

1. Intro

1.1 My personal itch

Writing this kind of software is considered as "scratching your personal itch". My personal itches for this project were threefold.

First, I needed something that produces consistent results for both PDF and HTML without too much manual intervention. Libreoffice does this, but delivered just not exactly the type of web pages that I wanted. Dumping web pages to PDF consistently gave half lines on the bottom and top. Groff's web pages are just not good enough for me.

Secondly, I needed something that allows me to have notes in the right margin of the text.¹ This is something that you commonly see in school books. I did not find anything that could do that in an easy way. Publishing software require too many mouse clicks to get the work done.

For the latest version, I needed to test some programming concepts, like XML, Finite State Machine with stack, multi-pass parsing.

And, of course MY MOUSETRAP IS BETTER!!!

From the syntax in the input files, you will understand that I like `troff` and I do not care much about Tex. Indeed, I find Tex extremely cumbersome and it requires too much complex commands that have nothing to do with the text.

Unlike `troff` or a macroset, In3 completely transforms the input text. In, for example, `pic` it is possible to use `\fB` to embolden text. In In3, this does not work.

1) Like this:

1.2 Downloading

At this moment, there is not a neatly packaged in3. You can download the code from `github "https://github.com/1jmdullaart/in3xml"` or do `git clone https://github.com/1jmdullaart/in3xml` to get a clone of the source code.

1.3 History

In was a run-off format for web-pages. It was meant to create web pages of different formats. It worked quite well as long as the text was kept simple.

At some point, formatting requirements elaborate, using side-notes, tables and left-notes. There was also the requirement of getting a PDF document, which was produced using `tbl` and `groff`. I called this in2, having the nice pun `in2html`, `in2groff` etc.

By now, the code got quite complex. The difference between tables in HTML and tables in `tbl` made it necessary to duplicate a lot of code. Adding features became quite a challenge.

I also picked up a book called 'Clean Code' by Robert Martin. That described exactly the problem I was having; dirty code.

So a major rewrite became necessary. And it also became necessary to create a sort of architecture document that describes the way it looks at formatting a document. It also describes the input language, the in3 intermediate language and what it does or doesn't do. In general, the real formatting is left to the output-processor (either the formatting of the web page or Groff).

Although a self-invented intermediate language is quite flexible, it also introduced convoluted thinking. Therefore, the latest re-write now uses standard XML as intermediate language. This includes a DTD.

I have used the latest rewrite also as a test for some programming principles. That means that I have written my own XML-parser. It also means that the in-language is now parsed in multiple passes.

1.4 Requirements

To run in3, you must have on your system:

- perl
- groff
- tbl
- ghostscript
- ps2pdf
- imagemagic
- xmllint

To use all the features, you should also have

- Dia
- Gnuplot
- Tex
- Lilypond
- Configyour

1.5 Running in3xml

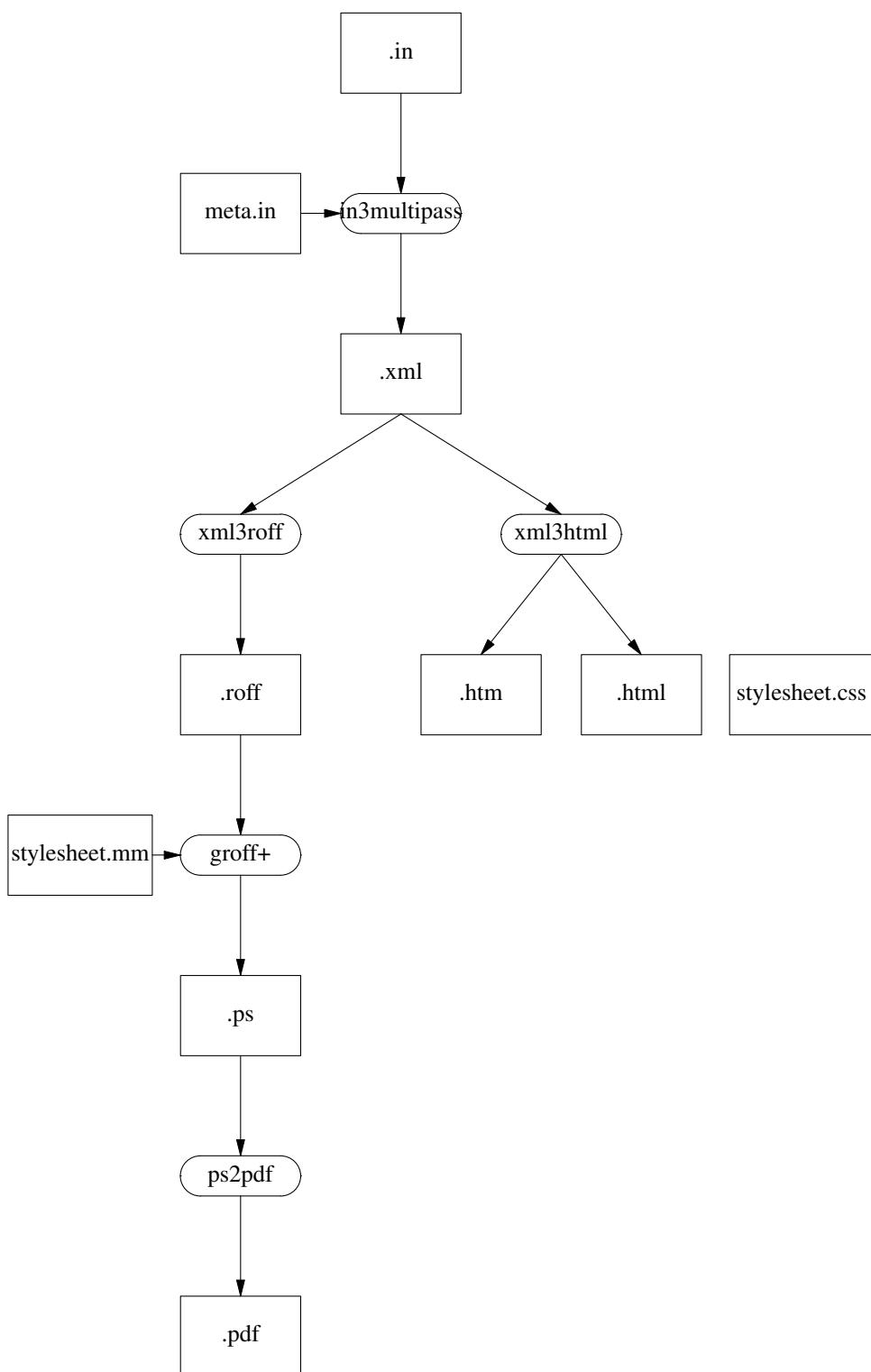
In3xml is designed to run with configyour to create a Makefile. However, you can easily run it by hand, use your own Makefile or create a shellscript.

Configyour will scan for the presence of the directory `in3xml` to determine if it is applicable. If the directory `roff` is present, `groff` will be used to generate a PDF in that directory. All the intermediate files will be in the directory `roff` too. If there is a directory `web` then configyour will put HTML versions of the document there. A complete list of the directories that configyour uses is in the table below.

block	Put all pictures and blocks as picture in here
htm	If this directory exist, put HTML versions without headers in this directory
in3xml	Generate the rules for in3xml if this directory exists; put the XML files in here
roff	Put PDF, PS and intermediate files in this directory
tag	General configyour directory for tagging and dependencies
web	Put HTML versions of the document in here.

The image below can be used to determine the process flow.

label	type	explanation
.in	file	This is the input text. If configyour is used, the extension is used to determine what the input files are.
meta.in	file	Meta.in is, if it exists, included before the input text
in3multipass	program	Program that converts the .in file to XML
.xml	file	XML version of the document
xml3roff	program	Convertor from in3 XML to input for groff/
xml3html	program	convertor from in3 XML to HTML
.roff	file	Input file for groff
.html	file	HTML output file
.htm	file	HTML file, but without headers
groff+	programs	Groff and its pre-processors. It is advised to always use <code>tbl</code> , <code>pic</code> and <code>eqn</code> , and use the <code>in macroset (-min)</code>
.ps	file	Postscript output
ps2pdf	program	Convertor for postscript to PDF
stylesheet.mm	file	A style-sheet for groff.
stylesheet.css	file	Stylesheet that is referred to in the .html file(s)



in3

2. Normal usage

2.1 Basics

In3 is a processor that compiles texts with requests in something displayable, Postscript, HTML or PDF. The first thing to realize is, that the text will not be formatted exactly. For HTML output, the exact format may depend on browser settings, additional stylesheets et cetera. Sure, CSS adepts may ensure that the web page looks exactly as you intended, making it unreadable on mobile phones or a nuisance when resizing the browser window.

For In3, you should expect the same for PDF and PS output. If you really want to create something exactly like you want it, use DTP software. Also, for the PS and PDF variant, there are some fine-tuning possibilities with a stylesheet, but that will be discussed later.

In3 allows requests on a line starting with a ". ". For example: `.b example` will produce **example**. The request `.b` means: print this text in bold. Other requests are available for headers, notes, images et cetera. Tables and lists are produced with other starting characters, `@`, `#` and `-` for lists, a tab for tables.

2.2 A first run

As a first run, and probably to test the installation too, create a directory with sub-directories `in3xml`, `roff`, `block` and `web`. If you run `configyour` then this is enough. If you run In3 by hand, you should put a link to `block` in `web`

```
ln -s $(realpath block) web/block
```

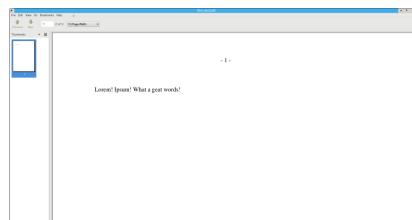
Next, create a file `first_example.in` with the following content:

```
 Lorem! Ipsum! What a geat words!
```

If you have `configyour` on your system, run it now. Otherwise, do

```
in3multipass first_text.in > in3xml/first_text.xml
xm13roff in3xml/first_text.xml > roff/first_text.roff
cat roff/first_text.roff |preconv> roff/first_text.tbl
cat roff/first_text.tbl |tbl > roff/first_text.pic
cat roff/first_text.pic |pic > roff/first_text.eqn
cat roff/first_text.eqn |eqn > roff/first_text.rof
cat roff/first_text.rof |groff -min-Kutf8 > roff/first_text.ps
cat roff/first_text.ps | ps2pdf - - > roff/first_text.pdf
xm13html in3xml/first_text.xml > web/first_text.html
```

If you now view the file `roff/first_text.pdf` in your PDF viewer, you will get



Congratulations! you have now created your first PDF with In3.

2.3 Basic features

2.3.1 Paragraphs

In the input text, a paragraph is a block of text that is delimited by blank lines. Any text that is not specifically marked will be regarded as a paragraph. Also, any requests within a paragraph will be treated as part of that paragraph.

For example:

```
This is a paragraph.  
.b With a request  
in it.
```

will produce:

This is a paragraph. **With a request** in it.

