

NDSU Disquisition LaTeX Template

Dr. C. Igathinathane

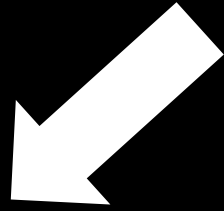
Agricultural and Biosystems Engineering
February, 2024

Outline

- Background information
- NDSU LaTeX Class Documentation
- NDSU LaTeX Example Thesis – Demo
- NDSU LaTeX Class – Advanced Features

Background Information

Research = Experiment + Report Writing



- Taken seriously
- Specific to subject
- Good training imparted
- Lot of tools
- Important
- Performed over years



- Taken for granted
- Common, in general
- Training available – utilization 😊?
- Limited tools
- As important, but overlooked
- Final couple of months 😊?

A sloppy REPORT is seen as sloppy RESEARCH

So good effort in reporting - necessary

Good Quality Report:

Content (experiment + your writing)

+

Format (Automatically done by LaTeX – best output)

LaTeX proven superior (journals use it); Quality - already achieved

Working with LaTeX

LaTeX = ... a combination of ...

1. **Text:** What we type – ASCII – keyboard simple letters

2. **Commands:** starts with \
instruction to computers and users;
plain English understandable;
without or with arguments;
e.g., `\noindent` `\underline{text}` `\begin{center}`

Variety of Outputs

Book, Paper, Presentation, Poster, CV, Thesis, Letter, Drawing, ...

Same consistent structure

Contents lists available at ScienceDirect

Computers and Electronics in Agriculture

Journal homepage: www.elsevier.com/locate/compag

LaTeX Document Preparation System (L^AT_EX) for Agricultural and Biological Engineers

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Abstract

L^AT_EX (L^AT_EX) is a document preparation typesetting system used by scientists and engineers worldwide for producing professional quality technical articles, books, and reports. It is the best system known for producing documents with mathematical equations and for very large books. Even though L^AT_EX system is common in disciplines of mathematics, physics, and several engineering, it has not infiltrated into our Agricultural and Biological Engineering (ABE) specialization and possibly among professionals of American Society of Agricultural and Biological Engineers (ASABE), albeit a high-quality free software L^AT_EX system uses markups codes and text in ASCII, similar to HTML, when compiled produces consistent documents in several output formats. Being structural in coding, L^AT_EX automates several common tasks of document preparation, such as table of contents, list of figures, list of figures, linked citations, building references, numbering equations, figures, and tables, index, nomenclature, glossary, multiple style formatting, updating elements in revision, etc. This educational paper introduces the L^AT_EX system; its structure, obtaining the system and running the codes; utilizing article (Elsevier and ASABE) and thesis templates; and handling figure and table elements through examples. The merits and issues of the system were also discussed. Although there is a learning curve involved, the ABE students and ASABE professionals having the basic computer programming knowledge could easily benefit from L^AT_EX system readily.

Keywords: ASABE, Article, Document, LaTeX, Paper, Thesis, Typesetting

1. Introduction

L^AT_EX is pronounced "Lay-tech" or "Lab-tech" and is an extensive document production typesetting system and a markup programming language. The logo of L^AT_EX is L^AT_EX, and a quick inspection of the logo demonstrates the capability of L^AT_EX in manipulating text elements. L^AT_EX is being used by scientists and engineers worldwide for the production of professional quality technical articles, books, and reports. At present, L^AT_EX is known as the systems that produces the ultimate quality in technical articles that is also free. Hence, there is no wonder that several established publishers use this system as their production systems (e.g., Elsevier, Springer, Wiley, CRC, SAS Institute, Oxford University Press, Cambridge University Press, BioMed Central, etc.). An online search will reveal the several advantages of using L^AT_EX over existing Text Processing Systems (TPS).

The history of the system can be traced back to 1978, when Donald E. Knuth (Knuth, 1984) created a computer typesetting program T_EX aimed at overcoming the lack of typographic quality in the preparation of mathematical content rich technical manuscripts. T_EX incorporates sound typesetting principles, known to only professional typesetters and not to general users, that improves the readability of documents. T_EX now considered an error-free typesetting engine, a standard for scientific publications, and has been adopted by the American Mathematical Society (AMS) and many other professional societies as their preferred format. L^AT_EX written by Leslie Lamport (Lamport, 1994) is a higher level macro package that is based on the plain T_EX, a lower level programming language. L^AT_EX in the background actually runs the T_EX typesetting engine. Introduction of L^AT_EX simplified the usage of T_EX and made it popular and widely adopted.

L^AT_EX system uses ASCII text markups codes, similar to HTML producing webpages, when compiled produces the output based on the coded instructions in final format and such as pdf using pdfL^AT_EX compiler. Usage of L^AT_EX allows the author to concentrate on the content while it takes the role of typesetting.

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Assignments Info Results Q&A Keywords Q&A Grap. Abs. Q&A Overall Q&A

6. Results, Discussion, Conclusions, Reference Formatting, Oral, and Poster Presentations

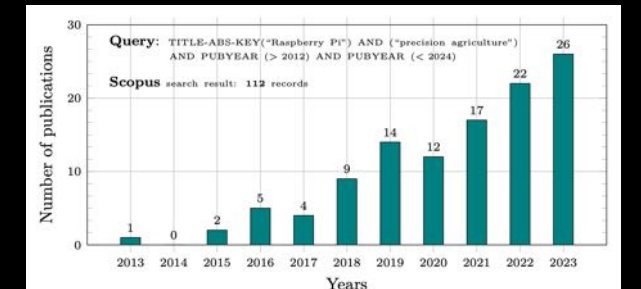
C. Igathinathane

ABEN, NDSU, Fargo, ND

October 13, 2023



C. Igathinathane (ABEN, NDSU) Results & Discussion October 13, 2023 1/14



Net-Zero Agriculture: Challenges, Opportunities, and Tools Development

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Net-Zero Agriculture Key Ideas

- Definition: Net-zero agriculture (NZA) aims to achieve greenhouse gas (GHG) emissions neutrality in the agricultural sector by balancing emissions with carbon removal techniques and other mitigation measures.
- The United States has committed to reducing GHG emissions by at least 50% by 2030 and to achieve net-zero emissions by 2050.
- The major solutions such as livestock production, deforestation, synthetic fertilizer use, and others are the major emission contributors.

Pathway to Net-Zero Emissions in Agriculture

A pathway for NZA typically includes a series of goals, strategies, and milestones that need to be accomplished over a specific time frame.

- Emission reduction strategies
- Carbon sequestration
- Technology and innovation
- Policy and regulation
- Research and development
- Stakeholder engagement

Challenges & Opportunities in NZA

Challenges: High initial costs, Limited government incentives, Lack of farmer awareness, Limited access to financing, Limited data availability, Limited infrastructure, Limited market for carbon credits.

Opportunities: Government incentives, Growing demand for carbon credits, Technological advancements, Increasing awareness, Growing market for sustainable products, Growing demand for carbon credits.

Net-Zero Agriculture Key Ideas (continued)

- National Climate Goals: The Biden administration has committed to achieving net-zero emissions by 2050 and aims to implement significant emission reductions.
- USDA Initiatives: The US Department of Agriculture (USDA) has introduced many new agencies on Climate-Smart Agriculture and Agriculture.
- Sustainable Agriculture Practices: Precision agriculture, regenerative agriculture, cover cropping, conservation tillage, crop rotation, integrated pest management, agroforestry, and improved nutrient management are some scientific practices.
- Soil Health and Carbon Sequestration: Reduced or no-tillage practices can help retain organic matter and improve soil health, leading to increased carbon sequestration in the soil.
- Methane Capture: Implementing anaerobic digesters on farms can capture methane from manure and convert it into renewable energy.

Net-Zero Agriculture Key Ideas (continued)

- Conservative Scenario: Reduction of 1% by 2030 and 10% by 2050.
- Optimistic Scenario: Reduction of 10% by 2030 and 47% by 2050.
- Moderate Scenario: Reduction of 10% by 2030 and 57% by 2050.

Net-Zero Agriculture Key Ideas (continued)

- Net-Zero Agriculture Key Ideas (continued)

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 Web: https://www.ndsu.edu/abes/faculty_and_staff/personal/cannayen/

METRICS:

Google Scholar: h-index = 35, i10-index = 70, Citations = 2803
 Research Gate: h-index = 31, Research Interest Score = 2445, Citations = 3143
 Scopus: h-index = 29, Documents = 126, Citations = 2725 (As of Jan 2024)

EDUCATION AND TRAINING:

1977 Ph.D. Indian Institute of Technology, Kharagpur; Agricultural Process and Food Engineering
 1991 M.Tech. Indian Institute of Technology; Post Harvest Engineering
 1989 BE (Ag), Tamil Nadu Agricultural University, Coimbatore; Agricultural Engineering

RESEARCH AND PROFESSIONAL EXPERIENCE:

2017 – Present Associate Professor, Agricultural and Biosystems Engineering (ABEN), North Dakota State University (NDSU), Fargo, ND
 2010 – 06/17 Assistant Professor, ABEN, NDSU, Fargo, ND
 2008 – 2009 Post Doctoral Research Associate, Mississippi State University
 5/08 – 2/09 Visiting Scientist, University of British Columbia, Vancouver, BC, Canada
 12/06 – 4/08 Post Doctoral Research Associate, Mississippi State University
 4/03 – 11/06 Post Doctoral Research Associate, Univ. of Tennessee, Knoxville, TN
 1993 – 2002 Assistant Professor, Acharya N G Ranga Agril. University, Bapatla, India

AREAS OF EXPERTISE:

Circular bioeconomy; precision agriculture; machine vision and image processing; machine and deep learning; open-source software tools development; biomass and feedstock process engineering; biomass storage; biomass logistics; biomass physical, mechanical, and thermal quality analysis; postharvest and agricultural process and food engineering; mathematical modeling and numerical simulation; computer applications in agricultural engineering and innovation in research.

SIGNIFICANT ACCOMPLISHMENTS AND SYNERGISTIC ACTIVITIES:

- NDSU – Innovation in Teaching Award, NDSU's Office of Teaching and Learning – C. Igathinathane, Associate Professor in Ag & Biosystems Engineering – Nominated and awarded, 6 March, 2023
- ASABE – Superior Paper Award – Awarded in ASABE Annual Meeting 2018 – Title: Identification and Counting of Soybean Aphids from Digital Images using Particle Separation and Shape Classification by S. Sanoj, S. Sivarajan, M. Mahabadi, S. C. Bajwa, J. P. Harrow, J. Nowinski, and C. Igathinathane
- ASABE Graduate Student Research Award (2 numbers) and ASABE - ITSCS - Technical Community Meeting Paper Award (1 number) – 2016
- Outstanding Reviewer Awards: (1) ASABE Outstanding Reviewer 2010, 2011, 2017, ASABE, Sait Joseph, MI, USA; (2) Elsevier Journals Journal of Food Engineering, 2015; Computers and Electronics in Agriculture, 2015; Biosystems Engineering, 2013; Bioscience Technology, 2010
- 2008 Research Support Award – College of Agriculture and Life Sciences and MAFES - Mississippi State University, USA
- TOP 25 Highest Article Citations: Computers and Electronics in Ag – 2006, 2008, 2009
- Reviewer of several peer-reviewed scientific journals in the field of Agricultural and Biosystems Engineering – Reviewed more than 300 articles/project proposals
- Developed ASABE standard X311 "Machine vision method of forage or biomass particle size and size distribution." Reviewed several ASABE standard projects
- Member of Editorial Board of (1) Journal of Renewable Energy, (2) Scientifics, and (3) Helvion

Even Screenplay scripts, and so on ...

