

New L^AT_EX Style for FAO Yearbook *

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Abstract

This package provides class for typesetting FAO Yearbook. This is a refactoring of the `faoyeabook` package

1 Introduction

The package `faoyearbook` [1] was written in 2011 for FAO Statistical Yearbook.

The package `faosyb` is a refactoring of this package. We use the lessons learned and incorporate new design requirements. We use some (actually plenty) code from the previous version, but since we do not have to be compatibility, we can correct some unfortunate decisions.

2 User Guide

The installation of the class follows the usual practice [2] for L^AT_EX packages:

1. Run `latex` on `faosyb.ins`. This will produce the L^AT_EX class `faosyb.cls`.
2. Put the file `faosyb.cls` to the place where L^AT_EX can find it (see [2] or the documentation for your T_EX system).
3. Update the database of file names. Again, see [2] or the documentation for your T_EX system for the system-specific details.
4. The file `faosyb.pdf` provides the documentation for the package (this is the file you are probably reading now).

As an alternative to items 2 and 3 you can just put the file `faosyb.cls` in the working directory where your `.tex` file is.

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2.1 Invocation

To use the class, put in the preamble of your document

```
\documentclass[<options>]{faosyb}
```

If the option `web` (default) is chosen, the pages of the book have the dimensions corresponding to A4 paper. However, if the option `print` is chosen, then the pages are printed on a wider area, and crop marks are added for the trimming.

If the option `issuu` is chosen, the internal links are transformed to external in the form suitable for <http://www.issuu.com>. Note that this option probably does not make much sense unless `web` option is also chosen. However, it is still possible to select both `print` and `issuu` option if someone needs it for an obscure purpose.

The option `Draft` (note the capitalization!) leads to the the large word ‘DRAFT’ printed across the pages. The standard \LaTeX option `draft` leads to the same result, but it also makes other changes, most notably, in the behavior of the `\includegraphics` command and warnings.

`\ifprint` It is possible to query the current mode using the macro `\ifprint`, for example

```
\ifprint
  Stuff for print version
\else
  Stuff for web version
\fi
```

Any branch of this conditional may be empty, so web-only stuff can be coded as

```
\ifprint\else Web-only stuff\fi
```

`\includegraphics` There is a special facility for `\includegraphics` command to choose a file depending on the current mode of the package. Namely, if there is a file `image_print.pdf` visible by \LaTeX , then the commands `\includegraphics{image}` or `\includegraphics{image.pdf}` selects the file `image_print.pdf`. In the case this file is not found, the file `image.pdf` is selected instead. Similarly in the web mode the file `image_web.pdf` will be selected first, and only if it does not exist, `image.pdf` is selected. This rule works also for commands `\includeLargeGraphics` and `\includeExtraLargeGraphics` described below.

Note that at this time there is no similar facility for the `\input` command.

2.2 Setting Parameters

`\faoset` Some parameters in the class can be set with the command `\faoset{<key=value>}`, for example

```
\faoset{bgcolor=blue}
```

Most of the parameters are explained below.

One of the important parameters is **year**. While the package at this time does not provide facilities for the title pages, it needs to know the year for the proper typesetting of footers. The command

```
\faoset{year=2013}
```

is used to provide this information.

2.3 Fonts

`\narrowfamily` The class uses PT Sans fonts [3] for body text and Arev fonts [4] for math. It defines two additional families: Narrow and Caption, corresponding to the PT Sans Narrow and PT Sans Caption font. They can be selected by the declarations `\captionfamily` and `\textcaption` or by the commands `\textnarrow{<text>}` and `\textcaption{<text>}` following the usual L^AT_EX conventions. Note that since PT Sans does not provide math alphabet, this choice does not change the mathematical text.

PT Sans Narrow may be useful for typesetting tables, for example,

```
{\scriptsize\narrowfamily
\rowcolors{4}{@bgcolor!30}{@bgcolor!20}
\input{./Tables/P1.DEM_1.tex}}
```

The choice of `\narrowfamily` is automatically done by the `tablepages` environment.

2.4 Colors and Icons for Parts

A Yearbook is separated into parts (more on this below). Each part has its own color and icon. They are set by the keys `bgcolor` and `icon` of the `\faoset` command, for example,

```
\faoset{icon=./Icons/agriculture.png}
\faoset{icon=./Icons/population}
\faoset{bgcolor=blue}
\faoset{bgcolor=green!25!yellow}
```

The parameter for the `icon` key can be any file name (with or without extension), suitable for the `\includegraphics` command. The parameter for the `bgcolor` key can be specified in any form acceptable by `xcolor` package [5].

The key `tableheadcolor` sets the color for the headers of tables defined by H or P key (see Section 2.7). Normally it is the current `@bgcolor` color, but it can be set to any required value.

`\selecticon` Note that `\faoset` command does not change the icon or background color immediately. When issued *before* `\part` command, it sets up icon and color for

the next part. If needed, you can manually change this using `\selecticon` and `\selectcolor` commands. In most cases you should *not* use these commands.

After a `\part` command (or explicit `\selecticon` and `\selectcolor` command we can access the current values of the color in `@bgcolor`, `@tablecolor` colors and `\currenticon` macro.

2.5 Sectioning

The main division of the text are `\parts`. The command `\part{<title>}` is used for numbered parts, while the command `\part*{<title>}` is used for unnumbered parts. The next division are `\sections` and `\subsections`. They are never numbered. The style does not use `\chapters`.

The sections immediately following new parts are special: they are typeset in one column and cannot have floats. The command `\EndPartIntro` switches to the “normal” sections.

2.6 Headers and Footers

Normally headers and footers are defined by the text. However, there is a possibility to change some of them. Commands `\evenfootmark{<text>}` and `\oddfootmark` set the right and left footers for even and odd pages correspondingly (the remaining footers are used by the page numbers). By default they are defined as

```
\evenfootmark{\textbf{FA0} Statistical Yearbook \textbf{\fao@year}}
\oddfootmark{\rightmark}
```

The last command sets the footer to be the current section name (or part name before the first section), but the user can change this.

2.7 Floats

One of the most important changes from the previous version of the class [1] is the treatment of floats.

In standard L^AT_EX floats “float”: they can be placed by the algorithm anywhere. The previous version made them “sticky”: the author explicitly tells T_EX where floats should be placed. However, to do so the class required the author to make explicit page breaks, which was not very convenient.

This version has a completely rewritten interface and algorithm for placing floats:

1. Like in standard L^AT_EX, authors do not normally provide page breaks—T_EX tries to make this decision for them.
2. Like in the previous version, floats are put exactly where the authors want them—no default placing and second-guessing.



Figure 1: A Spread

Here is how it is done.

The main unit of the book is *spread*: a verso page and the corresponding recto page. Each page is divided into four quarters, upper left, upper right, lower left and lower right. We will denote them `ul`, `ur`, `ll`, `lr` for the verso page and `UL`, `UR`, `LL`, `LR` for the recto page (Figure 1). We allow four kinds of floats:

Single floats occupy exactly one quarter. They are denoted as `S`.

Tall floats occupy two quarters stacked vertically (for example, `ul` and `ll`). They are denoted as `T`.

Wide floats occupy two quarters adjacent horizontally (for example, `LL` and `LR`). They are denoted as `W`.

Big floats occupy all four quarters on a page. They are denoted as `B`.

The parameters $\{\langle type \rangle\}$ and $\{\langle location \rangle\}$ are mandatory for floats, for example

```
\begin{map}{T}{ur}
...
\end{map}
\begin{chart}{S}{UL}
...
\end{chart}
```

For multiquarter floats the location is the location of the upper left corner, so Big float can use only `ul` or `UL` location.

Of course, not all combinations are valid: you cannot specify float as `{T}{ll}` or `{W}{UR}`, for example. If you use such combinations, the results may be unpredictable. Also it is not predictable what happens if you try to put overlapping floats (e.g. `{S}{UR}` and `{W}{UL}`).

There are two additional rules:

1. A verso page may have text and floats (still it is recommended that if it has text, then it should not have floats occupying the upper left corner).
2. A recto page may have *either* text or floats: if there are floats for this page, all text is moved to the following verso page.

`chart` There are three types of floats defined by the class:
`map` **chart** plots and other charts,
`table` **map** mapped data.
 table mini tables.

`caption` Each of these kinds of material is typeset using the corresponding environment: **chart**, **table** or **map**. Note that the caption for each of these environments *must* precede the graphical material, for example:

```
\begin{chart}{B}{UL}
  \caption{Hunger Data}
  \label{chart:hunger}
  \includegraphics{hunger.pdf}
\end{chart}
```

Note that our class redefines `table` environment!. For tables on separate pages use `longtable`.

`\chartwidth` Inside a **chart**, **map** or **table** it is useful to know the size allocated for the
`\chartheight` graphics or table, for example, to be able to scale the graphics. Two lengths, `\chartwidth` and `\chartheight` provide this information, so the user can say, for example,

```
\includegraphics[width=\chartwidth, height=\chartheight]{theChart}
```

`\source` Inside a **chart**, **map** or **table** the macro `\source{<source>}` gives the source of the information, for example,

```
\Source{FAO, Statistical Division [FAOSTAT]}
```

`\listoftables` The standard L^AT_EX has the command `\listoftables` to produce the list of
`\listofcharts` tables in the document. Our class retains this command and produces two additional commands `\listofcharts` and `\listofmaps` with the obvious meaning.

2.8 Page Breaks

`\clearpage` Standard L^AT_EX has commands for immediate page break (e.g. `\clearpage`) and for switching to the next recto page, possibly ejecting the next verso page (`\cleardoublepage`). The class provides another command `\clearspread`. It switches to the next *verso* page, possibly ejecting the next recto page (and putting there floats intended for this page, if any).

2.9 Tables

`tablepages` The tables at the end of a part should be typeset inside `tablepages` environment. The environment switches to the one column setup, decreases the margins and changes the font to `\narrowfamily`.

To typeset numerical items one should use `d` column identifier with the format `d{<a.b>}`, where *a* is the number of decimal in the integer part of the number, and *b* is the number of decimal digitst in the fractional part. For example, a number 12.345 corresponds to `d{2.3}`. The column headers are usually *not* numerical, so one need to use `\multicolumn` entries to typeset them. The class defines several such entries:

H produces a centered entry.

