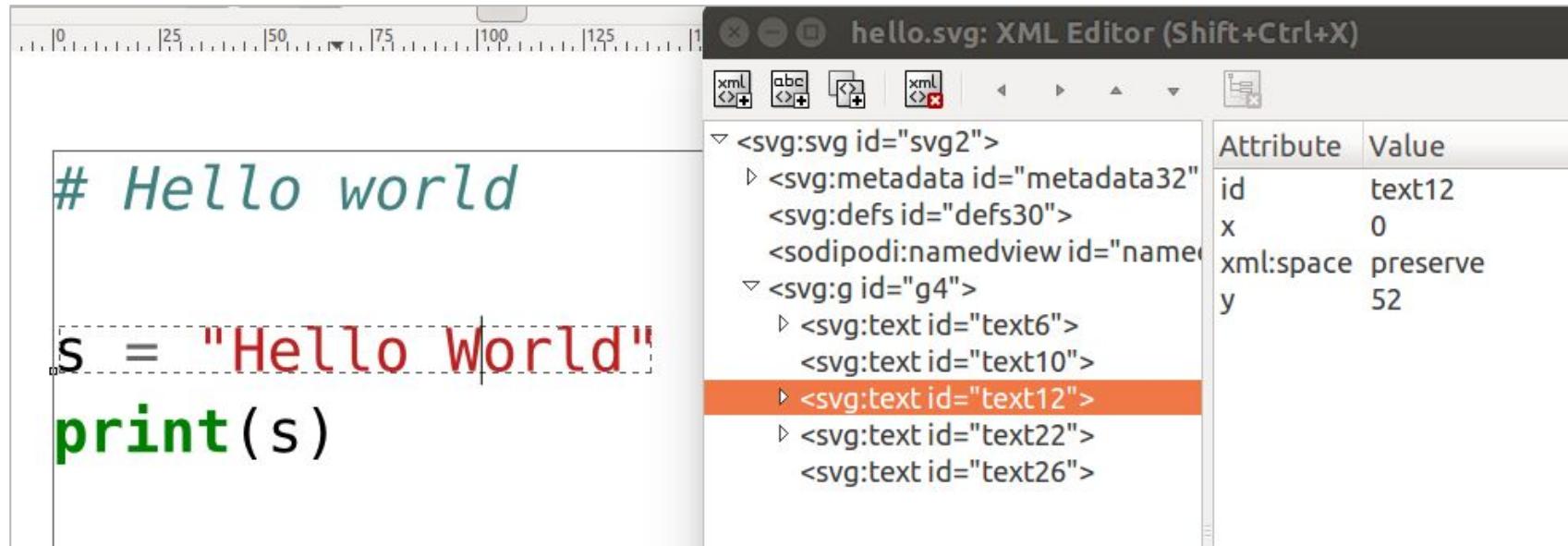
With Highlight

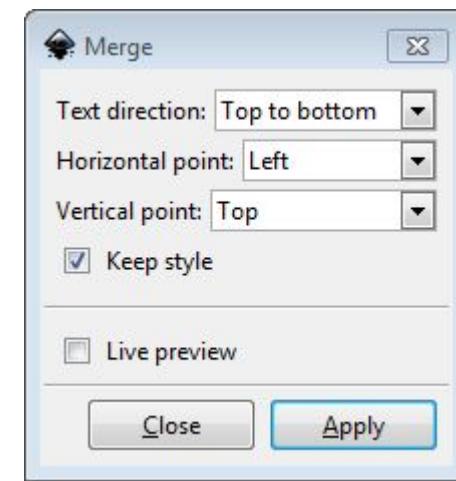
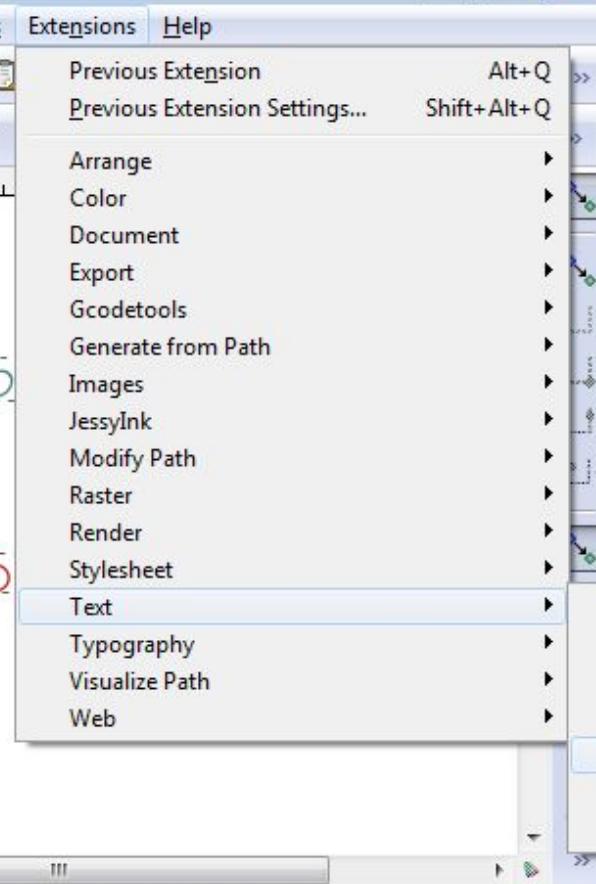
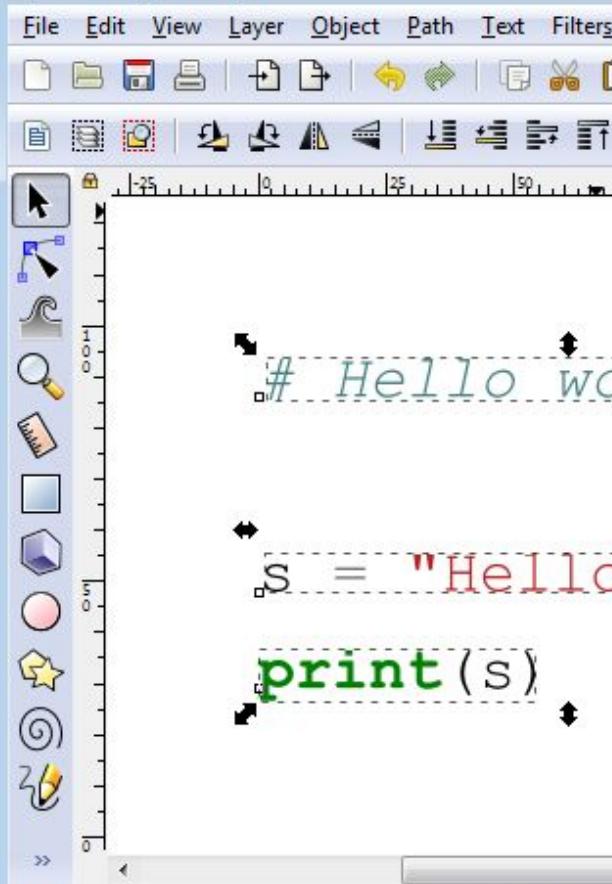
The image shows two windows side-by-side. On the left is the 'Highlight 3.34' application window, which has a menu bar with File, Windows, Help. Below the menu is a tab bar with 'Highlighting options' selected, followed by 'Files', 'Clipboard', and 'Plug-ins'. Under 'Highlighting options', there is a 'Choose input files' button with 'hello.py' listed, and 'Clear selection' and 'Clear all' buttons. The 'Output destination' section shows 'C:/Users/John/Desktop/highlight-3.34-x64' and a checked checkbox for 'Write to source directories'. There are 'Convert files' and 'Copy file to clipboard' buttons. Below these are tabs for 'General', 'SVG options', and 'Formatting', with 'General' selected. Under 'General', the 'Output format' dropdown is set to 'SVG'. Other options include 'Add line numbers' (checkboxes for 1 and 2), 'Pad with zeroes', 'Omit header and footer', 'Keep Plug-In injections', 'Validate input data', and 'Set encoding' (ISO-8859-1). At the bottom of the main area, it says 'Converted 1 files in 2 ms'. On the right is the 'Inkscape' application window, titled '*hello.py.svg - Inkscape'. It displays the converted SVG code as text: '# Hello world', 's = "Hello World"', and 'print(s)'. The text is styled with blue for the hash, red for the string, and orange for the print keyword. The Inkscape interface includes a toolbar, a color palette at the bottom, and various drawing tools on the right.

```
# Hello world
s = "Hello World"
print(s)
```