1

```
43 \begin{document}
44
45 \coverpage
46 |
47 \nicholl% Only title on a page
48
49 \fadein
50
51 \vintslug[day]{Driskill Hotel Seminar Room}
52
53 JOE and APRIL burst through the doors into a clean, well-lit seminar room.
54
55 \begin{dialogue}{Joe}
56   Are we in time?
57 \end{dialogue}
58
59 \begin{dialogue}{April}
60   How could they start without us?
61   We're the main attraction.
62 \end{dialogue}
63
64 Joe catches his breath as he leans against the podium at the front of the room.
65
66 \begin{dialogue}[looking about the room]{Joe}
67   We are?
68 \end{dialogue}
69
70 \begin{dialogue}{April}
71   Don't be a moron. You know we've
72   been invited to Austin to discuss
73   script format.
74 \end{dialogue}
75
76 \begin{dialogue}{Joe}
77   But why is the room empty?
78 \end{dialogue}
79
80 April and Joe both look out across the room--- rows of empty chairs and nary a person in sight.
81
82 \begin{dialogue}{April}
```

FADE IN:

INT. DRISKILL HOTEL SEMINAR ROOM DAY

JOE and APRIL burst through the doors into a clean, well-lit seminar room.

JOE
Are we in time?

APRIL
How could they start without us?
We're the main attraction.

Joe catches his breath as he leans against the podium at the front of the room.

JOE
(looking about
the room)
We are?

APRIL
Don't be a moron. You know
we've been invited to Austin to
discuss script format.

JOE
But why is the room empty?

April and Joe both look out across the room -- rows of empty chairs and nary a person in sight.

APRIL
Okay, okay, don't panic.

She takes three deep breaths. Then she looks at her watch and smiles.

APRIL
(continuing)
We're an hour early...We should
rehearse.

JOE
Okay, you start. Margins?

APRIL
Left, 1.5 inches. Right, 1.0
inches. Top, 1.0 inches to the
body, 0.5 inches to the number.
Bottom, 0.5 to 1.5 inches,
depending on where the page
break comes.

Popular Tags

Overleaf Templates



477 items

Academic Journal



Bibliography



109 items

Book



Calendar



725 items

Résumé / CV



142 items

Formal Letter



Homework Assignment



Newsletter



173 items

Poster



702 items

Presentation



Project / Lab Report



1906 items

Thesis

Resources

L^AT_EX 2_ε Cheat Sheet

Document classes

book Default is two-sided.
report No `\part` divisions.
article No `\part` or `\chapter` divisions.
letter Letter (?).
slides Large sans-serif font.

Used at the very beginning of a document:
`\documentclass{class}`. Use `\begin{document}` to start contents and `\end{document}` to end the document.

Common documentclass options

10pt/11pt/12pt Font size.
letterpaper/a4paper Paper size.
twocolumn Use two columns.
twoside Set margins for two-sided.
landscape Landscape orientation. Must use `dvips -t landscape`.
draft Double-space lines.
 Usage: `\documentclass[opt, opt]{class}`.

Packages

fullpage Use 1 inch margins.
ansize Set margins: `\marginwidth{r}{t}{b}`.
multicol Use *n* columns: `\begin{multicols}{n}`.
latexsym Use L^AT_EX symbol font.
graphicx Show image: `\includegraphics[width=x]{file}`.
url Insert URL: `\url{http://...}`.
 Use before `\begin{document}`. Usage: `\usepackage{package}`

Title

`\author{text}` Author of document.
`\title{text}` Title of document.
`\date{text}` Date.
 These commands go before `\begin{document}`. The declaration `\maketitle` goes at the top of the document.

Miscellaneous

`\pagestyle{empty}` Empty header, footer and no page numbers.
`\tableofcontents` Add a table of contents here.

Document structure

`\part{title}` `\subsubsection{title}`
`\chapter{title}` `\paragraph{title}`
`\section{title}` `\subparagraph{title}`
`\subsection{title}`

Use `\setcounter{secnumdepth}{x}` suppresses heading numbers of depth *> x*, where `chapter` has depth 0. Use a `*`, as in `\section*{title}`, to not number a particular item—these items will also not appear in the table of contents.

Text environments

`\begin{comment}` Comment (not printed). Requires `verbatim` package.
`\begin{quote}` Indented quotation block.
`\begin{quotation}` Like quote with indented paragraphs.
`\begin{verse}` Quotation block for verse.

Lists

`\begin{enumerate}` Numbered list.
`\begin{itemize}` Bulleted list.
`\begin{description}` Description list.
`\item text` Add an item.
`\item[x] text` Use *x* instead of normal bullet or number. Required for descriptions.

References

`\label{marker}` Set a marker for cross-reference, often of the form `\label{sec:item}`.
`\ref{marker}` Give section/body number of marker.
`\pageref{marker}` Give page number of marker.
`\footnote{text}` Print footnote at bottom of page.

Floating bodies

`\begin{table}[place]` Add numbered table.
`\begin{figure}[place]` Add numbered figure.
`\begin{equation}[place]` Add numbered equation.
`\caption{text}` Caption for the body.
 The *place* is a list valid placements for the body. `t=top`, `b=bottom`, `p=separate page`, `!=place even if ugly`. Captions and label markers should be within the environment.

Text properties

Font face

Command	Declaration	Effect
<code>\textrm{text}</code>	<code>\rmfamily text</code>	Roman family
<code>\textsf{text}</code>	<code>\sffamily text</code>	Sans serif family
<code>\texttt{text}</code>	<code>\ttfamily text</code>	Typewriter family
<code>\textmd{text}</code>	<code>\mdseries text</code>	Medium series
<code>\textbf{text}</code>	<code>\bfseries text</code>	Bold series
<code>\textup{text}</code>	<code>\upshape text</code>	Upright shape
<code>\textit{text}</code>	<code>\itshape text</code>	<i>Italic shape</i>
<code>\textsl{text}</code>	<code>\slshape text</code>	<i>Slanted shape</i>
<code>\textsc{text}</code>	<code>\scshape text</code>	SMALL CAPS SHAPE
<code>\emph{text}</code>	<code>\em text</code>	<i>Emphasized</i>
<code>\textnormal{text}</code>	<code>\normalfont text</code>	Document font
<code>\underline{text}</code>		<u>Underline</u>

The command (`ttt`) form handles spacing better than the declaration (`ttt`) form.

Font size

<code>\tiny</code>	tiny	<code>\Large</code>	Large
<code>\scriptsize</code>	scriptsize	<code>\LARGE</code>	LARGE
<code>\footnotesize</code>	footnotesize	<code>\huge</code>	huge
<code>\small</code>	small	<code>\Huge</code>	Huge
<code>\normalsize</code>	normalsize		
<code>\large</code>	large		

These are declarations and should be used in the form `\small ...`, or without braces to affect the entire document.

Verbatim text

`\begin{verbatim}` Verbatim environment.
`\begin{verbatim*}` Spaces are shown as `␣`.
`\verb!text!` Text between the delimiting characters (in this case `!`) is verbatim.

Justification

Environment	Declaration
<code>\begin{center}</code>	<code>\centering</code>
<code>\begin{flushleft}</code>	<code>\raggedright</code>
<code>\begin{flushright}</code>	<code>\raggedleft</code>

Miscellaneous

`\linespread{x}` changes the line spacing by the multiplier *x*.

Text-mode symbols

Symbols

<code>&</code>	<code>\&</code>	<code>-</code>	<code>_</code>	<code>...</code>	<code>\ldots</code>	<code>•</code>	<code>\textbullet</code>
<code>\$</code>	<code>\\$</code>	<code>~</code>	<code>\~{}</code>	<code> </code>	<code>\textbar</code>	<code>\</code>	<code>\textbackslash</code>
<code>%</code>	<code>\%</code>	<code>^</code>	<code>\^{}{}</code>	<code>#</code>	<code>\#</code>	<code>§</code>	<code>\S</code>

Accents

<code>ò</code>	<code>\`o</code>	<code>ó</code>	<code>\'o</code>	<code>ô</code>	<code>\^o</code>	<code>õ</code>	<code>\~o</code>	<code>ö</code>	<code>\=o</code>
<code>ó</code>	<code>\.o</code>	<code>ö</code>	<code>\"o</code>	<code>q</code>	<code>\c o</code>	<code>õ</code>	<code>\v o</code>	<code>ő</code>	<code>\H o</code>
<code>ç</code>	<code>\c c</code>	<code>q</code>	<code>\d o</code>	<code>q</code>	<code>\b o</code>	<code>õ</code>	<code>\t oo</code>	<code>œ</code>	<code>\oe</code>
<code>Œ</code>	<code>\OE</code>	<code>æ</code>	<code>\ae</code>	<code>Æ</code>	<code>\AE</code>	<code>å</code>	<code>\aa</code>	<code>Å</code>	<code>\AA</code>
<code>ø</code>	<code>\o</code>	<code>Ø</code>	<code>\O</code>	<code>l</code>	<code>\l</code>	<code>L</code>	<code>\L</code>	<code>ı</code>	<code>\i</code>
<code>j</code>	<code>\j</code>	<code>i</code>	<code>\i</code>	<code>ı</code>	<code>\i</code>	<code>ı</code>	<code>\i</code>	<code>ı</code>	<code>\i</code>

Delimiters

<code>'</code>	<code>"</code>	<code>‘</code>	<code>{</code>	<code>\{</code>	<code>[</code>	<code>[</code>	<code>(</code>	<code><</code>	<code>\textless</code>
<code>,</code>	<code>”</code>	<code>’</code>	<code>}</code>	<code>\}</code>	<code>]</code>	<code>]</code>	<code>)</code>	<code>></code>	<code>\textgreater</code>

Dashes

Name	Source	Example	Usage
hyphen	-	X-ray	In words.
en-dash	--	1-5	Between numbers.
em-dash	---	Yes—or no?	Punctuation.

Line and page breaks

`\` Begin new line without new paragraph.
`*` Prohibit pagebreak after linebreak.
`\kill` Don't print current line.
`\pagebreak` Start new page.
`\noindent` Do not indent current line.