P produces an entry of a given length, for example, `P{1.5cm}`

C produces an entry of the length corresponding to the given number of numerical columns. For example, `C{2}` corresponds to a header of two numerical columns. Each column is assumed to be of the size enough to store -99.999 .

`\hhline` For the rules that do not span the table width `\hhline{<specification>}` command from the `hhline` package should be used. The `{<specification>}` argument of this command has many variants, but for our purposes we need only one variant: the command `-` produces a horizontal line spanning one column. The color of this line is determined by the command `\arrayrulecolor{<color>}`, issued in the last `>{<argument>}` command before the `-` specification. Therefore the command `>{\arrayrulecolor{@tableheadcolor}}-` produces a line of the color `@tableheadcolor`, which is seen as the absence of line. The command `>{\arrayrulecolor{black}}---` produces a black line spanning three columns. Thus if we have a four-column table and want a rule spanning columns 2-3, the following command should be issued:

```
\hhline{>{\arrayrulecolor{@tableheadcolor}}-% Column 1, no rule
>{\arrayrulecolor{black}}--% Columns 2 and 3, black rule
>{\arrayrulecolor{@tableheadcolor}}-% Column 4, no rule
```

The usual `*` specification may be used for repeating patterns, for example, `*{5}{-}` is equivalent to `-----`.

The vertical bar `|` specification in the `\hhline` argument means an interruption of the line. The interruption is by default a black interval, to make it the same color as the header background, use `>{\arrayrulecolor{@tableheadcolor}}|`.

The design of the tables in the current edition requires several important changes to the usual tables:

1. There should be no `\toprule` at the beginning of a table.
2. The first row header of a table must be empty and white; this is done by the command `\cellcolor{white}` in this cell.
3. `\hhline` separating rows in the header must not go through this first white cell; this is done by the `~` specification.

2.10 Publication Descriptions

`publication` FAO yearbook describes some FAO publications. These publications should be put inside the environment `publication`. The environment has one mandatory argument, which is the title of the publication, and one optional argument, which sets the file name of the publication cover. Note that the option argument, if present, must precede the mandatory one. If this argument is absent, no cover is included. Inside the environment the macros `\pDescription{<description>}`, `\pEdition{<year>}{<edition>}`, `\pWeb{<URL>}` and `\pCycle{<date>}` are used to typeset the corresponding items related to the publication. For example,

```

\pDescription
\pEdition
\pCycle
pWeb
\begin{publication}[./Plots/StateOfFoodAndAgriculture.png]{The State
of Food and Agriculture}
\pDescription{The State of Food and Agriculture, FAO's major
annual flagship publication, aims at bringing to a wider
audience balanced science-based assessments of important issues
in the field of food and agriculture. Each edition of the
report contains a comprehensive, yet easily accessible, overview
of a selected topic of major relevance for rural and
agricultural development and for global food security. This is
supplemented by a synthetic overview of the current global
agricultural situation.}
\pEdition{2010}{Livestock in the balance}
\pEdition{2011}{Women in Agriculture Closing the gender gap for
development}
\pCycle{May each year}
\pWeb{http://www.fao.org/docrep/013/i2050e/i2050e00.htm}
\end{publication}

```

Note that, as in the example, some fields may be repeated.

`publicationparskip` Two spacing parameters can be used for typesetting of publications: `publicationskip` is the amount of additional space between the publications, while `publicationparskip` is the space between the paragraphs inside the publication environment. The default values correspond to the command

```

\faoset{publicationskip=6pt plus 2pt minus 2pt,
publicationparskip=6pt plus 6pt minus 4pt}

```


2.11 Metadata

`\metadatasection` The sources of the data are collected in special sections called “Metadata section”. Each section is introduced by the command `\metadatasection{<title>}`, for example,

```
\metadatasection{Indicators}
```

`metadata` The sources themselves are collected in the `metadata` environments. Each environment has one obligatory argument—the name of the source. It may include the following commands:

`\key` `\key{<key>}` sets the corresponding key which is used for labeling the metadata

`\source` `\source{<source>}` sets the source of the data.

`\owner` `\owner{<owner>}` sets the owner of the data.

Note that there is no “description” command because any text which is not an argument of the commands above is considered to belong to the description of the data.

Example of the usage of these commands:

```
\metadatasection{Indicators}
\begin{metadata}{Agricultural population}
  \key{agripop}%
  Agricultural population is defined as all persons depending for
  their livelihood on agriculture, hunting, fishing and forestry.
  It comprises all persons economically active in agriculture as
  well as their non-working dependents. It is not necessary that
  this referred population exclusively come from rural population.
  \source{FILL ME}
  \owner{FILL ME}
\end{metadata}
```

`\refMetadata` The metadata is referenced by the command `\refMetadata{<key>}`, for example

```
\refMetadata{agripop}
```

This command will not be typeset, but makes creates a backreference to the corresponding chart from the indicator section.

Note that the package automatically provides backreferencing: all charts, maps and tables where the metadata is referenced, are mentioned in the corresponding metadata section.

2.12 Further Reading

`freading` The special environment `freading` is used for the “further reading” sections of the book. It starts the text from the new page and changes some defaults.

2.13 Subscripts in Text

`\textsubscript` The standard \LaTeX defines `\textsuperscript`. The class adds a similar `\textsubscript` command.

3 Implementation

3.1 Options

`\faoyearbook@size@warning` The font-changing options are not used in our setup, so we just produce a warning:

```
1 \long\def\faoyearbook@size@warning#1{%
2   \ClassWarning{faoyearbook}{Size-changing option #1 will not be
3     honored}}%
4 \DeclareOption{8pt}{\faoyearbook@size@warning{\CurrentOption}}%
5 \DeclareOption{9pt}{\faoyearbook@size@warning{\CurrentOption}}%
6 \DeclareOption{10pt}{\faoyearbook@size@warning{\CurrentOption}}%
7 \DeclareOption{11pt}{\faoyearbook@size@warning{\CurrentOption}}%
8 \DeclareOption{12pt}{\faoyearbook@size@warning{\CurrentOption}}%
```

`\ifprint` We have a flag which shows whether we are in Web or print mode

```
9 \newif\ifprint
10 \printfalse
11 \DeclareOption{web}{\printfalse}
12 \DeclareOption{print}{\printtrue}
13 \PassOptionsToPackage{papersize={230mm,317mm},layout=a4paper,
14   layoutoffset=1cm,layoutvoffset=1cm,twoside}{geometry}}
```

`\ifDraft` If we are in ‘Draft’ or ‘draft mode’, we print a word ‘draft’ across the page:

```
15 \newif\ifDraft
16 \Draftfalse
17 \DeclareOption{Draft}{\Drafttrue}
18 \DeclareOption{draft}{\Drafttrue}
```

`\if@issuemode` Whether we need issue-style links

```
19 \newif\if@issuemode
20 \@issuemodefalse
21 \DeclareOption{issuu}{\@issuodemtrue}
```

All other options are just sent to the main class:

```
22 \DeclareOption*{\PassOptionsToClass{\CurrentOption}{report}}
23 \ProcessOptions\relax
```

3.2 Loading Class and Packages

We start with the base class and some packages

```
24 \LoadClass[10pt,twoside,twocolumn]{report}
25 \RequirePackage{graphicx,xkeyval}
26 \RequirePackage[table,cm]{xcolor}
27 \RequirePackage{tikz,geometry,dcolumn}
28 \usetikzlibrary{calc}
29 \RequirePackage{fancyhdr}
30 \RequirePackage{lscape,longtable,siunitx,booktabs}
31 \RequirePackage{multicol,atbegshi,picture,hhline,afterpage}
32 \RequirePackage[T1]{fontenc}
```

```

33 \RequirePackage[utf8x]{inputenc}
34 \RequirePackage{pdfpages}
35 \RequirePackage[authoryear]{natbib}
36 \RequirePackage[breaklinks]{hyperref}
37 \RequirePackage{bookmark}
38 \RequirePackage{adjmulticol}
39 \if@issuemode
40 \RequirePackage{issuulinks}
41 \fi

```

Options for the hyperref package are set as follows:

```

42 \ifprint
43 \hypersetup{breaklinks,colorlinks=false,pdfborder=0 0 0,
44   pdfauthor={FAO},
45   pdfsubject={Statistical Yearbook of the Food And Agricultural Organization for the United Na
46   pdftitle={Statistical Yearbook of the Food And Agricultural Organization for the United Nati
47   pdfkeywords={FAO, Food Security, Undernourishment, Sustainable agriculture},
48   pdfpagelayout=TwoColumnLeft,
49   pdfnewwindow=true
50 }
51 \else
52 \hypersetup{breaklinks,colorlinks=false,pdfborder=0 0 0,
53   pdfauthor={FAO},
54   pdfsubject={Statistical Yearbook of the Food And Agricultural Organization for the United Na
55   pdftitle={Statistical Yearbook of the Food And Agricultural Organization for the United Nati
56   pdfkeywords={FAO, Food Security, Undernourishment, Sustainable agriculture},
57   pdfpagelayout=TwoColumnRight,
58   pdfnewwindow=true
59 }
60 \fi

```

3.3 Color

We need to tell the printer that we are using CMYK color model. The following is taken from the pdfx package (the package itself is not too easy to make work).

```

61 \def\@pctchar{\expandafter\@gobble\string\%}
62 \def\@bchar{\expandafter\@gobble\string\}
63 \immediate\pdfobj stream attr{/N 4} file{FOGRA39L.icc}
64 \edef\OBJ@CVR{\the\pdfobj}
65 \pdfcatalog{/OutputIntents [ <<
66   /Type/OutputIntent
67   /S/GTS_PDFX
68   /OutputCondition (FOGRA39)
69   /OutputConditionIdentifier (FOGRA39 \@bchar(ISO Coated v2
70   300\@pctchar\space \@bchar(ECI\@bchar)\@bchar))
71   /DestOutputProfile \OBJ@CVR\space 0 R
72   /RegistryName(http://www.color.org)
73   >> ]}

```

3.4 Key-Value Interface

`\faoset` We define the family `fao` for our keys:

```
74 \def\faoset#1{\setkeys{fao}{#1}}
```

