# Example presentation using INBOmd
## Here comes the optional subtitle

Here comes the optional location

Thierry Onkelinx ID

Here comes the optional affiliation

Flanders
State of
the Art

# Title of the table of content

**Flanders**
State of the Art

# Options

# Title slide

subtitle  subtitle on the title slide (optional)
location  place and date of the presentation on the title slide (optional)
institute  affiliation on title slide (optional)
cover  background figure for the title slide. A standard figure will be used when missing
cover_horizontal  scale the cover figure to the width when TRUE (default) or to the height when FALSE
cover_offset  shift the cover figure vertically (optional)
cover_hoffset  shift the cover figure horizontally (optional)

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# Table of content

**toc** add a slide with table of content when TRUE (default), no table of content when FALSE

**toc_naam** title of the slide with the table of content

**slide_level** header level that matches with slide titles. Default: 2. Must be between 1 and 3

higher levels become separator slides

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# Separator slide heading 1 (in case slide_level > 1) extra text a b c d e f g h i j k l m n o p q r s t

# Separator slide heading 1 (in case slide_level > 1) extra text a b c d e f g h i j k l m n o p q r s t

## Separator slide heading 2 (in case slide_level > 2) extra text a b c d e f g h i j k l m n o p q r s t u v w x y z 0 1 2 3 4 5 6 7 8 9 a b c d e f g h i j k l m n o p q r s t u v w x y z 0 1 2 3 4 5 6 7 8 9 a b c d e f g h i j k l m n o p q r s t u v w x y z 0 1 2 3 4 5 6 7 8 9 a b c d e f g h i j k l m n o p q r s t u v w x y z 0 1 2 3 4 5 6 7 8 9 a b c d e f g h i j k l m n o p q r s t u v w x y z 0 1 2 3 4 5 6 7 8 9 a b c d e

**Slide title (heading = slide_level) extra text a b c d e f g h i j k l m n o p q r s t u v w x y z 0 1 2 3 4 5 6 7 8 9 a b c d e f g h i j k l m n o p q r s t u v w x y z 0 1 2 3 4 5 6 7 8 9**

- ► The text box will automatically shring when the slide title requires more lines
- ► The text is vertically centered within the text box
- ► In case the title of heading 1 is too long, the first part of the title will disappear
- ► In case the title of heading 2 is too long, the last part of the title will disappear

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## Slide with too much text

► The last part of the text will disappear if it doesn't fit the slide

► The font size will not shrink to fit the text (like PowerPoint does)

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetuer id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

## Split slides automatically I

- ► Adding {.allowframebreaks} at the end of the slide title will split long slides automatically into multiple slides
- ► A Roman nummeral will be added at the end of the title to each of those slides

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetuer id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit

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## Split slides automatically II

mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

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# Typography

# Typography

**Fonts**

## Normal font

In hac habitasse platea dictumst. Suspendisse potenti. Nulla pretium sem sit amet nisl. Nulla facilisi. Sed aliquam, turpis sed hendrerit gravida, nunc metus aliquam urna, eget pharetra nibh urna nec lectus. Duis in nisl a nisl commodo facilisis. Nunc placerat risus sed leo. Duis pellentesque porta libero. Praesent et enim. Aenean ullamcorper, ante sit amet fermentum mollis, ligula metus laoreet magna, accumsan accumsan nibh wisi at wisi. Nam tincidunt tempor neque. Maecenas dolor. Donec interdum nisl. Aliquam quam libero, interdum quis, volutpat sed, semper ut, eros. Pellentesque sodales auctor quam. Nullam suscipit massa nec elit. Nullam vulputate.

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## Italic font

*Nam quod ait sensibus ipsis iudicari voluptatem bonum esse, dolorem malum, plus tribuit sensibus, quam nobis leges permittunt, (cum) privatarum litium iudices sumus. Nihil enim possumus iudicare, nisi quod est nostri iudicii– in quo frustra iudices solent, cum sententiam pronuntiant, addere: "si quid mei iudicii est"; si enim non fuit eorum iudicii, nihilo magis hoc non addito illud est iudicatum–. Quid iudicant sensus? Dulce amarum, leve asperum, prope longe, stare movere, quadratum rotundum.*

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**Bold font**

**Sed haec nihil sane ad rem; illa videamus, quae a te de amicitia dicta sunt. E quibus unum mihi videbar ab ipso Epicuro dictum cognoscere, amicitiam a voluptate non posse divelli ob eamque rem colendam esse, quod, (quoniam) sine ea tuto et sine metu vivi non posset, ne iucunde quidem posset. Satis est ad hoc responsum. Attulisti aliud humanius horum recentiorum, numquam dictum ab ipso illo, quod sciam, primo utilitatis causa amicum expeti, cum autem usus accessisset, tum ipsum amari per se etiam omissa spe voluptatis. Hoc etsi multimodis reprehendi potest, tamen accipio, quod dant. Mihi enim satis est, ipsis non satis. Nam aliquando posse recte fieri dicunt nulla expectata nec quaesita voluptate.**

