P1-1: Install and setup

1.1 Important source of information

- **Pragma site:**

  http://www.pragma-ade.com/show-man-1.htm

- **ConTEXt wiki:**

  http://wiki.contextgarden.net/Main_Page

- **TEXshow:**

  http://texshow.contextgarden.net/

– **Module-documentation:**

http://groups.foundry.supelec.fr/modules/

1.2 Installation

- **Installation of Context Minimals on different platforms**
  - Windows
  - Mac
  - Linux/FreeBSD
- **Linux/Mac/FreeBSD:**

```
mkdir context
cd context

rsync -ptv rsync://contextgarden.net/minimals/setup/first-setup.sh
```

```
./first-setup.sh
```

The script `first-setup` will organize everything for you concerning the installation!

So it will run:

- **MKII & pdfTeX or XeTeX**
  - mktexlsr
  - texexec –make –all: the format files for ConTeXt, MetaFun, mptopdf
- **MKIV & luaTeX**
  - context –generate
  - texexec –lua –make –all: the format files for ConTeXt, MetaFun, mptopdf
- **Windows**

  There are two options to install the ConTeXt Minimals on a Windows machine:

- **Fetch the installer from Context-wiki**

  In this case you should not have MikTeX or TeXlive installed. Both installations will interfere with ConTeXt Minimals installation!
- **Use commandline tools**
  - md . . . context
  - cd . . . context
  - Download context-setup-mswin.zip
  - unzip it
  - Run `first-setup.bat`

- **Installation of TeXlive**

  TeXlive 2008 will come with a new installer for all platforms.

  Run this installer in such a way, that you just get "everything". Disadvantage: you get all which is needed for LaTeX too.

1.3 Setting up the environment variables

Before being able to use ConTEXt you need to run `setuptex` to initialize the environment.

It is a good idea to simplify this procedure:

- **Linux/Mac/FreeBSD:**

  Edit the `~/.profile` and add the following line (adapted to your installation):

  ```
  ~/context/tex/setuptex ~/context/tex
  ```

  This guarantees, that the environment variables needed by TEX will be setup whenever you open a Terminal.

– Windows

Create a file `startcontext.bat` (use any appropriate name) somewhere in PATH and put this line into it (adapt the line to your installation)

```
C:\Programs\context\tex\setuptex.bat C:\Programs\context\tex
```

Then, you can type `startcontext` into CMD whenever you want to use ConTEXt Minimals instead of MikTEX or TEXlive.

1.4 Testing the new installation

Make file `hello.tex`

```
\starttext
  Hello World!
\stoptext
```

Run `context hello`	→	By default luaTEX is run.
Run `texexec --lua hello`	→	luaTEX is invoked.
Run `texexec --xtx hello`	→	XETEX is invoked.
Run `texexec hello`	→	pdfTEX is run.

1.5 First Document

To write a document use an editor.

Editors providing integration with ConTEXt are:

- Scite for Windows and Linux
- Emacs for Linux
- Textmate for Mac
- TeXshop for Mac

- and many more!

Editors supporting ConTEXt provide generally syntax-highlighting, compilation facilities, viewing facilities.

- Regime `\enableregime[utf]`, `\enableregime[windows]` ... This line is only needed for MKII. In MKIV/luaTEX utf-8 is enabled by default.
- Language `\mainlanguage[en]`, `\mainlanguage[de]` ... This line makes sure that the language specific issues are used: hyphenation, quotes etc.
- `\starttext` ... `\stoptext`

1.6 Compiling first document

– **MKII (pdfTeX):**

```
texexec myfirstdocument
```

– **MKII (XeTeX):**

```
texexec --xtx myfirstdocument
```

– **MKIV (luaTeX):**

```
context myfirstdocument or texexec --lua myfirstdocument
```

1.7 Viewing first document

- Acrobat Reader
- Preview on the Mac
- xpdf/evince on Linux
- . . .

1.8 Default values

- Paper is A_4 portrait
- Margins 30 mm
- Backspace 25 mm
- Topspace 25 mm
- Header 20 mm
- Footer 20 mm
- . . .

If you want to know the actual values issue `\showlayout` in your document.

1.9 Where does Context look for files?

- Current folder
- Folders above the currentfolder
- Figure path can be setup like:

```
\setupexternalfigures[directory=~/Documents/TEXdata/Context-Bohinj]
```

1.10 Basic concepts

— Load a file

`\input` filename

Examples: `knuth.tex`, `ward.tex` ...

Have a look at `.../tex/texmf-context/tex/context/sample`

— Buffers

```
\startbuffer[Allkind]
\midaligned{\color[blue]{Here comes all kind of information}}
\stopbuffer
```

Call the created buffer with `\getbuffer[Allkind]`

Here comes all kind of information

– Framed text

Within ConTEXt an important environment is `\framed` and `\framedtext`. It is a good idea to get familiar with the possibilities hereof, because ConTEXt relies heavily on this mechanism.

```
\framed [..,..=..,..] {..}
          OPTIONAL
```

1 *inherits from* `\setupframed`

2 TEXT

\start*FRAMEDTEXT* [.[1].] [..,.[2]=.,..] ... \stop*FRAMEDTEXT*

OPTIONAL OPTIONAL

1 left right middle none

2 *inherits from* \setupframedtexts

```
\framed[width=.5\textwidth,offset=15pt,frame=on]{Welcome to Bohinj!}
```

Welcome to Bohinj!

– **Files are simply textfiles with the extension tex.**

P2-1: Document design/ workflow

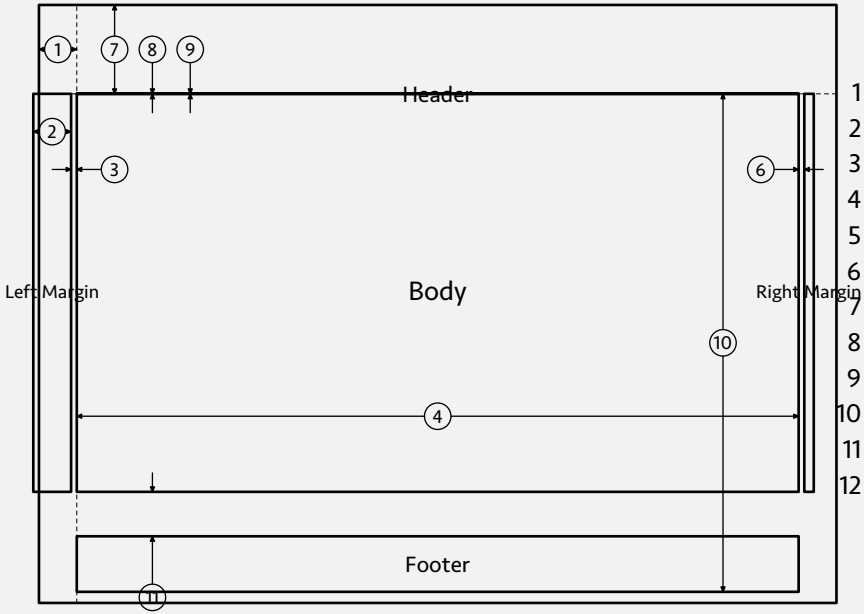
2.1 Design on Paper

- Visualize what you want (this is the hardest part)

For example, the following is IEEE conference specification

- Paper Size: 8.5 inches by 11.0 inches (21.59cm by 27.94cm)
- Top Margin: 0.75 inch (1.905 cm)
- Bottom Margin: 1.0 inch (2.54 cm)
- Left Margin: 0.75 inch (1.905 cm)
- Right Margin: 0.75 inch (1.905 cm)
- Columns: Two (2) columns, each 3.33 inches (8.46 cm) wide
- Column Gutter: 0.34 inches (0.84 cm) column gutter

The layout of this document is:



