User's Manual - UTHM thesis template Version 0.3
Using L{}_YX (front-end of L{}^AT{}_EX)

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8 October 2010

Contents

Abstract

This is an explanation of UTHM thesis template that I have prepared to suit UTHM thesis format style. However, the template is not fully completed but provides a general format and style. You can modify it to make it better from time to time and one day the template will be mature and perfectly matched with all expected requirements. If you modify the template and you think it is better than the this version, don't forget to modify this document as well and put your name as the contributors. Of course you can modify this abstract and other parts of this document. You may copy, distribute to others as you wish. This is free, you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 3 of the License, or (at your option) any later version.

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1 LaTeX package requirement

To be able to write your thesis using LyX, you have to make sure your LaTeX distribution already include several packages which are not the standard LaTeX packages in LyX.

The required packages: `koma-script`, `fancy`hdr, `caption, kluwer, tocloft, minitoc, prettyref.` The installation of any LaTeX package should be done from the LaTeX distribution. If you are running Ubuntu, you can install from Synaptic package manager where TexLive optional packages can be selected. For Windows users, you should install from MikTek package manager.

After installing new package, LyX must be reconfigured to use newly installed packages. Reconfiguring LyX from the menu Tools ▷ Reconfigure.

2 Document preparation

2.1 Document class

UTHM thesis is written under LaTeX document class book (KOMA-Script). In order to employ this document class, from the menu Document ▷ Settings and from the option Document Class find book (KOMA-Script).
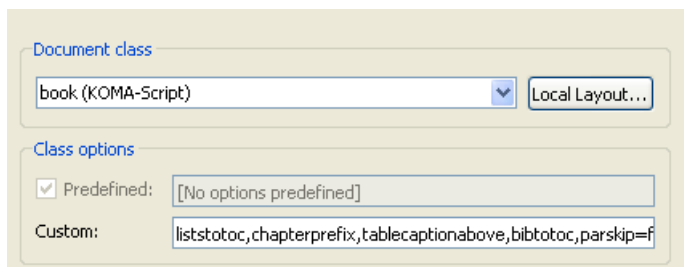
In the custom field, write the optional command: `listtotoc`, `chapterprefix`, `tablecaptionabove`, `bibtotoc`, `parskip=full`, `headings=small`, `numbers=noenddot`.

`listtotoc` prints all lists including List of Figures and List of Tables in TOC (Table of Contents). The default in book (KOMA-Script), all lists are not printed in TOC.

`chapterprefix` prints the "Chapter" prefix in front of chapter number in every chapter.

`tablecaptionabove` puts a correct space between table caption and the table. This is required for placing table below the caption table.

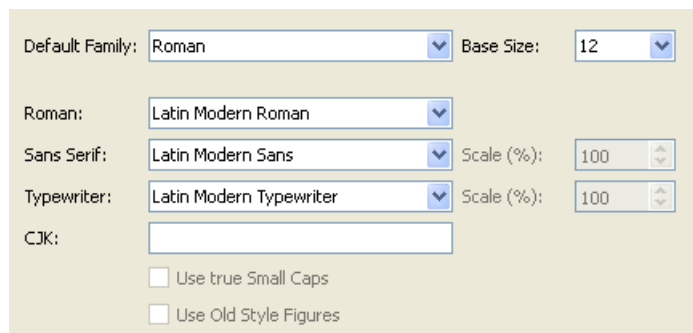**`bibtotoc`** includes references heading in Table of Contents

`parskip=full` provides a full space between paragraph, as defined by the book (KOMA-Script) document class. This is important since in the thesis every paragraph must be visible and separated by a vertical space which is higher than the line space. In case an exact space between paragraphs is required, then you have to write a command `\setlength{\parskip}{1cm}` in LaTeX preamble as explained in section 2.7, instead of `parskip=full`.

`headings=small` defines as `small` headings style. In book (KOMA-Script), other available styles are `normal` and `big`.