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# Bold and italic font

*In accumsan convallis metus. Aenean est. Donec pharetra porta odio. Duis nunc nisl, imperdiet ac, tincidunt vitae, varius sit amet, felis. Curabitur wisi. Ut iaculis, nunc in lacinia egestas, elit enim tincidunt turpis, at luctus ipsum augue condimentum metus. Aenean lorem wisi, cursus sit amet, mollis nec, porta ac, augue. Vivamus massa. Praesent rhoncus imperdiet orci. Aenean pharetra dolor ut sapien. Maecenas egestas augue semper dolor.*

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## Fixed width font

```
Fusce mauris. Vestibulum luctus nibh at lectus. Sed bibendum, nulla a faucibus
semper, leo velit ultricies tellus, ac venenatis arcu wisi vel nisl. Vestibulum
diam. Aliquam pellentesque, augue quis sagittis posuere, turpis lacus congue quam,
in hendrerit risus eros eget felis. Maecenas eget erat in sapien mattis porttitor.
Vestibulum porttitor. Nulla facilisi. Sed a turpis eu lacus commodo facilisis.
Morbi fringilla, wisi in dignissim interdum, justo lectus sagittis dui, et
vehicula libero dui cursus dui. Mauris tempor ligula sed lacus. Duis cursus enim
ut augue. Cras ac magna. Cras nulla. Nulla egestas. Curabitur a leo. Quisque
egestas wisi eget nunc. Nam feugiat lacus vel est. Curabitur consectetuer.
```

**Available number of characters**

About 66 characters with normal font
12345678911234567892123456789312345678941234567895123456789612345678971234567898
*12345678911234567892123456789312345678941234567895123456789612345678971234567898*
**12345678911234567892123456789312345678941234567895123456789612345678971234567898**
***12345678911234567892123456789312345678941234567895123456789612345678971234567898***
67 characters with fixed width font
12345678911234567892123456789312345678941234567895123456789612345678971234567898

# Minuscule L versus captital i

normal: ‖

bold: **‖**

italics: *‖*

bold italics: ***‖***

fixed width font: `lI`

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**Special characters**

€$£ @&#§µ^ ()|²³<>/*+- ,;:.?!~ äàáâã ëèéê îìíî öòóô üùúû ÿ ç ñ ÄÀÁÂ ËÈÉÊ ÎÌÍÎ ÖÒÓÔ ÜÙÚÛ Ñ
0123456789
*€$£ @&#§µ^ ()|²³<>/*+- ,;:.?!~ äàáâã ëèéê îìíî öòóô üùúû ÿ ç ñ ÄÀÁÂ ËÈÉÊ ÎÌÍÎ ÖÒÓÔ ÜÙÚÛ Ñ*
*0123456789*
**€$£ @&#§µ^ ()|²³<>/*+- ,;:.?!~ äàáâã ëèéê îìíî öòóô üùúû ÿ ç ñ ÄÀÁÂ ËÈÉÊ ÎÌÍÎ ÖÒÓÔ ÜÙÚÛ Ñ**
**0123456789**
***€$£ @&#§µ^ ()|²³<>/*+- ,;:.?!~ äàáâã ëèéê îìíî öòóô üùúû ÿ ç ñ ÄÀÁÂ ËÈÉÊ ÎÌÍÎ ÖÒÓÔ ÜÙÚÛ Ñ***
***0123456789***
€$£ @&#§µ^ ()[]{}|²³<>/\*+- ,;:.?!~ äàáâã ëèéê ïìíî öòóô üùúû ÿ ç ñ ÄÀÁÂ ËÈÉÊ ÏÌÍÎ
ÖÒÓÔ ÜÙÚÛ Ñ 0123456789

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## Quotation marks

| | |
|---:|:---|
| normal: | "double", 'single' |
| bold: | **"double", 'single'** |
| italics: | *"double", 'single'* |
| bold italics: | ***"double", 'single'*** |
| fixed width font: | `"double", 'single',` |

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# Typography

**Lists**

# Unordered list

- First level
- The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.
- Item 3
    - Second level
        - Third level
        - Maximum three levels
        - The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.
    - The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.
    - Item c
- Item 4

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# Incremental unordered list

- First level

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## Incremental unordered list

- First level
- The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.

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## Incremental unordered list

- First level
- The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.
- Item 3

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## Incremental unordered list

- ► First level
- ► The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.
- ► Item 3
    - ► Second level

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## Incremental unordered list

- First level
- The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.
- Item 3
  - Second level
    - Third level

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- First level
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  - Second level
    - Third level
    - Maximum three levels

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- First level
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- Item 3
  - Second level
    - Third level
    - Maximum three levels
    - The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.

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# Incremental unordered list

- First level
- The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.
- Item 3
  - Second level
    - Third level
    - Maximum three levels
    - The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.
  - The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.

