Disseration and Thesis Document Class

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February 15, 2019

1 Document Class

Your main file should have `\documentclass[12pt]{thesis}` as the first line. This document class is based on the `report` class, so any option available in the `report` class should be available, with two exceptions: the `twocolumn` and `titlepage` options are not available in the thesis class. For example `\documentclass[11pt,twocolumn]{thesis}` will not work. You should be able to use any package that works for the report document class. For example, `\usepackage{graphicx}` should work.

The thesis class also includes an optional bibliography style and set of macros for doing citations similar to the way they are specified in the Chicago manual of style. The bibliography style and citation package are based on the standard LaTeX chicago bibliograhpy style and package. You can use `\bibliographystyle{thesis}` if you have the `thesis.bst` file. In that case, you should also use `\usepackage{thesiscitations}` to get the matching citation macros. There is a separate PDF file describing those extended `\cite` macros.

`\bibliographystyle`

If you are doing a Computer Science Thesis, then you should use `\bibliographystyle{acm}` or `\bibliographystyle{ieeetr}`, and *not* have the `\usepackage{thesiscitations}` command.

2 Chapter Title Position

After the `\documentclass{}` statement, you can use one of these three commands to change the position of the chapter titles. Chapter titles will be left justified unless you specify otherwise.

`\lefttitles` The `\lefttitles` command sets chapter titles to be left justified.

`\centertitles` The `\centertitles` command sets chapter titles to be centered.

`\righttitles` The `\righttitles` command sets chapter titles to be right justified.

3 Optional Draft Commands

You can optionally specify the draft mode and spacing. These commands allow you to print draft copies with single and 1.5 spacing to save paper. A doublespace draft mode is also available so you can check the final formatting. If you do not specify a draft mode, then a final copy will be generated.

`\ssdraft` shifts to single spacing and puts DRAFT in the heading of every page.

`\hsdraft` shifts to 1.5 spacing and puts DRAFT in the heading of every page.

`\dsdraft` shifts to double spacing and puts DRAFT in the heading of every page. This mode should create a document that is identical to your final copy except for the DRAFT heading.

4 Definitions

After the optional `\ssdraft`, `\hsdraft`, or `\dsdraft` statement, you have to define some information that will be used for the cover sheet, running header, etc. each of the following macros takes one argument.

`\doctype` defines the type of document and should be written as either `\doctype{thesis}` or `\doctype{dissertation}`.

`\title` works just like in any other LaTeX document.

`\author` works just like in any other LaTeX document.

`\degree` defines the type of degree. It should be

```
\degree{Doctor of Philosophy in Underwater Basket Weaving}
\degree{Master of Science in Applied Handball}
\degree{Master of Arts in Finger Painting}
```

or whatever is appropriate for your degree.

`\defensedate` defines the date of the oral defense. For example:

```
\defensedate{January 12, 1988}
```

`\gradyear` defines the year you are graduating, It should be four digits.

`\department` defines the department that is granting your degree, examples:

```
\department{Department of Mathematics and Computer Science}
\department{Department of Zoology}
\department{Department of Redundancy Department}
```

`\signatureline` adds a line to the signature page where someone needs to sign. Examples:

```
\signatureline{Major Professor --- Dimm Whitt, Ph.D., Department of Zoology}
\signatureline{Graduate Division Representative --- E.\ Nigma, Ph.D., Department of Philos
\signatureline{Committee Member --- Chip Munk, Ph.D., Department of Zoology}
\signatureline{Head of the Zoology Department --- Earl E. Bird, Ph.D.}
\signatureline{Dean of Graduate Education --- Raney Daze}
```

5 Sections within the document

The thesis or dissertation is divided into 3 main sections: preliminaries, body, and supplementaries. There are 3 commands used to switch from one main section to the next.

`\preliminaries` The preliminaries section is for maketitle, table of contents, etc and comes directly after the the `\begin{document}` command.