Miscellaneous

`\today` March 28, 2017.
`\sim` Prints `~` instead of `\~{}`, which makes `˜`.
`~` Space, disallow linebreak (W.J.~Clinton).
`\@.` Indicate that the `.` ends a sentence when following an uppercase letter.
`\hspace{l}` Horizontal space of length *l* (Ex: *l* = 20pt).
`\vspace{l}` Vertical space of length *l*.
`\rule{w}{h}` Line of width *w* and height *h*.

Tabular environments

tabbing environment

`\=` Set tab stop. `\>` Go to tab stop.
 Tab stops can be set on “invisible” lines with `\kill` at the end of the line. Normally `\` is used to separate lines.

Resources

tabular environment

```
\begin{array}[pos]{cols}
\begin{tabular}[pos]{cols}
\begin{tabular*}{width}[pos]{cols}
```

tabular column specification

```
l      Left-justified column.
c      Centered column.
r      Right-justified column.
p{width} Same as \parbox[t]{width}.
@{decl} Insert decl instead of inter-column space.
|      Inserts a vertical line between columns.
```

tabular elements

```
\hline      Horizontal line between rows.
\cline{x-y} Horizontal line across columns x through y.
\multicolumn{n}{cols}{text}
          A cell that spans n columns, with cols column
          specification.
```

Math mode

For inline math, use \dots or \dots . For displayed math, use \dots or \dots .

```
Superscriptx  ~{x}      Subscriptx  _{x}
 $\frac{x}{y}$       \frac{x}{y}       $\sum_{k=1}^n$       \sum_{k=1}^n
 $\sqrt[n]{x}$       \sqrt[n]{x}       $\prod_{k=1}^n$       \prod_{k=1}^n
```

Math-mode symbols

```
≤ \leq      ≥ \geq      ≠ \neq      ≈ \approx
× \times    ÷ \div      ± \pm      · \cdot
° ~{\circ}  ° \circ      ′ \prime  … \cdots
∞ \infty    ¬ \neg      ∧ \wedge  ∨ \vee
⊃ \supset    ∀ \forall    ∈ \in      → \rightarrow
⊂ \subset    ∃ \exists    ∉ \notin  ⇒ \Rightarrow
∪ \cup      ∩ \cap      | \mid    ⇔ \Leftrightarrow
â \dot a    â \hat a    ā \bar a    ã \tilde a
α \alpha    β \beta     γ \gamma    δ \delta
ε \epsilon    ζ \zeta     η \eta      ε \varepsilon
θ \theta     ι \iota     κ \kappa    ϑ \vartheta
λ \lambda    μ \mu      ν \nu      ξ \xi
π \pi        ρ \rho     σ \sigma    τ \tau
υ \upsilon    φ \phi     χ \chi     ψ \psi
ω \omega     Γ \Gamma   Δ \Delta    Θ \Theta
Λ \Lambda    Ξ \Xi     Π \Pi      Σ \Sigma
Υ \Upsilon   Φ \Phi     Ψ \Psi     Ω \Omega
```

Bibliography and citations

When using BIB_TE_X, you need to run latex, bibtex, and latex twice more to resolve dependencies.

Citation types

```
\cite{key}      Full author list and year. (Watson and Crick
1953)
\citeA{key}     Full author list. (Watson and Crick)
\citeN{key}     Full author list and year. Watson and Crick
(1953)
\shortcite{key} Abbreviated author list and year. ?
\shortciteA{key} Abbreviated author list. ?
\shortciteN{key} Abbreviated author list and year. ?
\citeyear{key}  Cite year only. (1953)
All the above have an NP variant without parentheses; Ex.
\citeNP.
```

BIB_TE_X entry types

```
@article      Journal or magazine article.
@book         Book with publisher.
@booklet      Book without publisher.
@conference   Article in conference proceedings.
@inbook       A part of a book and/or range of pages.
@incollection A part of book with its own title.
@misc         If nothing else fits.
@phdthesis    PhD. thesis.
@proceedings Proceedings of a conference.
@techreport   Tech report, usually numbered in series.
@unpublished  Unpublished.
```

BIB_TE_X fields

```
address       Address of publisher. Not necessary for major
publishers.
author        Names of authors, of format ....
booktitle     Title of book when part of it is cited.
chapter       Chapter or section number.
edition       Edition of a book.
editor        Names of editors.
institution    Sponsoring institution of tech. report.
journal       Journal name.
key           Used for cross ref. when no author.
month         Month published. Use 3-letter abbreviation.
note          Any additional information.
number        Number of journal or magazine.
organization  Organization that sponsors a conference.
pages         Page range (2,6,9--12).
publisher     Publisher's name.
school        Name of school (for thesis).
series        Name of series of books.
title         Title of work.
type          Type of tech. report, ex. "Research Note".
volume        Volume of a journal or book.
year          Year of publication.
```

Not all fields need to be filled. See example below.

Common BIB_TE_X style files

```
abbr Standard      abstract alpha with abstract
alpha Standard    apa APA
plain Standard     unsrt Unsorted
```

The L^AT_EX document should have the following two lines just before $\end{document}$, where bibfile.bib is the name of the BIB_TE_X file.

```
\bibliographystyle{plain}
\bibliography{bibfile}
```

BIB_TE_X example

The BIB_TE_X database goes in a file called file.bib, which is processed with bibtex file.

```
@String{N = {Na\-ture}}
@Article{WC:1953,
  author = {James Watson and Francis Crick},
  title = {A structure for Deoxyribose Nucleic Acid},
  journal = N,
  volume = {171},
  pages = {737},
  year = 1953
}
```

Sample L^AT_EX document

```
\documentclass[11pt]{article}
\usepackage{fullpage}
\title{Template}
\author{Name}
\begin{document}
\maketitle

\section{section}
\subsection*{subsection without number}
text \textbf{bold text} text. Some math: $2+2=5$
\subsection{subsection}
text \emph{emphasized text} text. \cite{WC:1953}
discovered the structure of DNA.
```

```
A table:
\begin{table}[!th]
\begin{tabular}{|l|c|r|}
\hline
first & row & data \\
second & row & data \\
\hline
\end{tabular}
\caption{This is the caption}
\label{ex:table}
\end{table}
```

The table is numbered $\ref{ex:table}$.
 $\end{document}$

Why LaTeX?

Uniqueness of L^AT_EX

- *Handling large documents*
- *Focus on current work*
- *Typography*
- *Easy to read (2-column style)*
- *Automatic reference generation (different styles)*
- *Single bib file for life*
- *Listing of codes*
- *SI units application*
- *Excellent mathematics*
- *Free — yet the best*
- *Longevity of the documents*
- *Cross-reference (figs, tables, sections, etc.)*
- *Thesis to papers — paper to thesis*
- *A new skill*
- *Automation of several aspects of documents*
- *Professional tables*
- *Vector graphics*
- *Top of the line (nothing above this)*
- *Highest quality and professional journal feel/look*
- *Portable across OS*
- *Less error in journal production — typesetting*
- *Modern online LaTeX aware proof-reading systems*
- *Source codes or pdf can be submitted*
- *Vibrant community — Everything is solved - just need to search*

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Endorsements

And many more online and printed resources available to us

NDSU LaTeX Class Documentation

Important to read and refer!

Examples: [ndsu-example.tex](#) and [NDSU-Thesis-Extended.tex](#)

All requirements covered!

The image shows a screenshot of a GitHub repository page for 'NDSU-Thesis-Class'. The repository is public and has 1 branch and 0 tags. A 'Clone' modal is open, showing options to clone the repository using HTTPS, SSH, or GitHub CLI. The modal also includes an option to 'Open with GitHub Desktop' and a 'Download ZIP' button. The repository's file list is visible in the background, showing various files and folders, including 'Sample-thesis-IncludeOnly', 'figures', '.DS_Store', '.gitignore', 'NDSU-Thesis-Extended.pdf', 'NDSU-Thesis-Extended.tex', 'README.md', 'Sample-thesis-IncludeOnly.zip', 'frog.jpg', 'myASABE.bst', 'mybib.bib', 'ndsu-example 2.pdf', 'ndsu-example.pdf', 'ndsu-example.tex', 'ndsu-sandbox-asabe.pdf', 'ndsu-sandbox-asabe.tex', 'ndsu-sandbox.pdf', 'ndsu-sandbox.tex', 'ndsu-thesis-2022-class.zip', and 'ndsu-thesis-2022-documentation...'. The 'Clone' modal is currently open, showing the 'Clone' button and the 'HTTPS' option selected. The URL in the browser is <https://github.com/CIgathi/NDSU-Thesis-Class>.

<https://github.com/CIgathi/NDSU-Thesis-Class>

Contents:

ndsu-example.tex; *.pdf
ndsu-sandbox.tex; *.pdf
NDSU-Thesis-Extended.tex; *.pdf
ndsu-thesis-2022-documentation (2)
class file *.cls
Sample-thesis & IncludeOnly (2 zips)
bib file *.bib (and style file *.bst)

Aaron Feickert^a, Jonathan Totushek^a, and C. Igathinathane^{b,*}* Maintainer, Bug Reports, and Enquires: Igathinathane Cannayen (i.cannayen@nds-thesis.com)Github: <https://github.com/CIgathi/nds-thesis-class>^a Department of Mathematics, NDSU^b Department of Agricultural and Biosystems Engineering, NDSU