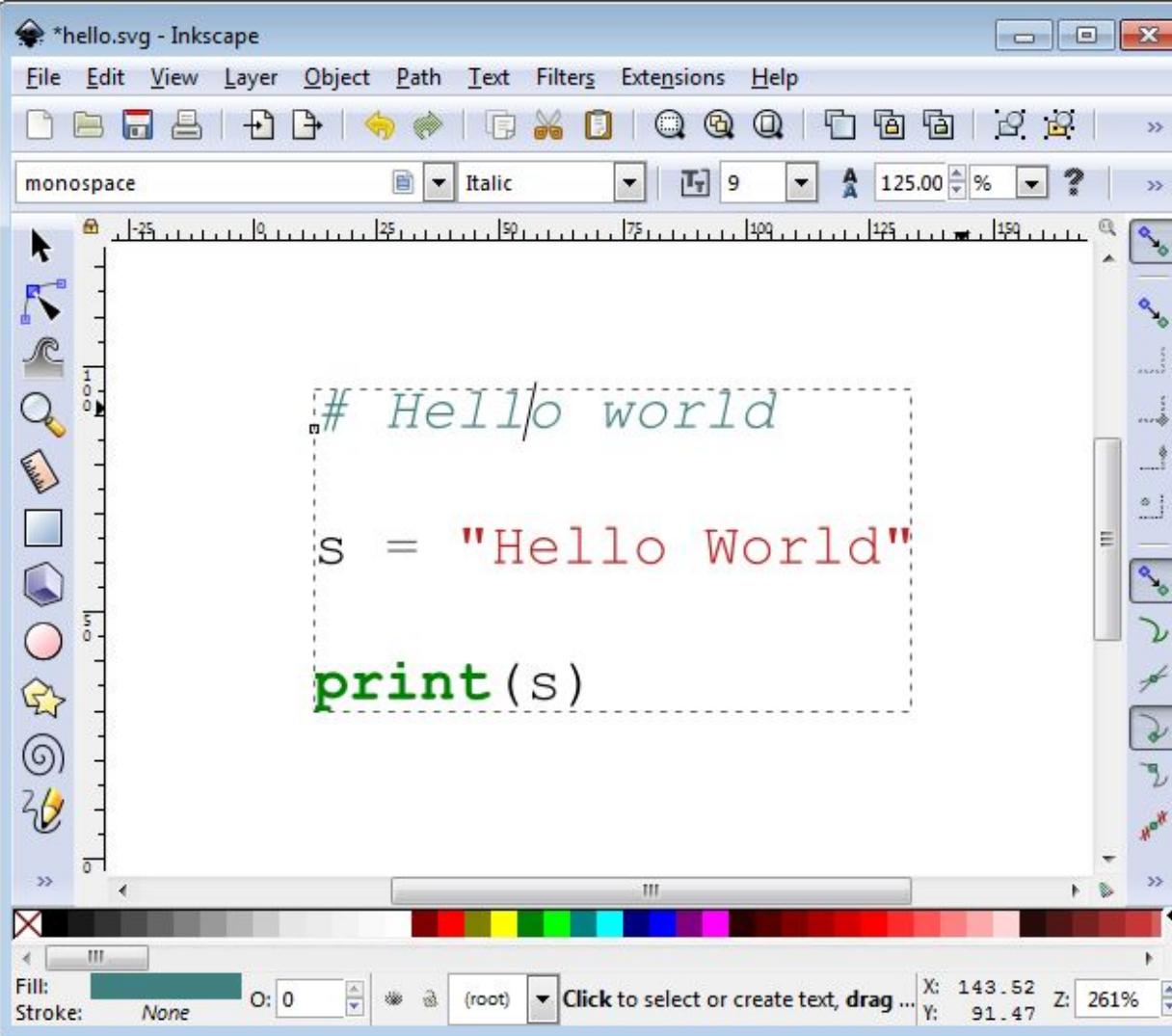
```
# Hello world
s = "Hello World"
print(s)
```