1 backspace 28.5 pt
2 leftmargin 28.5 pt
3 leftmargindistance 4.3 pt
4 width 543.1 pt
5 rightmargin 7.1 pt
6 rightmargindistance 4.3 pt
7 topspace 66.9 pt
8 header 0.0 pt
9 headerdistance 0.0 pt
10 height 374.7 pt
11 footerdistance 33.4 pt
12 footer 41.8 pt
paperwidth 600.0 pt
paperheight 450.0 pt

```
\setuplayout [..,.*=.,..]

*   width                =  DIMENSION  fit  middle
    height               =  DIMENSION  fit  middle
    backspace            =  DIMENSION
    topspace             =  DIMENSION
    margin               =  DIMENSION
    leftmargin           =  DIMENSION
    rightmargin          =  DIMENSION
    header               =  DIMENSION
    footer               =  DIMENSION
    top                  =  DIMENSION
    bottom               =  DIMENSION
    leftedge             =  DIMENSION
    rightedge            =  DIMENSION
    headerdistance       =  DIMENSION
    footerdistance       =  DIMENSION
    topdistance          =  DIMENSION
    bottomdistance       =  DIMENSION
    leftmargindistance   =  DIMENSION
    rightmargindistance  =  DIMENSION
    leftedgedistance     =  DIMENSION
    rightedgedistance    =  DIMENSION
    horoffset            =  DIMENSION
    veroffset            =  DIMENSION
    style                =  normal  bold  slanted  boldslanted  type  cap  small...  COMMAND
    color                =  IDENTIFIER
    marking              =  on  off  color  screen  TEXT
    location             =  left  middle  right  bottom  top  singlesided  doublesided
    scale                =  DIMENSION
    nx                   =  NUMBER
    ny                   =  NUMBER
    dx                   =  DIMENSION
    dy                   =  DIMENSION
    lines                =  NUMBER
    columns              =  NUMBER
    columndistance       =  DIMENSION
    grid                 =  yes  no
    bottomspace          =  DIMENSION
    cutspace             =  DIMENSION
    textdistance         =  DIMENSION
    textwidth            =  NUMBER
    textmargin           =  DIMENSION
    clipoffset           =  DIMENSION
    page                 =  IDENTIFIER
    paper                =  IDENTIFIER
```

Back to IEEE layout

```
\setuplayout[
                 width=middle,
                height=middle,
              location=middle,
              topspace=.75in,
           bottomspace=0.75in,
         bottomdistance=.25in,
                bottom=.25in,
            backspace=0.75in,
              cutspace=0.75in,
           leftmargin=0in,
          rightmargin=0in,
    leftmargindistance=0in,
   rightmargindistance=0in,
               header=0in,
               footer=0in,
```

```
   headerdistace=0in,
  footerdistance=.15in,
]
```

2.2 Visualizing layout

- `\showlayout` command
- `\ShowLayout` command from Patrick Gundlach's `layout` module

2.3 Setting the paper size

```
\definepapersize [.1.] [..,.2.,..]
```

1 IDENTIFIER

2
```
width  = DIMENSION
height = DIMENSION
offset = DIMENSION
scale  = NUMBER
```

\setuppapersize [...,...][1] [...,...][2]

OPTIONAL

1 A3 A4 A5 A6 letter ... CD IDENTIFIER landscape mirrored rotated 90 180 270

2 negative *inherits from* \setuppapersize

2.4 Makeup

A makeup is a separate page, like a title page or colofon. There is one standard makeup page, but you can define more if needed.

```
\startstandardmakeup
  My Fancy Title
\stopstandardmakeup
```

The associated commands are:

\definemakeup [.$\overset{1}{.}$.] [..,..$\overset{2}{=}$.,..]

1 IDENTIFIER

2 *inherits from* \setupmakeup

```
\setupmakeup [.[1].] [..,.[2]=.,..]

1   IDENTIFIER

2   width        =  DIMENSION
    height       =  DIMENSION
    voffset      =  DIMENSION
    hoffset      =  DIMENSION
    page         =  left  yes  right
    commands     =  COMMAND
    doublesided  =  yes  no  empty
    headerstate  =  normal  stop  start  empty  none  nomarking
    footerstate  =  normal  stop  start  empty  none  nomarking
    textstate    =  normal  stop  start  empty  none  nomarking
    topstate     =  stop  start
    bottomstate  =  stop  start
    pagestate    =  stop  start
    color        =  IDENTIFIER
```

– Standard is vertically centered. (top=`\vss`, bottom=`\vss`)

2.5 Framed

\defineframed [.$\overset{1}{.}$.] [..,.$\overset{2}{=}$.,..]
OPTIONAL

1 IDENTIFIER

2 *inherits from* \setupframedtexts

\defineframedtext [.$\overset{1}{.}$.] [..,.$\overset{2}{=}$.,..]
OPTIONAL

1 IDENTIFIER

2 *inherits from* \setupframedtexts

```
\setupframed [.1.] [..,.2=.,..]
             OPTIONAL

1   IDENTIFIER

2   height           = fit  broad  DIMENSION
    width            = fit  broad  fixed  local  DIMENSION
    autowidth        = yes  no  force
    offset           = none  overlay  default  DIMENSION
    location         = depth  hanging  high  lohi  low  top  middle  bottom  keep
    option           = none  empty
    strut            = yes  no  global  local
    align            = inner  outer  left  right  flushleft  flushright  middle  center
                       normal  no  yes
    bottom           = COMMAND
    top              = COMMAND
    frame            = on  off  none  overlay
    topframe         = on  off
    bottomframe      = on  off
    leftframe        = on  off
    rightframe       = on  off
    frameoffset      = DIMENSION
    framedepth       = DIMENSION
    framecorner      = round  rectangular
    frameradius      = DIMENSION
    framecolor       = IDENTIFIER
    background       = screen  color  none  foreground  IDENTIFIER
    backgroundscreen = NUMBER
    backgroundcolor  = IDENTIFIER
    backgroundoffset = frame  DIMENSION
    backgrounddepth  = DIMENSION
    backgroundcorner = round  rectangular
    backgroundradius = DIMENSION
    depth            = DIMENSION
    corner           = round  rectangular
    radius           = DIMENSION
    empty            = yes  no
    foregroundcolor  = IDENTIFIER
    foregroundstyle  = normal  bold  slanted  boldslanted  type  cap  small...  COMMAND
    rulethickness    = DIMENSION
```

```
\setupframedtexts [.1.] [..,.2=.,..]
                   OPTIONAL

1   IDENTIFIER

2   bodyfont         = 5pt  ...  12pt  small  big
    style            = normal  bold  slanted  boldslanted  type  cap  small...  COMMAND
    left             = COMMAND
    right            = COMMAND
    before           = COMMAND
    after            = COMMAND
    inner            = COMMAND
    linecorrection   = on  off
    depthcorrection  = on  off
    margin           = standard  yes  no
    location         = left  right  middle  none
    indenting        = never  none  not  no  yes  always  first  next  small  medium  big
                       normal  odd  even  DIMENSION
    inherits from \setupframed
```

- Frame does not break across pages.
- Use textbackgrounds instead: (see the details manual)

P2-2: Fonts and colors

3.1 Colors

Introduction

The support of colors has evolved during time. In this part of the tutorial we look at the color support as it is used in MKII. MKIV supports this still. However MKIV has its own color-mechanism (the key is attributes).

Supported color-schemes

- RGB
- CMYK
- Grayscale
- Transparent colors

- **Basic colors like red, blue,yellow, green are predefined**
- **Defining a custom color**
  - RGB:

    ```
    \definecolor[mygreen][r=.1,b=.0,g=.7]
    ```

  - CMYK:

    ```
    \definecolor[myblue][c=.9,m=.5,y=0,k=.5]
    ```

- Grayscale:

```
\definecolor[mygray][s=.625]
```

- **Transparant: all 12 in PDF described methods are supported**

```
\definecolor [tred] [r=1,t=.5,a=1]
\definecolor [tblue]  [c=1,k=.2,t=.5,a=1]
\definecolor [tc]     [s=.8,t=.3,a=11]
```

- **Starting use of colors:** `\setupcolors[state=start]`

– Examples

```
{\color[mygreen]{Green text in RGB color scheme\ }{\quotation{\mygreen
Still green}}}
{\color[myblue]{Blue text in CMYK color scheme\ }{\quotation{\myblue
Still blue}}}
{\color[mygray]{Gray text in gray-scale\ }{\quotation{\mygray Still
gray}}}
{\color[tred]{Transparant green text\ }{\quotation{\tred Still
transparant green}}}
{\color[tblue]{Transparant blue text\ }{\quotation{\tblue Still
transparant red}}}
{\color[tc]{Transparant gray text\ }{\quotation{\tc Still
transparant gray}}}
```

Green text in RGB color scheme “Still green”

Blue text in CMYK color scheme “Still blue”

Gray text in gray-scale “Still gray”

Transparant green text “Still transparant green”

Transparant blue text “Still transparant red”

Transparant gray text “Still transparant gray”

– Further reading

MetaFun manual. Hans Hagen, Ton Otten. 2002. (metafun-p.pdf)

RGB-CMYK-HSB. Hans Hagen. 2000. (rgb-cmyk.pdf)

ConTEXt MKII – MKIV.Hans Hagen. 2008. (mk.pdf)

3.2 Fonts

- **Systemfonts**
  - **OTF**
    - Latin-modern: this is the default font and the fallback font.
    - Tex-Gyre: Termes, Pagella, Bonum, Schola, Adventor, Heros, Cursor, Chorus

      TeX-Gyre is font-project: the aim is to develop OTF-fonts from the already available free fonts. The project will also cover math for those fonts.