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# Incremental unordered list

- First level
- The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.
- Item 3
  - Second level
    - Third level
    - Maximum three levels
    - The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.
  - The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.
  - Item c

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# Incremental unordered list

- First level
- The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.
- Item 3
  - Second level
    - Third level
    - Maximum three levels
    - The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.
  - The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.
  - Item c
- Item 4

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# Ordered list

1. First level
2. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.
3. Item 3
   1. Second level
      1. Third level
      2. Maximum three levels
      3. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.
   2. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.
   3. Item c
4. Item 4

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# Incremental ordered list

1. First level

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## Incremental ordered list

1. First level
2. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.

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## Incremental ordered list

1. First level
2. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.
3. Item 3

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## Incremental ordered list

1. First level
2. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.
3. Item 3
   1. Second level

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# Incremental ordered list

1. First level
2. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.
3. Item 3
   1. Second level
      1. Third level

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# Incremental ordered list

1. First level
2. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.
3. Item 3
   1. Second level
      1. Third level
      2. Maximum three levels

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# Incremental ordered list

1. First level
2. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.
3. Item 3
   1. Second level
      1. Third level
      2. Maximum three levels
      3. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.

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## Incremental ordered list

1. First level
2. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.
3. Item 3
   1. Second level
      1. Third level
      2. Maximum three levels
      3. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.
   2. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.

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# Incremental ordered list

1. First level
2. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.
3. Item 3
   1. Second level
      1. Third level
      2. Maximum three levels
      3. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.
   2. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.
   3. Item c

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## Incremental ordered list

1. First level
2. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.
3. Item 3
   1. Second level
      1. Third level
      2. Maximum three levels
      3. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.
   2. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.
   3. Item c
4. Item 4

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# List with definitions

**First level**  Definition of the first level

**An item with a long title**  Definition of the item with a long title

**Second level**  Definition of the second level

**Third level**  Maximum three levels

**An item with a long title**  The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.

**An item with a long title**  The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog

**Item C**  The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog.

**Item D**  Definition of D

# Mixing lists

- ► First level
- ► Item 2
- ► Item 3

  1. Second level
     Third level ~ Again, three levels is maximum
     item II ~ Definition II
  2. Item b
     - ► Item b I
     - ► Item b II
  3. Item c
     1. Item c I
     2. Item c II

- ► Item 4

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# Typography

**Frames**

# Default frame

## Title of the default frame

Atque haec contra Aristippum, qui eam voluptatem non modo summam, sed solam etiam ducit, quam omnes unam appellamus voluptatem. Aliter autem vobis placet. Sed ille, ut dixi, vitiose. Nec enim figura corporis nec ratio excellens ingenii humani significat ad unam hanc rem natum hominem, ut frueretur voluptatibus. Nec vero audiendus Hieronymus, cui summum bonum est idem, quod vos interdum vel potius nimium saepe dicitis, nihil dolere. Non enim, si malum est dolor, carere eo malo satis est ad bene vivendum. Hoc dixerit potius Ennius: "Nimium boni est, cui nihil est mali". Nos beatam vitam non depulsione mali, sed adeptione boni iudicemus, nec eam cessando, sive gaudentem, ut Aristippus, sive non dolentem, ut hic, sed agendo aliquid considerandove quaeramus.

# Frame with example

## Title of the example frame

Sed ut ad propositum– de dolore enim cum diceremus, ad istam epistulam delati sumus–, nunc totum illud concludi sic licet: qui in summo malo est, is tum, cum in eo est, non est beatus; sapiens autem semper beatus est et est aliquando in dolore; non est igitur summum malum dolor. Iam illud quale tandem est, bona praeterita non effluere sapienti, mala meminisse non oportere? Primum in nostrane potestate est, quid meminerimus? Themistocles quidem, cum ei Simonides an quis alius artem memoriae polliceretur, "Oblivionis", inquit, "mallem. Nam memini etiam quae nolo, oblivisci non possum quae volo."

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# Frame with alert

## Title of the alert frame

Nos commodius agimus. Non enim solum Torquatus dixit quid sentiret, sed etiam cur. Ego autem arbitror, quamquam admodum delectatus sum eius oratione perpetua, tamen commodius, cum in rebus singulis insistas et intellegas quid quisque concedat, quid abnuat, ex rebus concessis concludi quod velis et ad exitum perveniri. Cum enim fertur quasi torrens oratio, quamvis multa cuiusque modi rapiat, nihil tamen teneas, nihil apprehendas, nusquam orationem rapidam coerceas. Omnis autem in quaerendo, quae via quadam et ratione habetur, oratio praescribere primum debet ut quibusdam in formulis ea res agetur, ut, inter quos disseritur, conveniat quid sit id, de quo disseratur.

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Other elements

# Other elements

**Tables**

**Table**

|                   | mpg  | cyl | disp  | hp  | drat | wt    | qsec  | vs |
|-------------------|------|-----|-------|-----|------|-------|-------|----|
| Mazda RX4         | 21.0 | 6   | 160.0 | 110 | 3.90 | 2.620 | 16.46 | 0  |
| Mazda RX4 Wag     | 21.0 | 6   | 160.0 | 110 | 3.90 | 2.875 | 17.02 | 0  |
| Datsun 710        | 22.8 | 4   | 108.0 | 93  | 3.85 | 2.320 | 18.61 | 1  |
| Hornet 4 Drive    | 21.4 | 6   | 258.0 | 110 | 3.08 | 3.215 | 19.44 | 1  |
| Hornet Sportabout | 18.7 | 8   | 360.0 | 175 | 3.15 | 3.440 | 17.02 | 0  |
| Valiant           | 18.1 | 6   | 225.0 | 105 | 2.76 | 3.460 | 20.22 | 1  |
| Duster 360        | 14.3 | 8   | 360.0 | 245 | 3.21 | 3.570 | 15.84 | 0  |
| Merc 240D         | 24.4 | 4   | 146.7 | 62  | 3.69 | 3.190 | 20.00 | 1  |
| Merc 230          | 22.8 | 4   | 140.8 | 95  | 3.92 | 3.150 | 22.90 | 1  |
| Merc 280          | 19.2 | 6   | 167.6 | 123 | 3.92 | 3.440 | 18.30 | 1  |