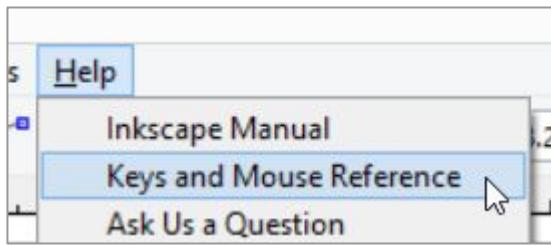
Problem: each line is an independent text object





Use 0.92's merge text extension





Inkscape keyboard and mouse reference

Version 0.91
Last revision: 2015-02-04

This document describes the default keyboard and mouse shortcuts of Inkscape, corresponding to the share/keys/default.xml file in Inkscape distribution. Most (but not all) of these keys are configurable by the user; see the default.xml file for details on how to do that.

Unless noted otherwise, keypad keys (such as arrows, Home, End, +, -, digits) are supposed to work the same as corresponding regular keys. If you have a new shortcut idea, please contact the developers (by writing to the [devel mailing list](#) or by [submitting an RFE](#)).

Tools Dialogs

- Open
- Toggle visibility
- Within a dialog

Controls bar

- Access
- Navigate
- Change values

Canvas

- Zoom

Tools

F1, s Selector
Space Selector (temporary)

Space switches to the Selector tool temporarily; another Space switches back.
When the "Left mouse button pans when Space is pressed" option is on in Preferences, Space+mouse drag pans canvas instead of switching to Selector.

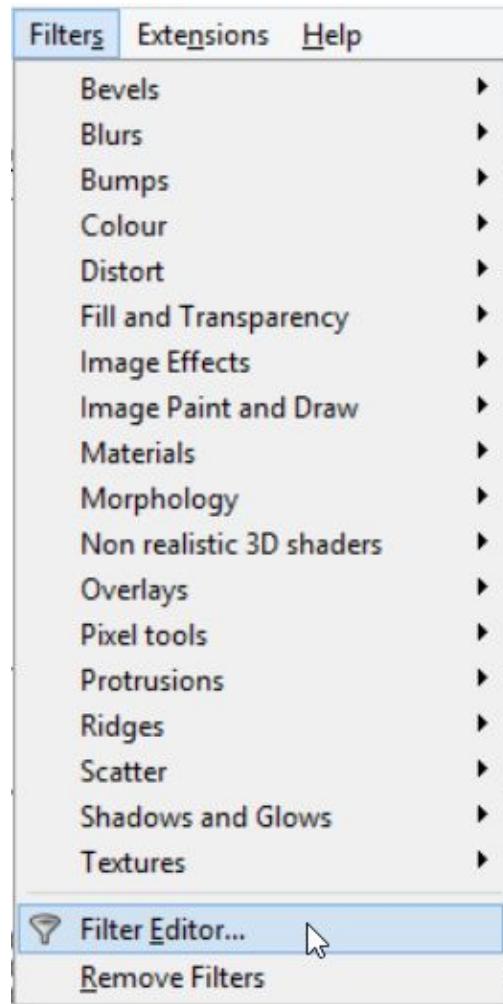
F2, n Node tool
Shift + F2, w Tweak tool
F3, z Zoom tool