`numbers=noenddot` the numbering of sectional units should have no dot at the end if only arabic numbers are used. On the other hand, if roman numerals or letters are appear in the numbering, then a dot should appear at the end of the numbering. If this optional command is not included, when appendix is inserted, then unnecessary dot appears after the chapter number.
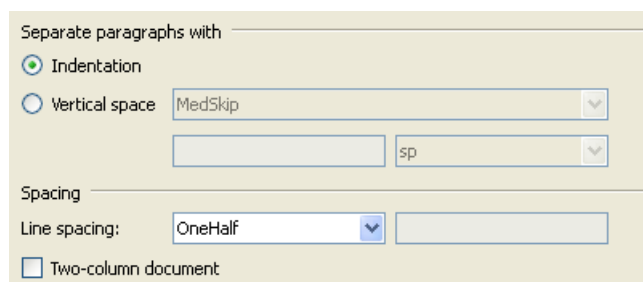
2.2 Fonts

The standard UTHM thesis is written in standard Roman font with base size of 12. The font setting should be adjusted. Go to Document ▷ Settings and from the option Font then change to the following entries:
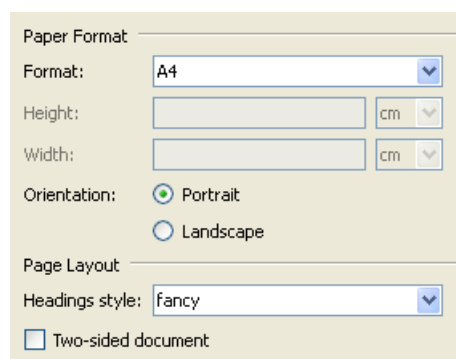
2.3 Text layout

The line spacing of the text should be set here: from the menu Document ▷ Settings then set the line spacing to OneHalf.

2.4 Page layout

The thesis should be printed in A4 size paper. This should be declare from the menu Document ▷ Settings then set the paper format to A4. The heading style to be used is fancy. This fancy style requires fancyhdr package, so make sure you have installed this from your LaTeX package manager.

2.5 Page margins

The default page margin of book (KOMA-Script) does not match with the margin requirement in UTHM Thesis, you need to modify it.

Go to menu Document ▷ Settings then under the option Page Margins, set the margins as follows

2.6 PDF properties

Your pdf output can be nice with all links active, which means the table of contents links to the corresponding pages in the document. Other links within the document also accurately point to the referred page.

LyX has already included hyperref LaTeX package when you install LyX. What you need to do is just activating this package. Go to menu Document ▷ Settings and from PDF Properties option enable the `Use hyperref support` by clicking the radio button. Write the title of the thesis and your name as the ID of pdf document.

You need to write optional commands in Additional options field: `linkcolor=blue`, `citecolor=blue`, `urlcolor=blue`, `pdfstartview=XYZ`, `plainpages=false`, `pdfpagelabels`. The "`blue`" color is recommended during thesis writing process to see clearly all links. You may change the color to any standard color according to your preference. When your thesis is ready to print, the printed result will be better if you switch the color to "`black`".

Once you have finished writing all optional commands in General tab, then modify the Hyperlinks and Bookmark tabs as follows:
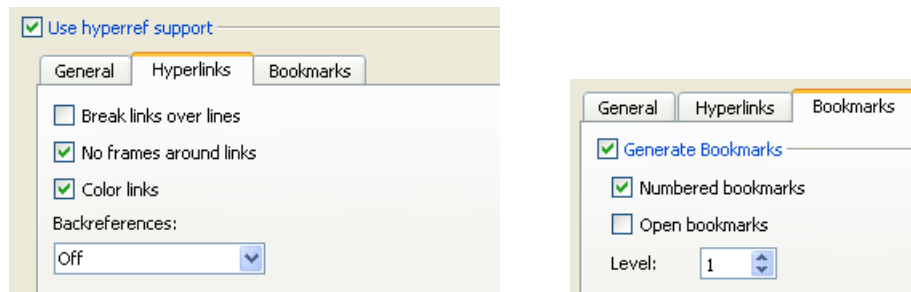
If you want to know what the effects of changing the options under Hyperlinks and Bookmarks tabs, you can modify and view the pdf output. Perhaps you can find the most preferable to you.