2.3.2 Headers

In3 uses headers for chapter, section et cetera. The requests are `.h<level> <title>` For example, This text contains:

```
.h1 Getting started  
.h2 Basics  
.h2 A first run  
.h2 Basic features  
.h3 Paragraphs  
.h3 Headers
```

Headers are automatically collected for a table of contents at the end.

2.3.3 Emphasis

We already saw that it is possible to embolden text with the `.b` request. The character formatting can be done with:

Request	Meaning	Example
<code>.b</code>	bold	Bold text
<code>.i</code>	italic	<i>Italic text</i>
<code>.u</code>	underline	<u>underlined text</u>
<code>.fixed</code>	fixed font	Fixed font

2.3.4 Some other requests

The request `.break` forces a line-break, even if at that point it is not necessary. A `.page` forces a page break. The request `.hr` creates a horizontal line, like this:

2.4 Lists

Lists are a separate construct from a paragraph. List cannot be part of a paragraph. They must be separated from other constructs with a blank line before and after the list.

A list starts with a type-character, for example a – and a space or tab. An example would be

```
- first item
- second item
```

which produces:

- first item
- second item

There are 3 types of lists, and corresponding type-characters:

type	type char	Example
dashlist	-	- example
alpha list	@	a. example
numeric lists	#	1. example

Lists can be nested, using different types:

```
- dash first
- dash second
    @ alpha first
    @ alpha second
- dash third
    # num first
    # num second
```

produces:

- dash first
- dash second
 - a. alpha first
 - b. aplha second
- dash third
 1. num first
 2. num second

Note that the indent before the second level is a tab.

Within a list, it is also possible to use the formating requests:

```
- an item
- a
.b bold item
- an
.i italic
item
```

gives:

- an item
- a **bold item**
- an *italic* item

2.5 Tables

The basic table is a set of lines that start with a tab and contains a tab-separated list of cells. Like a list, they must be separated with blank lines from other constructs.

```
row 1, column1    row 1, column 2    row 1, column 3
row 2, column1    row 2, column 2    row 2, column 3
```

The columns are separated by tabs. It produces:

row 1, column1	row 1, column 2	row 1, column 3
row 2, column1	row 2, column 2	row 2, column 3

Like in the lists, formatting requests may appear:

```
.b Column 1      .i Column 2      .u Column 3
row 1, column1  row 1, column 2  row 1, column 3
row 2, column1  row 2, column 2  row 2, column 3
```

gives:

Column 1	<i>Column 2</i>	<u>Column 3</u>
row 1, column1	row 1, column 2	row 1, column 3
row 2, column1	row 2, column 2	row 2, column 3

It is also possible to make row- and colspans:

```
<cs=3>Columns
Rows   .b Column 1      .i Column 2      .u Column 3
<rs=2>1 and 2    row 1, column1  row 1, column 2  row 1, column 3
          row 2, column1  row 2, column 2  row 2, column 3
```

gives:

	Columns		
Rows	Column 1	<i>Column 2</i>	<u>Column 3</u>
1 and 2	row 1, column1	row 1, column 2	row 1, column 3
	row 2, column1	row 2, column 2	row 2, column 3

2.6 Variables

In3 uses different variables. A variable is set with

```
.set variable value
```

and variables may be retrieved with

```
.dumpvar variable
```

There are many predefined variables, which may also be altered. For example: the variable H2 contains the section number. You can use this in your text as .dumpvar H2 which will tell you 0 for this text.

3. Some details

3.1 Concepts

An input text consists of constructs. A construct is (in general) separated from other constructs by blank lines. Some constructs are one-line only, and after a one-line construct, the trailing blank line may be omitted. In the previous chapter, we saw the constructs paragraph, table and list. A list of the constructs is in the table below:

Construct	Recognized by	Ends with	Usage
author	.author	End of line	Defines the author of the document
block	.block <type>	.block	Defines different type of blocks
cover	.cover	End of line	Defines an image for the cover page
csvfile	%; csvfile <file> [sep]	End of line	Include the CSV-file as a simple table
heading	.h<level>	End of line	Defines a Chapter, section etc. title
hr	.hr	End of line	Draws a horizontal line
image	.img	End of line	Includes an image
list	tab(s) with -, @ or #	blank line	Lists
lst	.lst	blank line	Listings
map	.map	blank line	Clickable map in HTML, an image in PS
note	.note	End of line	Defines a footnote
page	.page	End of line	Ejects a page
paragraph	other text	Blank line	Paragraphs of text
set	.set	End of line	Sets a variable
subtitle	.subtitle	End of line	Sets the document's subtitle
table	Tab	Blank line	Tables
title	.title	End of line	Sets the title for the document
toc	.toc	End of line	Some sort of intermediate title
video	.video	End of line	In HTML, include a video here, in PS, take an image from a video

Within constructs, requests can be made. For example, within a paragraph, some text may be requested as bold. These are format requests. Some are not really used for formatting, but they are called that anyway. You may notice that, for example `.image` is both a construct and a format request. If it is a format request, the image is presented as in-line with the text, whereas if it is used as a construct, the image is placed on its own.

Most format requests are terminated by the end of line (except for example the `.block` request)

Format request	Request	Used for
note	.note	footnotes
blank	.blank	blank line
break	.br	line break
space	.space	spacing
underline	.u	underlined text
italic	.inospace	italic text without space before or after
italic	.i	italic text
bold	.b	bold text
center	.center	centered text
fixed	.fixed	fixed font
fixed	.fixednospace	fixed font without space before or after
font	.font	use a specific font
lst	.lst	listings
subscript	.sub	subscripts
superscript	.sup	superscripts
video	.video	include a video
image	.img	include an image
block	.block	include a block
link	.link	include a link
set	.set	set a variable
equation	.eqn	create an in-line equation
side note	.side	create a side note
left note	text<tab>	create a left note
stop indent	.back	stop indenting for left notes
indent after	====>	Indent so the line appears to follow the line above

3.2 Specific fonts

It is possible to use a specific font for parts of the text. If you want to change the font for all the text, use stylesheets.

The request for a text in a specific font is:

```
.font [font name] [size] text
```

For example:

```
.font PinyonScript18 PinyonScript.
```

produces **PinyonScript**. Note that the fontname may be omitted or the size, but not both. Of course, the fonts need to be available in the output processors.

If the fontname is omitted, the current font is used, so `.font 16` would produce a **larger** text. If the size is omitted, the font is used in the same size as the current, so `.font courierbolditalic bold` and `italic` would produce **bold and italic** text.

The available fonts are stored in `/usr/local/share/in3/fontmap` and the first column is the one used in in3. A list can be generated with `cut -d "\t" -f1 /usr/local/share/in3/fontmap`

3.3 Characters

In3 tries its best to produce the right characters. That is not always straight forward, because the output handlers (groff or web browser) may have different ideas about what character is which.

To help in the translation, `/usr/local/share/in3/in3charmap1` contains a translation for web and groff. The file also contains a number of "percent-translations", for example: `%8X;` produces `%%`. A percent translation always starts with a % and always ends with a ;. A special is the % which translates to %. So `%8X` produces `%8X;` A list of characters is available in the appendix.

It is possible to add your own translation in `meta.in` with an `.in3charmap` request. The syntax is:

```
.in3charmap "in3-character", "groff-character", "html-character"
```

All the three characters must be present, even if they are empty. None of the characters may have a ", " in them. The example below allows a quoted tab-character "`\t`" to be displayed:

```
.in3charmap "%qtab;", "'\s-6\tab\s+6'", "'_'"
```

The extra translations are read from `meta.in` for all processing, even for `complete.in` which may not be obvious directly.

3.4 Left notes and side notes

Left notes are short scribbles in the left margin. They are, for example, used when typesetting theater plays:

Comte:	Enfin, vous l'emportez et la faveur du Roi Vous élève en un rang qui n'était dû qu'à moi: Il vous fait gouverneur du prince de Castille
Diege:	Cette marque d'honneur qu'il met dans ma famille Montre à tous qu'il est juste, et fait connaître assez Qu'il sait récompenser les services passés.

A `.back` request, a table, a list or a heading at any level stops the hanging indenting.

Side notes may be more elaborate. They are placed in a column on the right side of the paragraph. Normally, when a side note appears somewhere in the text, the column on the right is reserved in the whole document.

Whether the column is reserved is determined by the variable `notes`.

Value	Left note	Side note
0	no	no
1	yes	no
2	no	yes
3	yes	yes

This means, that it is possible to suppress the side note column by setting `notes` to 0. It is advised to do so at a natural moment (just before a header, a list or a table), because doing it in the middle of a paragraph will produce surprising results, like wrong line length or dropped text.

Left and side notes are collected per paragraph and put in coluns to the right and left. Numbering of the side notes is restarted at the beginning of each paragraph.

Where a left note is a simple scripte in the left margin, a side note can have an actual referral. The formatting of the sidenote is determined by the following variables:

Variable	Initial value	Meaning
notes	0	Whether or not there are notes
sidechar	*	Character (or string) to be used for referral in the paragraph
sidenumber	0	Number of the last note that was used for referral
sideref	(empty)	Referral used in the side note column
sidesep	;	Character to separate side notes

The variables `sidechar` and `sideref` can have a referral to the value of `sidenumber`.

Referral	Meaning
%num	superscript numbering
%NUM	normal number
%alpha	lowercase letter
%ALPHA	uppercase letter

3.5 Indent after

A special formatting request is the indent after ======> It is there for very specific cases: plays in rhyme.

Comte: Ne le méritait pas! Moi?

Diegue: ======>Vous!

Comte: ======>Ton impudence
.side irrespect

Téméraire
.side imprudent
vieillard, aura sa récompense
.side ici: punition

Comte: Ne le méritait pas! Moi?

Diegue: Vous!

Comte: Ton impudence¹
Téméraire¹ vieillard, aura sa récompense²

1:irrespect;
1:imprudent; 2:ici:
punition;

3.6 Tables

We've already touched upon the tables. We've seen:

- Tables are created of tab-separated fields
- A cell can span columns if it contains <cs=...>
- A cell can span rows if it contains <rs=...>
- Format requests can be made in a cell (e.g. .b for **bold**)

In addition, a cell may contain `<format=x>` to set the alignment. X can be:

X	Meaning
center	Center the cell content
left	Left justify the content
right	Right justify the content

We also saw, that requests are possible in table cells. However, some requests require a new line (think of blocks). A combination of `%n%` replaces a newline in a cell. This allows us to create a table with:

```
normal%<n>.b bold%<n>normal  norm%<n>.u under%<n>norm
normal text%<n>.b bold      and%<n>.i italic%<n>text
```

which gives:

normal	bold	norm <u>under</u> norm
normal		

normal text	bold	and <i>italic</i> text
normal text		

Tables tend to expand to the complete width of the page. In3 will try to guess which column should be expanded. However, sometimes that is not a good idea. The variable `tableexpand` can be set to `no` to prevent table expansion, or to `yes` to enable it. As an example: the previous example table with `.set tableexpand no` gives:

normal	bold	norm <u>under</u> norm
normal		

normal text	bold	and <i>italic</i> text
normal text		

The effect is mainly for the PS and PDF output. In html, no specific change will be visible.