`\body` The body section is for the main body of your work and it should come directly after the last section in the preliminaries.

`\supplementaries` The supplementary section contains the bibliography, appendices, glossary, index, and vita.

6 Commands and Environments in the Preliminaries

There are several commands and environments for use within the preliminaries section.

`\maketitle` The `\maketitle` command creates the title page, just as it does for other LaTeX classes.

`\makecopyright` The `\makecopyright` command creates a copyright page. Read the section about copyright in the Thesis and Dissertation Writing Instructions from the graduate school.

`abstract` The abstract environment is used the same as for any other LaTeX document. Just use `\begin{abstract} text \end{abstract}` as usual.

`acknowledgments` The acknowledgments environment creates a new page with at title for acknowledgments. It works very much like the `abstract` environment.

`\tableofcontents` The `\tableofcontents` macro makes a new page with the table of contents on it. It works

just like it does in other document classes

`\listoftables` The `\listoftables` macro makes a new page with the list of tables on it. It works just like it does in other document classes

`\listoffigures` The `\listoffigures` macro makes a new page with the list of figures on it. It works just like it does in other document classes

`listofsymbols` The `listofsymbols` environment lets you include a table of symbols and acronyms. You must build the table yourself within the environment, using the table or other environments. Use `\begin{listofsympols}` text `\end{listofsymols}` if you want one.

`listofkeywords` The `listofkeywords` environment lets you include a table of keywords. You must build the table yourself within the environment. Use `\begin{listofkeywords}` `text` `\end{listofkeywords}` if you want one.

`dedication` The dedication environment creates a new page with at title for the dedication. It works very much like the `abstract` environment.

`preface` The preface environment creates a new page with at title for the preface. It works very much like the `abstract` environment.

7 Commands and environments within the body

Commands and envionments within the body text should work as normal for the report document class. Use `\chapter{}`, `\section{}`, etc. You may wish to write the body in a separate file and just include it at the appropriate place.

8 Commands and environments within the supplementaries

The supplementaries section contains the bibliography, appendices, and other additional information that you may wish to include. There is a file named `thesis.bst` that is supposed to be supplied with the thesis class. If you do not have `thesis.bst`, or do not want to use it, then you can use the Chicago bibliography style (or any style appropriate for your field). Other than that, the bibliography should be created as you would for any other document class.

`appendices` The `appendices` environment is used to create the appendices. Within this environment, the `\appendix` macro is used to create individual appendices. The `\appendix` macro works just like the `\chapter` macro, but generates an appendix rather than a chapter.

`\appendix` The `\appendix` macro works like `\chapter`, but `\appendix` in used within the `appendix` environment.

`gloss` The `gloss` environment is used to create a glossary. The environment starts a new page and puts an appropriate heading, you have to fill in the text yourself. Use `\begin{glossary}` `text` `\end{glossary}` to create a glossary.

`abbreviations` The `abbreviations` environment is used to create list of abbreviations. The environment starts a new page and puts an appropriate heading, you have to fill in the text yourself. Use `\begin{abbreviations}` `text` `\end{abbreviations}` to create a list of abbreviations.

`\makeindex` The index generation macros work the same as in other document classes. Put `\usepackage{makeidx}` and `\makeindex` somewhere before `\begin{document}` if you want to use makeindex to create an index.

`\index` Use the `\index` macro as described in "The LaTeX Companion" and "LaTeX: a Document Preparation Language" to add entries to your index.

`\printindex` The `\printindex` macro is used to insert an index created by the `makeindex` program. The macro starts a new page and puts an appropriate heading, then inserts the index.

`vita` The vita environment creates a new page with at title for the vita. It works very much like the `abstract` environment. All SDSMT theses and dissertations must have a vita, not over one page in length. It must be the last page in the thesis or dissertation and must contain the following information:

1. place and date of birth,
2. place and date of high school graduation,
3. place and date of college graduation, including degree an major,
4. place and date of receipt of master's degree, including major, (for dissertations only),
5. vocational and professional experience (not summer jobs), including dates, nature of position, and school or organization,
6. military experience, with indication of professional relevance, if any,
7. scholarly publications, exhibits of creative work, membership in professional organizations and honorary societies.