2.7 LaTeX Preamble

The next step to prepare the thesis template is writing some additional command in LaTeX preamble, acessable from the menu Document ▷ Settings, LaTeX preamble.

The complete commands written in LaTeX preamble are as follows:

```
% this command prints empty date in title page
\date{}

% this command set the paragraph indentation
% if you want to modify change the value 1.5cm to your preference
\setlength{\parindent}{1.5cm}

% This command will change the default Bibliography to References
\AtBeginDocument{\renewcommand{\bibname}{References}}

% The following comands center the heading of chapters and
% chapter entries, the default is on the left
\addtokomafont{chapterentry}{\centering}
\addtokomafont{chapter}{\centering}

% The following commands set the page numbers on the top right
% except in the beginning of chapters
% using fancyhdr package (page layout>heading style->fancy)
\lhead{}
\chead{}
\rhead{\thepage}
\lfoot{}
\cfoot{}
\rfoot{}
\renewcommand{\headrulewidth}{0pt}

% The following commands set the vertical space before and after
% every chapter entry
\renewcommand*{\chapterheadendvskip}{\vspace{2cm}}
\renewcommand*{\chapterheadstartvskip}{\vspace{2.5cm}}

% The following commands set the TOC, LOT and LOF
% this employs tocloft package
\usepackage{tocloft}
```

```
\renewcommand{\cftdot}{}

\renewcommand{\cfttoctitlefont}{\hfill\Large\bfseries\sffamily}
\renewcommand{\cftaftertoctitle}{\hfill}
\renewcommand{\cftaftertoctitleskip}{2.5cm}
\renewcommand{\cftbeforetoctitleskip}{2.5cm}

\renewcommand{\cftloftitlefont}{\hfill\Large\bfseries\sffamily}
\renewcommand{\cftafterloftitle}{\hfill}
\renewcommand{\cftafterloftitleskip}{2.5cm}
\renewcommand{\cftbeforeloftitleskip}{2.5cm}

\renewcommand{\cftlottitlefont}{\hfill\Large\bfseries\sffamily}
\renewcommand{\cftafterlottitle}{\hfill}
\renewcommand{\cftafterlottitleskip}{2.5cm}
\renewcommand{\cftbeforelottitleskip}{2.5cm}

\newlistof{appendices}{loa}{List of Appendices}
\renewcommand{\cftloatitlefont}{\hfill\Large\bfseries\sffamily}
\renewcommand{\cftafterloatitle}{\hfill}
\renewcommand{\cftafterloatitleskip}{2.5cm}
\renewcommand{\cftbeforeloatitleskip}{2.5cm}

\usepackage{minitoc}

% Redefining automatic label of Figure, Table and Eq.
\usepackage{prettyref}
\newrefformat{tab}{Table\,\ref{#1}}
\newrefformat{fig}{Figure\,\ref{#1}}
\newrefformat{eq}{Eq.\,\textup{(\ref{#1})}}
```

By default the document class book (KOMA-Script) always prints the date of printing in the title page. To disable this a command `\date{}` prints a blank date.

The indentation of the paragraph is set 1.5 cm. This definition should be controlled by the command

```
\setlength{\parindent}{1.5cm}
```

If you want to set the vertical space in exact measurement (for example 1 cm), then you need to insert an additional command

```
\setlength{\parskip}{1cm}
```

The default of Bibliography heading name in book (KOMA-Script) is `Bibliography`. In UTHM thesis, the name is `References`. In this case you need to change the default name defined by \bibname, by using the following command

```
\AtBeginDocument{\renewcommand{\bibname}{References}}
```

The command however works when you are using the default language which is English. In case you want to use another language rather then English. You have to access in the babel level. For example you want to use English (UK), then the command above should be modified to

```
\AtBeginDocument{
        \addto\captionsbritish{
        \renewcommand{\bibname}{References}
}
}
```

In UTHM thesis the page number should be located on the top-right except in the beginning of every chapter and chapter like pages the page number are located at the bottom of the page and centered. To follow this requirement a fancyhdr package is needed (see section 2.4). Write the following commands:

```
\lhead{}
\chead{}
\rhead{\thepage}
\lfoot{}
\cfoot{}
\rfoot{}
\renewcommand{\headrulewidth}{0pt}
```