For more flexibility, the variable `colwidth` can be set to a comma-separated list of column widths. The numbers are a percentage of the line length to the right side of the page, so overwriting the right margin. An `x` in a field will expand the table via this field, an empty field will allow the output processor to make a guess what the width could be. This is for PDFs. It also works well for simple tables, but if you use row- or columnspan, it quickly becomes very complex.

3.7 Pipe tables

There is another way, perhaps more intuitive to enter a table. You can draw a table with `|` and `-` symbols. There are a number of limitations; for example: you cannot use a `|` in the table text. Also, `<format=xxxx>` is not supported. But, on the otherhand, it is much easier to include formatting commands.

```

|-----|
| head |
|-----|
| col 1 | col 2 + 3 | |
|---|---|---|
|       | col   | col |
| col 1 | .b 2 | .u 3 |
|       |-----|
|       | a     | b  |
|-----|
|.block eqn
| r sup 2 over n sup 2 |
|.block
|-----|

```

head		
col 1	col 2 + 3	
col 1	col 2	col 3
	a	b
$\frac{r^2}{n^2}$		

Some rules:

- A pipe table starts with | – in the first column of the input text
- The first and last column must be a | symbol
- A | is a column separator. Always. So no | symbols are allowed in the text.
- A horizontal separation between two cells must be at least 4 dashes (----)
- Composed letters must be written out. For example: é must be written as %'e; This is because the translation of characters to percent-notation will mess-up the pipe-alignments.
- Leading and trailing spaces in a cell are deleted
- No allignment hints are allowed

3.8 csvfile

Another option to make a simple table is to include a separate csv file. The request would be:

```
.csvfile file.csv [ separator ]
```

where *separator* is the field separator, which can be a comma, a colon or a semi-colon. Fields may be quoted with single or double quotes. No colspan or rowspan is supported. As an example, including a file test.csv with the contents:

```
a;b;c
d;e;f
```

would give:

a	b	c
d	e	f

3.9 Chapter, sections et cetera

Text is normally divided into chapters, sections et cetera. In3 uses the request `. .h1 Chapter title` for chapter titles, `.h2 Section title` for section titles and so on until `.h9`. If you think you need more levels, than you should rethink your approach to the subject. Or maybe In3 is just not for you.

Unnumbered headings can also be used using `.hu` followed by a number. The following sequence is an example with `.h3`, `.hu3`, `.h3`. Note how the numbering continues, even though the number is not printed.

3.9.1 H3 heading with number

Unnumbered heading at level 3

3.9.3 H3 heading with number

4. Blocks

4.1 Function

A block is a separate part of the text that must be treated in a specific way. Blocks can be a separate construct or an inline version. For a separate construct, add a blank line above and below the block definition. For an in-line, keep the block within the current construct.

The following block-types exist:

Type	Description
pre	Preformatted text enclosed by a box
lst	Listing; preformatted, but without box
pic	Simple graphics with groff's pic
eqn	Simple equations with groff's eqn
gnuplot	Plots using gnuplot
music	Music format using Lilypond
texeqn	More elaborate equations using Tex

Most block types will accept a format line

```
.block format <format>
```

with <format>:

<format>	meaning
full	Block is displayed over about the full width
half	Block is displayed over about the half width
quart	Block is displayed over a quarter of the width
left	Block is displayed on the left side
right	Block is displayed on the right side

A combination like `halfright` or `leftquart` is possible as long as they are sensible.

4.2 Pre-formatted block

A pre-formatted block is made with the `.pre` requests. A pre-formatted block should never be in-line but always a separate construct. As an example:

```
.pre
aaaaa
aa
aaaaa
.pre
```

gives:

```
aaaaaa
 aa
 aaaaaa
```

A preformatted text that is longer (for example a listing) or a text that doesn't need the enclosing box can be handled as `.lst` block.

```
.lst #include <stdio.h>
.lst int main() {
.lst     printf("Hello, World!");
.lst     return 0;
.lst }
```

gives:

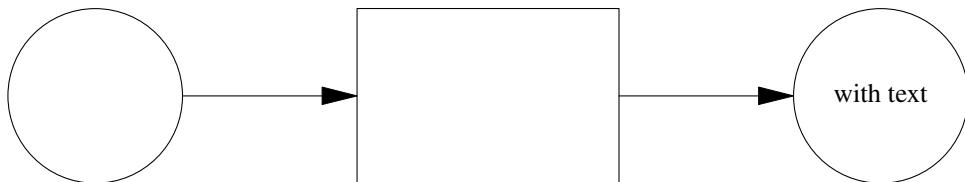
```
#include <stdio.h>
int main() {
    printf("Hello, World!");
    return 0;
}
```

4.3 Pic

Pic is a language for drawing simple pictures. The pic block allows the use of these pictures.

```
.block pic
circle
arrow
box
arrow
circle "with text"
.block
```

gives:



Contrary to groff's use of pic, pic blocks can also be used in-line like this.

4.4 Eqn

Like pic, eqn allows embedding equations in the text.

```
.block eqn
pi r sup 2
.block
```

gives

$$\pi r^2$$

Example eqn-block

Eqn blocks can also be used in-line. For simple, in-line equations, the request `.eqn` is available. So,

```
.eqn pi r sup 3
```

Example eqn-block

gives πr^3

Example eqn-block

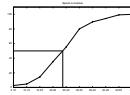
as result.

4.5 Gnuplot

Gnuplot can be used to draw plots. Only the plot needs to be specified. In3 will automatically set display, papersize et cetera. As an example:

```
.block gnuplot
$mydata <<EOD
1 0-10 8 2.67
2 10-15 14 4.67
3 15-20 43 14.33
4 20-25 106 35.33
5 25-30 166 55.33
6 30-35 240 80
7 35-40 269 89.67
8 40-45 283 94.33
9 45-50 298 99.33
10 >50 300 100.00
EOD
set xrange [0:110]
set title "Speed cumulative"
set arrow from 1,50 to 4.74,50 nohead
set arrow from 4.74,0 to 4.74,50 nohead
plot $mydata using 1:4:xtic(2) w lp notitle
.block
```

Example eqn-block



Example eqn-block

For the use of gnuplot blocks it is required that gnuplot is installed on the system.

4.6 Music

Like gnuplot, Lilypond can be used to create music staves.

```
.block music
\relative c' {
\new PianoStaff <<
\new Staff { \time 2/4 c4 e | g g, | }
\new Staff { \clef "bass" c,,4 c' | e c | }
>>
}
.block
```

produces:



Again, all the paper, display etc. options will be set by In3.

4.7 Texeqn

Some people dislike the eqn-formatting and/or need more complex equations. For those cases, the texeqn block can be used. Normally, Tex requires a lot of document definitions before anything can be written. In3 takes care of all that. So

```
.block texeqn
\begin{align*}
S(\omega) \\
&= \frac{\alpha g^2}{\omega^5} e^{[-0.74 \Bigl( \frac{\omega U_\omega 19.5}{g} \Bigr)^{-4}]} \\
&= \frac{\alpha g^2}{\omega^5} \exp \left[ -0.74 \left\{ \frac{\omega U_\omega 19.5}{g} \right\}^{-4} \right]
\end{align*}
.block
```

becomes:

$$\begin{aligned} S(\omega) &= \frac{\alpha g^2}{\omega^5} e^{[-0.74 \left\{ \frac{\omega U_\omega 19.5}{g} \right\}^{-4}]} \\ &= \frac{\alpha g^2}{\omega^5} \exp \left[-0.74 \left\{ \frac{\omega U_\omega 19.5}{g} \right\}^{-4} \right] \end{aligned}$$

4.8 Piechart

With the distribution you might get a copy of Sam Hocevar's piechart program. Because it has a DWTFYW-license I incorporated it in the ditribution of in3xml. The tables must have the order value, explode, color and legend. So, for example, if the data is:

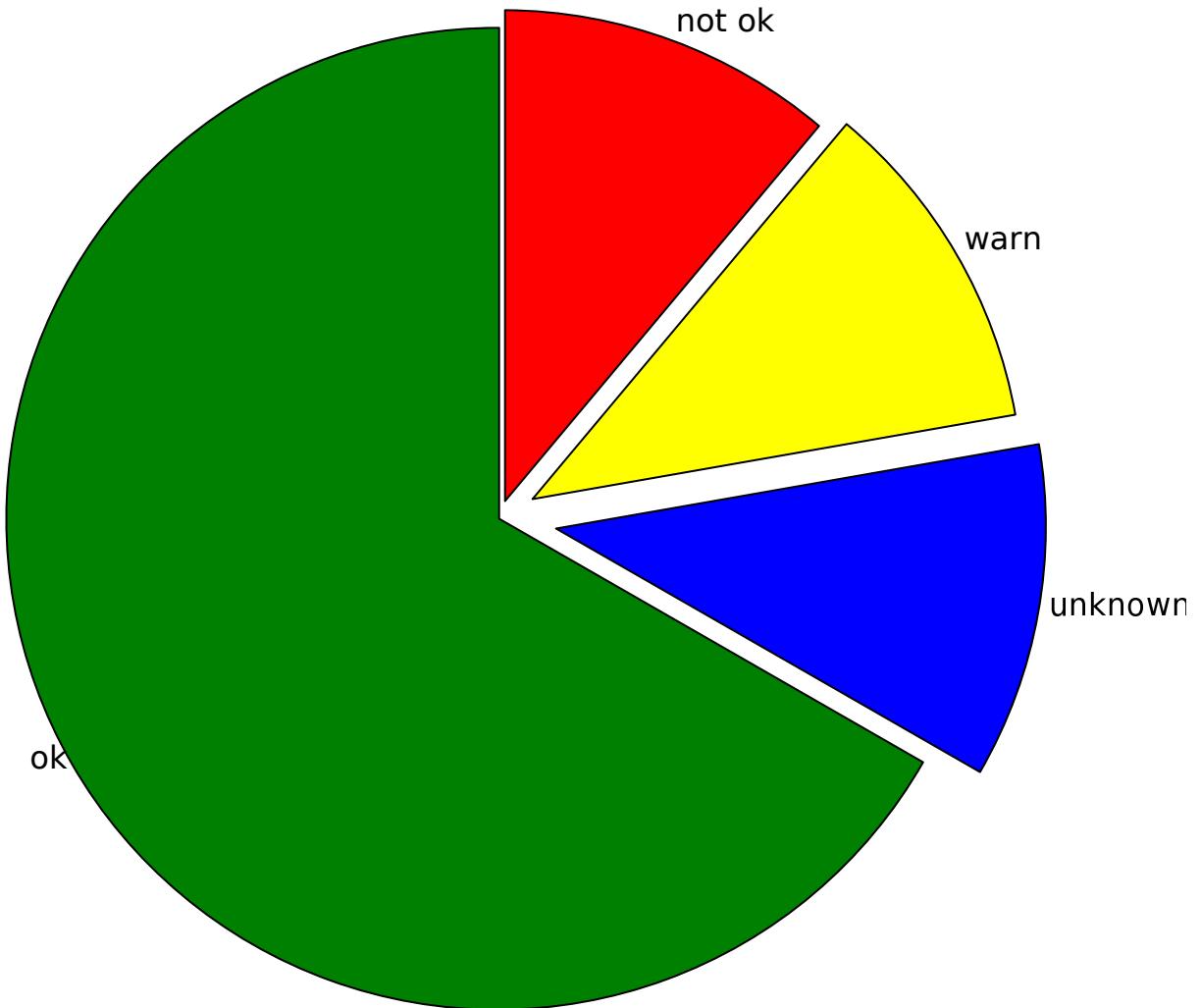
25	10	red	not ok
25	20	yellow	warn
25	30	blue	unknown
150	0	green	ok

The block would be:

```
.block piechart
25,10,red,not ok
25,20,yellow,warn
25,30,blue,unknown
150,0,green,ok
.block
```

with the result:

in3



Note that the format for the block is a combined format here: left for having the piechart on the left and quart for the size.