9 General use commands and defaults

`\singlespace` `\doublespace` The `\singlespace` command is used to switch to single spacing mode, and `\doublespace`is used to switch to double spacing mode. NOTE: The doublespace command is overridden by the `\ssdraft` and `\hsdraft` commands!

10 Example

```
\documentclass[12pt]{thesis}

\usepackage{graphicx}
\usepackage{makeidx}
\usepackage{subfig}

% Uncomment the following two lines and comment out the third one
% if you want to use the Chicago Manual based bibliography.
%\usepackage{thesiscitations}
%\bibliographystyle{thesis}
\bibliographystyle{ieeetr}

% Uncomment next line if you want chapter titles centered
%\centertitles

Uncomment next line to print a double-spaced draft version
%\dsdraft

Uncomment next line to print a single-spaced draft version
%\ssdraft

\makeindex

\doctype{thesis}
\title{A Compative Study of Gnus and Gnats}
\author{Harvey Finklebaum}
```

```
\degree{Doctor of Philosophy in Zoology}
\defensedate{April 4, 2013}
\gradyear{2013}
\department{Zoology}

% The following commands add a signature line for each person who needs
% to sign the thesis/dissertation
\signatureline{Major Professor --- Dimm Whitt, Ph.D., Department of Zoology}
\signatureline{Graduate Division Representative --- E.\ Nigma, Ph.D., Department of Philosophy}
\signatureline{Committee Member --- Chip Munk, Ph.D., Department of Zoology}
\signatureline{Committee Member --- Gail Force, Ph.D., Department of Meteorology }
% the line break in the next line makes the spacing come out right.
\signatureline{Head of the Zoology Department ---   Earl E. Bird, Ph.D.\\}
\signatureline{Dean of Graduate Education --- Raney Daze}

\begin{document}
\maketitle
\preliminaries

\begin{abstract}
I present a fascinating and
thought provoking study, comparing gnus and gnats.
The results of the study show conclusively that there
is no resemblance between the two, whatsoever.
\end{abstract}

\begin{acknowledgments}
I would like to thank my advisor, Dr.\ Dimm Whitt, for
all of the support he has given me.
\end{acknowledgments}

\tableofcontents

\listoftables

\listoffigures

\begin{listofsymbols}
\begin{tabular}{ll}
$\mathcal{G}_t$ & Gnat\\
$\mathcal{G}_u$ & Gnu
\end{tabular}
\end{listofsymbols}

\begin{listofkeywords}
\noindent Gnat, Gnu.
\end{listofkeywords}

\begin{dedication}
In loving memory of
my grandmother.
\end{dedication}

\begin{preface}
Before we begin, just let me say one thing.
```

```
Gnat and gnu are both begin with ``gn,'' and
the purpose of this work was to see if there
are any other resemblances.
This thesis has taken 45 years of work, and
I don't have much time left in this world, but it
has been worth it.  When the time comes,
I would like to die as my grandmother did, peacefully in
her sleep, not screaming like the passengers in her car.
\end{preface}

\body

\chapter{Introduction}
This thesis is the first work ever done in
the fascinating study of comparison of gnats to gnus.
It is groundbreaking.  There literally is nothing
like it.  However, there have been a few studies
of other things.

For example, \citeN{Kringle} showed that apples and
goats have almost nothing in common, other than both
being red.  The major problem with Kringle's study is that
he used a goat that had been spray painted red, and
his apple was a golden delicious variety.  Criticism
of Kringle's methods has been harsh, and so far, no
one has been able to replicate his results.

Several researchers have compared trout to eagles\cite{Simmons,Sheppard}.
The consensus that has emerged is that they are quite different,
and only an idiot would try to eat an eagle\cite{Idiot}.

\chapter{Comparison}
In this chapter, I will present the methods for my comparison, the