One of the important keys is `year`

```
75 \define@key{fao}{year}{\gdef\fao@year{#1}}
```

```
76 \faoset{year=20XX}
```

3.5 Fonts

We use `arev` for mathematics:

```
77 \RequirePackage{arevmath}
```

For body text we use PT Sans:

```
78 \def\PTSans@scale{0.95}
```

```
79 \def\PTSansNarrow@scale{0.95}
```

```
80 \def\PTSansCaption@scale{0.95}
```

```
81 \renewcommand{\sfdefault}{PTSans-TLF}
```

```
82 \renewcommand{\familydefault}{\sfdefault}
```

```
83 \renewcommand{\bfdefault}{b}
```

`\narrowfamily` We declare a new family, `\narrowfamily`:

```
84 \DeclareRobustCommand\narrowfamily{\fontfamily{PTSansNarrow-TLF}\selectfont}
```

`\textnarrow` And the matching `\textnarrow` command:

```
85 \DeclareTextFontCommand{\textnarrow}{\narrowfamily}
```

`\captionfamily` Same with `\captionfamily`:

```
86 \DeclareRobustCommand\captionfamily{\fontfamily{PTSansCaption-TLF}\selectfont}
```

`\textcaption` And the matching `\textcaption` command:

```
87 \DeclareTextFontCommand{\textcaption}{\captionfamily}
```

`\normalsize` The basic size is 9.6pt:

```
88 \renewcommand\normalsize{%
```

```
89   \@setfontsize\normalsize{9.6pt}{\@xipt}%
```

```
90   \abovedisplayskip 10\p@ \@plus2\p@ \@minus5\p@
```

```
91   \abovedisplayshortskip \z@ \@plus3\p@
```

```
92   \belowdisplayshortskip 6\p@ \@plus3\p@ \@minus3\p@
```

```
93   \belowdisplayskip \abovedisplayskip
```

```
94   \let\@listi\@listI}
```

```
95 \normalsize
```

`\small` This is the small size:

```
96 \renewcommand\small{%
```

```
97   \@setfontsize\small{\ixpt{10}}%
```

```
98   \abovedisplayskip 8.5\p@ \@plus3\p@ \@minus4\p@
```

```
99   \abovedisplayshortskip \z@ \@plus2\p@
```

```

100 \belowdisplayskip 4\p@ \@plus2\p@ \@minus2\p@
101 \def\@listi{\leftmargin\leftmargini
102         \topsep 4\p@ \@plus2\p@ \@minus2\p@
103         \parsep 2\p@ \@plus\p@ \@minus\p@
104         \itemsep \parsep}%
105 \belowdisplayskip \abovedisplayskip}

```

We use `rm` style of URL:

```
106 \urlstyle{sf}
```

3.6 Margins and Paragraphing

We use `a4paper`.

```

107 \geometry{layout=a4paper,
108   left=2cm,right=2cm,bottom=2.8cm,top=1.5cm,
109   columnsep=30pt, twoside}%
110 \savegeometry{standard}

```

```

\parindent We use not indented paragraphs with paragraph borders given by skips
\parskip 111 \setlength\parindent\z@
112 \setlength\parskip{6\p@ plus 6\p@ minus 4\p@}

```

```

\footskip We need generous foot
113 \setlength\footskip{27\p@}

```

```

\headheight We need generous headers
114 \setlength\headheight{35\p@}

```

3.7 Cropmarks

There are several packages that provide crop marks. Unfortunately they do not work for us because they put crop marks at the background. Since we have colored pages, we want crop marks to be on the foreground.

In this section we re-implement cropmarks of the `geometry` package, putting the marks on the foreground.

We postpone the code to the beginning of the document to get the proper value of the switch

```

115 \AtBeginDocument{\ifprint
116   \AtBeginShipout{%
117     \AtBeginShipoutUpperLeftForeground{%
118       \color{black}%
119       \@tempdima=\Gm@layouthoffset
120       \@tempdimb=\Gm@layoutvoffset
121       \put(\@tempdima,-\@tempdimb+6\p@){\line(0,1){50}}%
122       \put(\@tempdima-6\p@,-\@tempdimb){\line(-1,0){50}}%
123       \advance\@tempdima by \Gm@layoutwidth
124       \put(\@tempdima,-\@tempdimb+6\p@){\line(0,1){50}}%
125       \put(\@tempdima+6\p@,-\@tempdimb){\line(1,0){50}}%

```

```

126     \advance\@tempdimb by \Gm@layoutheight
127     \put(\@tempdima,-\@tempdimb-6\p@){\line(0,-1){50}}%
128     \put(\@tempdima+6\p@,-\@tempdimb){\line(1,0){50}}%
129     \advance\@tempdima by -\Gm@layoutwidth
130     \put(\@tempdima-6\p@,-\@tempdimb){\line(-1,0){50}}%
131     \put(\@tempdima,-\@tempdimb-6\p@){\line(0,-1){50}}%
132   }}\fi}

```

In draft mode we put the word ‘DRAFT’ across the page:

```

133 \AtBeginDocument{\ifDraft
134   \AtBeginShipout{%
135     \AtBeginShipoutUpperLeft{%
136       \color{black!25}%
137       \@tempdima=\Gm@layouthoffset
138       \@tempdimb=\Gm@layoutvoffset
139       \advance\@tempdima by 0.2\Gm@layoutwidth
140       \advance\@tempdimb by 0.7\Gm@layoutheight
141       \put(\@tempdima,-\@tempdimb){%
142         \rotatebox{45}{%
143           \fontsize{6cm}{6cm}\selectfont
144           DRAFT}}}}\fi}

```

3.8 Setting Colors and Icons

`\fao@color@string` This is the command that remembers the present color for TOC

```

145 \def\fao@color@string{0,0,0}

```

`@bgcolor@next` We store the next background color in `@bgcolor@next`. We store the next heading background in `@tableheadcolor@next`.

`\setbgcolor` The command `\setbgcolor` selects the next background color:

```

146 \def\setbgcolor#1{\colorlet{@bgcolor@next}[cmyk]{#1}%
147   \@for\curr@ext:=\@toc@ext@list\do{%
148     \addtocontents{\curr@ext}{\string\colorlet{@bgcolor}[cmyk]{#1}}}%
149   \addtocontents{toc}{\string\colorlet{@bgcolor}[cmyk]{#1}}%
150   \gdef\fao@color@string{#1}}
151 \colorlet{@bgcolor@next}[cmyk]{white}

```

The key-value interface for the same command:

```

152 \define@key{fao}{bgcolor}{\setbgcolor{#1}}

```

And for separate setting of `@tableheadcolor`

```

153 \define@key{fao}{tableheadcolor}{\colorlet{@tableheadcolor}[cmyk]{#1}}

```

`@bgcolor` The current color is in the macro `@bgcolor`.

`@tableheadcolor` This command makes the actual color change:

```

\selectcolor
154 \def\selectcolor{\colorlet{@bgcolor}{@bgcolor@next}%
155   \colorlet{@tableheadcolor}{@bgcolor}}
156 \selectcolor

```

`@tablebg` The color for table pages
157 `\define@key{fao}{tablebg}{\colorlet{tablebg}[cmyk]{#1}}`

`\seticon` Setting the next icon for the part
158 `\def\seticon#1{\gdef\next@icon{#1}}`
159 `\define@key{fao}{icon}{\seticon{#1}}`

`\selecticon` The actual icon change
`\currenticon` 160 `\def\selecticon{\gdef\currenticon{\next@icon}}`
161 `\def\next@icon{}`

`\newicon` Define an icon #2 for the part #1
162 `\def\newicon#1#2{\expandafter\gdef\csname @icon@#1\endcsname{#2}}`

`\colored@icon` The icon for us is just a mask. This will create a colored icon using background
`@bgcolor`
163 `\newcommand\colored@icon[2][\bgroup\fbboxsep=-1pt%`
164 `\fcolorbox{white}{@bgcolor}{\includegraphics[#1]{#2}}\egroup}`

`\colored@icon@fg` The icon for us is just a mask. This will create a colored icon using background
`@bgcolor!#3`
165 `\newcommand\colored@icon@fg[3][\bgroup\fbboxsep=-1\p%`
166 `\fcolorbox{white}{@bgcolor!#3}{\includegraphics[#1]{#2}}\egroup}`

3.9 Page Styles

`\evenfootmark` The mark on even pages
167 `\def\evenfootmark#1{\gdef@evenfootmark{#1}}`
168 `\evenfootmark{\textbf{FA0} Statistical Yearbook \textbf{\fao@year}}`

`\oddfootmark` The mark on odd pages
169 `\def\oddfootmark#1{\gdef@oddfootmark{#1}}`
170 `\oddfootmark{\rightmark}`

`standardpagestyle` This is our main page style
171 `\fancypagestyle{standardpagestyle}{%`
172 `\fancyhf{}`
173 `\fancyhfoffset[LR]{2.22cm}%`
174 `\renewcommand\headrulewidth{\z@}%`
175 `\fancyhead[LE]{\hspace*{25\p@}\color{@bgcolor}\captionfamily`
176 `\Huge\strut\ifnum\thepart>0\relax`
177 `\thepart\fi\normalsize\dotfill}%`
178 `\fancyhead[LO]{\hspace*{25\p@}\color{@bgcolor}\normalsize\dotfill\captionfamily`
179 `\Huge\leftmark\expandafter\ifx\csname @icon@\thepart\endcsname\relax\else\space`
180 `\raisebox{-0.25\totalheight}{%`
181 `\colored@icon[width=1.1cm]{\csname`
182 `@icon@\thepart\endcsname}\fi`
183 `\hspace*{25\p@}}%`


```

184 \fancyfoot[LE]{
185   \bgroup
186   \setlength\fbboxsep{10\p@}%
187   \color{@bgcolor}%
188   \raisebox{-\height}{\fcolorbox{@bgcolor}{@bgcolor}{\color{white}\thepage}}%
189   \normalsize\dotfill
190   \raisebox{-\height}{\@evenfootmark\hspace*{25\p@}}%
191 \egroup}%
192 \fancyfoot[LO]{
193   \bgroup
194   \setlength\fbboxsep{10\p@}%
195   \color{@bgcolor}%
196   \raisebox{-\height}{\hspace*{25\p@}\@oddfootmark}%
197   \normalsize\dotfill
198   \raisebox{-\height}{\fcolorbox{@bgcolor}{@bgcolor}{\color{white}\thepage}}%
199 \egroup}%
200 }
201 \pagestyle{standardpagestyle}