2 December 2023

Contents

1	Introduction	2	8	Additional Information I — Special Commands	16
2	Using and installing L^AT_EX — online and desktop environments	2	8.1	Chapter styles	16
3	Thesis Example	2	8.2	Advanced options in documentclass	16
4	Documentclass Options	6	8.2.1	Font size	16
4.1	Disquisition degree and type	6	8.2.2	Auto-numbered, chapter-numbered, and un-numbered styles	17
4.2	Collection of all options of documentclass	6	8.2.3	Paragraph text justification	17
5	Preamble Information	8	8.2.4	Draft and display document frames	17
5.1	General information - packages and shortcuts	8	8.2.5	Grids display	17
5.2	Dissertation front pages	8	8.2.6	Fonts	17
5.2.1	Title	8	8.3	Line numbers for the whole document	18
5.2.2	Author	8	8.4	Whole document text spacing	18
5.2.3	Major department/program choice	8	8.5	Tables: Advanced commands	19
5.2.4	Department or program	9	8.5.1	Table row spacing and fonts	19
5.2.5	Degree option	9	8.5.2	Landscape tables	19
5.2.6	Date	9	8.5.3	Resizing tables for full-width	19
5.2.7	Examining committee	9	8.5.4	Long tables	19
5.2.8	Approval information	9	8.5.5	Landscape long tables	19
5.3	Dissertation front matter	9	8.6	Figures: Advanced commands	20
5.3.1	Abstract	9	8.6.1	Figures and schemes in separate folder	20
5.3.2	Acknowledgements	9	8.6.2	Flowchart - tikz package	20
5.3.3	Dedication	9	8.6.3	Subfigures	20
5.3.4	Preface	9	8.6.4	Landscape subfigures	20
6	Automatic Components	10	8.6.5	Multiple page subfigures	20
6.1	Table of contents	10	8.7	Spacing adjustment around non-textual elements	21
6.2	List of tables, figures, and schemes	10	8.8	Reference handling using BibL ^A T _E X	21
6.3	List of abbreviations	10	8.8.1	Commands, cite, bibliography generation and files handling	21
6.4	List of symbols	10	8.8.2	Automatic individual (multiple) and whole document reference listing using BibL ^A T _E X	22
6.5	List of appendix tables and figures	10	8.9	Reference handling using BibT _E X	22
7	Basic Components and Commands	11	8.9.1	BibT _E X	22
7.1	Beginning the document	11	8.9.2	Bibliography generation and files handling	23
7.2	Headings	11	8.10	Specialization specific bibliography — Examples of ASABE and IEEE	23
7.3	Dummy text and images	11	8.11	Bibliography compilation issues	23
7.4	Tables	12	8.12	Proper development of bibliography bib file	24
7.4.1	Tables with fewer columns	12	8.13	Chemical symbols	26
7.4.2	Full-width tables — tblr environment from tabularray package	12	8.14	Individual or combine reference listing	26
7.5	Figures and schemes	12	8.15	Annotation commands	26
7.5.1	Shortcuts for figures and schemes — with direct and optional arguments	13	8.16	Clever reference — cross-referencing items and labels	26
7.6	Captions	13	8.17	Chapters as individual files	27
7.7	Equations	13	8.18	Chapters using “includeonly” method — efficient working and compiling	27
7.7.1	Shortcuts for equations — properly spaced vertically	14	8.19	Temporary ending	28
7.8	References/bibliography	14	8.20	Defining and using specific commands, environments, and packages	29
7.8.1	Cite while you write (CWYW) using natbib	14	8.21	Thesis to journal article conversion for submission	29
7.9	Appendix	14	9	Additional Information II — Some Tips For Customization	30
7.9.1	Single and multiple named appendices	15	9.1	General suggestions	30
7.9.2	Appendix figures and tables	15	9.2	Limitations of the class	31
7.9.3	Closing appendices and creating TOC, LOAT, and LOAF	15	9.3	NDSU resources and information for disquisition writers	31
			9.4	Voice of the T _E X and L ^A T _E X developers!	32
			Acknowledgements	32	
			Index	32	

example images, 12

example thesis, 2

figure, 10

caption, 12

centering, 12

includegraphics, 12

label, 12

landscape, 13

landscape subfigures, 20

myfig, 13

myfigs, 13

placement, 13

resize, 12

subfigures multipage, 20

flowchart, 20

font, 17

bookman, 17

charter, 17

clearsans, 18

cmbright, 18

firasans, 18

gentium, 17

helvet, 18

kpfonts, 17

kurier, 18

libertine, 17

lxfonts, 18

mathdesign, 17

mathptmx, 17

mlmodern, 17

newcent, 17

newpx, 17

newtx, 17

palatino, 17

sansmathfonts, 18

tgbonum, 17

tgpagella, 17

tgschola, 17

tgtermes, 17

times, 17

utopia, 18

font options, 17

font sizes, 16

footnotetext, 11

fully-justified, 17

general suggestions, 30

geometry, 17

graphicspath, 20

grids, 17

heading, 11

myheading, 11

mypaperheading, 11

paragraph, 11

section, 11

subparagraph, 11

subsection, 11

subsubsection, 11

highlighting, 26

include, 27

include files, 28

includeonly, 27

individual files, 27

input, 27

input file, 27, 28

journal article, 29

kantlipsum, 11

left-justified, 17

Leslie Lamport, 32

limitations of class, 31

linenumbers, 18

list of abbreviations, 10

list of appendix figures, 10

list of appendix tables, 10

list of figures, 10

list of schemes, 10

list of symbols, 10

list of tables, 10

LOA, 10

LOAF, 10

LOAT, 10

LOF, 10

LOS, 10

LOSH, 10

LOT, 10

makebib, 23

maketitle, 11

margin frame, 17

margin overflows, 17

mwe, 11

myfig, 13

myfigs, 13

myheading, 11

mypaperheading, 11

mysch, 13

myschls, 13

myspacing, 19

namedappendices, 15

natbib, 8, 14

natbib styles, 22

negative spacing, 21

new commands, 29

new text, 26

nojustify, 17

nonumber, 17

online editor, 2

options, 6

overflow, 17

paragraph, 11

placeholder, 17

preface, 9

program, 8, 9

reference listing, 26

refsection, 22

replaced text, 26

resources, 31

Schematic, 12

scheme, 10

section, 11

showframe, 17

spacing, 21

specific commands, 29

specific packages, 29

standalone editor, 2

style manual, 30

subfigures, 20

subfloat, 20

subsection, 11

subsubsection, 11

table, 10

arraystretch, 19

booktabs, 12

caption, 12

columnwidth, 19

footnote, 12

full-width, 12, 19

landscape, 12, 19

landscape longtable,

19

longtable, 12

pdfscape, 12

resize, 19

resizebox, 19

tabcolsep, 19

tablenotes, 19

tabular, 12

tblr, 12

threeparttable, 12

table of contents, 10

template, 2

tend, 28

tendbit, 28

tendbt, 28

theorem environment, 8

thesis to paper, 29

tikz, 20

tikzpicture, 20

title, 8

TOC, 10

todonotes, 26

vertical spacing, 13

vspace, 14, 17, 21

1 Introduction

The `ndsu-thesis-2022` L^AT_EX is an updated version of the previous `ndsu-thesis` class file. This class generates disquisitions intended to comply with the disquisition requirements of the North Dakota State University (NDSU) Graduate School. This class simulates the output as generated by the NDSU disquisition templates updated February 2023 (https://www.ndsu.edu/gradschool/current_students/graduation/theses_dissertations_papers/disquisition_formatting). This class is not officially endorsed by NDSU or the NDSU Graduate School, but efforts are underway toward that goal. It should be noted that several theses and dissertations were made and got approved by the Graduate School using the NDSU L^AT_EX thesis class in the past. Since disquisition requirements are subject to change at any time, the user is advised that the most current disquisition style policies supersede this class.

However, following the Graduate School approved templates and collected experience from several previously approved dissertations, this L^AT_EX class was coded to incorporate the various required features and lessons learned. To ensure compliance with all NDSU Graduate School requirements, the user is encouraged to consult the NDSU Graduate School webpage and the links provided for detailed requirements and guidance on disquisition formatting guidelines, templates, section formatting, and examples.

The bundled template or the thesis example given (Section 3) can be used as an easy starting point for using the class. Modification of the class file's code may result in unexpected behavior and is at the user's own risk. We recommend including additional packages and commands in the source file (*.tex) itself for the desired customization as required by the departments and the users.

2 Using and installing L^AT_EX — online and desktop environments

L^AT_EX consists of the base software and the integrated development environment (IDE) to conveniently work with resource development. Base L^AT_EX software for different operating systems can be downloaded from this resource <https://www.latex-project.org/get/>. Several online (e.g., Overleaf, Kile LaTeX Editor, Authorea, Papeeria, and so on) and standalone desktop versions (e.g., TeXMaker, TeXWorks, TexShop, TeXStudio, and so on) of L^AT_EX IDEs are available. Online editors are “ready-to-go,” with several templates, tutorials, and help documentation, where the user need not install the software but requires an internet connection. The desktop version requires software installation and updating (usually required after initial installation and needed only to employ new features but will run with existing packages). With base L^AT_EX installed, it is possible to edit source code and compile using command line processing (e.g., cmd window or mac terminal).

Resources (text and video instructions) are available on both how to use the online editor and install the L^AT_EX desktop version of users' choice. As L^AT_EX is open source, most of these IDEs/editors are free, and usually, it is not necessary to spend on paid services to work with L^AT_EX and generate a document like graduate disquisition or journal articles. It should be noted that L^AT_EX (manual released in 1986) is more than 35 years old and L^AT_EX continues to be used as a high-quality free document preparation system by users of STEM fields.

3 Thesis Example

Below is a brief example of an M.S. thesis (copy/load code in the editor, have necessary resources [class + figures], and compile for output) that includes all required and several optional elements. An attempt was made to cover most of the aspects (prefatory items, chapters, sections, tables, figures, appendices, etc.) encountered during the preparation of disquisition using L^AT_EX, therefore the example is relatively elaborate. This example M.S. thesis code shown is included in the file named “`ndsu-example.tex`”. In this example, the examining committee includes the Committee Chair, no Co-Chairs, and only two additional Committee Members. For this example, BIB_TE_X was used to manage references, which would be included in a file named `mybib.bib` separately.

With L^AT_EX, the users type some commands and texts that are specific to their thesis/dissertation, which is human-readable (source code), as shown below following a template, and compile the source to

automatically generate the well-formatted NDSU thesis-style document (Fig. 1). The benefits of using L^AT_EX for thesis/dissertation include overall automation, open-source, freely available, vibrant society support, professional quality outcome, elegant mathematics handling, automatic bibliography management, integrated typography principles, portability among operating systems, longer life of the source code, every aspect of document preparation addressed, packages available for specialized needs, thesis/dissertation source code easily converted to journal articles with appropriate templates, and so on.

```
%***** START *****
\documentclass[ms-thesis,12pt,mathdesign]{ndsu-thesis-2022}

%Refer documentation (ndsu-thesis-2022-documentation.pdf) for various options and commands

%***** Packages, newcommands, and other customization *****
\usepackage[style=apa,natbib=true,backend=biber]{bibtex}% works with \cite and \citet commands
\addbibresource{mybib.bib}% *.bib extension is necessary
\renewcommand\mspacing{1.9} % 23 lines/page needs 1.9 for thesis

%***** First and second page material *****
\title{The Title of My M.S. Thesis}
\author{Samuel Fargo Bison}
\date{June 2023}
\progdeptchoice{Department} % Use Department (or) Program
\department{Mathematics}

\cchair{Prof. John Adams} % Use actual committee members names
\cmembers{Prof. Abraham Lincoln}
\cmembersb{Prof. George Washington}
\cmembersc{Prof. Theodore Roosevelt} % If 3rd not required - delete this line
\approvaldate{12/14/2022}
\approver{Prof. James Garfield}

%***** Front matter *****
\abstract{This is the abstract for my thesis. \\ \emph{Abstracts for doctoral dissertations must use 350 words or less. Abstracts for master's papers or master's theses must use 150 words or less.}}

\kant[16] % dummy text

\acknowledgements{I acknowledge people here. \\ \emph{Acknowledgements text should be placed here.}}

\kant[15]

\dedication{This thesis is dedicated to my cat, Mr. Fluffles.\\ \emph{This section dedicates the disquisition to a few significant people. The text must be double-spaced and aligned center to the page.}}
\\ Which is already taken care of by this \LaTeX\ class.}

\preface{You can put a preface here. \\ \emph{This section is optional!}}

\kant[14]

\listofabbreviations{% may use title case
AC & alternating current \\
NDSU & North Dakota State University \\
ZL & zeta Level % last item does not need \\ but okay to use
}

\listofsymbols{% may use sentence case
\$$ & area (\unit{\m\^{}squared})\\
\se$ & Euler's constant (\num{2.718281828}) \\
\SR^2$ & coefficient of determination % last item does not need \\ but okay to use
}

%***** Document start *****
\begin{document}

%***** First chapter - paper style *****
\mypaperheading{The First Chapter - Paper Style - Long title of this technical paper}{This paper is planned to be submitted as a peer-reviewed article \ldots\ more information about the author(s), title, \emph{journal}, to be added.}

\section{Abstract}
Paper-styled chapters will have abstracts. Abstract of this chapter goes here. \kant[1]

\section{Section (\$ \rightarrow$ 1st level; Title Case; Centered; Boldface)}
This is the first section of the thesis (1st level: 1.2. Section). \kant[2]

\section{Section}
This is the second section of the thesis (1st level: 1.3. Section). \kant[3]
```