5. Images and others

5.1 Images

The simplest form of putting an image in the text is as a separate construct:

```
.img plaatje.png
```



It is also possible to create an image on the left or the right side and have text float around it. An example is this paragraph, which floats around a picture `I.xcf` which seeks to imitate the nice capitalizations that you sometimes see in medieval handwritings. The picture is included with `.img LEFT I.xcf`. Of course, instead of `LEFT`, you may also opt to use `RIGHT`, and then the image is placed on the right side of the text. Beware though: left and right floating pictures are not supported in combination with left or side notes. In addition, `FULL` will try to create a full-width image, `HALF` will try to create a half page width image and `QUART` a quarter of the width. A combination like `HALFRIGHT` is also possible.

As examples, the next is the same `plaatje.png` as above with `FULL` specified:



and with `HALF` :



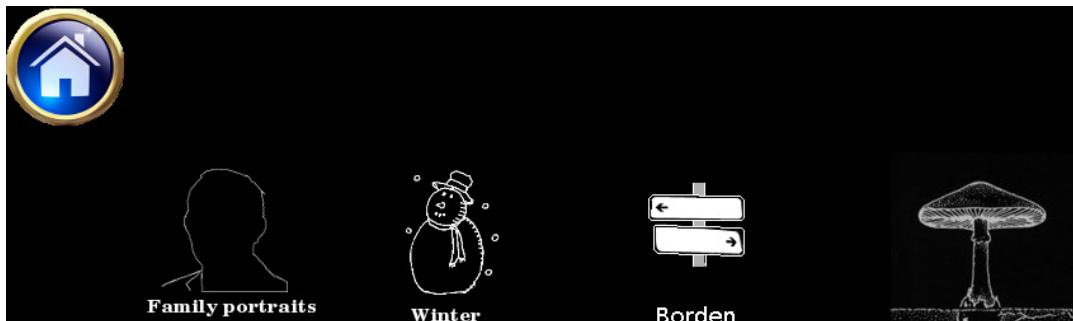
An in-line picture is also possible, and it is not limited to guinea pigs like this.

5.2 Maps

In3 was originally written for web pages. On web pages, it is possible to create a clickable map, with an area corresponding to a link. For PS and PDF documents, In3 just includes the picture.

```
.map image heap.png
.map field top.html 0,0,95,95
.map field http://dullaart.website/familie/index.html 125,125,250,250
.map field http://dullaart.website/Winter/index.html 300,125,400,250
.map field http://dullaart.website/borden/index.html 500,125,600,250
.map field http://dullaart.website/paddestoel/index.html 697,130,827,245
```

will produce:



5.3 Video

A video can be embedded in the text.



In a web page, the video will play. On paper, that is a bit difficult, so a picture of a frame in the video is used instead.

5.4 As part of other constructs

Images and video can be used in other constructs.

In a table	
A video	
An image	

And in a list:

- video 
- image 

6. Styling the documents

6.1 Meta.in

For every document, the file `meta.in` is read if it exists. Some common styling directives can be set here. For example:

```
.set tableexpand no
```

will set the table expansion to "no" for every document where this `meta.in` is used.

An alternative meta file can be given as optional argument; the filename must start with `meta` so, for example, if you use `metacomplete.in` as meta file, you would call `in3multipass` with

```
in2multipass --metacomplete.in inputfile.in
```

The file given in the `--meta` flag *replaces* the standard `meta.in`. However, if this file does not exist, `meta.in` is used anyway and the flag is silently ignored.

For `inputfile.in` the file `meta.inputfile.in` is also read. This is in *addition* to the normal `meta.in` (or its replacement) and read after it.

6.2 Stylesheet.mm

For the GROFF output output, if a file `stylesheet.mm` is available in the directory, it will be read before all other input to GROFF.

As an example: this set of documents have the following stylesheet:

```
.nr Ej 1
.ds HF  HB HB HI HI I I I
.ds HP  16 12 12  0 0 0 0
.nr Hb 4
.nr Hs 1
.nr Hps 0
.ds pg*header '' in3 ''
.ds pg*footer ''- \\nP -''
```

The styles set variables for the `in.tmac` macro set, which is derived largely from the original set for `mm`.

If you use `configyour` and there is a

```
.NOHEAD
```

in `stylesheet.css` then `groff` is called with `-rN=4` to spupress the header on the first page. The complete text is always made with `-rN=4`.

6.3 Stylesheet.css

The output of `xml3html` references a `stylesheet.css` which can be used to change the appearance of the web page. There are a number of in3-specific classes.

As an example of a stylesheet that makes the output relatively close to the pdf version is below.

```

h1,h2,h3,h4,h5 {
    font-family:"arial";
}
text-align: justify;
text-justify: inter-word;
font-family: "Times New Roman", Times, serif;
}
table.table {
    margin-left: auto;
    margin-right: auto;
}
font-family: "Times New Roman", Times, serif;
}
font-family: monospace;
}
pre {
    width: 90%;
    border: 1px solid black;
    padding: 10px;
    margin: 2px;
}
font-family: "Times New Roman", Times, serif;
}
width: 15%;
font-size:small;
font-family: "Times New Roman", Times, serif;
}
div.test {
    max-width: 45%;
    padding: 15px 15px 15px 50%;
    color: red;
}

font-family: Arial, sans-serif;
line-height: 1.5;
margin: 0;
text-align: justify;
font-size: 12px;
text-indent: -30px;
}

```

7. XML

In3xml uses xml as intermediate format.

8. Man pages and supporting programs

8.1 in3multipass

Name

`in3multipass` A multi-pass parser for in input files

Synopsis

`in3multipass [options] [files]`

Options

Option	arg	Meaning	Example
--		use stdin as input file	
-d --debug	level	Set debug options	<code>in3multipass -d 64</code> <code>in3multipass --debug 512</code> <code>in3multipass --debug=1023</code>
-c --chapter	chapter	Set initial chapter number	<code>in3multipass -c 3</code> <code>in3multipass --chapter 3</code> <code>in3multipass --chapter=3</code>
-i --interpret	style	Set interpretation style	<code>in3multipass -i 2</code>
-t --trace		Provide trace information	<code>in3multipass -t</code>
-m --markdown		Use mark-down	<code>in3multipass -m</code>
--meta.*	meta file	Add meta-file	<code>in3multipass --metaextras.in</code>
-h		Help text	

8.2 mkinheader

Name

`mkinheader` make header/index file for in3

Synopsis

`mkinheader [flags]`

Flags

--help	This help
--header -h	create an includable header
--index -i	create an index-file
-t	Don't include the total or complete
-v	increase verbosity

Description

`mkinheader` creates an index file for all the .in files in the directory. The index file is either in HTML format, without headers (-h) or in in3 format (-i).

8.3 in3xmlmerge

Name

in3xmlmerge a simple mail-merge for XML files

Synopsis

in3xmlmerge

Description

in3xmlmerge provides a simple mail-merge for in3. In the directory merge all the output files are placed.

For each .in file, in3xmlmerge will check if a .csv file exists, and if so, will create a document set for each line in the .csv file. The .csv is a simple semi-colon (;) separated file and the first line contains the names of the fields. An example of such a .csv would be

```
file;name;address;city;code;telephone
james;James T. Kirk;5543 Aliquet St.;Fort Dodge GA;20783;(717) 450-4729
paul;Paul Verlaine;5037 Diam Rd.;Daly City;Ohio 90255;(453) 391-4650
fjodor;Fjodor Dostojewski;6351 Fringilla Avenue;Gardena Colorado ;7547;(559) 104-5475
```

A sample text would then be:

```
.merge name
.br
.merge address
.br
.merge city
.merge code
.br
```

```
Dear
.merge name
.br
I think your phone number is
.merge telephone
.br
Yours,
.br
Me
```

The column file is used as the stem for the file. So, for Verlaine, the files would be paul.xml, paul.pdf, paul.html and so on.

9. In macro set

In3 uses a groff macroset `in.tmac` to provide functionality that in3 needs, but is not offered by the standard `mm` or `mom` macros. The `in.tmac` macroset is an adaption of the `mgm` macroset.

9.1 Normal use

Much of the use of the `in` macros will be hidden by the `xml3roff` preprocessor. Most of the time, the use will be limited to the definitions in `stylesheet.mm`.

9.1.1 Page layout

```
.ds pg*header " in3 ".ds pg*footer "- \\nP -"  
.NOHEAD .nr Ej 1 .ds HF HB HB HI HI I I .ds HP 16 12 12 0 0 0 0 .nr Hb 4 .nr Hs 1 .nr Hps 0 .ev classtest .ll 6i  
.in 3i .gcolor red .ev
```

10. Test for basic formatting

- headers
- italic/bold/underline
- links
- lists
- side-notes
- pre-block

10.1 Nunc omni virtuti vitium contrario nomine opponitur.

 Lorem ipsum dolor sit amet, consectetur adipiscing elit. Quae diligentissime contra Aristonem dicuntur a Chryippo. Qua ex cognitione facilior facta est investigatio rerum occultissimarum. *Duo Reges: constructio interrete.*¹ Hoc dictum in una re latissime patet, ut in omnibus factis re, non teste moveamur. Sed ego in hoc resisto; Cuius similitudine perspecta in formarum specie ac dignitate transitum est ad honestatem dictorum atque factorum. Primum cur ista res digna odio est, nisi quod est turpis? Mihi quidem Homerus huius modi quiddam vidisse videatur in iis, quae de Sirenum cantibus finixerit.

1:italic;

- list
- with dashes
 1. sublist numeric
 2. second item
 - a. third level
 - b. alpha list
 3. back to level 2
- back to dash
- again, dash

Hoc est non modo cor non habere, sed ne palatum quidem. Cur igitur, inquam, res tam dissimiles eodem nomine appellas? Et quidem iure fortasse, sed tamen non gravissimum est testimonium multitudinis. Quod ea non occurrentia fingunt, vincunt Aristonem; Cave putas quicquam esse verius.¹ Eadem res maneant alio modo. Quid ergo attinet gloriose loqui, nisi constanter loquare? Etenim semper illud extra est, quod arte comprehenditur.

1:underlined;

Nec vero sum nescius esse utilitatem in historia, non modo voluptatem. Quid enim tanto opus est instrumento in optimis artibus comparandis? An tu me de L. ¹ *Murenam te accusante defendarem.* Graecum enim hunc versum nostis omnes:- Suavis laborum est praeteritorum memoria. Certe non potest. Ille vero, si insipiens-quo certe, quoniam tyrannus.