```

`\@partpagepicture` A picture in the part page. `\@part` defines it to the combination of the current icons

```

202 \def\@partpagepicture{}

```

`partpagestyle` The page style for the parts introduction

```

203 \fancypagestyle{partpagestyle}{%
204   \fancyhf{}%
205   \fancyhead[L]{%
206     \begin{picture}(0,0)
207       \@partpagepicture
208       \put(-14,50){%
209         \raisebox{-\height}{\begin{tikzpicture}
210           \fill[color=@bgcolor,opacity=.1]
211             (0,0) rectangle ($(\textwidth,\textheight)+(5cm,5cm)$);
212           \end{tikzpicture}}}%
213       \end{picture}}%
214   \fancyhfoffset[LR]{2.22cm}%
215   \renewcommand\headrulewidth{\z@}%
216   \fancyfoot[LE]{
217     \bgroup
218     \setlength\fbboxsep{10\p@}%
219     \color{@bgcolor}%
220     \raisebox{-\height}{\fcolorbox{@bgcolor}{@bgcolor}{\color{white}\thepage}}%
221     \normalsize\dotfill
222     \raisebox{-\height}{\@evenfootmark\hspace{20\p@}}%
223   \egroup}%
224   \fancyfoot[LO]{
225     \bgroup
226     \setlength\fbboxsep{10\p@}%
227     \color{@bgcolor}%
228     \raisebox{-\height}{\hspace*{25\p@}\@oddfootmark}%

```

```

229 \normalsize\dotfill
230 \raisebox{-\height}{\fcolorbox{@bgcolor}{@bgcolor}{\color{white}\thepage}}%
231 \egroup}%
232 }

```

`\fao@partbloktop` Some pages have “part blobs”: colored blobs on the specific positions of the page.
`\fao@partblobbottom` These macros set the top and the bottom of the blob corresponding to the part set in the second parameter:

```

233 \def\fao@partbloktop#1#2{\expandafter\gdef\csname fao@blobstart#1\endcsname{#2}}
234 \def\fao@partblobbottom#1#2{\expandafter\gdef\csname fao@blobend#1\endcsname{#2}}

```

3.10 Nonfloats

In Faoyearbook we used float package. Since we changed too much in the internals, here we just rewrite the code from scratch.

`\@toc@ext@list` Added macro Comma-separated list of extensions for toc-like files:

```

235 \gdef\@toc@ext@list{toc}

```

`\nf@vert@sep` Vertical separation between the floats

```

236 \newlength\nf@vert@sep
237 \setlength\nf@vert@sep{30pt}

```

`\nf@width` The width of the nonfloat

```

238 \newlength\nf@width

```

`\nf@height` The height of the nonfloat

```

239 \newlength\nf@height

```

`\nf@captionheight` The height reserved for the caption

```

240 \newlength\nf@captionheight
241 \setlength\nf@captionheight{32\p@}

```

`\nf@sourceheight` The height reserved for the source lines

```

242 \newlength\nf@sourceheight
243 \setlength\nf@sourceheight{48\p@}

```

`\nf@margin` Margin for floats

```

244 \newlength\nf@margin
245 \setlength\nf@margin{12\p@}

```

`\nf@trianglebase` The design requires a triangle under the caption. Here it is

```

246 \newlength\nf@trianglebase
247 \setlength\nf@trianglebase{12\p@}

```

`\chartwidth` The resulting width of a chart

```

248 \newlength\chartwidth

```

`\chartheight` The resulting width of a chart
249 `\newlength\chartheight`

`\nf@topskip` Top separation for a nonfloat @topskip

`\nf@bottomskip` Bottom separation for a nonfloat @bottomskip

`\nonfloat@type` The counter to keep the next type to assign
250 `\newcount\nonfloat@type`
251 `\nonfloat@type=4\relax`

`\nf@contentsbox` The box to keep the contents of the float
252 `\newbox\nf@contentsbox`

`\nf@mainbox` The box for the float
253 `\newbox\nf@mainbox`

`\newnon@float` The macro `\newnon@float` has the following arguments: TYPE, EXT, NAME for example
`\newnon@float{map}{lom}{Map}`

It defines a nonfloat with these parameters.

254 `\def\newnon@float#1#2#3{%`

First, we need to define `\ftype@TYPE`: the type of the float. Note that tables are taken, so we need to make a special care of nonfloats that correspond to floats.

255 `\expandafter\ifx\csname ftype@#1\endcsname\relax`
256 `\expandafter\edef\csname ftype@#1\endcsname{\the\nonfloat@type}%`
257 `\multiply\nonfloat@type by 2\relax`
258 `\fi`

Now we define the extension for the floats

259 `\expandafter\def\csname ext@#1\endcsname{#2}%`
260 `\xdef\@toc@ext@list{\@toc@ext@list,#2}%`

The macro `\fnum@TYPE` formats the line like “Figure 1”. We need to check whether the counter is defined

261 `\expandafter\ifx\csname the#1\endcsname\relax`
262 `\newcounter{#1}\fi`
263 `\expandafter\def\csname fnum@#1\endcsname{#3~\csname`
264 `the#1\endcsname}%`

Now we want to define the environment TYPE. Since it might be already defined, we first delete this definition, otherwise `\newenvironment` might throw an error

265 `\expandafter\let\csname #1\endcsname\relax`
266 `\expandafter\let\csname end#1\endcsname\relax`

And the actual definition

267 `\newenvironment{#1}{\non@float{#1}}{\endnon@float}}`

`\@getfirstletter` An aux macro to get a first letter of a word. Used in constructs

```
\edef\U{\@getfirstletter{AAAAA\@endword}}
```

```
268 \def\@getfirstletter#1{\@getfirstletter#1}
```

```
269 \def\@getfirstletter#1{#1\@gobbleword}
```

```
270 \def\@gobbleword#1\@endword{}
```

`\non@float` Now we are ready to define the `\non@float` macro. It has three parameters: TYPE, SIZE and PLACEMENT. `\nf@source` is the source of the float.

```
271 \def\non@float#1#2#3{
```

```
272   \def\@capttype{#1}%
```

```
273   \def\nf@size{#2}%
```

```
274   \def\nf@placement{#3}%
```

The macro `\nf@vert@pos` is either u or l

```
275   \lowercase{\xdef\nf@vert@pos{\@getfirstletter#3\@endword}}
```

```
276   \global\let\nf@source\empty
```

Define the source command inside float

```
277   \def\source##1{\gdef\nf@source{##1}}
```

Define the caption producing command:

```
278 \long\def\@makecaption##1##2{\long\gdef\nf@caption{%
```

```
279   {\bfseries\large\color{white}
```

```
280     \MakeUppercase{##1}: ##2}}}%
```

```
281 \gdef\nf@caption{}}%
```

We calculate the size of the float and skips

```
282   \nf@width=\columnwidth
```

```
283   \nf@height=\dimexpr(\textheight/2-\nf@vert@sep)%
```

```
284   \if\nf@vert@pos u\relax
```

```
285     \nf@topskip=\z@
```

```
286     \nf@bottomskip=\nf@vert@sep
```

```
287   \else
```

```
288     \nf@topskip=\nf@vert@sep%
```

```
289     \nf@bottomskip=\z@
```

```
290   \fi
```

```
291   \def\tempW{W}%
```

```
292   \def\tempT{T}%
```

```
293   \def\tempB{B}%
```

```
294   \ifx\nf@size\tempW
```

```
295     \nf@width=\textwidth
```

```
296   \fi
```

```
297   \ifx\nf@size\tempT
```

```
298     \nf@height=\textheight
```

```
299     \nf@topskip=\z@
```

```
300     \nf@bottomskip=\z@
```

```
301   \fi
```

```
302   \ifx\nf@size\tempB
```

```
303     \nf@width=\textwidth
```

```

304 \nf@height=\textheight
305 \nf@topskip=\z@
306 \nf@bottomskip=\z@
307 \fi
308 \charheight=
309 \dimexpr(\nf@height-\nf@captionheight-\nf@sourceheight
310 -2\nf@margin-\nf@trianglebase)%
311 \chartwidth=\dimexpr(\nf@width-2\nf@margin-0.5\nf@trianglebase)%
312 \nf@height=\dimexpr(\nf@height+\nf@topskip+\nf@bottomskip)%

```

Now we construct the main box.

```

313 \global\setbox\nf@contentsbox
314 \color@vbox
315 \normalcolor
316 \vbox to \charheight
317 \bgroup
318 \hsize\chartwidth
319 \@parboxrestore
320 \@floatboxreset
321 }

```

\endnon@float The actual typesetting

```

322 \def\endnon@float{\@endfloatbox\par
323 \hsize=\nf@width
324 \setbox\nf@mainbox=\vbox to \nf@height\bgroup
325 \hsize=\chartwidth
326 \vskip\nf@topskip
327 \noindent
328 \begin{picture}(0,0)%
329 \put(0,0){\color{@bgcolor}%
330 \begin{tikzpicture}[baseline=(current bounding box.north)]
331 \fill (0,0) -- (\nf@trianglebase,0) --
332 (0.5\nf@trianglebase,-\nf@trianglebase) -- cycle;
333 \end{tikzpicture}}
334 \end{picture}%
335 \def\@tempa{chart}%
336 \ifx\@tempa\@capttype
337 \begin{picture}(0,0)%
338 \put(0,0){\color{@bgcolor}%
339 \begin{tikzpicture}[baseline=(current bounding box.north)]
340 \draw(0,0) -- (\nf@width,0);
341 \draw (0.5\nf@trianglebase,-2\nf@trianglebase) --
342 (0.5\nf@trianglebase,-\charheight-2\nf@trianglebase
343 -\nf@margin) --
344 (\nf@width-\pgflinewidth,-\charheight-2\nf@trianglebase
345 -\nf@margin) -- (\nf@width-\pgflinewidth, 0);
346 \end{tikzpicture}}
347 \end{picture}%
348 \fi
349 {\color{@bgcolor}\color@block{\nf@width}{\nf@captionheight}{.1\p}}%