Original	Free TEX variant	TEX-Gyre
Times Roman	Nimbus Roman No. 9 L	Termes
Palatino	URW Palatino L	Pagella
Bookman	URW Bookman L	Bonum
Schoolbook	URW Century Schoolbook	Schola
ITC Avant Garde Gothic	URW Gothic	Adventor
Helvetica	Nimbus Sans	Heros
Courier	Nimbus Mono L	Cursor
ITC Zapf Chancery	URW Chancery L	Chorus

- Antykwa Torunska
- Iwona
- Kurier

- **Type1**
  - Latin modern: this is the default font and the fallback font.
  - URW-times, URW-Palatino, URW-Helvetica see above.
  - Antykwa Torunska

- Iwona
- Kurier
- txfonts, pxfonts (Math)
- Utopia (Adobe), Fourier (Math) currently not in minimals
- Antykwa Poltawskiego currently not in minimals

Using system fonts

Type 1

```
\usetypescript[times][texnansi]
\setupbodyfont[times,rm,12pt]
```

OTF

```
\usetypescript[times]
\switchtobodyfont[times,rm,16pt]
```

Here a text typeset in /Applications/lua/tex/texmf/fonts/opentype/public/tex-gyre/texgyretermes-regul at 16.0pt.

– OTF features

OTF fonts come with features e.g. ligatures depending on the language, different styles of figures like lining figures, table figures, oldstyle figures, alternative glyph-forms, stylistic sets . . .

Hello World! ABC ABCE 123 1 2 3 4 5 6 7 8 9

0123.4567	0123.4567
0846.9321	0846.9321
2009.3456	2009.3456

- **Using private fonts**
  - **Type 1 fonts (MKII and MKIV)**
    - Install fonts with TEXfont
    - map-file
    - tfm and vf files
    - build typescripts
  - **Using a private type 1 font in a document**
    - Load mapfile: `\loadmapfile[type-canadatype-pendulum]`
    - Use typescriptfile: `\usetypescriptfile[type-canadatype-pendulum]`

- Use typescript: `\usetypescript[CT-Pendulum][texnansi]`
- Setup bodyfont: `\setupbodyfont[Pendulum,24pt]`

Welcome luatex, happy texing!

- **OTF for MKIV and XeTeX only**

  Copy the new font to the appropriate location.

- **Setup the font for use in ConTeXt**
  - Build typescripts for the new font: `type-seravek.tex`
  - Define the typefaces to be used with this font.
  - Put this typescript file into `.../tex/texmf-context/tex/context/user`
  - Run `context --generate` or `luatools --generate`

- **Use the font in ConTEXt**
  - `\usetypescriptfile[type-seravek]`
  - `\usetypescript[Seravek]`
  - `\setupbodyfont[Seravek,12pt]`

Welcome luaTEX, happy TEXing!

Features

Which font-features does my font have?

You can run:

```
mtxrun  --script font --info --list "seravek*.*"
```

```
MtxRun | fontname: seravek
MtxRun | fullname: Seravek
MtxRun | filename: Seravek-Regular.otf
MtxRun |
MtxRun | feature: c2sc, script: latn, language: dflt
MtxRun | feature: case, script: latn, language: dflt
MtxRun | feature: dnom, script: latn, language: dflt
MtxRun | feature: frac, script: latn, language: dflt
MtxRun | feature: kern, script: latn, language: dflt
MtxRun | feature: liga, script: latn, language: dflt
MtxRun | feature: lnum, script: latn, language: dflt
MtxRun | feature: locl, script: latn, language: mol rom
MtxRun | feature: numr, script: latn, language: dflt
MtxRun | feature: onum, script: latn, language: dflt
MtxRun | feature: ordn, script: latn, language: dflt
MtxRun | feature: ornm, script: latn, language: dflt
MtxRun | feature: pnum, script: latn, language: dflt
MtxRun | feature: salt, script: latn, language: dflt
MtxRun | feature: sinf, script: latn, language: dflt
MtxRun | feature: smcp, script: latn, language: dflt
MtxRun | feature: ss01, script: latn, language: dflt
MtxRun | feature: ss02, script: latn, language: dflt
MtxRun | feature: subs, script: latn, language: dflt
MtxRun | feature: sups, script: latn, language: dflt
MtxRun | feature: tnum, script: latn, language: dflt
MtxRun |
```

Seravek has several features: e.g. lining figures (default), table figures, oldstyle figures and olstyle-table figures:

In order to use these features define fontfeatures e.g.:

```
\definefontfeature[latin-tnum]     [default] [script=latn,tnum=yes]
\definefontfeature[latin-o-tnum]   [default] [script=latn,tnum=yes,onum=ye
\definefontfeature[latin-lnum]     [default] [script=latn,lnum=yes]
\definefontfeature[latin-oldstyle][oldstyle][script=latn]
```

Enable the font features when you need them:

```
\starttabulate[|le|l|]
\NC {\setfontfeature{latin-lnum}1234567890}     \NC Lining figures
\NC\NR
```

```
\NC {\setfontfeature{latin-oldstyle}1234567890} \NC Oldstyle lininig
figures \NC\NR
\NC {\setfontfeature{latin-tnum}1234567890}     \NC Table figures
\NC\NR
\NC {\setfontfeature{latin-o-tnum}1234567890}   \NC Oldstyle table
figures \NC\NR
\stoptabulate
```

1234567890 : Lining figures
1234567890 : Oldstyle lininig figures
1234567890 : Table figures
1234567890 : Oldstyle table figures

Further reading:

Fonts in ConTEXt. Hans Hagen. 2001. (mfonts.pdf)

MKII - MKIV ConTEXt. Hans Hagen. 2006. (mk.pdf);

My Way: A Beginner's Adventures with TEXFONT.

Adam Lindsay. 2003.(TeXFontExamined.pdf)

My Way: Installing Expert Fonts: Minion Pro.

Idris Samawi Hamid. 2005.(expertfonts.pdf)

ConTEXt wiki: http://wiki.contextgarden.net/Main_Page

P3-1:

Document Structure

4.1 Document structure
for small and medium sized documents

- **Predefined heads**
  - chapter/title
  - section/subject
  - subsection/subsubject
  - subsubsection/subsubsubject
- Heads can be configured by `\setuphead` and `\setupheads`
- New heads can be defined by `\definehead`

```
\setupheads [..,.*=.,..]

*   sectionnumber  =  yes  NUMBER  no
    alternative    =  normal  margin  middle  TEXT  paragraph
    separator      =  TEXT
    stopper        =  TEXT
    align          =  inner  outer  left  right  flushleft  flushright  middle
                      center  normal  no  yes
    aligntitle     =  yes  float  no
    tolerance      =  verystrict  strict  tolerant  verytolerant  stretch
    indentnext     =  yes  no
    command        =  \...#1#2
    margin         =  DIMENSION
```

\setuphead [...,[1],...] [..,.[2]=.,..]

1 SECTION

2 style = normal bold slanted boldslanted type cap small... COMMAND
textstyle = normal bold slanted boldslanted type cap small... COMMAND
numberstyle = normal bold slanted boldslanted type cap small... COMMAND
color = IDENTIFIER
textcolor = IDENTIFIER
numbercolor = IDENTIFIER
number = yes no
ownnumber = yes no
page = left right yes
continue = yes no
header = none empty high nomarking
text = none empty high nomarking
footer = none empty high nomarking
before = COMMAND
inbetween = COMMAND
after = COMMAND
alternative = normal inmargin middle TEXT
hang = none broad fit line NUMBER
command = \...*#1#2*
numbercommand = \...*#1*
textcommand = \...*#1*
deepnumbercommand = \...*#1*
deeptextcommand = \...*#1*
prefix = + - TEXT
placehead = yes no empty
incrementnumber = yes no LIST FILE
resetnumber = yes no
file = IDENTIFIER
expansion = yes no command
margintext = yes no
inherits from \setupheads

\definehead [.$\overset{1}{\cdot}$.] [.$\overset{2}{\cdot}$.]