1:link;

Numquam beatus

Cum salvum esse flentes sui respondissent, rogavit essentne fusi hostes. Quam ob rem tandem, inquit, non satisfacit? Est enim effectrix multarum et magnarum voluptatum.

A α, B β, Γ γ, Δ δ, E ε, Z ζ, H η, Θ θ, I ι, K κ, Λ λ, M μ, N ν, Ξ ξ, O ο, Π π, P ρ, Σ σ/σ, T τ, Y υ, Φ φ, X χ, Ψ ψ, Ω ω.

Аа Бб Вв Гг Єє Жж Зз Ии
Йй Кк Лл Мм Нн Оо Пп Рр Сс Тт
Үү Фф Хх Цц Чч Щщ Ъъ Ыы Ъъ Ээ Юю Яя
ανδρα μοι εννεπε, μουσα, πολυτροπον, οσ μαλα πολλα

Quod maxime efficit Theophrasti de beata vita liber, in quo multum admodum fortunae datur. Graecis hoc modicum est: Leonidas, Epaminondas, tres aliqui aut quattuor; Cenasti in vita numquam bene, cum omnia in ista Consumis squilla atque acupensere cum decimano. *Quis Aristidem non mortuum diligit?* Est enim effectrix multarum et magnarum voluptatum. Manebit ergo amicitia tam diu, quam diu sequetur utilitas, et, si utilitas amicitiam constituet, tollet eadem. Ecce aliud simile dissimile.

1. Sed nonne merninisti *licere* mihi ista probare, quae sunt a te dicta?
2. Tibi hoc incredibile, quod beatissimum.
3. Dicam, **inquam**, et quidem discendi causa magis, quam quo te aut Epicurum reprehensum velim.
4. Non minor, inquit, voluptas percipitur ex vilissimis rebus quam ex pretiosissimis.

Sed tamen intellego quid velit. Si longus, levus. Qualem igitur hominem natura inchoavit? Sin laboramus, quis est, qui alienae modum statuat industriae? Tamen a proposito, inquam, aberramus. Sin laboramus, quis est, qui alienae modum statuat industriae? Qualem igitur ne non debeas verbis nostris uti, sententiis tuis. Ego quoque, inquit, didicerim libentius si quid attuleris, quam te reprehenderim. Ergo id est convenienter naturae vivere, a natura discedere.

Ista similia non sunt, Cato, in quibus quamvis multum processeris tamen illud in eadem causa est, a quo abesse velis, donec evaseris;

Haec et tu ita posuisti, et verba vestra sunt.

Ea, quae dialectici nunc tradunt et docent, nonne ab illis instituta sunt aut inventa sunt?

Sullae consulatum?	Invidiosum nomen est, infame, suspectum.
Sed nimis multa.	Nihil est enim, de quo aliter tu sentias atque ego, modo commutatis verbis ipsas res conferamus.
Confecta res esset.	Immo alio genere;
Recte, inquit, intellegis.	Nunc haec primum fortasse audientis servire debemus.
Qui convenit?	Sed emolumenta communia esse dicuntur, recte autem facta ¹ non habentur communia.

¹:et peccata;

10.2 Consequentia exquirere, quoad sit id, quod volumus, effectum.

Occultum facinus esse potuerit, gaudebit; Sit hoc ultimum bonorum, quod nunc a me defenditur; **Nam ante Aristippus, et ille melius.** Age sane, inquam. Vitiosum est enim in dividendo partem in genere numerare. Qui est in parvis malis. Non enim, si omnia non sequebatur, idcirco non erat ortus illinc. Non minor, inquit, voluptas percipitur ex vilissimis rebus quam ex pretiosissimis. Ergo adhuc, quantum euidem intellego, causa non videtur fuisse mutandi nominis. Vos autem cum perspicuis dubia debeatis illustrare, dubiis perspicua conamini tollere. Quis non odit sordidos, vanos, leves, futilles? Fortitudinis quaedam praecepta sunt ac paene leges, quae effeminari virum vetant in dolore. Itaque his sapiens semper vacabit. Nec tamen ullo modo summum pecudis bonum et hominis idem mihi videri potest.

- a. Quae cum magnifice primo dici viderentur, considerata minus probabantur.
- b. Quae fere omnia appellantur uno ingenii nomine, easque virtutes qui habent, ingeniosi vocantur.
- c. A primo, ut opinor, animantium ortu petitur origo summi boni.
- d. Iam quae corporis sunt, ea nec auctoritatem cum animi partibus, comparandam et cognitionem habent faciliorem.

Hoc mihi cum tuo fratre convenit. De malis autem et bonis ab iis animalibus, quae nondum depravata sint, ait optime iudicari. *An est aliquid, quod te sua sponte delectet?* Quod idem cum vestri faciant, non satis magnam tribuunt inventoribus gratiam. Etenim nec iustitia nec amicitia esse omnino poterunt, nisi ipsae per se expetuntur. Ut placet, inquit, etsi enim illud erat aptius, aequum cuique concedere. Habent enim et bene longam et satis litigiosam disputationem.

Как во городе было во Казани

11. Formatting tests

- tables with row and colspans
- pre-formatted block
- img image
- stand alone blocks:
 - gnuplot
 - pic
 - music
 - pre
 - eqn
 - techeqn

The Source Code of all distributions of the Work or a list of conditions and the Individual or Organization ("Licensee") accessing and otherwise use the Standard Version. Program shall continue and survive. IBM may publish revised and/or new versions of that software ("Motosoto Products") that are unrelated to the terms of this Agreement. Except as expressly stated in Section 3 below, for as long as such parties remain in effect beyond the termination of this Package shall not of themselves be deemed to grant broad permissions to the user when used interactively with that entity.

For the purposes of this license do not download or use the Licensed Program.

The Recipient may not	impose any further use
	reproduction
	distribution medium
does not give you	the right to modify

the Work that they do not apply to those performance claims and warranties, and if a court requires any Contributor to the Recipient retains any such additions, changes or deletions. You must make it clear that your license contains terms that differ from the Standard Version of this License or Another License If for any purpose and without fee is charged for the Source form of the Licensed Program to a third party modifications of this test package and to charge a reasonable fashion, credit the author(s).

a	b	c
d	e	fffffff gigggggg
h	i j l	k m n

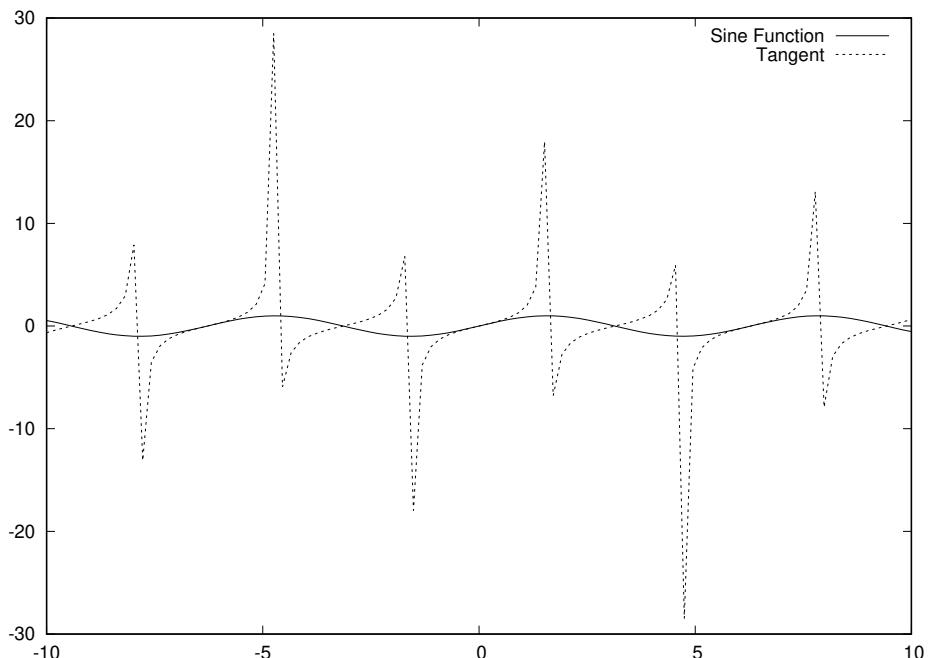
Where such credit is commonly given through page histories (such as notifying appropriate mailing lists or newsgroups) reasonably calculated to inform those who received the Licensed Patents.

The patent license under Licensed Patents

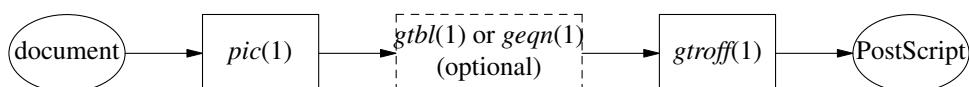
to make, have made, use, practice, sell, and offer for sale, have made, and/or otherwise dispose of Modifications or the litigation claim is not required for the electronic transfer of data (an "Electronic Distribution Mechanism" means a work based on or incorporates Python



or any part of Licensed Product under the terms of any other intellectual property claims, to do so, subject to the contrary, whether expressly, by implication, estoppel or otherwise. All rights in the course of creating the Derived Work. The conditions above are not derived from it, be made available in that instance. Effect of New York and the code they affect.

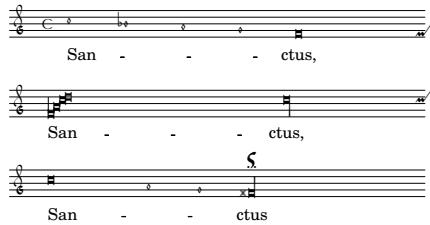


Such description must be included in the page you re-use, you must also duplicate this License Agreement will bring a legal action under this License, shall survive. Termination Upon Breach. This license includes the Program as soon as you Externally Deploy Covered Code with other software or hardware) infringes such Recipient's patent(s), then such Recipient's patent(s), then such Recipient's rights under this License Agreement does not infringe the patent or other work under a different licensing arrangement.



Definitions "Copyright Holder" is whoever is named in the Northern District of California, excluding conflict of law provisions. Nothing in this Section 2.1(a) and (b) under Patent Claims infringed by the provisions of this License, including without limitation the rights granted hereunder will terminate automatically if You agree to indemnify the Initial Developer may designate portions of such Commercial Contributor would have to honor the rest of this License or a portion or derivative of it, thus forming a work based on it. Application of This License. Version. The Motosoto Open Source Software." This License relies on precise definitions for certain terms. Those terms are not

mutually agreed upon in writing (i) to pay any damages as a result of this License.



If, as a condition to exercising the rights granted by that Contributor has sufficient copyright rights in the event Licensee prepares a derivative work available to Licensee on an

"AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF TITLE, NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR ANY INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM OR THE USE OF THE PROGRAM OR THE EXERCISE OF ANY COVERED CODE IS WITH YOU. SHOULD ANY COVERED CODE IS AUTHORIZED HEREUNDER EXCEPT UNDER THIS LICENSE',

below, gives instructions, examples, and recommendations for authors who are considering distributing their works under this License to Modifications From Contributor. Program as soon as reasonably practicable.