results, and fill in with a lot of gibberish.  For instance, I will
say things like ``Gnats and Gnus come in twos'' in order to fill space
and make my thesis seem longer than it really is.  This is a tactic
used by some people to hide the fact that their research is worthless.
The idea is that if the thesis is long enough and boring enough, the
thesis comittee members will go to sleep every time they try to read it.

Another thing that I may do is to use very long words, such as
onomatopoeia, for no apparent reason.  By employing voluminous
instances of obfuscatory and expansive vocables, the lack of
quintessence of this monograph can be adumbrated from all but
the most erudite, didactic, and scholarly bibliophiles.

\section{Visual comparison}
\index{comparison!visual}

\begin{table}
\caption{Results of visual comparison studies.}
\begin{center}
  \begin{tabular}{|c|c|}
    \hline
    \bf Categories & \bf Percent Correct\\
```

```
    \hline
    \hline
    insect/mammal & 76\\
    \hline
    gnat/gnu & 69\\
    \hline
  \end{tabular}
\end{center}
\label{table:comp1}
\end{table}

The first test that I performed was a visual comparison of gnats and
gnus.  First, I went on the internet and downloaded several thousand
pictures of gnats, and one picture of a gnu.  Then, I had two
volunteers compare them and categorize them as insect\index{insect} or
mammal.\index{mammal} Next, I selected another group of volunteers and
had them classify the photographs as either gnat or gnu.


The results of this comparison are shown in Table~\ref{table:comp1}.
As can be seen, both volunteers (myself and my advisor) were able to
correctly classify most of the photographs.  As a result, we gave each
other little gold stars.
\begin{figure}
\begin{center}
\subfloat{\resizebox{2in}{!}{\includegraphics{images/gnu.pdf}}}
\subfloat{\resizebox{2in}{!}{\includegraphics{images/gnat.pdf}}}
\end{center}
\caption{Photographs of a gnu (left) and a gnat (right).}
\label{figure:photos}
\end{figure}
For those who are interested,
Figure~\ref{figure:photos} shows the gnu photograph and one of the gnat
photographs.

\section{Comparison by Size}
\index{comparison!size}
As can be seen from Figure~\ref{figure:photos}, photographs of
gnats are slightly larger than photographs of gnus.  This leads
us to believe that statistically, gnats are slightly larger
than gnus.  Mathematically, we express this as follows:
\begin{equation}
S(\mathcal{G}_t) > S(\mathcal{G}_u) \forall \mathcal{G}_t,\mathcal{G}_u,
\end{equation}
where $\mathcal{G}_t$ is a photograph of a gnat and
$\mathcal{G}_u$ is a photograph of a gnu.  The $S()$ function
calculates the ``size'' of the photograph.

\chapter{Conclusions}

Well, there you have it.  My advisor and I were able to
tell the difference between a photograph of a gnat and
a gnu most of the time.  Also, gnats are larger than gnus, and
therefore, they are significantly different.
```

```
In the future, we plan to apply the techniques developed
in this research to answer the age old question of
whether dogs and ducks are the same thing.

\supplementaries

\pagebreak

\bibliography{harvey.bib}

\begin{appendices}

\appendix{Appendix A} Well, I really have nothing more to say,
but wanted to have an appendix.

\end{appendices}

\begin{gloss}
I don't have a glossary either, but this is what the page
would look like if I did.
\end{gloss}

%\begin{abbreviations}
%gnu is abbreviated to gnu\\
%gnat is abbreviated to gnat
%\end{abbreviations}

\printindex

\begin{vita}
\noindent Born: July 4, 1776, Cancun, Mexico.\\
Education:
High school: Napolean Bonaparte High, Versailles, 1923.
College: Bachelor of Science in Basket Weaving, Harvard on the Hill, Paris, Texas, 1989.
\end{vita}

\end{document}
```