1 IDENTIFIER

2 SECTION

\setuplabeltext [.$\overset{1}{\cdot}$.] [.$\overset{2}{=}$.]
OPTIONAL

1 nl fr en uk de es cz ..

2 IDENTIFIER = TEXT

4.2 Document structure for large documents

- **Section blocks**
  - `\startfrontmatter ... \stopfrontmatter`
  - `\startbodymatter ... \stopbodymatter`
  - `\startbackmatter ... \stopbackmatter`
  - `\startappendices ... \stopappendices`
- New section blocks can be defined using `\definesectionblock`
- Section blocks can be configured using `\setupsectionblock`

\definesectionblock [..[1]..] [..,..[2]=..,..]
OPTIONAL

1 *inherits from* \setupsectionblock

2 *inherits from* \setupsectionblock

\setupsectionblock [..[1]..] [..,..[2]=..,..]

1 IDENTIFIER

2 number = yes no
page = yes right
before = COMMAND
after = COMMAND

```
\definesectionblock [\v!frontpart] [\v!frontmatter] [\c!number=\v!no]
\definesectionblock [\v!bodypart]  [\v!bodymatter]  [\c!number=\v!yes]
```

```
\definesectionblock [\v!appendix]  [\v!appendices]  [\c!number=\v!yes]
\definesectionblock [\v!backpart]  [\v!backmatter]  [\c!number=\v!no]
```

For example, if we want the page numbering in the frontmatter to be roman, we can say

```
\setupsectionblock[frontpart]
                  [before={\setuppagenumbering[conversion=romannumerals]}]
```

4.3 Page headers and footers

– Page header and footer text can be set up using `\setupheadertexts` and `\setupfootertexts`.

– Page top and bottom (recall page layout) can be set up using `\setuptoptexts` and `\setupbottomtexts`.

`\setupheadertexts` `[.`$^{1}_{\cdot}$`.]` `[.`$^{2}_{\cdot}$`.]` `[.`$^{3}_{\cdot}$`.]`

OPTIONAL OPTIONAL OPTIONAL

1 text margin edge

2 TEXT SECTION date MARK pagenumber

3 TEXT SECTION date MARK pagenumber

\setupfootertexts [.^{1}.] [.^{2}.] [.^{3}.]
OPTIONAL OPTIONAL OPTIONAL

1 text margin edge

2 TEXT SECTION date MARK pagenumber

3 TEXT SECTION date MARK pagenumber

\setuptoptexts [.^{1}.] [.^{2}.] [.^{3}.]
OPTIONAL OPTIONAL OPTIONAL

1 text margin edge

2 TEXT SECTION date MARK pagenumber

3 TEXT SECTION date MARK pagenumber

```
\setupbottomtexts [.1.] [.2.] [.3.]
                  OPTIONAL OPTIONAL OPTIONAL

1   text  margin  edge

2   TEXT  SECTION  date  MARK  pagenumber

3   TEXT  SECTION  date  MARK  pagenumber
```

- `\setupheadertexts[...]` middle of text
- `\setupheadertexts[...][...]` left and right of text
- `\setupheadertexts[...][...][...][...]` right and left of odd and even page
- Page headers and footers can be configured using `\setupheader` and `\setupfooter`

```
\setupheader [..1..] [..,..2=..,..]
             OPTIONAL

1   TEXT  margin  edge

2   state       = normal  stop  start  empty  high  none  nomarking  IDENTIFIER
    strut       = yes  no
    style       = normal  bold  slanted  boldslanted  type  cap  small...  COMMAND
    leftstyle   = normal  bold  slanted  boldslanted  type  cap  small...  COMMAND
    rightstyle  = normal  bold  slanted  boldslanted  type  cap  small...  COMMAND
    leftwidth   = DIMENSION
    rightwidth  = DIMENSION
    before      = COMMAND
    after       = COMMAND
```

```
\setupfooter [.1.] [..,.2=.,..]
             OPTIONAL
```

1 *inherits from* \setupheader

2 *inherits from* \setupheader

– New header header and footer like elements can be defined using \definetext

```
\definetext [.1.] [.2.] [.3.] [.4.] [.5.]
                                OPTIONAL OPTIONAL
```

1 IDENTIFIER

2 header footer

3 TEXT

4 TEXT

5 TEXT

– This can be used, for example, to set different headers and footers on chapter's first page. For example, to hide the header and show the page number on the footer of each chapter page (like the handout mode of this document) use

```
\definetext [chapterfooter] [footer]  [pagenumber]
\setuphead  [chapter] [header=high, footer=chapterfooter]
```

4.4 Itemizations

– `\startitemize ... \stopitemize`

For example

1. This is an example of an itemized list
2. Each new list starts with a `\item`
3. The `\startitemize` takes optional arguments
4. Same arguments are taken by `\setupitemize`
5. `itemize` is a special kind of `itemgroup`

6. `itemgroups` can be defined and configured using `\defineitemgroup` and `\setupitemgroup`

7. See ConTEXt an excursion for usage details.

```
\setupitemgroup [.1.] [.2.] [...,3,...] [..,.4=.,..]
                      OPTIONAL   OPTIONAL       OPTIONAL
```

1 IDENTIFIER

2 NUMBER each

3 standard broad serried packed unpacked nowhite before after stopper joinedup atmargin inmargin autointro loose repeat SECTION paragraph intext random reverse

4
```
margin      = no standard DIMENSION
leftmargin  = no standard DIMENSION
rightmargin = no standard DIMENSION
width       = DIMENSION
distance    = DIMENSION
factor      = NUMBER
items       = NUMBER
start       = NUMBER
before      = COMMAND
inbetween   = COMMAND
after       = COMMAND
left        = TEXT
right       = TEXT
beforehead  = COMMAND
afterhead   = COMMAND
headstyle   = normal bold slanted boldslanted type cap small... COMMAND
marstyle    = normal bold slanted boldslanted type cap small... COMMAND
symstyle    = normal bold slanted boldslanted type cap small... COMMAND
stopper     = TEXT
n           = NUMBER
symbol      = NUMBER
align       = inner outer left right flushleft flushright middle center normal
              no yes
symalign    = left right flushleft flushright middle center
indentnext  = yes no
```

4.5 Descriptions and enumerations

- descriptions are for parts of documents that are less important than heads but need to be highlighted, for example, theorems and definitions.

- enumerations are numbered descriptions.

```
\definedescription [.1.] [..,.2=.,..]
                                OPTIONAL
```

1 IDENTIFIER

2 *inherits from* \setupdescriptions

\defineenumeration [...,...][1] [..][2] [..,..=..,..][3]
OPTIONAL OPTIONAL

1 IDENTIFIER

2 IDENTIFIER

3 *inherits from* \setupenumerations

\setupdescriptions [...,[1],...] [..,.[2]=.,..]
OPTIONAL

1 IDENTIFIER

2
style	=	normal bold slanted boldslanted type cap small... COMMAND
color	=	IDENTIFIER
width	=	fit broad DIMENSION
distance	=	DIMENSION
sample	=	TEXT
text	=	TEXT
closesymbol	=	TEXT
closecommand	=	\...*#1*
closesymbol	=	TEXT
titleleft	=	TEXT
titleright	=	TEXT
titledistance	=	DIMENSION
titlestyle	=	normal bold slanted boldslanted type cap small... COMMAND
titlecolor	=	IDENTIFIER
align	=	inner outer left right flushleft flushright middle center normal no yes
margin	=	standard yes no DIMENSION
location	=	left right top serried inmargin inleft inright hanging
headstyle	=	normal bold slanted boldslanted type cap small... COMMAND
headcolor	=	IDENTIFIER
headcommand	=	COMMAND
hang	=	fit broad NUMBER
before	=	COMMAND
inbetween	=	COMMAND
after	=	COMMAND
indentnext	=	yes no
indenting	=	never none not no yes always first next small medium big normal odd even DIMENSION
command	=	COMMAND

\setupenumerations [...,...][1] [..,..=..,..][2]

OPTIONAL

1 IDENTIFIER

2 *inherits from* \setupdescriptions

P3-2:

TOC, indexing and referencing

5.1 Predefined lists

- Table of contents (TOC)
- List of figures
- List of tables

5.2 TOC

\placecombinedlist [.[1].] [..,.[2]=.,..]
OPTIONAL

1 IDENTIFIER

2 *inherits from* \setupcombinedlist

completeCOMBINEDLIST [.[1].] [..,.[2]=.,..]
OPTIONAL

1 IDENTIFIER

2 *inherits from* \setupcombinedlist

The contents of this part of the tutorial:

```
\placecontent[criterium=all,alternative=c]
```

– Customizing a TOC with available options

```
\setupcombinedlist [..1..] [..,..2=..,..]
```

1 IDENTIFIER

2 level = 1 2 3 4 SECTION current
inherits from \setuplist

\setuplist [...,[1],...] [..,.[2]=.,..]