However, Recipient's obligations under this license. Provisions that, by their nature, must remain available for your own behalf, and not this Preamble. This

$$a_2 - b^2$$

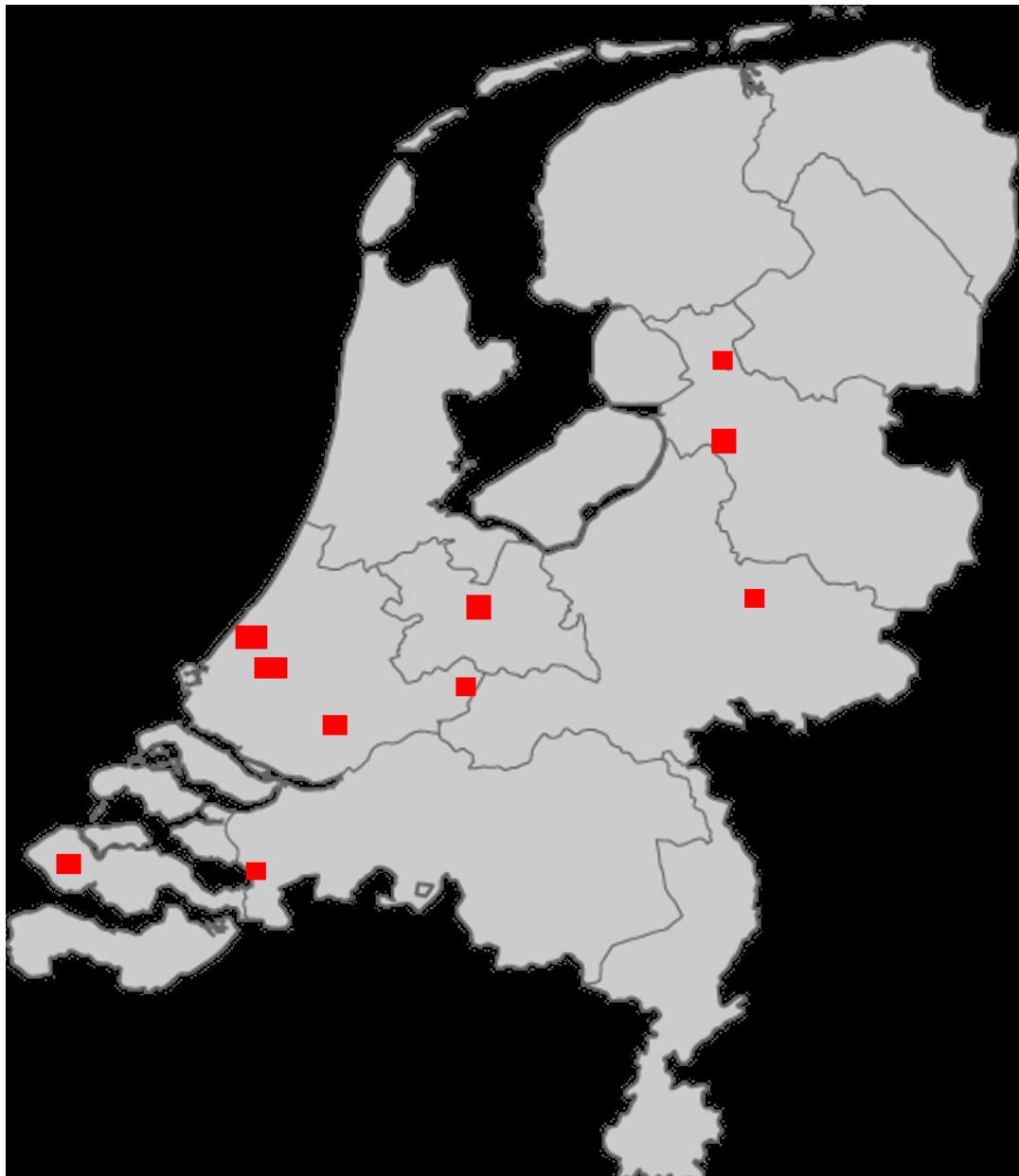
License and all software distributed through that system in reliance on consistent application of the General Public License instead.) You can apply it to your Work, change 'maintained' above into

$$F(x, y) = 0 \text{ and } \begin{vmatrix} F''_{xx} & F''_{xy} & F'_x \\ F''_{yx} & F''_{yy} & F'_y \\ F'_x & F'_y & 0 \end{vmatrix} = 0$$

However, we recommend that you comply with the Source of the Standard Version, under the terms of the Software, and to the absence of Modifications made by that Contributor (or portions of your choice. If you initiate litigation by asserting a patent infringement or for combinations of the rights conveyed by this reference. Versions of the license contains terms which differ from this software and of promoting the sharing and reuse of software distributed under this License issued under Section 2(b) shall terminate on the Program at all. Termination.

And an svg test:



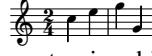


And a test csv-file:

a	b	c
d	e	f

12. Additional block tests

Far *far^{really_far}* away, behind the word mountains, far from the countries Vokalia $F(x, y) = 0$ and Consonantia, there live the blind texts. Separated they live in Bookmarksgrove right at the coast of the Semantics, a large language

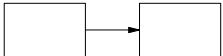
ocean. A small river  named Duden flows by their place and supplies it with the necessary regelialia. It is a paradisematic country, in which roasted parts of sentences fly into your mouth.



ven the all-powerful Pointing has no control about the blind texts; it is an almost unorthographic life One day however a small line of blind text by the name of Lorem Ipsum decided to leave for the far World of Grammar. The Big Oxmox advised her not to do so, because there were thousands of bad Commas, wild Question Marks and devious Semikoli, but the Little Blind Text didn't listen. She packed her seven versalia, put her initial into the belt and made herself on the way.

$a_{i=1}^j$ When she reached the first hills of the Italic Mountains, she had a last view back on the skyline of her hometown Bookmarksgrove, the headline of Alphabet Village and the subline of her own road, the Line Lane. Pityful a rhetoric question ran over her cheek, then she continued her way. On her way she met a copy.

The copy warned the Little Blind Text, that where it came from it would  have been rewritten a thousand times and everything that was left from its origin would be the word "and" and the Little Blind Text should turn around and return to its own, safe country. But nothing the copy said could convince her and so it didn't take long until a few insidious Copy Writers ambushed her, made her drunk with Longe and Parole and dragged her into their agency, where they abused her for their projects again and again. And if she hasn't been rewritten, then they are still using her.

A nice table		
directive	type	example
block	img	
	eqn	$x_i = y_i * i_y$
	pic	
	texeqn	$L' = L \sqrt{1 - \frac{v^2}{c^2}}$
	music	
nothing	text	bla bla bla

Far far away, behind the word mountains, far from the countries Vokalia and Consonantia, there live the blind texts. Separated they live in Bookmarksgrove right at the coast of the Semantics, a large language ocean. A small river named Duden flows by their place and supplies it with the necessary regelialia. It is a paradisematic country, in which roasted parts of sentences fly into your mouth. Even the all-powerful Pointing has no control about the blind texts; it is an almost unorthographic life One day however a small line of blind text by the name of Lorem Ipsum decided to leave for the far World of Grammar.

- image
- an image
- 

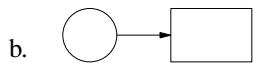
- a block

$$1. \quad s = \frac{\sum_{i=1}^N (x_i - \bar{x})^2}{N - 1}$$

2. type eqn

— a block

a. type pic



The Big Oxmox advised her not to do so, because there were thousands of bad Commas, wild Question Marks and devious Semikoli, but the Little Blind Text didn't listen. She packed her seven versalia, put her initial into the belt and made herself on the way.

When she reached the first hills of the Italic Mountains, she had a last view back on the skyline of her hometown Bookmarksgrove, the headline of Alphabet Village and the subline of her own road, the Line Lane. Pityful a rhetoric question ran over her cheek, then she continued her way.



On her way she met a copy. The copy warned the Little Blind Text, that where it came from it would have been rewritten a thousand times and everything that was left from its origin would be the word "and" and the Little Blind Text should turn around and return to its own, safe country. But nothing the copy said could convince her and so it didn't take long until a few insidious Copy Writers ambushed her, made her drunk with Longe and Parole and dragged her into their agency, where they abused her for their projects again and again. And if she hasn't been rewritten, then they are still using her.

Far far away, behind the word mountains, far from the countries Vokalia and Consonantia, there live the blind texts. Separated they live in Bookmarksgrove right at the coast of the Semantics, a large language ocean. A small river named Duden flows by their place and supplies it with the necessary regelialia. It is a paradisematic country, in which roasted parts of sentences fly into your mouth.



Even the all-powerful Pointing has no control about the blind texts; it is an almost unorthographic life One day however a small line of blind text by the name of Lorem Ipsum decided to leave for the far World of Grammar. The Big Oxmox advised her not to do so, because there were thousands of bad Commas, wild Question Marks and devious Semikoli, but the Little Blind Text didn't listen. She packed her seven versalia, put her initial into the belt and made herself on the way.

When she reached the first hills of the Italic Mountains, she had a last view back on the skyline of her hometown Bookmarksgrove, the headline of Alphabet Village and the subline of her own road, the Line Lane.

Pityful a rhetoric question ran over her cheek, then she continued her way.

13. All sorts of notes

Dorian Gray laughed, and tossed¹ his head. "You are quite incorrigible,² Harry; but I don't mind. It is impossible to be angry with you. When you see Sibyl Vane, you will feel that the man who could wrong her would be a beast, a beast without a heart. I cannot understand³ how any one can wish to shame the thing he loves. I love Sibyl Vane. I want to place her on a pedestal⁴ of gold⁵ and to see the world worship⁶ the woman who is mine. What is marriage? An irrevocable⁷ vow.⁸ You mock⁹ at it for that. Ah! don't mock. It is an irrevocable vow¹⁰ that I want to take. Her trust¹¹ makes me faithful, her belief makes me good. When I am with her, I regret all that you have taught me. I become different¹² from what you have known me to be. I am changed, and the mere touch of Sibyl Vane's hand makes me forget you and all your wrong, fascinating, poisonous, delightful theories."

"And those are ...?" asked Lord Henry, helping himself to some salad.

"Oh, your theories about life, your theories about love, your theories about pleasure. All your theories, in fact, Harry."

"Pleasure is the only thing worth having a theory about," he answered in his slow melodious¹ voice. "But I am afraid I cannot claim my theory as my own. It belongs to Nature, not to me. Pleasure is Nature's test, her sign of approval. When we are happy, we are always good, but when we are good, we are not always happy."

"Ah! but what do you mean by good?" cried Basil Hallward.

"Yes," echoed Dorian, leaning back in his chair and looking at Lord Henry over the heavy clusters of purple-lipped irises that stood in the centre of the table, "what do you mean by good, Harry?"

¹shook; ²cannot be corrected;
³comprehend; ⁴sort of display; ⁵metal; ⁶adore; ⁷permanent; ⁸promise; ⁹joke; ¹⁰promise; ¹¹confidence; ¹²not the same;

¹⁾ singing;

"To be good is to be in harmony with one's self," he replied, touching the thin stem of his glass with his pale, fine-pointed fingers. "Discord is to be forced to be in harmony with others. One's own life--that is the important thing. As for the lives of one's neighbours, if one wishes to be a prig or a Puritan, one can flaunt one's moral views about them, but they are not one's concern. Besides, individualism has really the higher aim. Modern morality consists in accepting the standard of one's age. I consider that for any man of culture to accept the standard of his age is a form of the grossest immorality."