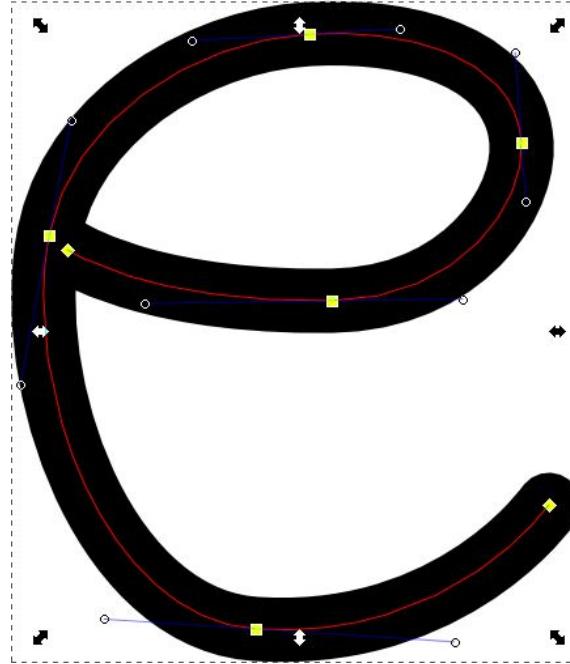
FYI

the *keys and mouse reference* is very good,
and some functionalities only exist via keyboard shortcuts.

Advice: avoid Filters (and especially its editor)
It's quite buggy and crashes Inkscape easily

Also, they don't render well when exported to PDF.



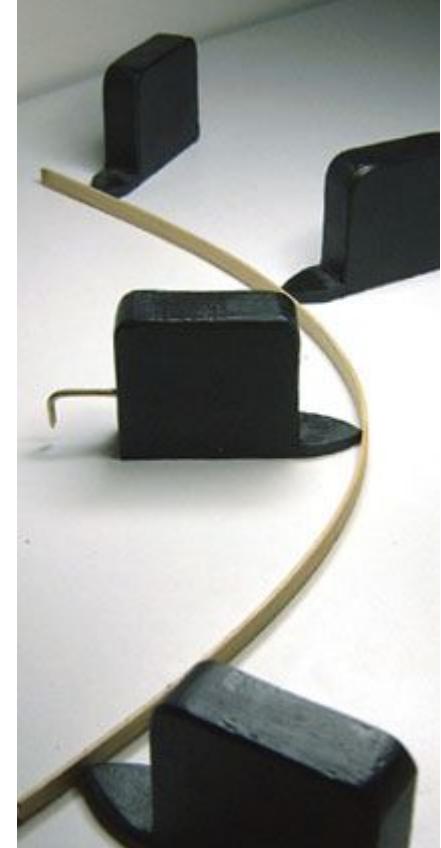


Problem: even with a few points,
It's not always easy to get a natural-looking curve.

Spiro Spline

Imagine some fixed points, and a physical object bending: only these points are relevant: vector handles are ignored.

Spiro spline always give 'natural' curves.