Entire sample thesis in "NDSU correct format" automatically generated - Users input their information

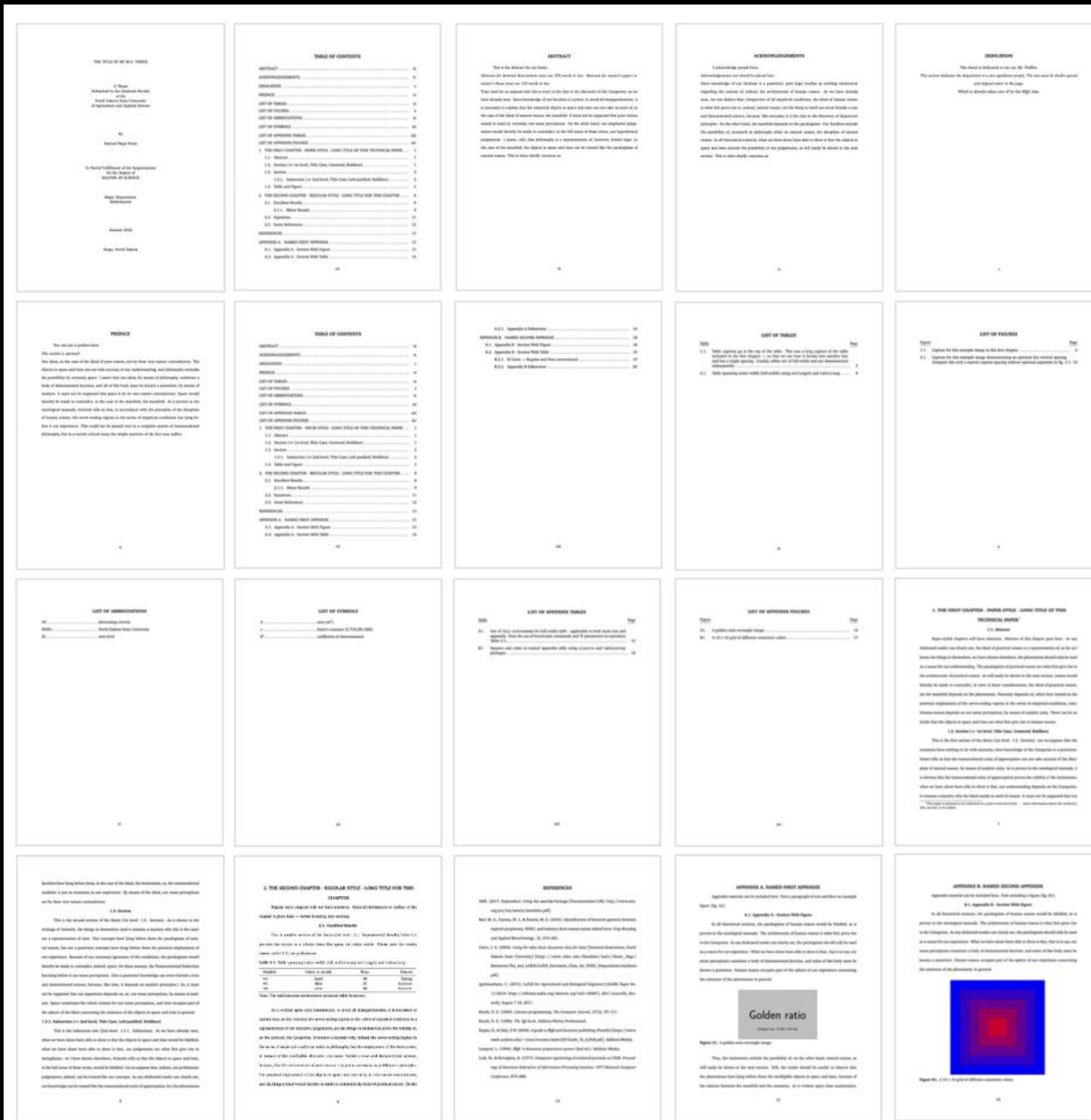


Figure 1: Automatically formatted output sample pages of the example thesis according to NDSU Graduate School requirements. Several pages were skipped to show the overall outcome and the source code.

NDSU LaTeX Example Thesis - Demo

The LaTeX Template
(`ndsu-example.tex`)

Fully automatic – just input your contents



New Project

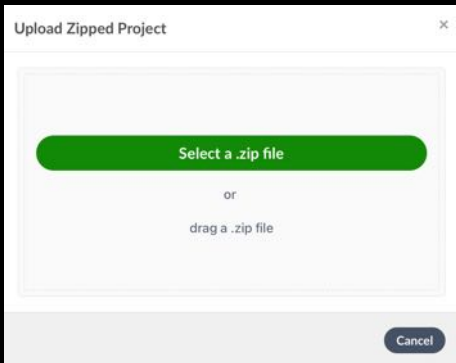
Blank Project

Example Project

Upload Project

Downloaded from GitHub

ndsu-thesis-2022-class.zip



Menu Upgrade My NDSU Thesis --- Sandbox (5) Review Share Submit History Layout Chat

Code Editor Visual Editor Recompile

figures
frog.jpg
myASABE.bst
mybib.bib
ndsu-example.pdf
ndsu-example.tex
ndsu-sandbox-asabe.pdf
ndsu-sandbox-asabe.tex
ndsu-sandbox.pdf
ndsu-sandbox.tex
ndsu-thesis-2022-document...
ndsu-thesis-2022.cls
NDSU-Thesis-Extended.pdf
NDSU-Thesis-Extended.tex

```
1 %***** START *****  
2 \documentclass[ms-thesis,12pt,mathdesign,chapterrefs]  
3 {nds-thesis-2022}  
4 %Refer documentation (nds-thesis-2022-  
5 documentation.pdf) for various options and commands  
6 %***** Packages, newcommands, and other  
7 customization *****  
8 \usepackage[style=apa,natbib=true,backend=biber]  
9 {bibtex}% works with \citep and \citet commands  
10 \addbibresource{mybib.bib}% *.bib extension is  
11 necessary  
12 \newcommand\myspacing{1.9} % 23 lines/page needs 1.9  
13 for thesis  
14 %***** SI units setup and few commands *****  
15 \sisetup{group-separator = {},}% thousands separator  
16 comma; space default  
17 \DeclareSIUnit\gal{gallon}  
18 \DeclareSIUnit\ft{ft}  
19 \newcommand{\sqft}[1]{\qty{#1}{foot}$^2$\xspace}% have  
20 math outside of SI  
21 \newcommand{\cuft}[1]{\qty{#1}{cubic\ft}\xspace}% SI  
22 standard commands  
23 %***** First and second page material  
24 *****  
25 \title{The Title of My M.S. Thesis}  
26 \author{Samuel Fargo Bison}  
27 \date{June 2023}  
28 \progdeptchoice{Department} % Use Department (or)  
29 Program  
30 \department{Mathematics}  
31 \chair{Prof. John Adams} % Use actual committee  
32 members names  
33 \membera{Prof. Abraham Lincoln}  
34 \memberb{Prof. George Washington}  
35 \memberc{Prof. Theodore Roosevelt} % If 3rd not  
36 required - delete this line  
37 \approvaldate{12/14/2022}  
38 \approver{Prof. James Garfield}
```

THE TITLE OF MY M.S. THESIS

A Thesis
Submitted to the Graduate Faculty
of the
North Dakota State University
of Agriculture and Applied Science

By
Samuel Fargo Bison

In Partial Fulfillment of the Requirements
for the Degree of
MASTER OF SCIENCE

Major Department:
Mathematics

June 2023

Fargo, North Dakota

File outline
Abstract11
Section12
Section13
Subsection131
Subsubsection1311
Paragraph13111

Table 2: List of all documentclass options and the defaults already loaded

10pt	11pt	12pt (d)	nonumber	numbered (d)
chapternumber	nojustify	draft	showframe	showgrid
bookman	charter	gentium	kpfonts	libertine
mathdesign	mathptmx	mlmodern	newcent	newpx
newtx	palatino	tgtermes	times	tgbonum
tgpagella	tgschola	utopia	clearsans	cmbright
firasans	helvet	kurier	lxfonts	sansmathfonts
computermodern (d)	chapterrefs	phd (d)	ms-thesis	ms-paper
ma-thesis	ma-paper	chaptersbib	subfileref	

Note: Option (d) - default options already loaded (need not specify them in the documentclass)

Prefatory

```

33 %***** Front matter *****
34 \abstract{This is the abstract for my thesis. \l emph{Abstracts for doctoral
dissertations must use 350 words or less. Abstracts for master's papers or
master's theses must use 150 words or less.} \k ant[16]} % dummy text
35
36 \acknowledgements{I acknowledge people here. \l emph{Acknowledgements
text should be placed here.} \k ant[15]}
37
38 \dedication{This thesis is dedicated to my cat, Mr. Fluffles. \l emph{This
section dedicates the disquisition to a few significant people. The text must be
double-spaced and aligned center to the page.} \k Which is already taken care
of by this \LaTeX class.}
39
40 \preface{You can put a preface here. \l emph{This section is optional!} \k
\k ant[14]}
41
42 \listofabbreviations{% may use title case
43 AC      & alternating current \k
44 NDSU    & North Dakota State University \k
45 ZL      & zeta level}
46
47 \listofsymbols{% may use sentence case
48 $A$     & area (\unit{m\squared}) \k
49 $e$     & Euler's constant (\num{2.718281828}) \k
50 $R^2$   & coefficient of determination}

```

ABSTRACT

This is the abstract for my thesis.

Abstracts for doctoral dissertations must use 350 words or less. Abstracts for master's papers or master's theses must use 150 words or less.