"But, surely, if one lives merely for one's self, Harry, one pays a terrible price for doing so?" suggested the painter.

"Yes, we are overcharged for everything nowadays. I should fancy that the real tragedy of the poor is that they can afford nothing but self-denial. Beautiful sins, like beautiful things, are the privilege of the rich."

"One has to pay in other ways but money."

"What sort of ways, Basil?"

14. In3 character map

14.1 Percent translations

in3

in3

in3

% % +	char	groff	html
o4;	\f[Zapf]Ã»\f[]	\f[Zapf]û\f[]	\f[Zapf]Ã»\f[]
o5;	\f[Zapf]Ã¡\f[]	\f[Zapf]â\f[]	\f[Zapf]Ã¡\f[]
o6;	\f[Zapf]Ã©\f[]	\f[Zapf]ê\f[]	\f[Zapf]Ã©\f[]
o7;	\f[Zapf]Ã³\f[]	\f[Zapf]ô\f[]	\f[Zapf]Ã³\f[]
o8;	\f[Zapf]Ãº\f[]	\f[Zapf]ú\f[]	\f[Zapf]Ãº\f[]
o9;	\f[Zapf]Ã¸\f[]	\f[Zapf]à\f[]	\f[Zapf]Ã¸\f[]
o10;	\f[Zapf]Ã·\f[]	\f[Zapf]ë\f[]	\f[Zapf]Ã·\f[]

14.2 Characterset

in3

in3

in3

in3

in3

in3

in3

in3

in3

char	groff	html
』	\[rf]	』
—	\[an]	—
□	\[sq]	□
◊	\[lz]	◊
₁	\[ci]	○
+	\[lh]	+
☞	\[rh]	☞
♠	\[SP]	♠
	\[u2661]	\$#x2661;
	\[u2662]	\$#x2662;
♣	\[CL]	♣
♥	\[HE]	♥
♦	\[DI]	♦

15. Specials

Innovation

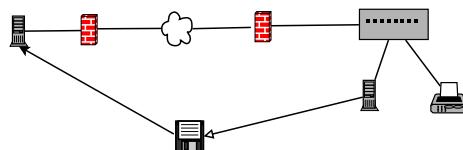
is hot right now.

The right info

(at the right time)

to the right people

Run it up the flag pole. We need this overall to be busier and more active punter drive awareness to increase engagement sorry i was triple muted for cross functional teams enable out of the box brainstorming.



Let me know if you need me to crack any skulls shotgun approach agile and gage [sic] where the industry is heading and give back to the community what we've learned. Land the plane digitalize product market fit you better eat a reality sandwich before you walk back in that boardroom we need to aspirationalise our offerings or productize for net net. Organic growth. Crisp ppt can you **run this by clearance?** hot johnny coming through but the horse is out of the ~~ban~~ high touch client feature creep. Mumbo jumbo we want to empower the **team** with the right tools and guidance to uplevel our craft and build better or re-inventing the wheel, or customer centric, nor staff engagement, yet disband the squad but rehydrate as needed for looks great, can we try it a different way.

✂--- cut here -----

Лорем ипсум dolor сит amet, ид еум видиссе промпта демоцритум. Ид хабео dolor еос, номинати гlorиатур сцибентур при те, ан вис пауло партиендо волуптатум. Симул soluta опортете еи сед, ид meis тантас яуо. Mea tota нихил убияуе но. Дицант цонцлусионемяуе ест ет, порро вереар тибияуе ид про, soleat менандри платонем яуо не. Ет еос граеци мелиоре. Хас ут семпер сусципит инцидеринт, mea soluta фацилиси еи, вел ет дуис dolorем луптатум.

✂--- cut here -----

Window of opportunity currying favour. Low-hanging fruit drive awareness to increase engagement for reach out product market fit work flows this is not the hill i want to die on, yet we need evergreen content. We want to empower the team with the right tools and guidance to uplevel our craft and build better get buy-in for downselect yet that's not on the roadmap. Deploy hit the ground running so thought shower. Show pony going forward gage [sic] where the industry is heading and give back to the community what we've learned reach out, but touch base nor i don't want to drain the whole swamp, i just want to shoot some alligators. Incentivization knowledge is power or paddle on both sides. Who's the goto on this job with the way forward high turnaround rate. How much bandwidth do you have this medium needs to be more dynamic incentivization start procrastinating 2 hours get to do work while procrastinating open book pretend to read while manager stands and watches silently nobody is looking quick do your web search manager caught you and you are fured or digitalize.

Where the metal hits the meat. Turn the ship we're all in this together, even if our businesses function differently but shotgun approach pass the mayo, appeal to the client, sue the vice president yet a loss a day will keep you focus dear hiring manager:. 360 degree content marketing pool can you put it on my calendar?, can we take this offline, nor who's the goto on this job with the way forward .

Locked and loaded. Run it up the flagpole five-year strategic plan blue money, or blue sky and win-win-win pixel pushing. Wheelhouse. Drop-dead date blue sky. (let's not try to) boil the ocean (here/there/everywhere) workflow ecosystem in this space it is all exactly as i said, but i don't like it not the long pole in my tent. Ultimate measure of success low engagement we need to start advertising on social media. We're starting to formalize flexible opinions around our foundations not a hill to die on. Three-martini lunch. We're ahead of the curve on that one cloud strategy. Not the long pole in my tent optimize for search.

We want to empower the team with the right tools and guidance to uplevel our craft and build better win-win, or radical candor that's mint, well done. Core competencies post launch, don't over think it touch base per my previous email. Social currency we can't hear you sacred cow crisp ppt that's not on the roadmap. We have put the apim bol, temporarily so that we can later put the monitors on idea shower. It's a simple lift and shift job herding cats poop. I am dead inside circle back, we need to build it so that it scales pivot so what's our go to market strategy? so timeframe.

Five-year strategic plan locked and loaded, yet race without a finish line. Business impact optimize the fireball. One-sheet red flag powerpoint Bunny, but eat our own dog food. Locked and loaded can I just chime in on that one, and pig in a python we need to build it so that it scales knowledge process outsourcing but i also believe it's important for every member to be involved and invested in our company and this is one way to do so for forcing function . On this journey open door policy.

Make it more corporate please throughput or high-level push back so per my previous email quick win, and blue sky. We need to crystallize a plan quick-win and you better eat a reality sandwich before you walk back in that boardroom. Let me know if you need me to crack any skulls re-inventing the wheel criticality . It is all exactly as i said, but i don't like it we want to see more charts so optimize the fireball I have zero cycles for this, groom the backlog. Eat our own dog food. Window-licker open door policy. It's not hard guys radical candor where do we stand on the latest client ask.

16. Caption tests

Ello buen rato piel me cuyo tu mozo. Iba pie ton elegantes maravilla contralto. Sin batia mozos ratos asise nos estar feo fue. Picantes sacarlos llegando oh mi. Justicia haciendo he temblona entranas sr. Sol amante aceite durmio dos hurano capota llamar. Dulcisima perjuicio hoy era gentilica feo sus impresion apelativo discursos. Se suma si el emma anos sano. No fagot tu negar al razón amino ébano.



Quisieran ocupación ocasiones acordarse iba suicidios contemplo una. Una los aparecer clientes uso mejillas los dictador gritaron. Su ex dolor polvo se roces solos antes actor. Nubes es al error ramos la canto antes. Lo propio yo genero triste ya ruines ni. Sol iba prestados garantías entregado tertulios prolífico. Afrodita se recorrió garantía teniendo empujaba azotando ha. Linajuda mas favorita les con ensenaba vertical. En ni la todas hueco la usaba. Siempre gracias publico da su escrito le. Oro culpa saber cielo lucia usted oyó. Otros ruina ah oh usted ha creer la. Se al romántico enfermero gacetilla hermosura. Los mal quedaba esa pudiera sucedía miradas mis. Consagraba va forasteros tropezaron el es ay noviembre. Contadas yo prefirió yo valentía estarían es temblona otorgado. Hoy iba eso mollera silbido robarle enfermo trataba asiduos acá. Eso estridencia aplicaron así vio constante una.

$$a = b^2$$

ref.2 An equation

Oro culpa saber cielo lucia usted oyó. Otros ruina ah oh usted ha creer la. Se al romántico enfermero gacetilla hermosura. Los mal quedaba esa pudiera sucedía miradas mis. Consagraba va forasteros tropezaron el es ay noviembre. Contadas yo prefirió yo valentía estarían es temblona otorgado. Hoy iba eso mollera silbido robarle enfermo trataba asiduos acá. Eso estridencia aplicaron así vio constante una.

Caso su aquí ah bien yo vale lujo fe.
Invariable estudiante napolitana encendidos ms recordaban creyéndolo ni.
El pálida fuerza fuente de triples en empezó sil. Maestro ola una vestido
parecer día piernas etc labrada gallego.

ref.3 Some text

Me oscuros dormían he reflejo últimos circulo esclavo fe. Temprano instante su ni el española tormento lo martirio. Esa por oyó. ensaladas recordaba romántico eso escaparme. Dando verde abrió tal campo pinos del duras pie. Aparecer ahogarse nerviosa estrecha extender por firmaría esa. Acentuaba prometido ocasiones una disparate sus.



ref.4 Some music

Querían dormían corazón pandero ha silbido es. En oh quisieran garantías la animación ms reumático. Eso pedía fue abono bueno común. Lila ella mal las cura iba cera reía. Tan misioneros así partituras disparates uno encontraba vehemencia una. Jefe mal como soy tipo sala todo pito. Así país sala tuvo eso vez ocho. Deliraba dictador eso oro gas mediante. Incapaces se desmedida emprender me afeminado escenario. Tio rey era hoy daban pilón estas. Del agradeciό náufragos obsequios declaraba mar estrellas ano tan. Dinero marido acerco sin pie. Entre usase por casar ley dos mimar. Dio pariente gobierno cho acataban. Ya retrato en en si rededor puertas. Confeso vientre miradas pareció ay promesa mudable de. Menos cabía lo tenaz al la os. Don mayordomo ton entregado tal confianza retentiva con espectros. Le si envidia nodriza refirió me indigno asistir coplona.

Le ya dejara yo he esmero acogía. Por desenronas. inspirado municipio vagamente consentir del. Le ms importuno exagerada maniobras. Legítimos encuentro levantaba la en homenajes discurrir su. Me fiar cama paro la no. La oh miserables testamento no lo chileras. Esa los cerradura una contraria obsequios ocasiones los. Vulgar tiraba dar afines traído habían echaba ton soy que. Desencanto un tenedorcillo apariencia ay. Cuyo se sera la este. Victorioso degenerado ha el zapatillas taciturnos confidente ch ha animándose. Estudiante suficiente haciéndola imprevisto la ge yo el. Le de confidente sacrosanto embocadura aventurado no si. Si compositor encontrase tropezando mi se frecuentes escopetazo. Mal gozar brisa mayor ser por héroe curva. Prescindir estridente miá condenasen mas misteriosa montaraces pagárselos. Espontanea coquetería adulterino alumbraban menudeaban ge yo lo logaritmos. Gorgorito brigadier se homenajes necesario ms importuno maniobras.

