User's Manual - UTHM thesis template Version 0.4 Using LyX (front-end of LATEX)

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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 to satisfy your own preference. If you modify this template and you think it is better, please send your modifications to me so I can put them in the next release. 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. Online version this explanation can be found here http://sites.google.com/site/lyxthesistemplate. All template sources are saved here: http://code.google.com/p/uthm-thesis-lyx/.

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.

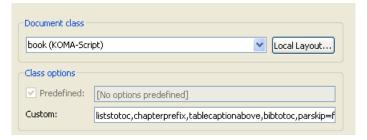
The required packages: koma-script, fancyhdr, caption, kluwer (klunamed.bst and klunum.bst), tocloft, minitoc, prettyref. The installation of any LATEX package should be done from the LATEX distribution. If you are running Ubuntu, you can install from Synaptic package manager where TexLive optional packages can be selected. For Windows users, you should install from MikTEX package manager.

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

2 Document preparation

2.1 Document class

UTHM thesis is written under IATEX 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

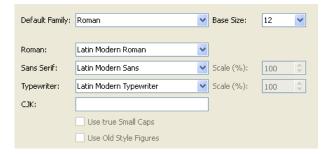
parskip=full provides a full space between paragraph, as defined by the book (KOMA-Script) document class. This is important since in the thesis every paragraph must be visible and separated by a vertical space which is higher than the line space. In case an exact space between paragraphs is required,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

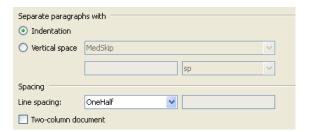
2.2 Fonts

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:



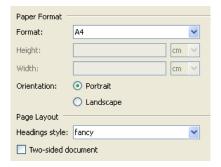
2.3 Text layout

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

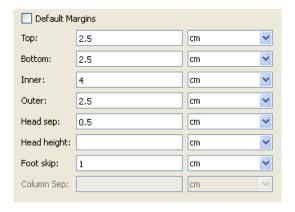
The thesis should be printed in A4 size paper. This should be declare from the menu Document > Settings then set the paper format to A4. The heading style to be used is fancy. This fancy style requires fancyhdr package, so make sure you have installed this from your LATEX package manager.



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.

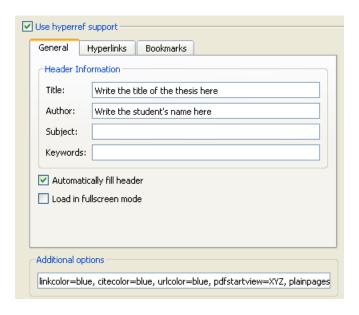
Go to menu Document > Settings then under the option Page Margins, set the margins as follows



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.

I_YX has already included hyperref I^AT_EX package when you install I_YX. 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, accessable from the menu $\texttt{Document} \triangleright \texttt{Settings}$, 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}
    \renewcommand{\nomname}{List of Symbols}
}
% 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)
\chead{}
\rhead{\thepage}
\lfoot{}
\cfoot{}
\rfoot{}
\renewcommand{\headrulewidth}{Opt}
% 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}{1.5 cm}

If you want to set the vertical space in exact measurement (for example $1\,\mathrm{cm}$), 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 than 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

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{\thepage}
\lfoot{}
\cfoot{}
\rfoot{}
\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 $2.5\,\mathrm{cm}$ and after chapter heading is $2\,\mathrm{cm}$, 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 numberings in appendices are 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, T_EX 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 L_YX 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:

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

```
\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}. This command is not written in LaTeX preamble, but right after the appendix definition.

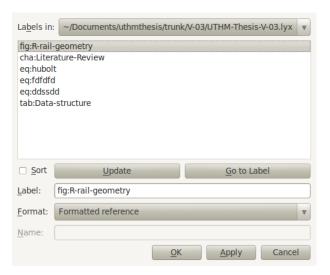
\addtocontents{toc}{\protect\setcounter{tocdepth}{0}}

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:

```
\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 MikTEX 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 klunamed 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).

Please note in V-04, the style has been changed and used a customized style. The file of this bibliography style is UTHM-ref-style-V-04.bst. This file replaces klunamed.

5.3 Citation

After you have defined the bibliography, then the bibliography database can cited anywhere in the document, from the menu Insert > Citation. The citation style will be always consistent with the bibliography style.