```

```

350 \hskip\dimexpr(\nf@margin+0.5\nf@trianglebase)%
351 \vbox to \nf@captionheight\bgroup
352 \nf@caption\vfill\normalcolor
353 \egroup\par\nointerlineskip\vskip\nf@trianglebase
354 \vskip\nf@margin
355 \noindent\hskip\dimexpr(\nf@margin+0.5\nf@trianglebase)%
356 \box\nf@contentsbox\par\nointerlineskip
357 \vskip\nf@margin
358 \hskip\dimexpr(\nf@margin+0.5\nf@trianglebase)%
359 \vbox to \nf@sourceheight\bgroup
360 \ifx\nf@source\@empty\else
361 \noindent\color{@bgcolor}%
362 \rule{.2em}{.2em}~\rule{.2em}{.2em}~%
363 \rule{.2em}{.2em}~\rule{.2em}{.2em}~%
364 \rule{.2em}{.2em}\par\normalcolor
365 \noindent Source: \nf@source\par\vfill\fi\egroup
366 \vfill\egroup
367 \edef\nf@currbox{\expandafter\csname nfbox@\nf@size
368 @\nf@placement\endcsname}%
369 \global\setbox\nf@currbox=
370 \vbox{\box\nf@currbox\nointerlineskip\penalty0\box\nf@mainbox}}

```

\map A standard nonfloat:

```
371 \newnon@float{map}{\lom}{Map}
```

\listofmapsname The name for the list of maps

```
372 \def\listofmapsname{List of Maps}
```

\table Another one

```
373 \newnon@float{table}{\lot}{Table}
```

\chart And another one

```
374 \newnon@float{chart}{\loc}{Chart}
```

\listofchartsname The name for the list of charts

```
375 \def\listofchartsname{List of charts}
```

3.11 Output Routine

This is hairy because output routines are hairy...

We need several insert boxes. Naming convention: the letter for the box size and two letter code for the location. We use `\newbox` instead of `\newinsert` since we do not use associated `\count`, `\dimen` and `\skip` registers.

```

376 \newbox\nfbox@S@ul
377 \newbox\nfbox@S@ur
378 \newbox\nfbox@S@ll
379 \newbox\nfbox@S@lr
380 \newbox\nfbox@S@UL

```

```

381 \newbox\nfbox@S@UR
382 \newbox\nfbox@S@LL
383 \newbox\nfbox@S@LR
384 \newbox\nfbox@T@ul
385 \newbox\nfbox@T@ur
386 \newbox\nfbox@T@UL
387 \newbox\nfbox@T@UR
388 \newbox\nfbox@W@ul
389 \newbox\nfbox@W@ll
390 \newbox\nfbox@W@UL
391 \newbox\nfbox@W@LL
392 \newbox\nfbox@B@ul
393 \newbox\nfbox@B@UL

\@tempboxb Standard LATEX has \@tempboxa. We need more...
394 \ifx\@tempboxb\@undefined
395   \newbox\@tempboxb
396 \fi

\standard@output The standard LATEX output routine is saved as \standard@output. We use it for
one column pages—maybe one even wants a standard float here?
397 \edef\standard@output{\the\output}

\output Right now we use standard output on one column pages and the new one with
two columns
398 \output{\if@twocolumn\the\nf@output\else\standard@output\fi}

\nf@output Here we define our own output routine.
399 \newtoks\nf@output
400 \nf@output {%
    We define the current boxes \curr@nfbox.... Also, uc or lc mean Upper or
    Lower Current column
401   \ifodd\c@page
402     \global\let\curr@nfbox@S@ul\nfbox@S@UL
403     \global\let\curr@nfbox@S@ur\nfbox@S@UR
404     \global\let\curr@nfbox@S@ll\nfbox@S@LL
405     \global\let\curr@nfbox@S@lr\nfbox@S@LR
406     \global\let\curr@nfbox@T@ul\nfbox@T@UL
407     \global\let\curr@nfbox@T@ur\nfbox@T@UR
408     \global\let\curr@nfbox@W@ul\nfbox@W@UL
409     \global\let\curr@nfbox@W@ll\nfbox@W@LL
410     \global\let\curr@nfbox@B@ul\nfbox@B@UL
411   \else
412     \global\let\curr@nfbox@S@ul\nfbox@S@ul
413     \global\let\curr@nfbox@S@ur\nfbox@S@ur
414     \global\let\curr@nfbox@S@ll\nfbox@S@ll
415     \global\let\curr@nfbox@S@lr\nfbox@S@lr
416     \global\let\curr@nfbox@T@ul\nfbox@T@ul

```

```

417 \global\let\curr@nfbox@T@ur\nfbox@T@ur
418 \global\let\curr@nfbox@W@ul\nfbox@W@ul
419 \global\let\curr@nfbox@W@ll\nfbox@W@ll
420 \global\let\curr@nfbox@B@ul\nfbox@B@ul
421 \fi
422 \if@firstcolumn
423 \global\let\curr@nfbox@S@uc\curr@nfbox@S@ul
424 \global\let\curr@nfbox@S@lc\curr@nfbox@S@ll
425 \global\let\curr@nfbox@T@uc\curr@nfbox@T@ul
426 \else
427 \global\let\curr@nfbox@S@uc\curr@nfbox@S@ur
428 \global\let\curr@nfbox@S@lc\curr@nfbox@S@lr
429 \global\let\curr@nfbox@T@uc\curr@nfbox@T@ur
430 \fi
431 \let \par \@par
432 %
433 % There are several possibilities when we start the output routine for
434 % a single column in a two-column layout.
435 % \begin{enumerate}
436 % \item Wide or big non-floats completely cover the page. In this
437 % case we do not need to create columns, and directly go to the
438 % output.
439 % \item The columnd is occupied by tall or single nonfloats. We make
440 % a column of nonfloats and send it further.
441 % \item There is room for text on the page, but its height
442 % (\cs{@colroom}) is different from the one known to the page builder
443 % (\cs{vsize}). In this case we change \cs{vsize} and return.
444 % \item The room for text is exactly \cs{vsize}. In this case we form
445 % a column and return.
446 % \end{enumerate}
447 % \begin{macrocode}
448 \global\@colht=\textheight
449 \ifdim\ht\curr@nfbox@B@ul>0.5\baselineskip
450 \global\advance\@colht by -\textheight
451 \fi
452 \ifdim\ht\curr@nfbox@W@ul>0.5\baselineskip
453 \global\advance\@colht by -0.5\textheight
454 \fi
455 \ifdim\ht\curr@nfbox@W@ll>0.5\baselineskip
456 \global\advance\@colht by -0.5\textheight
457 \fi
458 \ifdim\@colht < \baselineskip
459 \nf@output@widepage
460 \else
461 \nf@makecol
462 \fi
463 }

```

\nf@output@widepage The macro \nf@output@widepage outputs a page completely filled by wide pic-

tures.

```

464 \def\nf@output@widepage{%
465   \unvbox\@cclv
466   \penalty\outputpenalty
467   \if@firstcolumn\else
468     \ClassError{faosyb}{Wide or big nonfloats defined too late. Move
469       them up}{I encountered Big or Wide floats when I already made the
470       first column. Please move them up}
471   \fi
472   \ifdim\ht\curr@nfbox@B@ul>0.5\baselineskip
473     \global\setbox\@outputbox\vsplit\curr@nfbox@B@ul to \textheight
474   \else
475     \setbox\@tempboxa\vsplit\curr@nfbox@W@ul to 0.5\textheight
476     \setbox\@tempboxb\vsplit\curr@nfbox@W@ll to 0.5\textheight
477     \setbox\@outputbox\vbox\bgroup
478       \box\@tempboxa
479       \nointerlineskip
480       \box\@tempboxb
481     \egroup
482   \fi
483   \global\size\textheight
484   \global\@colht\textheight
485   \@outputpage
486   \@firstcolumntrue
487 }
```

\nf@makecol This macro tries to make one column of text. If successful, it puts first column into temporary storage, and outputs the page when or if the second column is ready.

When we start `\nf@makecol`, `\@colht` already reflects possible wide nonfloats. This to get `\@colroom`, we need to take into account only the narrow ones

```

488 \def\nf@makecol{%
489   \global\@colroom\@colht
490   \ifdim\ht\curr@nfbox@T@uc>0.5\baselineskip
491     \global\@colroom=0pt
492   \fi
493   \ifdim\ht\curr@nfbox@S@uc>0.5\baselineskip
494     \global\advance\@colroom by -0.5\textheight
495   \fi
496   \ifdim\ht\curr@nfbox@S@lc>0.5\baselineskip
497     \global\advance\@colroom by -0.5\textheight
498   \fi
```

Now there could be two cases. If `\@colroom` is small, we fill the column with the non-floats only. Otherwise we have a “mixed” column with both text and nonfloats.

```

499   \ifdim\@colroom<0.5\baselineskip
500     \nf@makenfcol
501   \else
```

```

502 \nf@makemixedcol
503 \fi}

```

`\nf@makenfcol` This macro outputs a column with only non-floats. If it is called, we already know that the narrow non-floats would fill the column, so we do not do any additional checks.

```

504 \def\nf@makenfcol{%
505   \unvbox\@cclv
506   \penalty\outputpenalty
507   \ifdim\@colht>0.9\textheight % one tall or two squares
508     \ifdim\ht\curr@nfbox@T@uc>0.5\baselineskip
509       \setbox\@outputbox\vbox\bgroup
510       \boxmaxdepth \@maxdepth
511       \vsplit \curr@nfbox@T@uc to \textheight
512       \egroup
513     \else
514       \setbox\@outputbox\vbox\bgroup
515       \boxmaxdepth \@maxdepth
516       \vsplit\curr@nfbox@S@uc to 0.5\textheight
517       \nointerlineskip
518       \vsplit\curr@nfbox@S@lc to 0.5\textheight
519       \egroup
520     \fi
521   \else % one square
522     \ifdim\ht\curr@nfbox@S@uc>0.49\textheight
523       \setbox\@outputbox\vsplit \curr@nfbox@S@uc to 0.5\textheight
524     \else
525       \setbox\@outputbox\vsplit \curr@nfbox@S@lc to 0.5\textheight
526     \fi
527   \fi
528   \nf@opcol
529 }

```

`\nf@makemixedcol` This macros used when we have a mix of text with nonfloats (or possibly just text).