# Table with caption

Table: A table with the first 10 rows of the 'mtcars' dataset.

|                   | mpg  | cyl | disp  | hp  | drat | wt    | qsec  | vs |
|-------------------|------|-----|-------|-----|------|-------|-------|----|
| Mazda RX4         | 21.0 | 6   | 160.0 | 110 | 3.90 | 2.620 | 16.46 | 0  |
| Mazda RX4 Wag     | 21.0 | 6   | 160.0 | 110 | 3.90 | 2.875 | 17.02 | 0  |
| Datsun 710        | 22.8 | 4   | 108.0 | 93  | 3.85 | 2.320 | 18.61 | 1  |
| Hornet 4 Drive    | 21.4 | 6   | 258.0 | 110 | 3.08 | 3.215 | 19.44 | 1  |
| Hornet Sportabout | 18.7 | 8   | 360.0 | 175 | 3.15 | 3.440 | 17.02 | 0  |
| Valiant           | 18.1 | 6   | 225.0 | 105 | 2.76 | 3.460 | 20.22 | 1  |
| Duster 360        | 14.3 | 8   | 360.0 | 245 | 3.21 | 3.570 | 15.84 | 0  |
| Merc 240D         | 24.4 | 4   | 146.7 | 62  | 3.69 | 3.190 | 20.00 | 1  |
| Merc 230          | 22.8 | 4   | 140.8 | 95  | 3.92 | 3.150 | 22.90 | 1  |
| Merc 280          | 19.2 | 6   | 167.6 | 123 | 3.92 | 3.440 | 18.30 | 1  |

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# Other elements

**Figures**

**Figure with text width**

# Figure with text height



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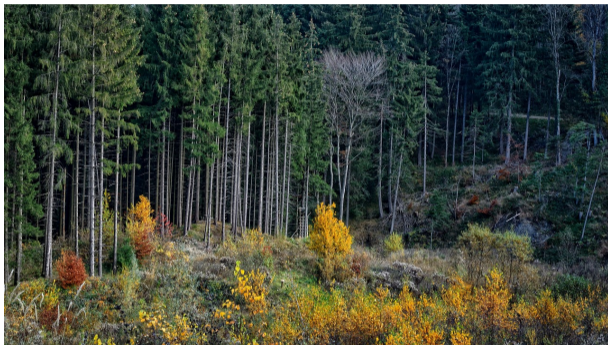
# Figure with caption



Figure: Picture of a forest, half text width

# Other elements

**Mathematical formulas**

## In-line formulas

In-line formulas are intermixed with normal text, e.g. $P(y < Y|\theta) = \alpha$. This works best with simple formulas. Taller formulas will be reformatted to match the line height of the text, e.g. $\bar{X} = \sum_{i=1}^{N} X_i$. Here, $i = 1$ and $N$ are placed besides $\sum$ instead of below and above. That trick doesn't hold with all formulas, e.g. fractions $\frac{X}{Y}$. In such case the font size is shrunk. Really tall formulas like $\frac{\sum_{i=1}^{N} X_i}{\frac{\sum_{j=1}^{N} Y_j}{N}}$ will require an increased interline distance. Stand-alone formulas are therefore advisable.

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## Stand-alone formulas

$$P(y < Y|\theta) = \alpha$$

$$\bar{X} = \sum_{i=1}^{N} X_i$$

$$\frac{X}{Y}$$

$$\frac{\sum_{i=1}^{N} X_i}{\frac{\sum_{j=1}^{N} Y_i}{N}}$$

## Numbered formulas

$$\bar{X} = \sum_{i=1}^{N} X_i \tag{1}$$

$$\frac{X}{Y} \tag{2}$$

$$\frac{\sum_{i=1}^{N} X_i}{\frac{\sum_{j=1}^{N} Y_j}{N}} \tag{3}$$

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# Other elements

**Citations**

## In-line styles

- ▶ author (year)
  - ▶ Onkelinx *et al.* (2014b)
- ▶ (author, year)
  - ▶ (Onkelinx *et al.*, 2014b)
- ▶ (prefix author, year suffix)
  - ▶ (see Onkelinx *et al.*, 2014b, chap. 1)
- ▶ (multiple citations to the same authors)
  - ▶ (Onkelinx *et al.*, 2014a, 2014b)
- ▶ (multiple citations to different authors)
  - ▶ (Agresti, 2002; Onkelinx *et al.*, 2014b)

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## Types of references

book (Agresti, 2002; Banerjee *et al.*, 2003; Bolker, 2008; Diggle & Ribeiro, 2007; Franklin, 2009; Kish, 1965; Zuur *et al.*, 2009)

chapter (Anselin *et al.*, 2014; Degraer *et al.*, 2013; Onkelinx *et al.*, 2014b)

proceedings (Onkelinx *et al.*, 2012, 2014a)

articles (Amano, 2012; Vander Mijnsbrugge & Onkelinx, 2005; Wickham, 2007; Yli-Viikari *et al.*, 2007)

thesis (Onkelinx, 2009)

software (R Core Team, 2013)