1 IDENTIFIER

2

state	=	start stop
alternative	=	a b c ... none command
coupling	=	on off
criterium	=	SECTION local previous current all
pageboundaries	=	LIST
style	=	normal bold slanted boldslanted type cap small... COMMAND
numberstyle	=	normal bold slanted boldslanted type cap small... COMMAND
textstyle	=	normal bold slanted boldslanted type cap small... COMMAND
pagestyle	=	normal bold slanted boldslanted type cap small... COMMAND
color	=	IDENTIFIER
command	=	\...*#1#2#3*
numbercommand	=	\...*#1*
textcommand	=	\...*#1*
pagecommand	=	\...*#1*
interaction	=	cd:sectionnumber TEXT pagenumber all
before	=	COMMAND
after	=	COMMAND
inbetween	=	COMMAND
left	=	TEXT
right	=	TEXT
label	=	yes no
prefix	=	yes no none
pagenumber	=	yes no
headnumber	=	yes no
cd:sectionnumber	=	yes no
aligntitle	=	yes no
margin	=	DIMENSION
width	=	DIMENSION fit
height	=	DIMENSION fit broad
depth	=	DIMENSION fit broad
distance	=	DIMENSION
separator	=	TEXT
stopper	=	TEXT
symbol	=	none 1 2 3 ...
expansion	=	yes no command
maxwidth	=	DIMENSION

inherits from \setupframed

```
\setuplistalternative [.1.] [..,.2.,..]

1   a  b  c

2   command   =  COMMAND
    width     =  DIMENSION
    stretch   =  DIMENSION
    distance  =  DIMENSION
```

– The part title in the TOC

Default the section “part” is not included in the TOC, nor it is numbered. Including a numbered part in the TOC can be achieved by:

`\setuphead[part][placehead=yes,number=yes]`

– Different levels of the TOC, local TOC

`\placecontent[content][level=all,alternative=b]`

This will cause a TOC displaying all levels.

`\placecontent[criterium=chapter,alternative=c]`

This setup can be used to display a TOC per chapter i.e. a local TOC

– Further reading

ConTEXt wiki:

http://wiki.contextgarden.net/Table_of_Contents#Author_in_ToC

5.3 Own list

\definelist [.[1].] [.[2].] [..,.[3]=.,..]
OPTIONAL OPTIONAL

1 IDENTIFIER

2 IDENTIFIER

3 *inherits from* \setuplist

\placelist [...[1],...] [..,.[2]=.,..]
OPTIONAL

1 IDENTIFIER

2 *inherits from* \setuplist

5.4 Listing of float-blocks

`\completelistofFLOATS`

`\placelistofFLOATS`

Defining a float results also in defining a list:

Example:

```
\definefloat[SMUfigur][SMUfiguren]
\completelistofSMUfiguren

\setuplabeltext[de][SMUfigur=SMU-Abb. ]
```

5.5 Indexing, registers

– Index

```
\index{car}
\index{car+wheel}
\index{car+lights}
\seeindex{lamp}{car, lights}
```

Example:

c

car *85*

lights *85*

wheel *85*

l

lamp

see car, lights

– Registers

– Defining a register

```
\defineregister [.[1].] [.[2].]

1   SINGULAR NAME

2   PLURAL NAME
```

\setupregister [.[1].] [.[2].] [..,.[3]=.,..]
OPTIONAL

1 SINGULAR NAME

2 IDENTIFIER

3

n	=	NUMBER
balance	=	yes no
align	=	inner outer left right flushleft flushright middle center normal no yes
style	=	normal bold slanted boldslanted type cap small... COMMAND
pagestyle	=	normal bold slanted boldslanted type cap small... COMMAND
textstyle	=	normal bold slanted boldslanted type cap small... COMMAND
indicator	=	yes no
coupling	=	yes no
cd:sectionnumber	=	yes no
criterium	=	SECTION local all
distance	=	DIMENSION
symbol	=	1 2 ... n a ... none
interaction	=	pagenumber TEXT
expansion	=	yes no command
referencing	=	on off
command	=	\...*#1*
location	=	left middle right
maxwidth	=	DIMENSION
unknownreference	=	empty none
alternative	=	a b A B
prefix	=	both first none
compress	=	no yes
deeptextcommand	=	\...*#1*

Example:

```
\defineregister[person][persons]
\setupregister[person][indicator=yes]
```

Filling the register

```
Hans Hagen \person{Hans Hagen}is the projectleader of the \LUATEX
-project \par
Taco Hoekwater \person{Taco Hoekwater} is the programmer of MPlib.
```

Hans Hagen is the projectleader of the luaTEX-project

Taco Hoekwater is the programmer of MPlib.

REGISTER [.[1].] {..+.[2].+..}
OPTIONAL

1 TEXT

2 ENTRY

*see**REGISTER* [.[1].] {.[2].} {..+.[3].+..}
OPTIONAL

1 TEXT

2 TEXT

3 ENTRY

```
\startREGISTER [.1.]{..+..2.+..} ... \stopREGISTER

1  TEXT
2  ENTRY
```

```
\writetoregister [.1.] [.2.] {..+.3.+..}
                        OPTIONAL

1   SINGULAR NAME

2   TEXT

3   ENTRY
```

– Placing a register

completeREGISTER [..,.*=.,..]
OPTIONAL

* *inherits from* \setupregister

\placeregister [.1=.] [..,.2=.,..]
OPTIONAL

1 IDENTIFIER

2 *inherits from* \setupregister

Example:

h

Hans Hagen *86*

t

Taco Hoekwater *86*

5.6 Referencing

```
\setupreferencelist [.1.] [..,.2=.,..]
                    OPTIONAL
```

1 IDENTIFIER

2
```
state      =  start  stop
criterium  =  SECTION  local  previous  all
command    =  COMMAND
before     =  COMMAND
after      =  COMMAND
```

```
\setupreferencing [..,..*=..,..]

*   state             =  start  stop
    cd:sectionnumber  =  yes  no
    prefix            =  +  -  TEXT
    interaction       =  label  TEXT  all  symbol
    width             =  DIMENSION
    left              =  COMMAND
    right             =  COMMAND
    convertfile       =  yes  no  small  big
    separator         =  TEXT
    autofile          =  yes  no  page
    global            =  yes  no
```

\usereferences [...,*,...]

* FILE

\definereference [.:1.] [...,2,...]

1 IDENTIFIER

2 REFERENCE

```
\definereferenceformat [.1.] [..,.2=.,..]

1   IDENTIFIER

2   left   = TEXT
    right  = TEXT
    text   = TEXT
    label  = IDENTIFIER
```

```
\definereferencelist [.1.] [..,.2=.,..]
                                OPTIONAL

1   IDENTIFIER

2   inherits from \setupreferencelist
```

— Placing a reference

```
\ref [.1.] [.2.]
```

```
1   t  p  r  s  e
2   REFERENCE
```

```
\reference [.1.] {.2.}
```

```
1   REFERENCE
2   TEXT
```

```
\reference[my reference]{{Look}{at}{this}}
```

The separate elements can be recalled by `\ref`:

p	the typeset pagenumber	`\ref [p][my reference]`	**94**
t	the text reference	`\ref [t][my reference]`	**Look**
r	the real pagenumber	`\ref [r][my reference]`	**103**
s	the subtext reference	`\ref [s][my reference]`	**at**
e	the extra text reference	`\ref [e][my reference]`	**this**

– Calling a reference

– Referencing a section number: `\in{text}[ref]`

```
\in {.1.} {.2.} [.3.]

1   TEXT

2   TEXT

3   REFERENCE
```

We talked about table of content in section 5.2.