We check whether the page builder has the right idea about the text size; if not, we return from the output routine

```

530 \def\nf@makemixedcol{%
531   \ifdim\@colroom=\vsize
532     \nf@makemixedcol@
533   \else
534     \global\vsize=\@colroom
535     \unvbox\@cclv
536     \penalty\outputpenalty
537   \fi}

```

`\nf@makmixedcol@` And now the real work of `\nf@makemixedcol@`

```

538 \def\nf@makemixedcol@{%
539   \ifvoid\footins

```

```

540     \setbox\@outputbox \box \@cclv
541   \else
542     \setbox\@outputbox \vbox {%
543       \boxmaxdepth \@maxdepth
544       \unvbox \@cclv
545       \vskip \skip\footins
546       \color@begingroup
547         \normalcolor
548         \footnoterule
549         \unvbox \footins
550       \color@endgroup
551     }%
552   \fi
553   \ifdim\ht\curr@nfbox@S@uc>0.49\textheight
554     \setbox\@tempboxa\vsplit\curr@nfbox@S@uc to 0.5\textheight
555     \setbox\@outputbox \vbox
556       \bgroup
557         \box\@tempboxa
558         \nointerlineskip
559         \box\@outputbox
560     \egroup
561   \fi
562   \ifdim\ht\curr@nfbox@S@lc>0.49\textheight
563     \setbox\@tempboxa\vsplit\curr@nfbox@S@lc to 0.5\textheight
564     \setbox\@outputbox \vbox
565       \bgroup
566         \box\@outputbox
567         \nointerlineskip
568         \box\@tempboxa
569     \egroup
570   \fi
571   \nf@opcol}

```

`\nf@opcol` This is like the standard L^AT_EX `\@outputdblcol`, but with the treatment of wide nonfloats.

```

572 \def\nf@opcol{%
573   \if@firstcolumn
574     \global\@firstcolumnfalse
575     \global\setbox\@leftcolumn\box\@outputbox
576   \else
577     \global\@firstcolumntrue
578     \ifdim\ht\curr@nfbox@W@ul>0.5\baselineskip
579       \setbox\@tempboxa\vsplit \curr@nfbox@W@ul to 0.5\textheight
580     \else
581       \setbox\@tempboxb\box\@tempboxa
582     \fi
583     \setbox\@outputbox \vbox\bgroup
584       \box\@tempboxa
585       \nointerlineskip
586       \hb@xt@\textwidth {%

```

```

587     \hb@xt@\columnwidth {%
588       \box\@leftcolumn \hss}%
589     \hfil
590     {\normalcolor\vrule \@width\columnseprule}%
591     \hfil
592     \hb@xt@\columnwidth {%
593       \box\@outputbox \hss}%
594   }%
595 \egroup
596 \ifdim\ht\curr@nfbox@W@ll>0.5\baselineskip
597   \setbox\@tempboxa\vsplit \curr@nfbox@W@ll to 0.5\textheight
598   \setbox\@outputbox\ vbox\bgroup
599     \box\@outputbox
600     \nointerlineskip
601     \box\@tempboxa
602   \egroup
603 \fi
604 \@outputpage
605 \global\ysize\textheight
606 \global\@colht\textheight
607 \global\@colroom\textheight
608 \fi}

```

`\standard@clearpage` The usual `\clearpage` flushes the floats. We keep it in `\standard@clearpage`

```

609 \let\standard@clearpage\clearpage

```

`\clearpage` Now we can define `\clearpage` to take care of the mode:

```

610 \def\clearpage{%
611   \if@twocolumn
612     \nf@clearpage
613   \else
614     \standard@clearpage
615 \fi}

```

`\nf@totalheight` The total height of all non-floats

```

616 \def\nf@totalheight{\dimexpr(
617   \ht\nfbox@S@UL+
618   \ht\nfbox@S@UR+
619   \ht\nfbox@S@LL+
620   \ht\nfbox@S@LR+
621   \ht\nfbox@T@UL+
622   \ht\nfbox@T@UR+
623   \ht\nfbox@W@UL+
624   \ht\nfbox@W@LL+
625   \ht\nfbox@B@UL+
626   \ht\nfbox@S@ul+
627   \ht\nfbox@S@ur+
628   \ht\nfbox@S@ll+
629   \ht\nfbox@S@lr+

```

```

630 \ht\nfbox@T@ul+
631 \ht\nfbox@T@ur+
632 \ht\nfbox@W@ul+
633 \ht\nfbox@W@ll+
634 \ht\nfbox@B@ul)}

```

`\nf@clearpage` We keep ejecting pages until get rid of nf stuff

```

635 \def\nf@clearpage{%
636 \write\m@ne{}}%
637 \if@firstcolumn
638 \ifdim\dimexpr(\pagetotal+\nf@totalheight)>\baselineskip
639 \leavevmode
640 \null\vfill\newpage
641 \null\vfill\newpage
642 \fi
643 \else
644 \leavevmode
645 \null\vfill\newpage
646 \fi
647 \ifdim\nf@totalheight>\baselineskip
648 \nf@clearpage\fi
649 }

```

`\clearspread` This is like `\cleardoublepage`, but with the logic inverted:

```

650 \def\clearspread{\clearpage\ifodd\c@page
651 \hbox{}}\newpage\if@twocolumn\hbox{}}\newpage\fi\fi\@firstcolumntrue}

```

We need to clear everything at the end

```

652 \AtEndDocument{\if@twocolumn
653 \ifdim\nf@totalheight>\baselineskip
654 \null\vfill\clearpage\fi
655 \fi}

```

3.12 Sectioning

`\if@mainmatter` This is used to check whether we are at main matter

```

656 \newif\if@mainmatter

```

`\frontmatter` We want Arabic numbers for front matter:

```

657 \def\frontmatter{\cleardoublepage\setbgcolor{gray}\selectcolor
658 \pagenumbering{roman}\pagestyle{standardpagestyle}%
659 \onecolumn\@mainmatterfalse}

```

`\mainmatter` We want Arabic numbers for main matter:

```

660 \def\mainmatter{\cleardoublepage\onecolumn
661 \pagenumbering{arabic}\pagestyle{standardpagestyle}%
662 \@mainmattertrue}

```

`\tocdepth` Only sections and up are allowed in TOC:
663 `\setcounter{tocdepth}{1}`

`\secnumdepth` Only the parts are numbered in out setup:
664 `\setcounter{secnumdepth}{-1}`

`\thepart` And the parts are numbered using Arabic numbers:
665 `\renewcommand \thepart {\@arabic\c@part}`

`\c@fao@partnum` To draw the blobs in part color in the proper position, we need to associate them with parts. However, some parts are numbered, some are not. The macro `\fao@partnum` keeps the current part number counted continuously from the beginning to end.
666 `\newcounter{fao@partnum}`
667 `\setcounter{fao@partnum}{0}`

`\fao@currentpartnum` The current value of `\fao@partnum` used in TOC:
668 `\def\fao@currentpartnum{0}`

`\part` The largest partition in the book
669 `\renewcommand\part{%`
670 `\secdef\@part\@spart}`

`\EndPartIntro` This command switches off the special formatting of part pages:
671 `\def\EndPartIntro{\clearspread\twocolumn\normalcolor`
672 `\pagestyle{standardpagestyle}}`

`iconfill` Fill a line with the icons of increasing size. The parameters are the initial size, length of the strip and the intensity of the background
673 `\def\@maxpart{1}`
674 `\def\iconfill#1#2#3{%`
675 `\expandafter\ifx\csname @icon@1\endcsname\relax\strut\else`
676 `\@tempcnta=1`
677 `\setbox\@tempboxa=\hbox{}%`
678 `\loop`
679 `\@tempdima=#1`
680 `\setbox\@tempboxa=\hbox{\unhbox\@tempboxa`
681 `\colored@icon@fg[width=\@tempdima]{\csname`
682 `@icon@\the\@tempcnta\endcsname}{#3}}%`
683 `\advance\@tempcnta by 1\relax`
684 `\ifnum\@tempcnta>\@maxpart\relax\@tempcnta=1\fi`
685 `\ifdim\wd\@tempboxa>\#2\else\repeat`
686 `\unhbox\@tempboxa`
687 `\fi}`

`\currenticonfill` Several iterations of the current icon with increasing sizes. The parameters are the initial size, length and the intensity of the background.
688 `\def\currenticonfill#1#2#3{%`

```

689 \expandafter\ifx\csname @icon@\thepart\endcsname\relax\strut\else
690 \setbox\@tempboxa=\hbox{}\%
691 \@tempdima=#1
692 \loop
693 \@tempdima=1.44\@tempdima
694 \setbox\@tempboxa=\hbox{\unhbox\@tempboxa
695   \colored@icon@fg[width=\@tempdima]{\csname
696     @icon@\thepart\endcsname}{#3}}\%
697 \ifdim\wd\@tempboxa>#2\else\repeat
698 \unhbox\@tempboxa
699 \fi}

```

\@part This is the actual part making macro.

```

700 \def\@part[#1]#2{%
701   \clearspread
702   \onecolumn
703   \clearspread
704   \selectcolor
705   \selecticon
706   \color{@bgcolor}\%
707   \rowcolors{2}{@bgcolor!10}{}\%
708   \pagestyle{partpagestyle}\%
709   \refstepcounter{part}\%
710   \addcontentsline{toc}{part}{\thepart\hspace{1em}#1}\%
711   \protected@write\@auxout{}\%
712   {\string\newicon{\thepart}{\currenticon}
713     \string\gdef\string\@maxpart{\thepart}}\%
714   \def\@partpagepicture{%
715     \put(-20,-500){\rotatebox{30}{\parbox{\textwidth}{\%
716       \iconfill{1cm}{0.5\textwidth}{20}\currenticonfill{1cm}{0.4\textwidth}{20}\%
717       \iconfill{1cm}{1.15\textwidth}{100}\%
718       \iconfill{1cm}{1.14\textwidth}{20}}}}\%
719   \markboth{#1}{#1}\%
720   \null
721   \newpage
722   \def\@partpagepicture{\put(150,-200){\rotatebox{30}{\iconfill{1cm}{12cm}{20}}}\%
723   \gdef\@partpagepicture{}}
724   {\interlinepenalty \@M
725     \vspace*{80\p@}
726     \captionfamily
727     \fontsize{240\p@}{240\p@}\selectfont\raggedright\thepart~\%
728     \parbox[b]{0.8\textwidth}{\fontsize{64\p@}{72\p@}\selectfont
729       \raggedright\null#2\par}\par\vskip80\p@
730   }\par}