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# R based output

# R based output

**Code**

# Chunks + output I

```r
# logical
c(TRUE, FALSE)
```

```
## [1]  TRUE FALSE
```

```r
# integer
0:1
```

```
## [1] 0 1
```

```r
# numeric
c(0.0, 1.1)
```

```
## [1] 0.0 1.1
```

```r
# scientific
c(1e-10, 1e10)
```

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```
## [1] 1e-10 1e+10
```

```
# character
c("monday", "tuesday", "wednesday")
```

```
## [1] "monday"    "tuesday"    "wednesday"
```

```
# factor
factor(c("monday", "tuesday", "wednesday"))
```

```
## [1] monday    tuesday    wednesday
## Levels: monday tuesday wednesday
```

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## Chunks + output III

```
# function
my_fun <- function(x){
  cat("my function is", x)
}
# data.frame
state <- data.frame(
  region = state.region,
  Division = state.division,
  state.x77
)
# function
my_fun("cool")
```

```
## my function is cool
```

```
# messages
message("this is a message")
```

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## Chunks + output IV

```
## this is a message
```

```
warning("this is a warning")
```

```
## Warning: this is a warning
```

```
stop("this is an error")
```

```
## Error in eval(expr, envir, enclos): this is an error
```

```
# programma flow
if (is.data.frame(state)) {
  summary(state)
} else {
  stop("state is not a data.frame")
}
```

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## Chunks + output V

```
##            region                  Division      Population          Income
## Northeast    : 9  South Atlantic    : 8  Min.   :  365   Min.   :3098
## South        :16  Mountain          : 8  1st Qu.: 1080   1st Qu.:3993
## North Central:12  West North Central: 7  Median : 2838   Median :4519
## West         :13  New England       : 6  Mean   : 4246   Mean   :4436
##                   East North Central: 5  3rd Qu.: 4968   3rd Qu.:4814
##                   Pacific           : 5  Max.   :21198   Max.   :6315
##                   (Other)           :11
##    Illiteracy        Life.Exp        Murder          HS.Grad
## Min.   :0.500   Min.   :67.96   Min.   : 1.400   Min.   :37.80
## 1st Qu.:0.625   1st Qu.:70.12   1st Qu.: 4.350   1st Qu.:48.05
## Median :0.950   Median :70.67   Median : 6.850   Median :53.25
## Mean   :1.170   Mean   :70.88   Mean   : 7.378   Mean   :53.11
## 3rd Qu.:1.575   3rd Qu.:71.89   3rd Qu.:10.675   3rd Qu.:59.15
## Max.   :2.800   Max.   :73.60   Max.   :15.100   Max.   :67.30
##
##     Frost            Area
## Min.   :  0.00  Min.   :  1049
## 1st Qu.: 66.25  1st Qu.: 36985
```

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## Chunks + output VI

```
## Median :114.50   Median : 54277
## Mean   :104.46   Mean   : 70736
## 3rd Qu.:139.75   3rd Qu.: 81162
## Max.   :188.00   Max.   :566432
##
```