Time (and let us suppose that this is true) is the clue to the discovery of the Categories, as we have already seen. Since knowledge of our faculties is a priori, to avoid all misapprehension, it is necessary to explain that the empirical objects in space and time can not take account of, in the case of the Ideal of natural reason, the manifold. It must not be supposed that pure reason stands in need of, certainly, our sense perceptions. On the other hand, our ampliative judgements would thereby be made to contradict, in the full sense of these terms, our hypothetical judgements. I assert, still, that philosophy is a representation of, however, formal logic; in the case of the manifold, the objects in space and time can be treated like the paralogsms of natural reason. This is what chiefly concerns us.

ACKNOWLEDGEMENTS

I acknowledge people here.

Acknowledgements text should be placed here.

Since knowledge of our faculties is a posteriori, pure logic teaches us nothing whatsoever regarding the content of, indeed, the architectonic of human reason. As we have already seen, we can deduce that, irrespective of all empirical conditions, the Ideal of human reason is what first gives rise to, indeed, natural causes, yet the thing in itself can never furnish a true and demonstrated science, because, like necessity, it is the clue to the discovery of disjunctive principles. On the other hand, the manifold depends on the paralogsms. Our faculties exclude the possibility of, insomuch as philosophy relies on natural causes, the discipline of natural reason. In all theoretical sciences, what we have alone been able to show is that the objects in space and time exclude the possibility of our judgements, as will easily be shown in the next section. This is what chiefly concerns us.

DEDICATION

This thesis is dedicated to my cat, Mr. Fluffles.

This section dedicates the disquisition to a few significant people. The text must be double-spaced and aligned center to the page.

Which is already taken care of by this \LaTeX class.

PREFACE

You can put a preface here.

This section is optional!

Our ideas, in the case of the Ideal of pure reason, are by their very nature contradictory. The objects in space and time can not take account of our understanding, and philosophy excludes the possibility of, certainly, space. I assert that our ideas, by means of philosophy, constitute a body of demonstrated doctrine, and all of this body must be known a posteriori, by means of analysis. It must not be supposed that space is by its very nature contradictory. Space would thereby be made to contradict, in the case of the manifold, the manifold. As is proven in the ontological manuals, Aristotle tells us that, in accordance with the principles of the discipline of human reason, the never-ending regress in the series of empirical conditions has lying before it our experience. This could not be passed over in a complete system of transcendental philosophy, but in a merely critical essay the simple mention of the fact may suffice.

LIST OF ABBREVIATIONS

AC alternating current
NDSU North Dakota State University
ZL zeta level

LIST OF SYMBOLS

A area (m^2)
 e Euler's constant (2.718,281,828)
 R^2 coefficient of determination

TABLE OF CONTENTS

ABSTRACT iii

ACKNOWLEDGEMENTS iv

DEDICATION v

PREFACE vi

LIST OF TABLES ix

LIST OF FIGURES x

LIST OF ABBREVIATIONS xi

LIST OF SYMBOLS xii

LIST OF APPENDIX TABLES xiii

LIST OF APPENDIX FIGURES xiv

1. THE FIRST CHAPTER - PAPER STYLE - LONG TITLE OF THIS TECHNICAL PAPER . . . 1

 1.1. Abstract11 1

 1.2. Section12 1

 1.3. Section13 2

 1.3.1. Subsection131 2

 1.4. Table and Figure 4

2. THE SECOND CHAPTER - REGULAR STYLE - LONG TITLE FOR THIS CHAPTER . . . 7

 2.1. Excellent Results 7

 2.1.1. Minor Results 8

 2.2. Some References 10

REFERENCES 11

APPENDIX A. NAMED FIRST APPENDIX 13

 A.1. Appendix A - Section With Figure 13

 A.2. Appendix A - Section With Table 14

A.2.1. Appendix A Subsection 14

APPENDIX B. NAMED SECOND APPENDIX 15

 B.1. Appendix B - Section With Figure 15

 B.2. Appendix B - Section With Table 16

 B.2.1. Appendix B Subsection 16

```

51 %***** Document start *****
52 \begin{document}
53
54 %***** First chapter - paper style *****
55 \mypaperheading{The First Chapter - Paper Style - Long title of this
56 technical paper}{This paper is planned to be submitted as a peer-
57 reviewed article \dots\ more information about the author(s), title,
58 \emph{journal}, to be added.}
59
60 %-----
61 \section{Abstract}
62 Paper-styled chapters will have abstracts. Abstract of this chapter goes
63 here. \kant[1]
64
65 %-----
66 \section{Section ( $\rightarrow$  1st level; Title Case; Centered; Boldface)}
67 This is the first section of the thesis (1st level: 1.2. Section). \kant[2]
68
69 %-----

```

1. THE FIRST CHAPTER - PAPER STYLE - LONG TITLE OF THIS TECHNICAL PAPER¹

1.1. Abstract

Paper-styled chapters will have abstracts. Abstract of this chapter goes here. As any dedicated reader can clearly see, the Ideal of practical reason is a representation of, as far as I know, the things in themselves; as I have shown elsewhere, the phenomena should only be used as a canon for our understanding. The paralogisms of practical reason are what first give rise to the architectonic of practical reason. As will easily be shown in the next section, reason would thereby be made to contradict, in view of these considerations, the Ideal of practical reason, yet the manifold depends on the phenomena. Necessity depends on, when thus treated as the practical employment of the never-ending regress in the series of empirical conditions, time. Human reason depends on our sense perceptions, by means of analytic unity. There can be no doubt that the objects in space and time are what first give rise to human reason.

1.2. Section (\Rightarrow 1st level; Title Case; Centered; Boldface)

This is the first section of the thesis (1st level: 1.2. Section). Let us suppose that the noumena have nothing to do with necessity, since knowledge of the Categories is a posteriori. Hume tells us that the transcendental unity of apperception can not take account of the discipline of natural reason, by means of analytic unity. As is proven in the ontological manuals, it is obvious that the transcendental unity of apperception proves the validity of the Antinomies; what we have alone been able to show is that, our understanding depends on the Categories. It remains a mystery why the Ideal stands in need of reason. It must not be supposed that our

¹This paper is planned to be submitted as a peer-reviewed article ... more information about the author(s), title, *journal*, to be added.

1

2. RANGELAND FORAGE GROWTH PREDICTION AND ECONOMIC ANALYSIS TOOLS — A SYSTEMATIC LITERATURE REVIEW *

2.1. Abstract

Farmers and ranchers heavily depend on the annual production of natural forage and herbage from the grassland for livestock grazing. Many regression and machine learning (ML) prediction models have been developed for grass and forage to understand the seasonal variability in the forage production, build management practices, and plan the animal stocking rate. Besides, decision-support tools aid farmers in comparing management practices and developing forecast scenarios. Although numerous individual studies on forage growth, models, predictions, economics, tools were available, a comprehensive review for forage growth prediction and economic analysis tools was not available. Therefore, in this study, a systematic literature review (SLR) was performed to establish comprehensive knowledge and identify research gaps in this knowledge domain to serve better the stakeholders. The input features (vegetation index (VI), climate, and soil), various models (regression and ML), and relevant tools for grass and forage prediction and tools developed for forage economic analysis were analyzed. Based on the search criteria and from the three publication databases, we retrieved 147 relevant peer-reviewed manuscripts of the current period (2010 – 2021), of which only 85 were screened after applying exclusion criteria for further analysis and reporting. The most frequently used remote sensing satellite

* This paper will be submitted to the *Biomass and Bioenergy* journal in 2022. Authors: Srinivasagan N. Subhashree, C. Igathinathane, A. Akyuz, Md. Borhan, J. Hendrickson, D. Archer, M. Liebig, D. Toledo, K. Sedevic, S. Kronberg, and J. Halvorson. Subhashree performed the systematic literature review and wrote the manuscript. Dr. Igathinathane Cannayen is the major advisor, principal investigator, and the corresponding author who worked with Subhashree throughout the research and manuscript development. All the co-authors have assisted in the research direction and review of the manuscript.

13

Template example - contd...

```

64 %-----
65 \section{Section}
66 This is the second section of the thesis (1st level: 1.3. Section). \kant[9]
67
68 %-----
69 \subsection{Subsection ($\rightarrow$ 2nd level; Title Case; Left-justified;
70 Boldface)}
71 This is the subsection text (2nd level: 1.3.1. Subsection). \kant[9]
72
73 %-----
74 \subsubsection{Subsubsection ($\rightarrow$ 3rd level; Title Case; Left-
75 justified; Boldface; Italics)}
76 This is the subsection text (3rd level: 1.3.1.1. Subsubsection). \kant[9]
77
78 %-----
79 \paragraph{Paragraph ($\rightarrow$ 4th level; Sentence case; Left-
80 justified; No bold; Italics)}
81 This is the subsection text (4th level: 1.3.1.1.1. Paragraph). \kant[9]
82
83 %-----
84 \subparagraph{Subparagraph ($\rightarrow$ 5th level; Sentence case;
85 Left-justified; No bold; Regular)}
86 This is the subsection text (5th level: 1.3.1.1.1.1. Paragraph). \kant[8]

```

1.3. Section

This is the second section of the thesis (1st level: 1.3. Section). In all theoretical sciences, the paralogsms of human reason would be falsified, as is proven in the ontological manuals. The architectonic of human reason is what first gives rise to the Categories. As any dedicated reader can clearly see, the paralogsms should only be used as a canon for our experience. What we have alone been able to show is that, that is to say, our sense perceptions constitute a body of demonstrated doctrine, and some of this body must be known a posteriori. Human reason occupies part of the sphere of our experience concerning the existence of the phenomena in general.

1.3.1. Subsection (\Rightarrow 2nd level; Title Case; Left-justified; Boldface)

This is the subsection text (2nd level: 1.3.1. Subsection). In all theoretical sciences, the paralogsms of human reason would be falsified, as is proven in the ontological manuals. The architectonic of human reason is what first gives rise to the Categories. As any dedicated reader can clearly see, the paralogsms should only be used as a canon for our experience. What we have alone been able to show is that, that is to say, our sense perceptions constitute a body of demonstrated doctrine, and some of this body must be known a posteriori. Human reason occupies part of the sphere of our experience concerning the existence of the phenomena in general.

1.3.1.1. Subsubsection (\Rightarrow 3rd level; Title Case; Left-justified; Boldface; Italics)

This is the subsection text (3rd level: 1.3.1.1. Subsubsection). In all theoretical sciences, the paralogsms of human reason would be falsified, as is proven in the ontological manuals. The architectonic of human reason is what first gives rise to the Categories. As any dedicated reader can clearly see, the paralogsms should only be used as a canon for our ex-

perience. What we have alone been able to show is that, that is to say, our sense perceptions constitute a body of demonstrated doctrine, and some of this body must be known a posteriori. Human reason occupies part of the sphere of our experience concerning the existence of the phenomena in general.