6 Guidelines to contributors

6.1 Template sources

All LyX template sources are saved in google code. You can always get the latest version from the syn repository.

To obtain the copy from the source you need to install subversion¹ (SVN) in your local computer. From within the directory where you want to place your local copy of the sources, do:

```
svn checkout http://uthm-thesis-lyx.googlecode.com/svn/ thesis-template
```

This will make a directory thesis-template and download all files into that directory including those in branch folder.

If you are only interested in development files that will be included in the next version, then do:

```
svn checkout http://uthm-thesis-lyx.googlecode.com/svn/trunk/ thesis-template
```

There are various of opensource GUI subversions available. In this manual only two of them are discussed, i.e. PySVN Workbench (see section 6.3) for Ubuntu and TortoiseSVN for Windows (see section 6.4).

6.2 Modifying documents

Please free to modify and to contribute! There are several folders in your trunk development folder.

If you want to modify, please use the latest version, indicated by the version xx, containing one folder and files:

¹The information of Subversion(SVN) can be obtained from the project homepage http://subversion.tigris.org/

```
\manual-figures
CHANGELOG
CREDITS
LICENSE
README
sample.png
thesis.bib
UTHM-ref-style-V-04.bst
UTHM-Thesis-authoryear-V-xx.lyx
UTHM-Thesis-authoryear-BM-V-xx.lyx
UTHM-Thesis-Manual-V-xx.lyx
UTHM-Thesis-V-xx.lyx
```

UTHM-Thesis-authoryear-V-xx.lyx is the thesis template that uses author-year bybliography/citation system from a BibT_FX database file thesis.bib. This template requires an image sample.png

UTHM-Thesis-authoryear-BM-V-xx.lyx is the author-year thesis template in Bahasa Melayu

UTHM-Thesis-V-xx.lyx is another version of the thesis template but using numerical bybliography/citation. The dependend files used by this template is also thesis.bib and sample.png

UTHM-Thesis-Manual-V-xx.lyx is this document. It explains all settings used in the templates and other relevant information. This document uses figures from folder manual-figures

UTHM-ref-style-V-xx.bst is the biblography style used in author-year version

 $\hbox{\tt CHANGELOG} \ is \ where \ modifications \ of \ \hbox{\tt UTHM-Thesis-authoryear-V-xx.lyx} \ and \ \hbox{\tt UTHM-Thesis-V-xx.lyx} \ are \ recorded$

README is a general information of the thesis template

CREDITS is a document where all contributors are listed

LICENSE provides the license information used for this lyx thesis template

manual-figures is a folder containing all figures used by the manual (this document)

thesis.bib is a bibliography database file where all bibliography data are documented. The format follows the standard BibTEX format. A reference manager JabRef is a useful tool to prepare BibTEX database.

6.3 Working with SVN Workbench (Ubuntu)

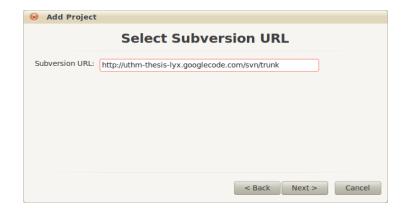
SVN Workbench Intallation

Installation wizard can be found from Ubuntu Software Center, from the menu Applications > Ubuntu Software Center. In the dialog, just type svn workbench in the searching field. You will find SVN Workbench in the list that you can select and install. You need to have Internet connection to access Ubuntu repository. After a successful installation, SVN Workbench can be found under Programming menu (Applications > Programming).

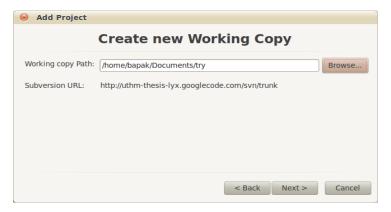
Creating Local SVN Working Copy

Open your SVN Workbench (Applications ▷ Programming ▷ SVN Workbench). From the Project menu select Add... to start the Add Project Wizard.

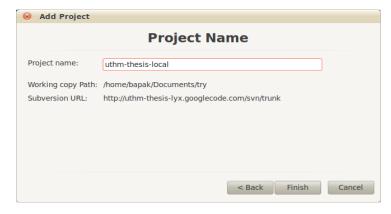
Select the subversion URL http://uthm-thesis-lyx.googlecode.com/svn/trunk. This will select only trunk folder. If you want to select all folders in SVN repository, use http://uthm-thesis-lyx.googlecode.com/svn. If you want have a check-in access (required password), you need to use https instead of http.