– **Referencing a page:** `\at{prefix-text}{suffix-text}[ref]`

```
\at {.1.} {.2.} [.3.]

1   TEXT

2   TEXT

3   REFERENCE
```

We talked about the table of content at page 74 and following pages.

– Calling a referenced text: \about[ref]

```
\about {.1.} [.2.]

1   TEXT

2   REFERENCE
```

Caution: \about[ref] does not accept a text as mentioned above!

We talked already about the issue “Indexing, registers” at page 84.

— Calling a reference URL, mailaddress: \from[ref]

```
\from [.*.]

*   REFERENCE
```

```
\from[wiki]
```

http://wiki.contextgarden.net/Main_Page

In order to be able to use the \from[ref] command you need of course to setup the reference where this command reads from:

```
\useURL [.1.][.2.][.3.][.4.]

1  reference for \from [ref]
2  URL
3  attached file URL
4  text

\useURL[author-email]
    [mailto:a.u.thor@somewhere.edu]
    [][a.u.thor@somewhere.edu]
\useURL[wiki][http://wiki.contextgarden.net][][\ConTeXt\ wiki]
\useURL[willi][mailto:willi@boede.nl][][willi@boede.nl]
```

a.u.thor@somewhere.edu

ConTEXt wiki

willi@boede.nl

P4-1:

Specialized ingredients

6.1 Tables

– Tabulation

```
\starttabulate[|l|c|r|]
\NC 1  \NC Column is center \NC Column is right \NC \NR
\NC 10 \NC aligned          \NC aligned         \NC \NR
\stoptabulate
```

1	Column is center	Column is right
10	aligned	aligned

Key	Meaning	Key	Meaning
l	left aligned	R	roman
c	centered	S	*slanted*
r	right aligned	T	`teletype`
i*n*	set space left	m	in line math mode
j*n*	set space right	M	display math mode
k*n*	set space around	f`\command`	font specification
w(*d*)	fixed width one liner	b..	put before entry
p(*d*)	fixed width paragraph	a..	put after entry
p	maximum width paragraph	h`\command`	do with entry (hook)
B	**boldface**	e	insert an equal symbol in the next column
I	*italic*		

```
\starttabulate[|*{4}{cBh\type|}]
\NC            \NC normal \NC raw   \NC hook \NC \NR
\RC \bf equal \HC {\EQ}  \HC {\RQ} \HC {\HQ} \NC \NR
\RC \bf none  \HC {\NC}  \HC {\RC} \HC {\HC} \NC \NR
\stoptabulate
```

	normal	raw	hook
equal	\EQ	\RQ	\HQ
none	\NC	\RC	\HC

– Tabulate environments

```
\definetabulate [.1.] [.2.] [.3.]
                OPTIONAL OPTIONAL

1   IDENTIFIER

2   IDENTIFIER

3   TEXT
```

```
\definetabulate[Three][|lB|lI|p|]

\startThree

\NC first column
```

```
\NC second column
\NC third column
\NC \NR
\NC bold and left aligned
\NC italic and left aligned
\NC in paragraph mode, in this column we can write a long
    paragraph and \CONTEXT\ takes care of setting the
    proper width of the column.
\NC \NR
\stopThree
```

first column	*second column*	third column
bold and left aligned	*italic and left aligned*	in paragraph mode, in this column we can write a long paragraph and ConTEXt takes care of setting the proper width of the column.

The first argument contains the name of the environment, the optional second argument holds the preamble, and the optional third one can be used to change settings.

```
\setuptabulate[.1.][.2.,...=...,...][.3.]
```

name	
unit	dimension
indenting	yes no
before	command
after	command
inner	command
EQ	text
rulecolor	name
align	left middle right normal
rulethickness	dimension
distance	blank grid depth dimension small medium big none
bodyfont	5pt ... 12pt small big
rule	normal line
split	yes no

– **TABLE environment based on M.J. Wichura's work**

Day	Opening hours	
Monday	14.00 – 17.30	18.30 – 20.30
Tuesday		
Wednesday	10.00 – 12.00	14.00 – 17.30
Thursday	14.00 – 17.30	18.30 – 20.30
Friday	14.00 – 17.30	
Saturday	10.00 – 12.30	

```
\starttable[|l|c|c|]
\HL
\VL \bf Day   \VL \use2 \bf Opening hours \VL\SR
\HL
\VL Monday    \VL 14.00 -- 17.30 \VL 18.30 -- 20.30 \VL\AR
\VL Tuesday   \VL                \VL                \VL\AR
\VL Wednesday \VL 10.00 -- 12.00 \VL 14.00 -- 17.30 \VL\AR
\VL Thursday  \VL 14.00 -- 17.30 \VL 18.30 -- 20.30 \VL\AR
\VL Friday    \VL 14.00 -- 17.30 \VL                \VL\AR
\VL Saturday  \VL 10.00 -- 12.30 \VL                \VL\AR
\HL
\stoptable
```

– **Further reading:**

Read the ConTEXt an excursion manual pages 25 – 35.

ConTEXt basics for users: Table macros. Aditya Mahajan. TUGboat 28:3, 372-374, 2007.

ConTEXt basics for users: Table macros II. Aditya Mahajan. TUGboat 29:1, 219-222, 2008.

– Natural tables (HTML-like tables)

```
\bTABLE
   [split=repeat,option=stretch]% head on every page,
                                % stretch columns

% setup for all cells
\setupTABLE[r][each][style=\tfx\it, align=center]

% setup table head
\setupTABLE[r][first]
              [background=color,backgroundcolor=yellow]

% setup table footer
\setupTABLE[r][last]
```

```
                [style=bold,background=color,backgroundcolor=green]

% IMPORTANT: use \bTH ... \eTH to enclose the head|next cells
\bTABLEhead
\bTR
  \bTH  head1 \eTH
  \bTH  head2 \eTH
  \bTH  head3 \eTH
\eTR
\eTABLEhead

\bTABLEnext % setup for next table head
\bTR [background=color,backgroundcolor=cyan]
  \bTH  next1 \eTH
  \bTH  next2 \eTH
```

```
  \bTH  next3 \eTH
\eTR
\eTABLEnext

% the table body (main part)
\bTABLEbody
%
\doifmodeelse{screen}{\dorecurse{10}}{\dorecurse{50}}
{\bTR
  \bTC  body body body body body \eTC
  \bTC  body body body body body \eTC
  \bTC  body body body body body \eTC
\eTR}%

\eTABLEbody
```

```
% the table foot
\bTABLEfoot
\bTR
  \bTC  foot1 \eTC
  \bTC  foot2 \eTC
  \bTC  foot3 \eTC
\eTR
\eTABLEfoot
%
\eTABLE
```

head1	head2	head3
body body body body body	*body body body body body*	*body body body body body*

next1	next2	next3
body body body body body	*body body body body body*	*body body body body body*
body body body body body	*body body body body body*	*body body body body body*
body body body body body	*body body body body body*	*body body body body body*
body body body body body	*body body body body body*	*body body body body body*
body body body body body	*body body body body body*	*body body body body body*
body body body body body	*body body body body body*	*body body body body body*
body body body body body	*body body body body body*	*body body body body body*
body body body body body	*body body body body body*	*body body body body body*
body body body body body	*body body body body body*	*body body body body body*
foot1	**foot2**	**foot3**

More examples and possibilities for natural tables in enattab.pdf

– Placing a table with a caption

```
 \placetable[middle,force][]{A colorful table}
{\setupTABLE[row][odd]
            [background=color,backgroundcolor=red,frame=off]
\setupTABLE[row][even]
           [background=color,backgroundcolor=gray,frame=off]
\bTABLE
\bTR \bTD first \eTD \bTD alpha \eTD \bTD one \eTD \eTR
\bTR \bTD second \eTD \bTD beta \eTD \bTD two \eTD \eTR
\bTR \bTD third \eTD \bTD gamma \eTD \bTD three \eTD \eTR
\eTABLE}
```

first	alpha	one
second	beta	two
third	gamma	three

Table 6.1 A colorful table

– **Further reading:**

Tabulating in ConTEXt. Hans Hagen. MAPS nr. 22.153, 1999.
(http://www.ntg.nl/maps/22/index.html)
http://wiki.contextgarden.net/TABLE
Natural tables in ConTEXt. Hans Hagen. 2001. (enattab.pdf)
http://wiki.contextgarden.net/table
ConTEXt an excursion. Ton Otten, Hans Hagen. 1999 (mp-cb-en.pdf)

6.2 Figures

- **The floats concept**

  Elements like figures, tables, formulae are treated as blocks. They are placed on a page if enough space is available. Otherwise they are postponed to the next page.