```

\@spart Unnumbered parts are only in the forewart

```

731 \def\@spart#1{%
732   \clearspread
733   \onecolumn
734   \clearspread

```

```

735 \selectcolor
736 \selecticon
737 \color{@bgcolor}%
738 \rowcolors{2}{@bgcolor!10}{}%
739 \pagestyle{partpagestyle}%
740 \phantomsection
741 \addcontentsline{toc}{spart}{\hspace{1em}#1}%
742 \def\@partpagepicture{%
743   \put(20,-500){\rotatebox{30}{\parbox{\textwidth}{%
744     \iconfill{1cm}{1.14\textwidth}{20}\
745     \iconfill{1cm}{1.15\textwidth}{100}\
746     \iconfill{1cm}{1.14\textwidth}{20}}}}}%
747 \markboth{#1}{#1}%
748 \null
749 \newpage
750 \def\@partpagepicture{\put(150,-150){\rotatebox{30}{\iconfill{1cm}{12cm}{20}}}%
751 \gdef\@partpagepicture{}}
752 {\interlinepenalty \@M
753   \vspace*{80\p@}
754   \captionfamily
755   \parbox[b]{0.8\textwidth}{\fontsize{64\p@}{72\p@}\selectfont
756     \raggedright\null#1\par}\par\vskip80\p@
757   }%
758 \par}

\sectionmark We do not want to have uppercase sections in the footers
759 \def\sectionmark#1{\markright{#1}}

\section New sections start on a recto page in one column mode and on a verso page in
two column mode
760 \renewcommand\section{\par\clearspread
761   \@startsection {section}{1}{\z@}%
762                                     {-1sp}%
763                                     {2.3ex \@plus.2ex}%
764                                     {\normalfont\Large\bfseries\raggedright
765                                     \color{@bgcolor}}}
```

3.13 Tables

\tablepages Long tables at the end of a part

```

766 \newenvironment{tablepages}{\onecolumn
767   \bgroup\narrowfamily\multicolsep=\z@
768   \vspace*{-2cm}%
769   \def\emph{\textsl}%
770   \begin{adjmulticols}{1}{-1.3cm}{-1.3cm}\centering\normalcolor}%
771   {\end{adjmulticols}\egroup}
```

\tablemph Some styles define \tablemph commands. Here we supply a stub

```

772 \AtBeginDocument{\providecommand{\tablemph}[1]{\emph{#1}}}
```


We define new column types for table headers:

```
773 \newcolumntype{d}[1]{D{.}{.}{#1}}
774 \newcolumntype{H}{>{\columncolor{@tableheadcolor}[1.01\tabcolsep][1.01\tabcolsep]}c}
```

P columntype is much more complex. Basically we want a centered entry with a parbox of the given width inside.:

```
775 \newcolumntype{P}[1]{>{\columncolor{@tableheadcolor}[1.01\tabcolsep][1.01\tabcolsep]}%
776   \@fao@Pentry{#1}}c<{\end@fao@Pentry}}
```

`\@fao@Pentry` Since `\parbox` needs “real” braces to delimit the argument, we use this trick. Note `\hspace{Opt}` to allow T_EX to hyphenate the first word.

```
777 \def\@fao@Pentry#1#2\end@fao@Pentry{%
778   \parbox[t]{#1}{\centering\strut\hspace{\z@}#2\strut}}
```

Same with C entry:

```
779 \newcolumntype{C}[1]{>{\columncolor{@tableheadcolor}[1.01\tabcolsep][1.01\tabcolsep]}%
780   \@fao@Centry{#1}}c<{\end@fao@Centry}}
```

`\@fao@Centry` This macro is similar to `\@fao@Pentry`, but with different way to set the width of the `\parbox`:

```
781 \def\@fao@Centry#1#2\end@fao@Centry{%
782   \settowidth{\@tempdima}{$-99.999$}%
783   \@tempdima=#1\@tempdima\relax
784   \parbox[t]{\@tempdima}{\centering\strut\hspace{\z@}#2\strut}}
```

`\LT@makecaption` This macro produces the caption for the long tables. We redefine it to get the tables in the way specified by the designer

```
785 \def\LT@makecaption#1#2#3{%
786   \LT@mcol\LT@cols {#1}{\cellcolor{white}}%
787   \rlap{\fcolorbox{white}{@tableheadcolor}{\normalsize
788     \captionfamily\large\strut
789     \textcolor{white}{#1{\MakeUppercase{#2}: }#3}}}%
790   \begin{picture}(0,0)%
791     \put(.5,-7){\color{@bgcolor}}%
792     \begin{tikzpicture}[baseline=(current bounding box.north)]
793       \fill (0,0) -- (\nf@trianglebase,0) --
794         (.5\nf@trianglebase,-\nf@trianglebase) -- cycle;
795     \end{tikzpicture}}
796   \end{picture}\normalcolor
797   \raisebox{-17pt}{\strut}}}
```

3.14 Front Matter

`\@generic toc` This is a generic macro with two parameters: name of the toc and file extension

```
798 \def\@generic toc#1#2{\clearspread
799   {\fontsize{48pt}{48pt}\selectfont
800     \captionfamily\color{black!40}#1\par}\@mkboth{#1}{#1}\bigskip
801   \@starttoc{#2}}
```

```

\tableofcontents Our table of contents
802 \renewcommand\tableofcontents{\clearspread
803 \mkboth{\contentsname}{\contentsname}%
804 \makebox[0pt][l]{\fontsize{24pt}{32pt}\selectfont \bfseries
805 \color{black!70}\MakeUppercase{\contentsname}\space}%
806 \par\vspace{-2\baselineskip}\vspace{-\parskip}%
807 \@starttoc{toc}}

\@tocpartskip This is the skip between the parts in TOC:
808 \newlength{\@tocpartskip}
809 \define@key{fao}{tocpartskip}{\setlength{\@tocpartskip}{#1}}
810 \faoset{tocpartskip=\z@}

\@fao@tocrule@start The start of the current TOC colored rule
811 \newdimen\@fao@tocrule@start

\@fao@tocrule@height The height of the current TOC rule
812 \newdimen\@fao@tocrule@height

\@draw@tocrule@part Drawing the toc rule for a part
813 \def\@draw@tocrule@part{\@fao@tocrule@height=\pagetotal
814 \protected@write\@auxout{}\{\string\@fao@partblobbottom{\@fao@currentpartnum}\the\@fao@tocrule@height\}}
815 \advance\@fao@tocrule@height-\@fao@tocrule@start
816 \bgroup\parskip\z@
817 \parbox[b][\z@]{\z@}{\hspace*{-15\p@}\color{@bgcolor}\rule{2\p@}{\@fao@tocrule@height}}%
818 \parbox[b][\z@]{\z@}{\hspace*{330\p@}%
819 \color{@bgcolor}\rule{41\p@}{\@fao@tocrule@height}}%
820 \par\vspace{-0.5\baselineskip}\egroup}

\@draw@tocrule@section Drawing the toc rule for a section
821 \def\@draw@tocrule@section{\@fao@tocrule@height=\pagetotal
822 \protected@write\@auxout{}\{\string\@fao@partblobbottom{\@fao@currentpartnum}\the\@fao@tocrule@height\}}
823 \advance\@fao@tocrule@height-\@fao@tocrule@start
824 \advance\@fao@tocrule@height5\p@
825 \bgroup\parskip\z@\small
826 \raisebox{\baselineskip}[\z@][\z@]{\parbox[b][\z@]{\z@}{\hspace*{-35\p@}\color{@bgcolor}\rule{2\p@}{\@fao@tocrule@height}}}%
827 \raisebox{\baselineskip}[\z@][\z@]{\parbox[b][\z@]{\z@}{\hspace*{310\p@}%
828 \color{@bgcolor}\rule{41\p@}{\@fao@tocrule@height}}}%
829 \par\vspace{-\baselineskip}\egroup}

\l@part This prints the part in TOC:
830 \renewcommand*\l@part[2]{%
831 \ifnum \c@tocdepth >-2\relax
832 \addpenalty{-\@highpenalty}%
833 \setlength\@tempdima{3em}%
834 \addvspace{\@tocpartskip}%
835 \begingroup

```

We store the current vertical position of the page into \@fao@tocrule@start

```

836 %      \addvspace{-2pc}\par
837      \@fao@tocrule@start=\pagetotal
838      \protected@write\@auxout{}\{\string\fao@partblobtop{\fao@currentpartnum}\the\fao@tocrule@start\}
839      \parindent \z@ \rightskip \@pnumwidth
840      \parfillskip -\@pnumwidth
841      \leftskip180\p@
842      {\leavevmode
843       \color{\bgcolor}\bfseries\partname\space#1:
844       \hfil \hb@xt@\@pnumwidth{\hss #2}}%
845      \par\@draw@tocrule@part
846      \nobreak
847      \global\@nobreaktrue
848      \everypar{\global\@nobreakfalse\everypar{}}%
849      \endgroup
850      \fi}

```

`\l@spart` This adds unnumbered part to TOC

```

851 \newcommand*\l@spart[2]{%
852   \ifnum \c@tocdepth >-2\relax
853     \addpenalty{-\@highpenalty}%
854     \setlength\@tempdima{3em}%
855     \begingroup
856     \@fao@tocrule@start=\pagetotal
857     \protected@write\@auxout{}\{\string\fao@partblobtop{\fao@currentpartnum}\the\fao@tocrule@start\}
858     \parindent \z@ \rightskip \@pnumwidth
859     \parfillskip -\@pnumwidth
860     \leftskip180\p@
861     {\leavevmode
862      \color{\bgcolor}\bfseries#1:
863      \hfil \hb@xt@\@pnumwidth{\hss #2}}%
864     \par\@draw@tocrule@part
865     \nobreak
866     \global\@nobreaktrue
867     \everypar{\global\@nobreakfalse\everypar{}}%
868     \endgroup
869     \fi}