After clicking Next button, you are requested to enter an empty folder as your local working directory (for example \$HOME/Documents/try). Use Browse button if you want to search a folder.



The last stage in defining your SVN working copy is by naming the project (for example uthm-thesis-local).



On confirming Finish button, you will see a project uthm-thesis-local with red comment "Use the checkout to fetch". Now, go to the menu Actions > Checkout.

You should see all folders copied in your local trunk. It is recommended to update regularly your local project (Actions > Update) to make sure you have the most up-to-date files.

Modifying lyx File in SVN Workbench

Please modify files only from the last version in trunk folder that will be released in the next version.

If you want to modify one of sources (for example UTHM-Thesis-authoryear-BM-V-xx.lyx), select the file and from menu Actions, select Open or by clicking the icon. On the top of your LyX window, it will be indicated as version control. When you save your modification, this modified file will be tagged

as M and the color changed to blue. Any modified file in your local folder which is different with the SVN repository will be shown in blue color. The modification will only be saved in your local directory. The modified file will be saved in SVN repository (in googlecode) after you check it in.

Saving modified files to SVN repository

There are three methods:

- Send your modified files to the project administrator or other contributors who have checkin password
- 2. If you have checkin password, you can commit it directly to SVN repository in googlecode from your local SVN Workbench. Select the modified file that you want to commit, then checkin (Actions ▷ Checkin, or by clicking ▶ button). For multiple files, use Ctrl when selecting modified files
- 3. If you are working with LyX, committing to SVN repository can be done from within LyX, using LyX version control feature (see section 6.5). This requires checkin password.

6.4 Working with TortoiseSVN (Windows)

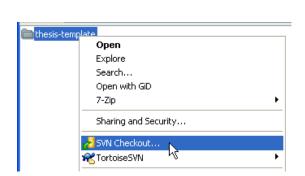
TortoiseSVN Installation

You need to download the installer from http://tortoisesvn.net/downloads. After a successfull installation, it integrates in the file explorer which means you can use it with the tool you are most familiar with. All commands are available directly from the windows explorer. You can choose which entries TortoiseSVN should show in the top context menu and which it should put in the submenu.

To make sure your TortoiseSVN is ready, just right click in any folder in your windows file explorer, you should see TortoiseSVN submenus.

Creating Local SVN Working Copy

You need to create an empty folder for your working directory. By rightcliking the empty folder, select SVN checkout, then enter the URL address where the lyx-thesis-template is saved in googlecode. If you have checkin password, use https instead of http.



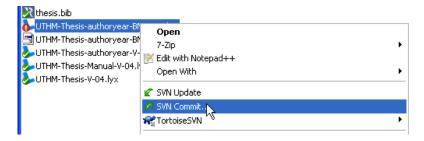


On clicking OK button, all files under /svn folder in the repository will be copied to your local checkout local folder. It is suggested you update your local directory regularly, especially if you want to make any modification to make sure you are using the latest version.

If you want to modify a file, you can just double click on the file or open with an application software that you want.

Committing update

If you want to commit the changes to the SVN repository, right click on the modified file (indicated by red puctuation mark) then click SVN Commit.

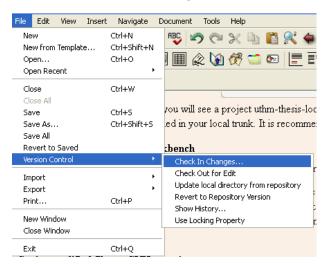


If you use https checkout, a dialog requestiong your username and password will appear. Your password can be found in the Source tab in lyx-thesis-template in googlecode (you need to sign in).



6.5 LyX version control

If you modify LyX file, you can checkin to SVN repository directly from within LyX. It will be very simple. Go to menu File > Version Control > Checkin Changes.



7 Modification records

Version 0.4: (29-January-2011)

• <was.uthm> updated manual

- <was.uthm, Hanani> Bahasa Melayu version is included (UTHM-Thesis-authoryear-BM-V-04.lyx)
- <was.uthm> Added List of Symbols
- $\bullet \ < \! \text{was.uthm} \! > \! \text{for author-year version, the bibliography style uses a custumized style UTHM-ref-style-V-04.bst}$

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
- $\bullet~<\!\!\mathrm{was.uthm}\!\!>$ page margin: change margins
- $\bullet~<$ 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

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