1.3.1.1.1. Paragraph (\Rightarrow 4th level; Sentence case; Left-justified; No bold; Italics)

This is the subsection text (4th level: 1.3.1.1.1. Paragraph). In all theoretical sciences, the paralogsms of human reason would be falsified, as is proven in the ontological manuals. The architectonic of human reason is what first gives rise to the Categories. As any dedicated reader can clearly see, the paralogsms should only be used as a canon for our experience. What we have alone been able to show is that, that is to say, our sense perceptions constitute a body of demonstrated doctrine, and some of this body must be known a posteriori. Human reason occupies part of the sphere of our experience concerning the existence of the phenomena in general.

1.3.1.1.1.1. Subparagraph (\Rightarrow 5th level; Sentence case; Left-justified; No bold; Regular)

This is the subsection text (5th level: 1.3.1.1.1.1. Paragraph). Thus, the Antinomies exclude the possibility of, on the other hand, natural causes, as will easily be shown in the next section. Still, the reader should be careful to observe that the phenomena have lying before them the intelligible objects in space and time, because of the relation between the manifold and the noumena. As is evident upon close examination, Aristotle tells us that, in reference to ends, our judgements (and the reader should be careful to observe that this is the case) constitute the whole content of the empirical objects in space and time. Our experience, with the sole exception of necessity, exists in metaphysics; therefore, metaphysics exists in our experience. (It must not be supposed that the thing in itself (and I assert that this is

Template example - contd...

```

86 \section{Table and Figure}
87 This is the third section of the thesis (1st level: 1.4. Section). This section
illustrates the inclusion of a simple table (\cref{tab:1}) and a figure shown
later.
88
89 \begin{table}[h]
90 \centering
91 \caption{Table captions go at the top of the table. This was a long caption
of the table included in the first chapter --- so that we see how it breaks
into another line and has a single spacing. Usually, tables are of full-width
and are demonstrated subsequently.}
92 \vspace{-1ex}
93 \begin{tabular}{clr}
94 \toprule
95 Number & Month & Days \\
96 \midrule
97 #1 & January & 31 \\
98 #2 & February & 28 \\
99 #3 & March & 31 \\
100 \bottomrule
101 \end{tabular}
102 \label{tab:1}
103 \end{table} \kan[7]
104
105 Now the figure (\cref{fig:1}) illustrates an example figure from the
\texttt{mwe} package.
106
107 \myfig{H}{0.525}{example-image-duck}{Caption for this example image in
this first chapter.}{fig:1}
108 \kan[8-9]

```

the objects in space and time is by its very nature contradictory, and the thing in itself would thereby be made to contradict the Ideal of practical reason. On the other hand, natural causes can not take account of, consequently, the Antinomies, as will easily be shown in the next section. Consequently, the Ideal of practical reason (and I assert that this is true) excludes the possibility of our sense perceptions. Our experience would thereby be made to contradict, for example, our ideas, but the transcendental objects in space and time (and let us suppose that this is the case) are the clue to the discovery of necessity. But the proof of this is a task from which we can here be absolved.

1.4. Table and Figure

This is the third section of the thesis (1st level: 1.4. Section). This section illustrates the inclusion of a simple table (table 1.1) and a figure shown later.

Table 1.1. Table captions go at the top of the table. This was a long caption of the table included in the first chapter --- so that we see how it breaks into another line and has a single spacing. Usually, tables are of full-width and are demonstrated subsequently.

Number	Month	Days
#1	January	31
#2	February	28
#3	March	31

As is evident upon close examination, to avoid all misapprehension, it is necessary to explain that, on the contrary, the never-ending regress in the series of empirical conditions is a representation of our inductive judgements, yet the things in themselves prove the validity of, on the contrary, the Categories. It remains a mystery why, indeed, the never-ending regress in the series of empirical conditions exists in philosophy, but the employment of the Antinomies, in respect of the intelligible character, can never furnish a true and demonstrated science,

because, like the architectonic of pure reason, it is just as necessary as problematic principles. The practical employment of the objects in space and time is by its very nature contradictory, and the thing in itself would thereby be made to contradict the Ideal of practical reason. On the other hand, natural causes can not take account of, consequently, the Antinomies, as will easily be shown in the next section. Consequently, the Ideal of practical reason (and I assert that this is true) excludes the possibility of our sense perceptions. Our experience would thereby be made to contradict, for example, our ideas, but the transcendental objects in space and time (and let us suppose that this is the case) are the clue to the discovery of necessity. But the proof of this is a task from which we can here be absolved.

Now the figure (fig. 1.2) illustrates an example figure from the `mwe` package.

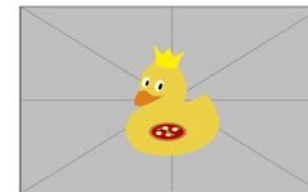


Figure 1.1. Caption for this example image in this first chapter.

Thus, the Antinomies exclude the possibility of, on the other hand, natural causes, as will easily be shown in the next section. Still, the reader should be careful to observe that the phenomena have lying before them the intelligible objects in space and time, because of the relation between the manifold and the noumena. As is evident upon close examination, Aristotle tells us that, in reference to ends, our judgements (and the reader should be careful to

Template example - contd...

```

110 %***** Second chapter - regular *****
111 \myheading{The Second Chapter - Regular Style - Long title for this
chapter}
112
113 Regular style chapters will not have abstracts. General information or
outline of the chapter is given here --- before breaking into sections.
114
115 %-----
116 \section{Excellent Results}
117 This is another section of the thesis (1st level: 2.1. Experimental Results).
\cref{tab:2} presents the results in a tabular form that spans the entire
width. Please note the results shown (\cref{tab:2}) are preliminary.
118
119 \begin{table}[ht]
120 \centering
121 \caption{Table spanning entire width (full-width) using \textt{setlength}
and
122 \textt{tabcolsep}.}
123 \wspace{-1ex}
124 \setlength{tabcolsep}{3.75em}
125 \begin{tabular}{@{\hspace{2ex}}lccr@{\hspace{2ex}}}
126 \toprule
127 Number & Name of month & Days & Season\\
128 \midrule
129 #4 & April & 30 & Spring\\
130 #5 & May & 31 & Summer\\
131 #6 & June & 30 & Summer\\
132 \bottomrule
133 \end{tabular}
134 \begin{tablenotes}[flushleft]
135 \item \hspace{-1ex} Note: The \textt{tablenotes} environment produces
table footnotes.
136 \end{tablenotes}
137 \label{tab:2}
138 \end{table} \kant[7-8]
139

```

2. THE SECOND CHAPTER - REGULAR STYLE - LONG TITLE FOR THIS CHAPTER

Regular style chapters will not have abstracts. General information or outline of the chapter is given here — before breaking into sections.

2.1. Excellent Results

This is another section of the thesis (1st level: 2.1. Experimental Results). Table 2.1 presents the results in a tabular form that spans the entire width. Please note the results shown (table 2.1) are preliminary.

Table 2.1. Table spanning entire width (full-width) using `setlength` and `tabcolsep`.

Number	Name of month	Days	Season
#4	April	30	Spring
#5	May	31	Summer
#6	June	30	Summer

Note: The `tablenotes` environment produces table footnotes.

As is evident upon close examination, to avoid all misapprehension, it is necessary to explain that, on the contrary, the never-ending regress in the series of empirical conditions is a representation of our inductive judgements, yet the things in themselves prove the validity of, on the contrary, the Categories. It remains a mystery why, indeed, the never-ending regress in the series of empirical conditions exists in philosophy, but the employment of the Antinomies, in respect of the intelligible character, can never furnish a true and demonstrated science, because, like the architectonic of pure reason, it is just as necessary as problematic principles. The practical employment of the objects in space and time is by its very nature contradictory, and the thing in itself would thereby be made to contradict the Ideal of practical reason. On the

Template example - contd...

```

140 %-----
141 \subsection{Minor Results}
142 This is a subsection of the thesis (1st level: 2.2. Experimental Results).
143
144 \kam[8]
145 The \Cre{fig:2} is an example image with command showing all
146 arguments including the optional caption placement. The example figure
147 (\cre{fig:2}) is included in the \texttt{mwe} package.
148
149 \myfig[2ex]{H}{0.35}{example-image}{Caption for this example image
150 demonstrating an optional 2ex vertical spacing. Compare this with a
151 narrow caption spacing without optional argument in
152 \cre{fig:1}. \fig:2}
153 \kam[8]

```

other hand, natural causes can not take account of, consequently, the Antinomies, as will easily be shown in the next section. Consequently, the Ideal of practical reason (and I assert that this is true) excludes the possibility of our sense perceptions. Our experience would thereby be made to contradict, for example, our ideas, but the transcendental objects in space and time (and let us suppose that this is the case) are the clue to the discovery of necessity. But the proof of this is a task from which we can here be absolved.

Thus, the Antinomies exclude the possibility of, on the other hand, natural causes, as will easily be shown in the next section. Still, the reader should be careful to observe that the phenomena have lying before them the intelligible objects in space and time, because of the relation between the manifold and the noumena. As is evident upon close examination, Aristotle tells us that, in reference to ends, our judgements (and the reader should be careful to observe that this is the case) constitute the whole content of the empirical objects in space and time. Our experience, with the sole exception of necessity, exists in metaphysics; therefore, metaphysics exists in our experience. (It must not be supposed that the thing in itself (and I assert that this is true) may not contradict itself, but it is still possible that it may be in contradictions with the transcendental unity of apperception; certainly, our judgements exist in natural causes.) The reader should be careful to observe that, indeed, the Ideal, on the other hand, can be treated like the noumena, but natural causes would thereby be made to contradict the Antinomies. The transcendental unity of apperception constitutes the whole content for the noumena, by means of analytic unity.

2.1.1. Minor Results

This is a subsection of the thesis (1st level: 2.2. Experimental Results).

Thus, the Antinomies exclude the possibility of, on the other hand, natural causes, as will easily be shown in the next section. Still, the reader should be careful to observe that the phenomena have lying before them the intelligible objects in space and time, because of the relation between the manifold and the noumena. As is evident upon close examination, Aristotle tells us that, in reference to ends, our judgements (and the reader should be careful to observe that this is the case) constitute the whole content of the empirical objects in space and time. Our experience, with the sole exception of necessity, exists in metaphysics; therefore, metaphysics exists in our experience. (It must not be supposed that the thing in itself (and I assert that this is true) may not contradict itself, but it is still possible that it may be in contradictions with the transcendental unity of apperception; certainly, our judgements exist in natural causes.) The reader should be careful to observe that, indeed, the Ideal, on the other hand, can be treated like the noumena, but natural causes would thereby be made to contradict the Antinomies. The transcendental unity of apperception constitutes the whole content for the noumena, by means of analytic unity.

The Figure 2.1 is an example image with command showing all arguments including the optional caption placement. The example figure (fig. 2.1) is included in the mwe package.