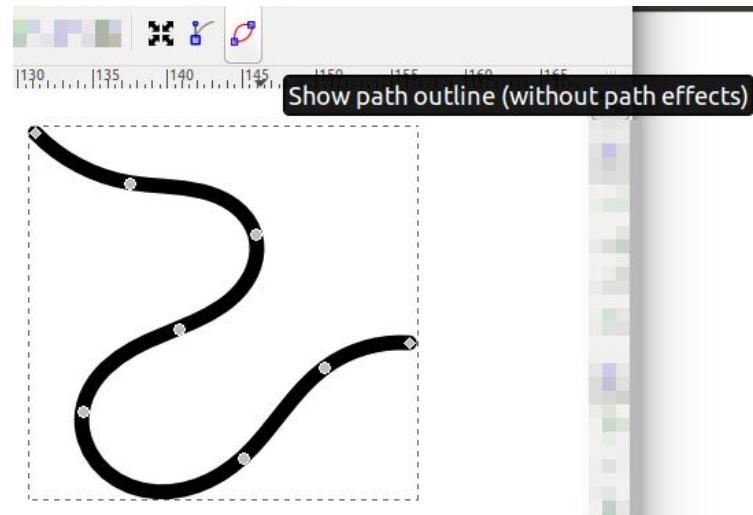
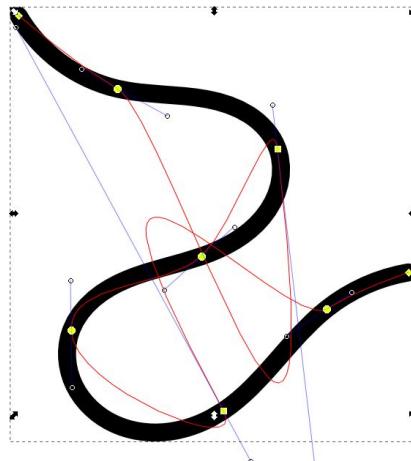


Splines in Inkscape

Inkscape handles that transparently as a SVG paths, as a specific *Path effect*, working on non-cusp nodes (all smooth nodes)

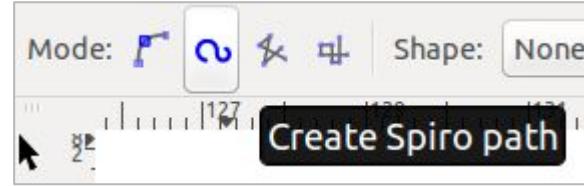
The theoretical path and handles are useless. Turn them off!

Node types are irrelevant (if not cusp) → use auto-smooth nodes!

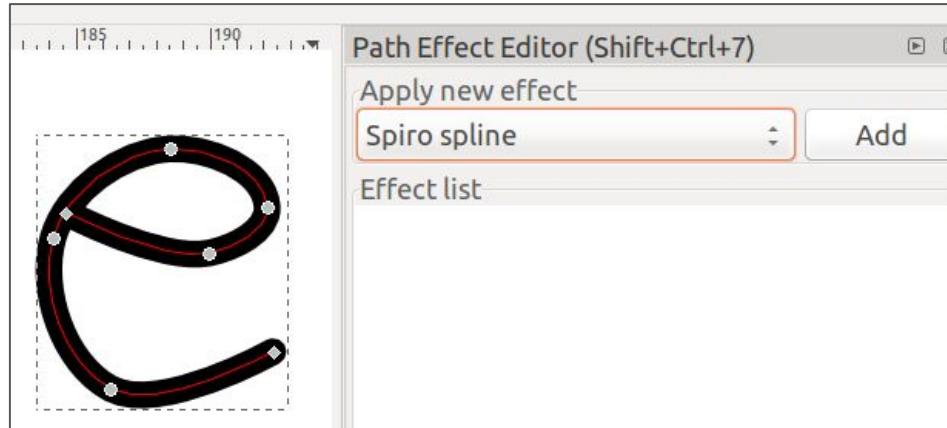
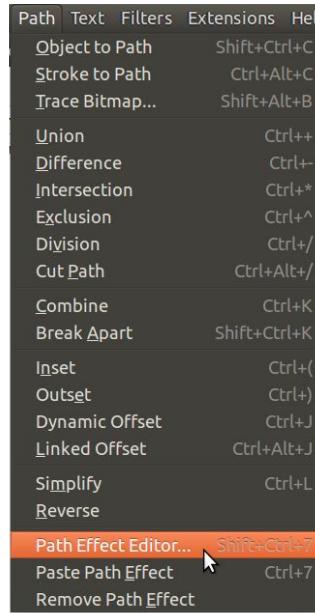