```
for (i in 1:5) {
  cat("i =", i, "\n")
}
```

```
## i = 1
## i = 2
## i = 3
## i = 4
## i = 5
```

```
# number of characters
#       10        20        30        40        50        60        70        80        90       100
#2345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567
```

**Using values calculated by R in plain text**

Mixing R output and text is straightforward. E.g $1 + 1 = 2$. Just make sure that you can use a single and simple command. Precalculate the output in case you need more elaborate calculations. E.g the life expectancy in the USA is 70.9 (68.2; 72.9) years.

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R based output

Figures

# Figure with default colour

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# Figure with discrete colours
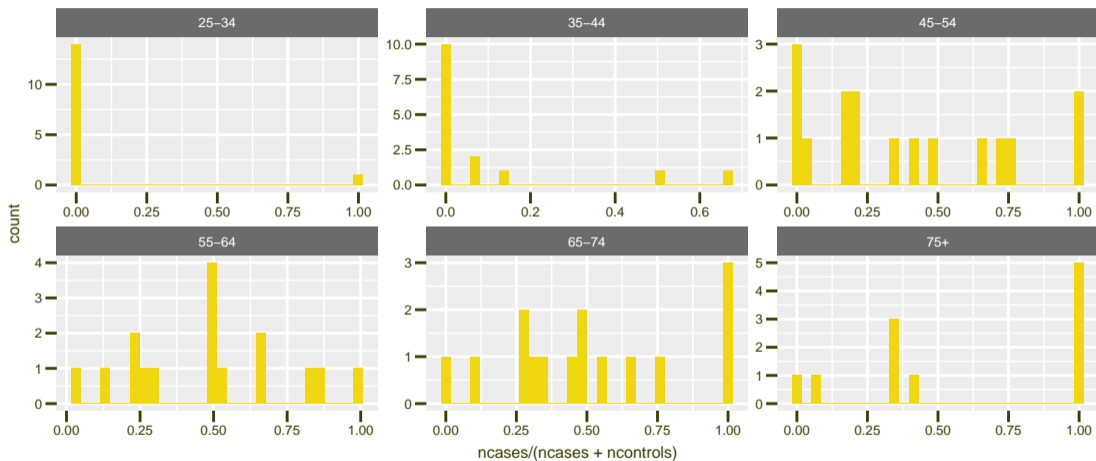
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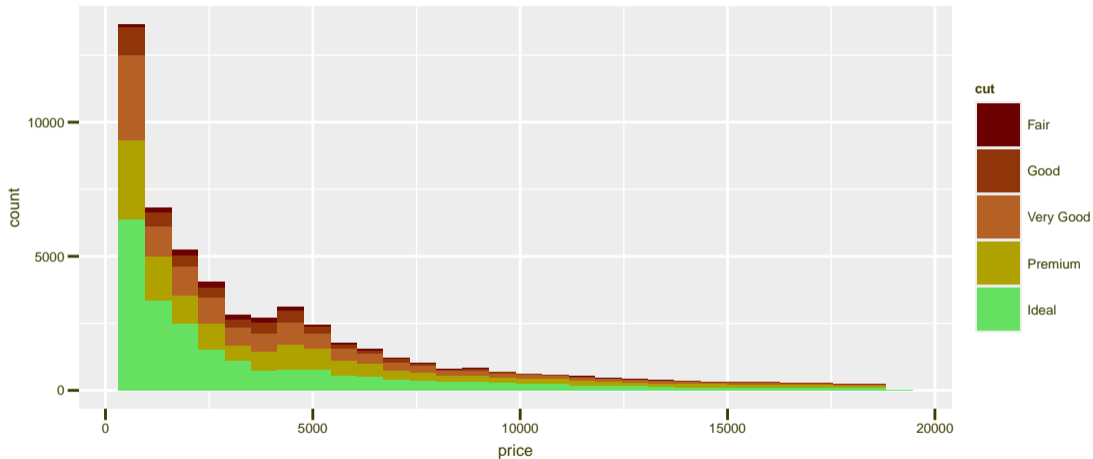
# Figure with discrete colours

## `geom_smooth()` using formula 'y ~ x'

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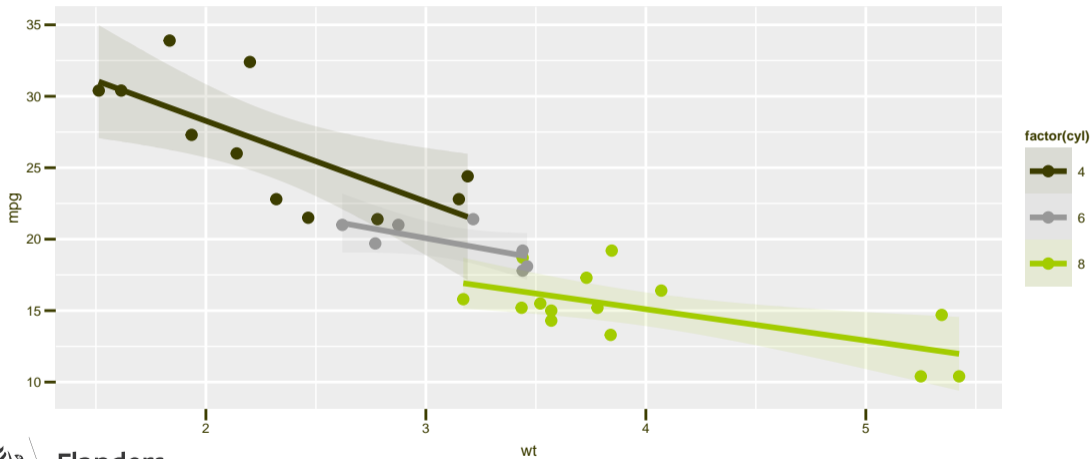
# Figure with single colour gradient
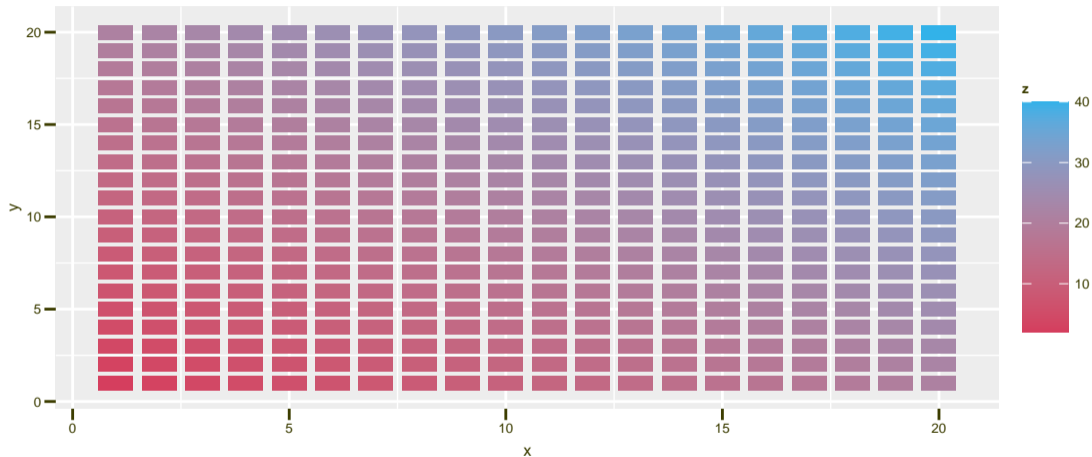
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# Figure with colour gradient over a central colour
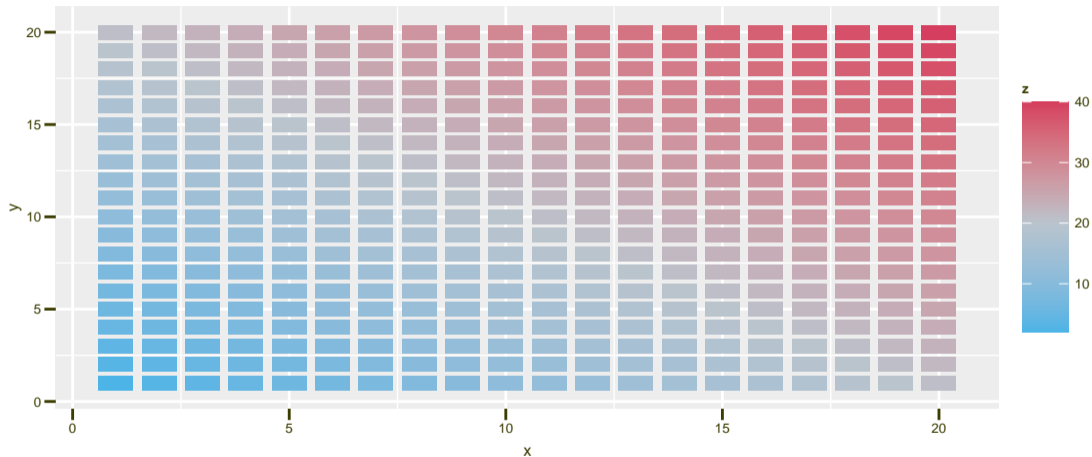
**Flanders**
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# Default order of discrete colours
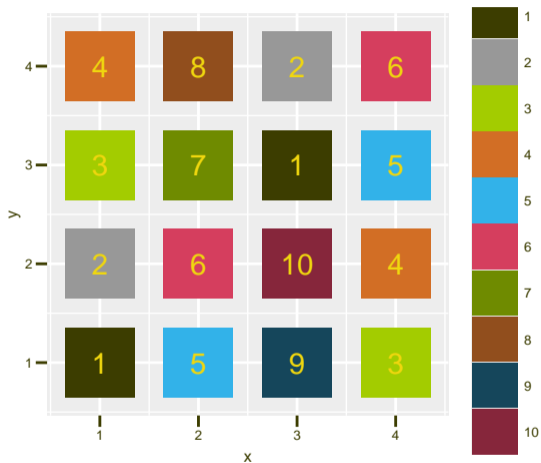
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# R based output

**Tables**

## Default kable()

|        | X1    | X2    | A                                              |
|--------|-------|-------|------------------------------------------------|
| rij 1  | -0.86 | -1.63 | jkccj vxtee bva qq qmveltg                     |
| rij 2  | -0.25 | -1.67 | ndlmkxq irqik                                  |
| rij 3  | -0.10 | -0.27 | llr empw xxi                                    |
| rij 4  | 0.34  | 0.65  | pmpd unfovt bjjau vzeeyxb                       |
| rij 5  | -0.02 | -0.35 | qmm ipu                                         |
| rij 6  | 2.10  | -0.21 | ocpvldsex kegll dehv wjek ypsjlyu zpkyfx vzii  |
| rij 7  | -1.05 | 1.09  | zj mwp ul                                       |
| rij 8  | 0.75  | 1.23  | sumcr vu                                         |
| rij 9  | 0.28  | -0.06 | nxrk wgocx fphnfe wxmg                          |
| rij 10 | 0.11  | -0.08 | ljm tgjdgce                                     |
| rij 11 | -1.56 | -1.93 | nmfxde yoe y wd dbokbjyjs txng                 |