Another style appeared in UTHM thesis is before and chapter entry, the vertical space is wider then the space between paragraphs. Assuming this vertical space before chapter heading is 2.5 cm and after chapter heading is 2 cm , the following commands will set it accurately.

```
\renewcommand*{\chapterheadendvskip}{\vspace{2cm}}
\renewcommand*{\chapterheadstartvskip}{\vspace{2.5cm}}
```

The settings of TOC, LOF and LOT are controlled by `tocloft` package.

3   Appendices

Appendices are attached in the end of thesis document after References. All numbering in apendices printed in alphabetical character, starting from A.

The format style of appendix is a bit different with the chapter format. To accommodate this the format is set differently and only applicable for the appendices.

After the References heading, TEX commands must be inserted to define the vertical space, before and after the appendix heading:

```
\renewcommand*{\chapterheadendvskip}{\vspace{2cm}}
\renewcommand*{\chapterheadstartvskip}{\vspace{1cm}}
```

The definition of the appendix has been defined from the LYX menu Document ▷ Start Appendix Here. User can make a cross reference to the bibliography database and will be listed in the References.

The contents of Appendices are listed in a separate List of Appendices. The List of Appendices page is defined by `tocloft` command:

```
\newlistof{appendices}{loa}{List of Appendices}
```

The format setting of the heading is consistent with LOF and LOT:

```
\renewcommand{\cftloatitlefont}{\hfill\Large\bfseries\sffamily} \renewcommand{\
   cftafterloatitle}{\hfill} \renewcommand{\cftafterloatitleskip}{2.5cm} \
   renewcommand{\cftbeforeloatitleskip}{2.5cm}
```

In order to print the chapter headings in List of Appendices, right after the appendix definition (from the menu Document ▷ Start Appendix Here), LATEX commands are inserted. This simply copied from book.cls then changed `toc` to `loa`.

```
\makeatletter
\def\@chapter[#1]#2{\ifnum \c@secnumdepth >\m@ne
                    \if@mainmatter
                      \refstepcounter{chapter}%
                      \typeout{\@chapapp\space\thechapter.}%
                      \addcontentsline{loa}{chapter}%
                                {\protect\numberline{\thechapter}#1}%
                    \else
                      \addcontentsline{loa}{chapter}{#1}%
                    \fi
                  \else
                    \addcontentsline{loa}{chapter}{#1}%
                  \fi
                  \chaptermark{#1}%
                  \addtocontents{lof}{\protect\addvspace{10\p@}}%
```

```
                    \addtocontents{lot}{\protect\addvspace{10\p@}}%
                    \if@twocolumn
                      \@topnewpage[\@makechapterhead{#2}]%
                    \else
                      \@makechapterhead{#2}%
                      \@afterheading
                    \fi}
\makeatother
```

To prevent section headings of the appendices printed in TOC, `minitoc` command is used. The package minitoc must be called in the preamble `\usepackage{minitoc}`.

```
\addtocontents{toc}{\protect\setcounter{tocdepth}{0}}
```

4 Cross References

For automatic labeling with prefix Figure, Table and Eq. in the text, the thesis template uses `prettyref` package. The default formats for figure, table and equation have been changed. The new command written in latex preamble:

```
% Redefining automatic label of Figure, Table and Eq.
\usepackage{prettyref}
\newrefformat{tab}{Table\,\ref{#1}}
\newrefformat{fig}{Figure\,\ref{#1}}
\newrefformat{eq}{Eq.\,\textup{(\ref{#1})}}
```