Drawing splines

Either draw directly in splines



Or add the effect to an existing path



Splines == natural curves

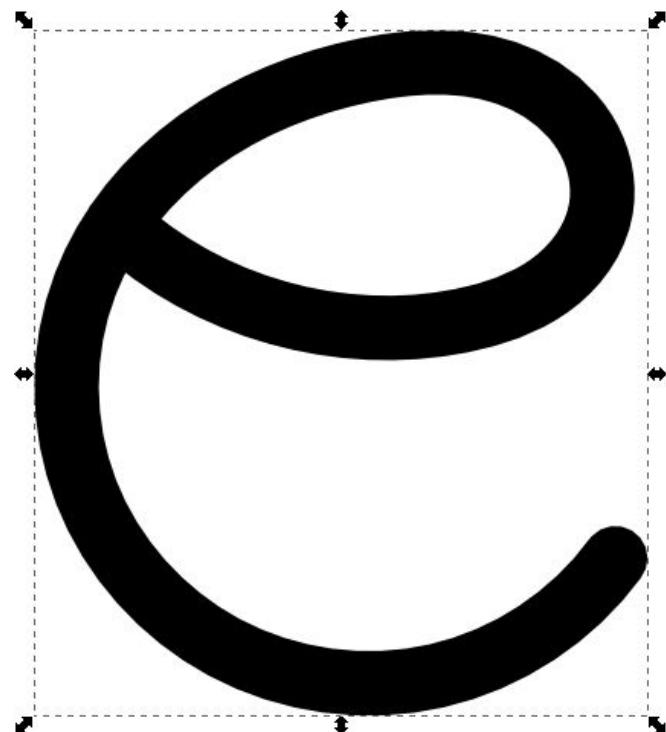
Then you always get something very natural.

But it still looks very 'artificial':

- Stroke width always the same
- endings very 'mathematical'.

It's a common problem with vectors:

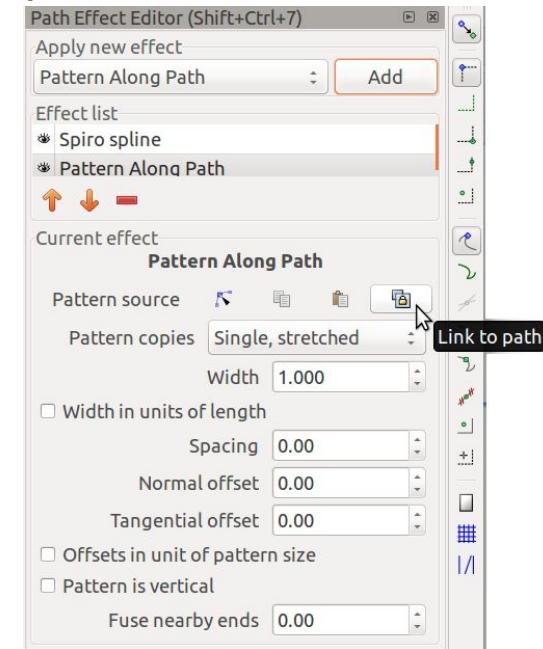
Perfect for a logo or diagram,
but never looks natural for calligraphy.



Apply a pattern to a path

Defines stroke drawing independently.

1. Draw a rectangle-shaped path - it will be 'stroked' on the path.
2. Copy the rectangle to clipboard.
3. Add a "pattern along path" effect to our current spiro spline.
4. Click "Link to path"
5. Remove stroke, set filling.





Font tricks

If you use vectors to preserve the diagrams from your latest meetings

In a reusable form, using a handwritten font helps to keep the diagrams more human.

([TitanVex' Hashtag](#) is a good free handwritten font)

A large, handwritten-style word "Hashtag" written in black ink on a white background. The letters are fluid and vary in size, with a prominent 'H' at the beginning and a 'g' at the end.

Each OS has its standard code font, and [Source Code Pro](#) is free and multi-platform.

(useful to keep the same appearance despite OS)

LaTeX relies on [Computer Modern](#) if you want your drawings to 'blend in' your academic paper.

On the opposite, you can create LaTeX documents using any system fonts with [XeLaTeX](#).

Questions / suggestions?

@angealbertini

<https://github.com/corkami/pics>