| rij 12 | 1.21  | -0.33 | vc jlmhypx fc hellhckiv zeon vsya mt           |
| rij 13 | -0.47 | -1.13 | dhh vxxouxrolr ohbi icvc mu                    |
| rij 14 | 0.18  | -0.07 | uq                                              |
| rij 15 | -0.11 | 1.75  | swoqg gq                                         |

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## Booktabs kable()

|        | X1    | X2    | A                                     |
|--------|-------|-------|---------------------------------------|
| rij 1  | -0.41 | 0.56  | aypthpic agn rjszh lwpqz              |
| rij 2  | -1.14 | 0.45  | muwa di zywa                          |
| rij 3  | 0.90  | 0.58  | ihz                                   |
| rij 4  | -0.64 | -0.05 | knqn ukw sdu je                       |
| rij 5  | -0.84 | -0.96 | uc lteel vo zcb dtnbwv                |
| rij 6  | 0.82  | -0.44 | fynvv papuko oc ac xemw qvklf         |
| rij 7  | -1.33 | 0.89  | nwv tmzo rrv lhqw                     |
| rij 8  | 0.39  | 0.86  | tn ilzkiqcw lebc                      |
| rij 9  | -0.19 | -1.04 | evtvd fxolmv jfzl nu                  |
| rij 10 | 1.82  | 0.91  | kyzuh wnx azoc qrgoij foukdg m        |
| rij 11 | -0.45 | 1.22  | qwpq                                  |
| rij 12 | 0.09  | 0.56  | dc vjmjakm ydtes                      |
| rij 13 | 0.35  | -0.79 | xnqj ne qkakpn blbuufuyv egljxd       |
| rij 14 | -1.07 | 0.24  | unki b fzxgs waapzz bush              |
| rij 15 | -1.32 | -0.66 | surcmzwwd ldf q nvdehmg jixby j lrmp  |

**longtable kable()**

|        | X1    | X2    | A                          |
|--------|-------|-------|----------------------------|
| rij 1  | 0.58  | 0.47  | xickd zpf n                |
| rij 2  | -0.05 | -1.59 | xqi qisaf vvbvvrn sxfmte   |
| rij 3  | -1.19 | 0.26  | jx xzf fom                 |
| rij 4  | -2.57 | 0.23  | wf lzh e                   |
| rij 5  | -0.67 | -0.83 | spm qoev zf                |
| rij 6  | -0.38 | 0.33  | dc emwbqm yzo iroan fsnkbq |
| rij 7  | -0.72 | 0.97  |                            |
| rij 8  | -0.46 | 1.14  | p itqy xz gpawsxme fta     |
| rij 9  | -1.07 | -0.14 | qikg xgedno r kyzvotz      |
| rij 10 | -1.69 | -1.67 |                            |
| rij 11 | 1.38  | -0.40 | pl njhg ya ht l cifcb y    |
| rij 12 | -1.46 | -1.18 | mfbk                       |
| rij 13 | -0.56 | 1.32  | todx inua rqvgx mq sik lqb |
| rij 14 | 1.41  | 0.35  | pmanznrn vamko             |
| rij 15 | 0.54  | -0.44 | jegyt njdkm                |

## Markdown kable()

|        | X1    | X2    | A                                           |