```

`\l@section` This prints the section in TOC:

```

870 \renewcommand*\l@section[2]{%
871   \ifnum \c@tocdepth >-2\relax
872     \addpenalty{-\@highpenalty}%
873     \setlength\@tempdima{3em}%
874     \begingroup
875     \small
876     \@fao@tocrule@start=\pagetotal
877     \leftskip200\p@\relax\parskip\z@
878     \parindent \z@ \rightskip \@pnumwidth
879     \parfillskip -\@pnumwidth

```

```

880      {\leavevmode\small\strut
881      #1\hfil \hb@xt@{\pnumwidth{\hss #2}}\par\@draw@tocrule@section
882      \nobreak
883      \global\@nobreaktrue
884      \everypar{\global\@nobreakfalse\everypar{}}%
885      \endgroup
886      \fi}

\appendix We do not draw colored rules in the TOC part of the appendix:
887 \renewcommand\appendix{%
888   \bookmarksetup{startatroot}%
889   \addtocontents{toc}{\string\let\string\@draw@tocrule@part\string\relax
890     \string\let\string\@draw@tocrule@section\string\relax}}

      We use special formatting of metadata in the lists of... This requires explicit
      \pars at the end:
891 \AtEndDocument{%
892   \immediate\write\@auxout{\string\@writefile{loc}{\string\par}}%
893   \immediate\write\@auxout{\string\@writefile{lot}{\string\par}}%
894   \immediate\write\@auxout{\string\@writefile{lom}{\string\par}}}

\l@nonfloat The generic listing of a nonfloat in a list
895 \newcommand*\l@nonfloat{\@dottedtocline{1}{\z@}{2.3em}}

\numberline The number in table of contents
896 \def\numberline#1{%
897   \raisebox{\z@}{\z@}[\z@]{%
898     \fcolorbox{\bgcolor}{\bgcolor}{%
899       \hb@xt@{\tempdima{\color{white}#1\strut\hfil}}{\hspace{2em}}

\listofmaps Our list of maps
900 \newcommand\listofmaps{\@generic toc{\listofmapsname}{lom}}

\l@map Entry in the list of maps
901 \let\l@map\l@nonfloat

\listoftables Our list of tables
902 \renewcommand\listoftables{\@generic toc{\listtablename}{lot}}

\l@table Entry in the list of tables
903 \let\l@table\l@nonfloat

\listofcharts Our list of charts
904 \newcommand\listofcharts{\@generic toc{\listofchartsname}{loc}}

\l@chart Entry in the list of charts
905 \let\l@chart\l@nonfloat

```

3.15 Metadata

`\metadatasession` The section for metadata:

```
906 \newcommand\metadatasession[1]{\clearspread\twocolumn\normalcolor
907   \section{#1}}
```

`\metadata` This starts the metadata section. The commands inside are local to the metadata.

```
908 \def\metadata#1{\bgroup
909   \def\meta@key{@@@}%
```

Now we define the commands for metadata:

`\key` This sets the key:

```
910   \def\key##1{\NR@getttitle{##1}\phantomsection\label{##1}%
911     \gdef\meta@key{##1}}
```

`\source` This typesets the source:

```
912   \def\source##1{\emph{Source: }##1. }%
```

`\owner` This typesets the owner:

```
913   \def\owner##1{\emph{Owner: }##1. }%
```

```
914   \begin{list}{-}{\topsep8\p@\labelwidth\z@
915     \labelsep\z@\itemindent\z@\parsep0.4ex plus 0.5ex minus
916     0.2ex\relax\listparindent\z@\leftmargin\z@\rightmargin\z@
917     \partopsep\z@}%
918   \item{\bfseries\textbullet~#1\par\penalty10000}}
```

`\endmetadata` This closes the environment:

```
919 \def\endmetadata{%
920   \expandafter\ifx\csname
921     metaback@\meta@key\endcsname\relax
922   \else
923     \emph{Referenced in: }
924     \csname metaback@\meta@key\endcsname
925   \fi
926   \end{list}\egroup}
```

`\refMetadata` The way we actually reference the metadata:

```
927 \def\refMetadata#1{%
928   \ifx\@captive\@undefined\def\@captive{table}\fi
929   \if@filesw
930     \immediate\write\@mainaux{%
931       \string\faometaback{#1}{\@captive}{\csname the\@captive\endcsname}{\thepage}{\@currentpage}
932     }
933 }
```

`\fao@metaback` This reads the backreferences to metadata and prepares the the list. The arguments are: key, float type, number of float, page and hyperref

```
934 \def\fao@metaback#1#2#3#4#5{%
```

```

935 \expandafter\ifx\csname metaback@#1\endcsname\relax
936 \expandafter\gdef\csname metaback@#1\endcsname{%
937   \hyper@linkstart{link}{#5}#2~#3\hyper@linkend}%
938 \else
939   \expandafter\g@addto@macro\csname metaback@#1\endcsname{,
940   \hyper@linkstart{link}{#5}#2~#3\hyper@linkend}%
941 \fi}

```

3.16 Further Reading

`\fitemize` This is the special version of `itemize` for further reading pages. Basically it is a patched kernel version.

```

942 \def\fitemize{%
943   \ifnum \@itemdepth >\thr@@\toodeep\else
944     \advance\@itemdepth\@ne
945     \edef\@itemitem{labelitem\romannumeral\the\@itemdepth}%
946     \expandafter
947     \list
948       \csname\@itemitem\endcsname
949       {\def\makelabel##1{\color{@bgcolor}{##1}\space}%
950       \itemsep\z@\labelwidth\z@
951       \leftmargin\z@\labelsep\z@}%
952 \fi}

```

`\endfitemize` This is standard:

```

953 \let\endfitemize =\endlist

```

`\freading` This is the “Further Reading environment”

```

954 \newenvironment{freading}{%
955   \vfill\section*{Further reading}\par
956   \vspace{-\baselineskip}{\color{@bgcolor}{\rule{\columnwidth}{1.5pt}}}\par
957   \vspace{-\baselineskip}\bgroup
958   \let\itemize=\fitemize
959   \let\enditemize=\endfitemize}{\egroup}

```

3.17 Publications

`\@publicationskip` Skip between the publications. By default `\medskip`:

```

960 \newlength{\@publicationskip}
961 \define@key{fao}{publicationskip}{\setlength{\@publicationskip}{#1}}
962 \faoset{publicationskip=6pt plus 2pt minus 2pt}

```

`\@publicationparskip` Paragraph skip between the publications.

```

963 \newlength{\@publicationparskip}
964 \define@key{fao}{publicationparskip}{\setlength{\@publicationparskip}{#1}}
965 \faoset{publicationparskip=6pt plus 6pt minus 4pt}

```

`\publication` This typesets one publication:

```
966 \newenvironment{publication}[2][]{%
967   \par{\bfseries#2\par}\begin{minipage}[t]{0.49\columnwidth}%
968     \setlength\parskip{\@publicationparskip}%
969     \gdef\@pub@cover{#1}%
970     \long\def\pDescription##1{\par##1\par}%
971     \def\pEdition##1##2{\par##1: ##2\par}%
972     \def\pCycle##1{\par Publication cycle: ##1\par}%
973     \def\pWeb##1{\par \raggedright Webpage: \url{##1}\par}}%
974 {\end{minipage}%
975   \ifx\@pub@cover\@empty\else
976     \hspace{0.1\columnwidth}%
977     \raisebox{\dimexpr\baselineskip-\totalheight}{%
978       \includegraphics[width=0.4\columnwidth]{\@pub@cover}}\fi\par
979   \vspace{\@publicationskip}}
```

3.18 Subscripts

`\textsubscript` This follows standard L^AT_EX:

```
980 \DeclareRobustCommand*\textsubscript[1]{%
981   \@textsubscript{\selectfont#1}}
982 \def\@textsubscript#1{%
983   {\m@th\ensuremath{_{\mbox{\fontsize\sf@size\z@#1}}}}}
```

3.19 LyX code

`\lyxlist` It seems Lyx wants this:

```
984 \newenvironment{lyxlist}[1]
985 {\begin{list}{}}
986 {\settowidth{\labelwidth}{#1}
987   \setlength{\leftmargin}{\labelwidth}
988   \addtolength{\leftmargin}{\labelsep}
989   \renewcommand{\makelabel}[1]{##1\hfil}}
990 {\end{list}}
```

3.20 The final word

```
991 \setbgcolor{gray}\selectcolor
992 \pagestyle{standardpagestyle}
993 \normalsize\normalfont
994 </class>
```

References

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Change History

v0.2		v1.1	
\@part: Changed formatting . . .	31	\colored@icon@fg: Added argu- ment	16
iconfill: Rewrote	30	iconfill: Rewrote	30
\EndPartIntro: Deleted \clearspread	30	\currenticonfill: Added macro	30
\newicon: Added macro	16	v1.3	
\section: Redefined	32	\@part: Changed the way the icons are displayed	31
v0.3		\@partpagerpicture: Rewrote us- ing tikz	17
\@generictoc: Added macro . . .	33	General: Added Further Reading from the old code	38
\@toc@ext@list: 11	18	Added metadata from the old code	37
\EndPartIntro: Restored		Added Pubs from the old code	38
\clearspread	30	partpagestyle: Changed position of footers	17
\l@chart: Added macro	36	Rewrote using tikz	17
\l@map: Added macro	36	\EndPartIntro: Added \normalcolor	30
\l@nonfloat: Added macro	36	\evenfootmark: Introduced macro	16
\l@table: Added macro	36	\footskip: Increased	14
\listofcharts: Added macro . .	36	\metadata: Rewrote	37
\listofchartsname: Added macro	22	\metadatasession: Added macro	37
\listofmaps: Added macro . . .	36	\nf@opcol: Typo corrected	27
\listofmapsname: Added macro .	22	\oddfootmark: Introduced macro	16
\listoftables: Added macro . .	36	\tableofcontents: Rewrote	34
\newnon@float: Added writing ex- tensions to the list of extensions	19	standardpagestyle: Changed posi- tion of footers	16
\numberline: Added macro	36		
\tableofcontents: Added macro	34		
v1.0			
\colored@icon: Added macro . .	16		
\colored@icon@fg: Added macro	16		
iconfill: Rewrote	30		
\endnon@float: Source in normal color	21		

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