- **Setting up floats**

```
\setupfloats [..,.*=.,..]

*   location             =  left  right  middle
    width                =  fit  DIMENSION
    before               =  COMMAND
    after                =  COMMAND
    margin               =  DIMENSION
    spacebefore          =  small  medium  big  none
    spaceafter           =  small  medium  big  none
    sidespacebefore      =  small  medium  big  none
    sidespaceafter       =  small  medium  big  none
    indentnext           =  yes  no
    ntop                 =  NUMBER
    nbottom              =  NUMBER
    nlines               =  NUMBER
    default              =  IDENTIFIER
    tolerance            =  0  1  2
    leftmargindistance   =  DIMENSION
    rightmargindistance  =  DIMENSION
    sidealign            =  normal  line
    numbering            =  yes  nocheck
    inherits from \setupframed
```

— Defining a float

```
\definefloat [.^1.] [.^2.]
```

1 SINGULAR NAME

2 PLURAL NAME

```
\setupfloat [.1..] [..,.2=.,..]

1   IDENTIFIER

2   height               =  DIMENSION
    width                =  DIMENSION
    maxheight            =  DIMENSION
    maxwidth             =  DIMENSION
    minwidth             =  DIMENSION
    default              =  IDENTIFIER
    pageboundaries       =  LIST
    leftmargindistance   =  DIMENSION
    rightmargindistance  =  DIMENSION
    location             =  left  middle  right
    inherits from \setupframed
```

– Figure types handled by ConTEXt

- jpg
- png
- single pdf, pages from a pdf-file
- METAPOST (mps)

– Placing a single figure

```
\externalfigure [..1..] [..,..2..=..,..]
                                 OPTIONAL
```

1 FILE

2 *inherits from* \setupexternalfigures

```
\setupexternalfigures [.*=.]

*   scale       =  NUMBER
    yscale      =  NUMBER
    yscale      =  NUMBER
    factor      =  max  fit  broad
    wfactor     =  NUMBER  max  broad  fit
    hfactor     =  NUMBER  max  broad  fit
    width       =  DIMENSION
    height      =  DIMENSION
    frame       =  on  off
    preset      =  yes  no
    display     =  FILE
    preview     =  yes  no
    repeat      =  yes  no
    object      =  yes  no
    type        =  eps  mps  pdf  tif  png  jpg  mov  cd:tex
    method      =  eps  mps  pdf  tif  png  jpg  mov  cd:tex
    option      =  frame  empty  test
    frames      =  on  off
    ymax        =  NUMBER
    xmax        =  NUMBER
    directory   =  TEXT
    location    =  local  global  default  none
    maxwidth    =  DIMENSION
    maxheight   =  DIMENSION
    conversion  =  TEXT
    prefix      =  TEXT
```

Example:

```
\placefigure[middle,here][fig:cow]
  {The dutch cow}
  {\externalfigure[cow][width=6cm]}
```

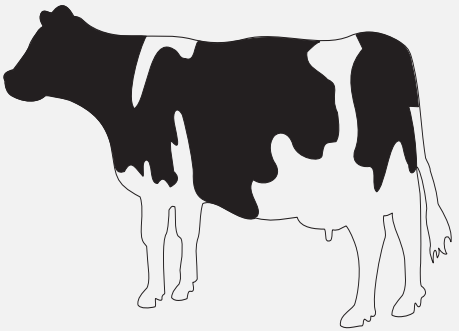


Figure 6.1 The dutch cow

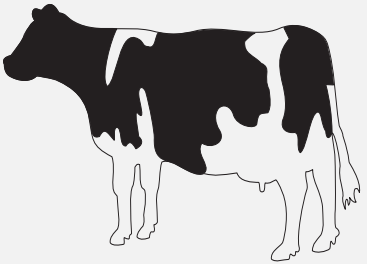
– Placing multiple figures in combinations

```
\startcombination [.*.] ... \stopcombination

N*M
N    number of floats per row
M    number of rows
```

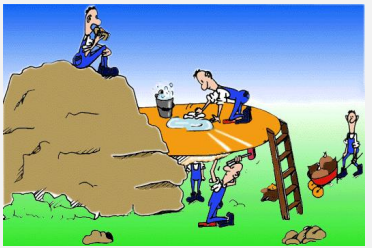
```
\setupcombinations [..,.*=.,..]

*   before     =  COMMAND
    inbetween  =  COMMAND
    after      =  COMMAND
    distance   =  DIMENSION
    height     =  DIMENSION  fit
    width      =  DIMENSION  fit
    location   =  top  middle  bottom  left  right
    align      =  inner  outer  left  right  flushleft  flushright  middle
                  center  normal  no  yes
    style      =  normal  bold  slanted  boldslanted  type  cap  small...
                  COMMAND
    color      =  IDENTIFIER
```

Example:

```
\placefigure[middle,force][fig:combination]
    {The sample figures}
    {\startcombination[2*2]
        {\externalfigure[cow][width=.25\makeupwidth]}{cow.pdf}
        {\externalfigure[hacker][width=.25\makeupwidth]}{hacker.jpg}
        {\externalfigure[mill][width=.25\makeupwidth]}{mill.png}
        {\framedtext
            [width=.25\makeupwidth]
            {A framed text
            \blank[2*line]
            \midaligned{\color[blue]\CONTEXT}}}{free framed
text}
    \stopcombination}
```



cow.pdf



hacker.jpg

mill.png

A framed text

ConTEXt

free framed text

Figure 6.2 The sample figures

– Placing text next to a float

```
\startFLOATtext [.1.][.2.]{.3.} {.4.} ... \stopFLOATtext

1  left right high middle low offset tall
2  REFERENCE
3  TEXT
4  TEXT
```

Example:

```
\startfiguretext
    [left]
    [fig:Cow2]
    {I am the Holstein-Frisian cow of \Context}
    {\externalfigure[cow][height=0.4\textwidth]}
    {\startlines
    {\bf Las peñas y las vaquitas}
    \blank[small]
    Las peñas y las vaquitas
    Se van por la misma senda.
    Las peñas son de nosotros,
    Las vaquitas son ajenas.
    \hfill Eugenio Coserius
    \blank
    Die Sorgen und die Kühe
    Auf demselben Pfad wandern.
    Die Sorgen sind die unseren,
    Die Kühe die der andern.
    \stoplines}
\stopfiguretext
```

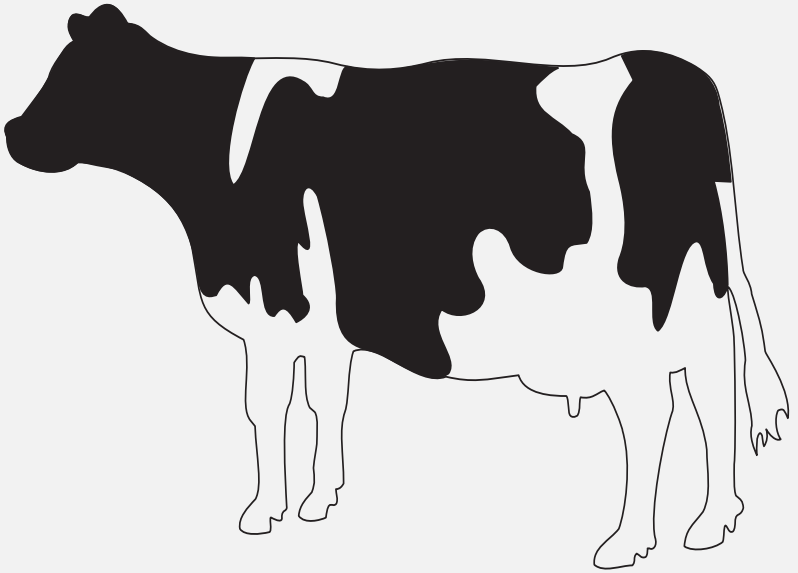


Figure 6.3 I am the Holstein-Frisian cow of CONTEXT

Las peñas y las vaquitas

Las peñas y las vaquitas
Se van por la misma senda.
Las peñas son de nosotros,
Las vaquitas son ajenas.