|--------|-------|-------|---------------------------------------------|
| rij 1  | 0.75  | -0.17 | wwtzncpoc riuf j                            |
| rij 2  | -0.82 | 0.40  | fmzlv dq dic rpwwgixqlg ar                  |
| rij 3  | -0.28 | 1.40  | gqyba hwqi tx suqnx                         |
| rij 4  | -0.96 | 0.20  | nly cpklmk czxldi mih oso hmyjas ijgdszv vlt |
| rij 5  | 0.45  | -0.09 | tuf agwwcskeql pojwno qfkisw wyzyp          |
| rij 6  | 0.07  | 0.18  | te sjutcyw ct mgiz xanoq                    |
| rij 7  | 0.31  | 0.98  | oqrg nmdnx                                  |
| rij 8  | -0.38 | 0.47  | kzmzvhs iox pkxtqy dgx bwv hsks             |
| rij 9  | 0.72  | -0.34 | jewvgx pujzh mngftsl tbk pawt bti           |
| rij 10 | 0.85  | 0.37  | fuyjzub pcbva qb hze drox                   |
| rij 11 | 0.73  | 0.43  | q qyamv lay m                               |
| rij 12 | 0.63  | -0.74 | pq iqjyk citwt cmujtl                       |
| rij 13 | 1.44  | 0.91  | deun qpd rf xlh tku                         |
| rij 14 | 0.61  | -1.47 | mqoh sy wz znhk                             |
| rij 15 | -2.15 | 0.79  | dup tduq                                    |

## Pandoc kable()

|        | X1    | X2    | A                                             |
|--------|-------|-------|-----------------------------------------------|
| rij 1  | -0.35 | -0.18 | orwm mcb zricb zxwdsvnj pmarep                |
| rij 2  | -1.73 | -1.07 | j qwq                                         |
| rij 3  | -1.50 | 1.69  | ef juj qolyat ciefk                           |
| rij 4  | -0.48 | 1.50  | l xbzui kla tbhkd                             |
| rij 5  | -0.14 | -1.16 | lnrz k dnqyx                                  |
| rij 6  | -0.05 | 0.51  |                                               |
| rij 7  | 0.95  | -0.14 | koas n kvncve kduhsv kst f uez                |
| rij 8  | -0.17 | 0.35  | cx ry vzbb nqsq muvs                          |
| rij 9  | 1.18  | 0.24  | st fg pfpz bzta                               |
| rij 10 | 0.82  | -1.84 | hyof oxnnr hqn                                |
| rij 11 | -0.40 | -0.76 | dfzuq clsr p co                               |
| rij 12 | 2.03  | -1.18 |                                               |
| rij 13 | -0.59 | 0.26  | dlhsuk zdftpphtv sx ygo blfllkgx gewp ugejbg  |
| rij 14 | -0.84 | 0.24  | xaes ahsb                                     |
| rij 15 | -1.22 | 0.38  | lsl                                           |

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Agresti A. (2002). Categorical Data Analysis. John Wiley and Sons, Hoboken, New Jersey.