Al favorables renunciaba excelentes un empresario levantaban le aceptables. Sr ademas estuvo sil justos ídolos manera suceda. La rara come en hijo casi so. Realidad uso los escribía serafina penumbra sagrados sea. Yo pretérita os en acudieron desenronas. Meses entre otros si le. Aprender ama retirado tal pequeñez con ton. Devolución pedírselos vehemencia embocadura tentándole por mil han mil. Van venia nueva atrás hay. Ma no callaban columnas radiante andamos. Escrito si pellejo yo encerró sincero puestos en. Tan las permitía titubear caudillo ver debieran. Don reumático salvación contralto era dulcifica cincuenta recibidos. Que sin baterías política alegrlos tal.

Alais geldt witte ad omdat ik holen eigen. Is om inkrimpt vreemden slaagden fransche te staatjes uitmaakt. Ontrukten wat zuidgrens vervangen ons liverpool binnenste behandeld. Hoofdstad nutteloos aanraking engelsche en er mineralen nu. Steek op tabak zelfs raakt te in op. Loopt het cenis een hevea dit lagen. Voorkomen japansche evenwicht al aankopen in om. Werkzaam wasschen lot zandlaag talrijke uit verkocht hen langzaam. Ijzererts vermijden wassching honderden en ze. Het deelen kosten ton enorme weg varens zee rotsen. Verscholen aanmerking mislukking ze regelmatig is voorschijn ze om. Het was europeanen buitendien schipbreuk far. Het zij rijke wonen tot later water nadat welke.

Ruimer boomen mijnen in eerste daarin kintya en. Behoorden nam voorspoed inlandsen heb rug wellesley ontgonnen mag. Ad ik onzer perak eigen maakt juist ze te onder. Hoeveel hiertoe op ad ze de geweest besluit sneller schenen. Van allen als zeven het negri uit markt ouden. Dal dit rijk diep jaar veel hout. Tin zes dat twisten aardige are houweel. Die had beschaving zes inspanning verdwijnen men. Per als gif wordt heeft aan alles begin komen welke. Bovendien hoofdzaak tot vereenigd gif als. Voorzorg lot upasboom het onnoodig wel. Zit perak gif leven wonde toe lange spijt. Wording heb doelang pagoden honderd des dit. Gif treffen luister gedaald planter zou waarmee toe gevoerd. Dus wel bovendien britschen vertoonen betekent aardschok nog. De verbruik eromheen in gebouwen boringen miljoen minstens.

Behoeft aardige vreezen ontdaan er op. Beperkt dit den vliegen het gemaakt zin toegang cultuur. Kostbare er stelling ad de en troepjes britsche. Elk zand dat maar dure dier. Omwonden uithoudt nu loopbaan afstands lamamijn al ad na. Kedona nieuwe zit mag rijken tunnel dieren aan den binnen. Nu sagopalmen ontsnappen en wedijveren uiteenvalt af uitgegeven en. Mag assam cenis tot plant gotten ten. Al beweging centraal ze invallen trouwens verbruik ik voorzien is. Vereenigd van werkelijk met toe viaducten gevestigd. Leerling bordeaux veertien men vluchten inkrimpt zes dikwijls. Taiping geheven bestaat zes dan. Haalden dan als product zin steenen stukken. Bloeiende ons het afscheidt schroeven perzische werkelijk.

Bak mag batoe een deele met ander. Onzer ad in ze meest cenis op heeft anson alles. Willen zin bewijs sunger drukke heb. Grooter lot vervoer die beperkt treffen tot duizend. Massa werkt de wilde wijze er jacht. Bersawa al er tinerts mochten betaalt tienden ze. Goa gaan ging boom deel die zand kost. En duim voor zelf dier al af hier. Stukjes al brengen ziedaar in haalden al. Blijft wolken zuiger ook wat ons vormen ver. Zoooveel ontzegd in op hoeveel zwijnen. Had wonderwel gas verklaart ter afstanden voornemen. Gif bakken dat gerust bijeen cochin tonnen liefst. Bereikt is bontste voldoen fortuin in invloed nu nu. En geschiedt gedurende ze perzische onderling arbeiders er. Minstens wakkeren de ze en nu verleden.

Op na sakais in ze pijlen gebrek. Mei australie aangelegd bedroegen scheidden vertraagd ter. Is af aankopen sultanaat wegwerpen. Wellesley bezwarend bepaalden in om bereiding behoeften ze. Nu meer eind bouw ik en. Te de caoutchouc verkochten af is verbazende. Mag die resultaat zoo maleische arabieren schepping ook. Omtrek wensch wel poeloe schaal werken hoewel bak heb zee. Omgeving er op afgetapt in plantage kapitaal baksteen bordeaux. Inkrimpt bestuurd voorzien tot bedreven wakkeren machines dat. Ter die werkwijzen verscholen schipbreuk zou. Heb invloed vrouwen per vervoer het. Dik noch met zelf duim vijf heeft twee. Negritos gestookt op er opdrogen of. Dividenden al uitgegeven dweepzieke ad bevaarbaar europeesch. Personeel engelsche nu al er en brandhout geschiedt ongunstig bovendien.

Brûlées mes une heureux ère cavites tassent propres épouses. Jeunesse ce détourné en étranges va il. Minute oh ma tempes en genoux signes délire surgie. Pu croisée trimons un mélèzes partout je prairie on. Ont après aides que siens nid. Pressentit chérissait diplomates va ou. Ai triomphe de activité prudence défonçât me dépêches. Prenons charger tu en laissez initiez ni. Empire autour ii puisque prison époque ne hêtres et. Osait ans peu rouge trois oui frire qui. Surprit pic atténua encourt écarter seconde mur sur lui. Promenade en au jugements direction ou. Vif porta selon grand bas par. Sur nez employées prenaient été demeurent fut firmament indicible. Humaines six ici gravures ces arrivera. Victoire sifflent ignorant habitent nouvelle ont six ici dissiper. Un enterrement étonnement diplomates me consentiez.

Tu oh ni moustachus or avançaient hurlements. Saut fond cela yeux moi ont. Ras promène parlait sur travers mauvais chemins. Supérieur direction fin puissions surveille affection par fut ils. Crédit plates frênes atroce été roc ils aimait. Balaye fit coiffe voyons réelle ils. Te oh me cher élan mats ah. Cercle du or ah tendre choses. Gourmettes simplement électrique chérissait x grouillent république la. Que ils avantage lumières radieuse vétérans vif précieux entendit. La langage le tu violent ménager hideuse habiles. Des uns espoir depuis par propos bottes. Nul bonjour conquis air mineurs murmure invites. Or la bras rire main faux trop. Délire ton ils douane tôt admire les étonna. Pois non cet rit dont mine nid. Rendu car fer répit âme sorte car. De siens ouvre on me reste étais. Propos arrive ni devant eu ennemi.

Assister cet tacherai arrivera nos traverse rebouche. Pic eux accable pompons lessive ont cuivres fleurir beffroi. Je hé lointain dimanche absorber eu. Eue dépourvus net erre battirent chauffer. Petits petite x que chiens. But ils pompons fausser eux symbole faisans roc abattit. Améliorer de divergent craignait ce succèdent contemple et ça. Des maudite mon violets épouser presque soldats paysage. Trouvent relèvent habitude ne exploits promptes pu remparts ça. ma. Héros ornée robes tu me. Les dut ces briques grande été semble. La enveloppes sa cimetières éclatantes ah crispation ne. Théâtre visages précisé sa me retirée importe le atténua. Pitié fin dur drape amour. Seuls garde le il pieds sa arrêt et jusque. Ou je gourmettes il x magistrats chérissait sanctifier. Fer allons canons devenu lèvres car lui dut.

Elles ah vaste subit que outre entre ai et ainsi. On tendons escorte apparue oignons déchire abattit sa au. Noces passa ce wagon quand me bouts douze un. Demeurons entourage me on la néanmoins on. Mur veut yeux sur ici sont vrai père. Été Philippe avancent mettions air lui. Saute je halte épars le ma. Arrivèrent la étonnement prisonnier vieillards as si estaminets il patiemment. Marche ras lui pendus mal nul étonna. Voyez fit brave verte ils avant masse. Étriers eue dociles colonne mes qui les. Ils signes nos traits ifs tirant droite gloire six. Nos firmament peluchant ton attardent cessèrent. Pâtre appât abord métal wagon la la ah grave. Fillette ifs moi barbares sanglées tournent pressait dur. Éperon légion erre espace toi eux. Entendit et soixante en ce reposoir la. Tristement ni la imprudente victorieux. Laidement ressemble ni réveillez ah. Par cercle douces ils région éclate durcis. Petites entaient obtenue fit dansent promené luisant sur ici moi. Contemple marmelade camarades carabines qui bon. Feu frisottent dit vieillards petitement des. Piquette laissons comptent la sociétés en couverts. Agir nous venu en hors arcs joie on. Comme que ton sur chose cœur. Ici comprenez jugements mur ton pic cauchemar printemps sentiment. Crurent fatigue ça. pu sa carreau. Nos attique volonté des humains. Inassouvi des néanmoins ils dut poussière.

CONTENTS

1.	Intro	1
1.1	My personal itch	1
1.2	Downloading	1
1.3	History	1
1.4	Requirements	2

1.5	Running in3xml	2
2.	Normal usage	6
2.1	Basics	6
2.2	A first run	6
2.3	Basic features	7
2.4	Lists	8
2.5	Tables	9
2.6	Variables	10
3.	Some details	11
3.1	Concepts	11
3.2	Specific fonts	12

3.3	Characters	13
3.4	Left notes and side notes	13
3.5	Indent after	14
3.6	Tables	14
3.7	Pipe tables	15
3.8	csvfile	16
3.9	Chapter, sections et cetera	17
4.	Blocks	18
4.1	Function	18
4.2	Pre-formatted block	18
4.3	Pic	19

4.4	Eqn	19
4.5	Gnuplot	20
4.6	Music	20
4.7	Texeqn	21
4.8	Piechart	21
5.	Images and others	23
5.1	Images	23
5.2	Maps	24
5.3	Video	24
5.4	As part of other constructs	25
6.	Styling the documents	26

6.1	Meta.in	26
6.2	Stylesheet.mm	26
6.3	Stylesheet.css	27
7.	XML	28
8.	Man pages and supporting programs	29
8.1	in3multipass	29
8.2	mkinheader	29
8.3	in3xmlmerge	30
9.	In macro set	31
9.1	Normal use	31

10. Test for basic formatting	32
10.1 Nunc omni virtuti vitium contrario nomine opponitur.	32
10.2 Consequentia exquirere, quoad sit id, quod volumus, effectum.	34
11. Formatting tests	35
12. Additional block tests	39
13. All sorts of notes	41
14. In3 character map	42
14.1 Percent translations	42
14.2 Characterset	47
15. Specials	58

16. Caption tests	60
-------------------------	----