Eugenio Coserius

Die Sorgen und die Kühe
Auf demselben Pfad wandern.
Die Sorgen sind die unseren,
Die Kühe die der andern.

– Setting up captions

\setupcaption [..[1]..] [..,..[2]=..,..]

1 IDENTIFIER

2 *inherits from* \setupcaptions

```
\setupcaptions [..,.*=.,..]

*   location    = top bottom none high low middle left middle right lefthanging
                  righthanging leftmargin rightmargin innermargin outermargin
    width       = fit broad max DIMENSION
    minwidth    = fit DIMENSION
    headstyle   = normal bold slanted boldslanted type cap small... COMMAND
    style       = normal bold slanted boldslanted type cap small... COMMAND
    number      = yes no none
    inbetween   = COMMAND
    align       = inner outer left right flushleft flushright middle center normal
                  no yes
    conversion  = numbers characters Characters romannumerals Romannumerals
    way         = bytext bycd:section
    separator   = TEXT
    stopper     = TEXT
    command     = COMMAND
    distance    = DIMENSION
```

\useexternalfigure [..=1..] [..=2..] [..=3..] [..,..=4=..,..]
OPTIONAL OPTIONAL OPTIONAL OPTIONAL

1 IDENTIFIER

2 FILE

3 IDENTIFIER

4 *inherits from* \setupexternalfigures

– Allocate space for a future float-block

```
\reserveFLOAT [..,.1=.,..] [.2..] [...,3...] {.4..}
                OPTIONAL     OPTIONAL   OPTIONAL
```

1 height = DIMENSION
  width = DIMENSION
  frame = on off

2 TEXT

3 REFERENCE

4 TEXT

```
\reservefigure
    [height=4cm,width=10cm,frame=on][here][fig:reservation]
    {An example of a reservation.}
```

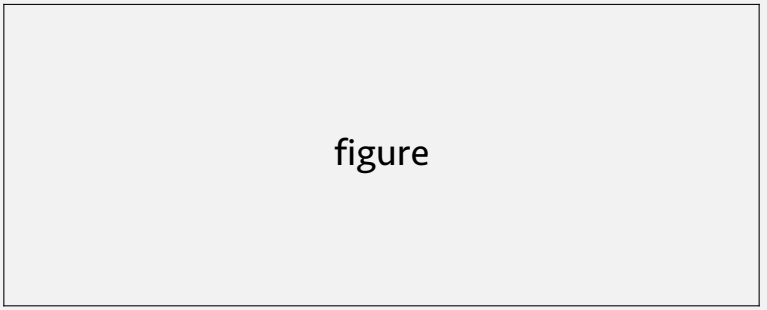


Figure 6.4 An example of a reservation.

– **Further reading:**

MetaFun manual. Hans Hagen, Ton Otten. 2002. (metafun-p.pdf)

It's in the DETAILS. Hans Hagen, Ton Otten. 2003. (details.pdf)

6.3 Math

– Inline, display, formulae

The formula

```
$f(x) = \max_{y} \int_0^y g(y)dy$
```

typeset: $f(x) = \max_y \int_0^y g(y)dy$

The formula

```
\startformula
  f(x) = \max_{y} \int_0^y g(y)dy
\stopformula
```

typeset:

$$f(x) = \max_{y} \int_0^y g(y)dy$$

Notice the difference between the inline mode (`$...$`) and display mode (`\startformula ... \stopformula`)

```
\placeformula [...,...] {...} $$...$$
                  1         2      3
              OPTIONAL  OPTIONAL
```

1 REFERENCE

2 TEXT

3 UNKNOWN MESSAGE

```
\placeformula[formula:aformula]
    \startformula
        \int_0^1 x^2 dx
    \stopformula
```

$$\int_0^1 x^2 dx \tag{6.1}$$

A formula without numbering:

```
\placeformula[-]% Or you can leave out \placeformula
    \startformula
        y=x^3
    \stopformula
```

$$y = x^3$$

– Setting up formulae

```
\setupformulas [..,.*=.,..]

*  location     =  left  right
   left         =  TEXT
   right        =  TEXT
   align        =  inner  outer  left  right  flushleft  flushright  middle  center  normal
                   no  yes
   option       =  middle
   strut        =  yes  no
   distance     =  DIMENSION
   margin       =  DIMENSION  standard  yes  no
   align        =  flushleft  flushright  middle  center
   leftmargin   =  DIMENSION
   rightmargin  =  DIMENSION
   indentnext   =  yes  no
   alternative  =  IDENTIFIER
   spacebefore  =  DIMENSION
   after        =  DIMENSION
   separator    =  TEXT
   conversion   =  numbers  characters  Characters  romannumerals  Romannumerals  TEXT
```

– \startalign ... \stopalign

```
\startformula \startalign
\NC a_1 x + b_1 y \NC = c_1 \NR
\NC a_2 x + b_2 y \NC = c_2 \NR
\stopalign \stopformula
```

We get non numbered display math:

$$a_1 x + b_1 y = c_1$$

$$a_2 x + b_2 y = c_2$$

```
\placeformula
\startformula \startalign
\NC a_1 x + b_1 y \NC = c_1 \NR[eq:1]
```

```
    \NC a_2 x + b_2 y \NC = c_2 \NR[eq:2]
    \stopalign \stopformula
    As seen from (\in[eq:1]) and (\in[eq:2]), referring equations is
straight forward.
```

$$a_1x + b_1y = c_1 \tag{6.2}$$

$$a_2x + b_2y = c_2 \tag{6.3}$$

As seen from (6.2) and (6.3), referring equations is straight forward.

Numbered formulae are preceded with `\placeformula`. One can place reference-points after each `\NR` command.

The `\startalign ... \stopalign` environment comes with many more options like:

- Multicolum placement of a series of formulae
- Individual numbering of specific formulae
- Subformula placement with and without incrementing the equation numbering

- Module: SI-units

  Examples:

`2 \Square \Meter`	$2\,\mathrm{m}^2$
`1 \Kilo \Meter`	$1\,\mathrm{km}$

- Legends and facts

```
\placeformula$$ s = v t + \frac{1}{2} a t^2 $$
    \startlegend
        \leg s \\ displacement \\\Unit \Meter \\
        \leg v \\ velocity \\ \Unit \Meter \Per \Second  \\
```

```
            \leg t \\ time \\ \Unit \Second \\
            \leg a \\ acceleration \\ \Unit \Meter \Per\Square
\Second  \\
        \stoplegend
```

$$s = vt + \frac{1}{2}at^2 \tag{6.4}$$

s = displacement m
v = velocity $\mathrm{m/s}$
t = time s
a = acceleration $\mathrm{m/s^2}$

```
    \startfact
        \fact velocity \\ v \\ 10~m/s \\
        \fact accelaration \\ a \\ - 3~m/s^2 \\
```

```
        \fact time \\ t \\ 3~s \\
    \stopfact
```

velocity	v	=	$10\mathrm{m/s}$
accelaration	a	=	$-3\mathrm{m/s}^2$
time	t	=	$3\mathrm{s}$

```
    \startfact
        \fact velocity \\ v \\ 10\Meter\Per\Second \\
        \fact accelaration \\ a \\ - 3\Meter\Per\Square\Second \\
        \fact time \\ t \\ 3\Second \\
    \stopfact
```

The same facts-block with SI-units notation.

velocity	v	=	$10\ \mathrm{m/s}$
accelaration	a	=	$-3\ \mathrm{m/s^2}$
time	t	=	$3\ \mathrm{s}$

– **Further reading:**

Context an excursion. Ton Otten and Hans Hagen. 1999. (mp-cb-en.pdf)

It's in the DETAILS. Hans Hagen, Ton Otten. 2003. (details.pdf)

Eenheid in Eenheden. Hans Hagen. MAPS 21, 53-60, 1998.

Using `startalign` and friends. Aditya Mahajan. My Way. 2006.

Extensible Arrows in ConTeXt. Aditya Mahajan. My Way. 2006.