To make a reference to a figure, table or equation Inserting (Document ▷ Insert ▷ Cross-reference), the format must be set to `Formatted reference`.
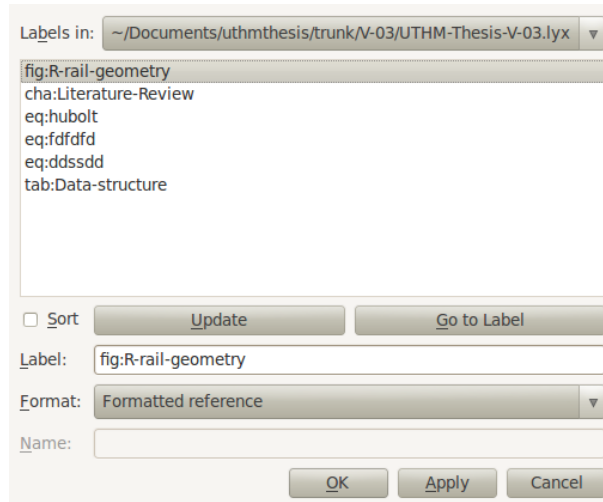
5 Bibliography

There are two template versions available. One has numeric bibliography style (`UTHM-Thesis-V-xx.lyx`) and another one uses author-year style (`UTHM-Thesis-authoryear-V-xx.lyx`)

5.1 Numerical bibliography style

- When you insert the bibliography in the first time and attaching bibliography database file (*.bib), from the menu Insert ▷ List/TOC ▷ BibTeX Bibliography, you have to select `klunum` as the bibliography style. The package `klunum` is provided by Kluwer international publisher for numeric citation and bibliography styles.

- For Ubuntu users, `kluwer` and other publishers styles can be made available if you are installing `texlive-publishers`. If you are using Windows, `kluwer` package must be installed from MikTek package manager.

5.2 Author-year bibliography style

- When you insert the bibliography in the first time and attaching bibliography database file (*.bib), from the menu Insert ▷ List/TOC ▷ BibTeX Bibliography, you have to use klun**amed** as the bibliography style. The package `klunamed` is provided by Kluwer international publisher for author-year citation and bibliography styles.

- The citation style must be consistent with author-year style. Go to menu Document ▷ Settings ▷ Bibliography, then change the default (numerical) to Natbib (author-year).

6 Modification records

Version 0.3: (8-October-2010)

- <was.uthm> updated manual, new sections: appendices and cross reference

- <was.uthm, Richard Heck> include appendices in the template, Separate List of Appendices

- <was.uthm, Agus Anggono> automatic cross references with prefix Figure, Table and Eq.

Version 0.2: (29-September-2010)

- <was.uthm> updated manual

- <was.uthm> title page updated

- <was.uthm> page margin: change margins

- <was.uthm> add students declaration page, dedication page

- <was.uthm> create author-year version (`UTHM-Thesis-authoryear-V-xx.lyx`)

- <was.uthm> modify TOC, LOF and LOT without leader dots (employing `tocloft`)

Version 0.1: (23-September-2010)

- <was.uthm> The first version is released to public

7 Guidelines to contributors

7.1 Modifying documents

Please free to modify and to contribute!

Whenever you modify UTHM thesis template (filename: `UTHM-Thesis-V-01.lyx`) you are requested to save in the subsequent version `UTHM-Thesis-V-xx.lyx`, where `xx` is the numbers. If you have modified `V-01`, you have to save `V-02`. Inside the document (the first page), there is a note indicating the version number and the date of realease. Please modify this consistently with the file version.

You need to modify and to document the modifications that you have done in the manual (this file): `uthm-thesis-manual-V-01.lyx`.

Apart from the mannual contents that should be in good agreement with the thesis template, there are several sections you need to modify. This is very important so that other contributors want to make better have sufficient information what have been done previously.

Filename

You are requested to save the new version following. If the file is `UTHM-Thesis-V-01.lyx`, the released version to public must be `UTHM-Thesis-V-02.lyx`

Title

The title must be adjusted according to the new release version

PDF Properties

The title of the pdf properties (Document ▷ Settings and from PDF Properties) should be adjusted to be consistent with the version number

Release date

The release date should modified before you release to public. This information is written in LATEX Preamble accessible from the menu Document ▷ Settings, LATEX Preamble

Modification records

Write the summary of the modification in the new release. This modification records are written in section 6.

7.2 Working with PySVN Workbench

7.3 LYX version control