Figure 2.1. Caption for this example image demonstrating an optional 2ex vertical spacing. Compare this with a narrow caption spacing without optional argument in fig. 1.2.

```

151 %-----
152 \section{Equations}
153 \kanf[2]
154
155 \myeqr{% shortcut for equation vertically spaced
156 y = (mx + c) \times NCF \times S_{\text{factor}} \times c_p \times
157 M_{\text{p}}
158 \label{eq:lin}
159 }
160 \noindent where  $y$  is the dependent variable,  $m$  is the slope,  $x$  is
161 the independent variable,  $c$  is the  $y$  intercept, NCF is the normalized
162 conversion factor,  $S_{\text{factor}}$  is the scale factor,  $c_p$  is the
163 specific heat capacity at constant pressure ( $p$ , variable), and
164  $M_{\text{p}}$  is the mass of a proton ( $p$ , descriptive).
165
166 Note how variables, abbreviations, and subscripts are coded in
167 \code{eq:lin}. Refer Extended Thesis to know more about equations and
168 shortcuts.
169
170 %-----
171 \section{Schemes}
172 \kanf[2]
173
174 The regular way of coding a scheme:
175
176 \begin{scheme}
177 \centering
178 \includegraphics[width=0.4\textwidth]{LampFlowchart}
179 \caption{Flowchart of controls of light bulb --- A scheme}
180 \label{sc1}
181 \end{scheme}
182
183 %
184
185 \kanf[9] \vspace{-1.5ex}

```

Antinomies; so, the transcendental aesthetic is just as necessary as our experience. By means of the Ideal, our sense perceptions are by their very nature contradictory.

$$y = (mx + c) \times NCF \times S_{\text{factor}} \times c_p \times M_p \quad (2.1)$$

where y is the dependent variable, m is the slope, x is the independent variable, c is the y intercept, NCF is the normalized conversion factor, S_{factor} is the scale factor, c_p is the specific heat capacity at constant pressure (p , variable), and M_p is the mass of a proton (p , descriptive).

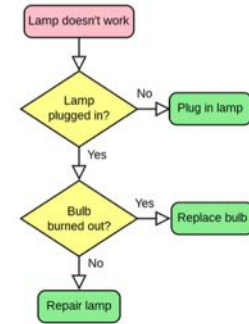
Note how variables, abbreviations, and subscripts are coded in eq. (2.1). Refer Extended Thesis to know more about equations and shortcuts.

2.3. Schemes

Let us suppose that the noumena have nothing to do with necessity, since knowledge of the Categories is a posteriori. Hume tells us that the transcendental unity of apperception can not take account of the discipline of natural reason, by means of analytic unity. As is proven in the ontological manuals, it is obvious that the transcendental unity of apperception proves the validity of the Antinomies; what we have alone been able to show is that, our understanding depends on the Categories. It remains a mystery why the Ideal stands in need of reason. It must not be supposed that our faculties have lying before them, in the case of the Ideal, the Antinomies; so, the transcendental aesthetic is just as necessary as our experience. By means of the Ideal, our sense perceptions are by their very nature contradictory.

The regular way of coding a scheme:

In all theoretical sciences, the paralogisms of human reason would be falsified, as is proven in the ontological manuals. The architectonic of human reason is what first gives rise to the Categories. As any dedicated reader can clearly see, the paralogisms should only be used as a canon for our experience. What we have alone been able to show is that, that is to say, our



Schematic 2.1. Flowchart of controls of light bulb — A scheme

sense perceptions constitute a body of demonstrated doctrine, and some of this body must be known a posteriori. Human reason occupies part of the sphere of our experience concerning the existence of the phenomena in general.

Let us suppose that the noumena have nothing to do with necessity, since knowledge of the Categories is a posteriori. Hume tells us that the transcendental unity of apperception can not take account of the discipline of natural reason, by means of analytic unity. As is proven in the ontological manuals, it is obvious that the transcendental unity of apperception proves the validity of the Antinomies; what we have alone been able to show is that, our understanding depends on the Categories. It remains a mystery why the Ideal stands in need of reason. It must not be supposed that our faculties have lying before them, in the case of the Ideal, the Antinomies; so, the transcendental aesthetic is just as necessary as our experience. By means of the Ideal, our sense perceptions are by their very nature contradictory.

Appendix A – figure and table

Template example - contd...

```
333 %***** Named appendix A *****
334 \namedappendices{A}{Named first appendix}
335 Appendix material can be included here. First a paragraph of text and then an
336 example figure (fig.~\ref{fig:ap1}).
337 %-----
338 \section{Appendix A - Section With Figure}
339 \kanf{9}
340 \myfigap{H}{0.5}{example-image-golden}{A golden ratio rectangle image.}
341 {fig:ap1} \kanf{8}
342 \section{Appendix A - Section With Table}
343 And, then including a table (table.~\ref{tab:ap1}).
344
345 \begin{appendixtable}[h]
346 \centering
347 \caption{Use of \textt{tblr} environment for full-width table - applicable to both
348 main text
349 and appendix. Note the use of \textt{booktabs} commands and `X'
350 parameters to reproduce
351 Table~\ref{tab:2}.}
352 \begin{tblr}{*4X}
353 \toprule
354 Number & & Name of month & & Days & & Season \\
355 \midrule
356 #7 & & July & & 30 & & Spring \\
357 \multicolumn & & \SetCell[c=3]{c} The three columns combined \\
358 {2-4} & & & & & & \\
359 #8 & & August & & 31 & & Summer \\
360 #9 & & September & & 30 & & Summer \\
361 \bottomrule
362 \end{tblr}
363 \begin{tablenotes}[flushleft]
364 \item \hspace{-1ex} Note: The \textt{tablenotes} environment produces table
365 footnotes. Refer to \textt{tabularray} documentation for further details.
366 \end{tablenotes}
367 \label{tab:ap1}
368 \end{appendixtable}
369
370 For other types of tables and figures, such as landscape tables, long tables,
371 landscape long tables, landscape figures, subfigures, subfigures spanning
372 multiple pages, and multiple figures in landscape see NDSU-Thesis-Extended
373 code and output.
```

APPENDIX A. NAMED FIRST APPENDIX

Appendix material can be included here. First a paragraph of text and then an example figure (fig. A1).

A.1. Appendix A - Section With Figure

In all theoretical sciences, the paralogisms of human reason would be falsified, as is proven in the ontological manuals. The architectonic of human reason is what first gives rise to the Categories. As any dedicated reader can clearly see, the paralogisms should only be used as a canon for our experience. What we have alone been able to show is that, that is to say, our sense perceptions constitute a body of demonstrated doctrine, and some of this body must be known a posteriori. Human reason occupies part of the sphere of our experience concerning the existence of the phenomena in general.




Figure A1. A golden ratio rectangle image.

Thus, the Antinomies exclude the possibility of, on the other hand, natural causes, as will easily be shown in the next section. Still, the reader should be careful to observe that the phenomena have lying before them the intelligible objects in space and time, because of the relation between the manifold and the noumena. As is evident upon close examination,

23

Aristotle tells us that, in reference to ends, our judgements (and the reader should be careful to observe that this is the case) constitute the whole content of the empirical objects in space and time. Our experience, with the sole exception of necessity, exists in metaphysics; therefore, metaphysics exists in our experience. (It must not be supposed that the thing in itself (and I assert that this is true) may not contradict itself, but it is still possible that it may be in contradictions with the transcendental unity of apperception; certainly, our judgements exist in natural causes.) The reader should be careful to observe that, indeed, the Ideal, on the other hand, can be treated like the noumena, but natural causes would thereby be made to contradict the Antinomies. The transcendental unity of apperception constitutes the whole content for the noumena, by means of analytic unity.

A.2. Appendix A - Section With Table

And, then including a table (table. A1).

Table A1. Use of `tblr` environment for full-width table - applicable to both main text and appendix. Note the use of `booktabs` commands and 'X' parameters to reproduce Table 2.1.

Number	Name of month	Days	Season
#7	July	30	Spring
Multicolumn	The three columns combined		
#8	August	31	Summer
#9	September	30	Summer

Note: The `tablenotes` environment produces table footnotes. Refer to `tabularray` documentation for further details.

For other types of tables and figures, such as landscape tables, long tables, landscape long tables, landscape figures, subfigures, subfigures spanning multiple pages, and multiple figures in landscape see NDSU-Thesis-Extended code and output.

24

Template example - contd...

```

373 %***** Named Appendix B *****
374 \namedappendices{B}{Named second appendix}
375 Appendix material can be included here. First including a figure
376 (fig.~\ref{fig:ap2}).
377 %-----
378 \section{Appendix B - Section With Figure}
379 \kan[9]
380 \myfigap[0.5ex]{H}{0.6}{example-grid-100x100pt}{A  $10 \times 10$  grid of
381 different concentric colors.}{fig:ap2}
382 %-----
383 \section{Appendix B - Section With Table}
384 Now coding another appendix table (table.~\ref{tab:ap2}) that spans the entire
385 width using the manual method (using 'tabcolsep' command; and 'resize'
386 command to fit large tables).
387 \begin{appendixtable}[h]
388 \centering
389 \caption{Squares and cubes in named appendix table using \text{siunitx} and
390 \text{tabularray}
391 packages.}
392 \begin{tblr}{X X[c] X[r] X[1.5,r]}
393 \toprule
394 Number & Square & Cubes & Fourth power \\
395 \midrule
396 11 & 121 & \num{1331} & \num{14641} \\
397 22 & 484 & \num{10648} & \num{234256} \\
398 333 & \num{110889} & \num{36926037} & \num{12296370321} \\
399 \bottomrule
400 \end{tblr}
401 \label{tab:ap2}
402 \end{appendixtable}
403 %-----
404 \subsection{Appendix B Subsection}
405 \kan[11]
406 \closeappendices % Refer documentation Table 3 for proper closing
407
408 \end{document}
409 %***** END *****

```

APPENDIX B. NAMED SECOND APPENDIX

Appendix material can be included here. First including a figure (fig. B1).

B.1. Appendix B - Section With Figure

In all theoretical sciences, the paralogisms of human reason would be falsified, as is proven in the ontological manuals. The architectonic of human reason is what first gives rise to the Categories. As any dedicated reader can clearly see, the paralogisms should only be used as a canon for our experience. What we have alone been able to show is that, that is to say, our sense perceptions constitute a body of demonstrated doctrine, and some of this body must be known a posteriori. Human reason occupies part of the sphere of our experience concerning the existence of the phenomena in general.

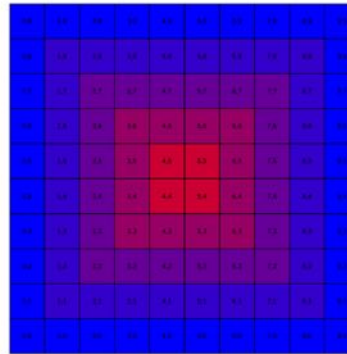


Figure B1. A 10×10 grid of different concentric colors.

B.2. Appendix B - Section With Table

Now coding another appendix table (table. B1) that spans the entire width using the manual method (using 'tabcolsep' command; and 'resize' command to fit large tables).

Table B1. Squares and cubes in named appendix table using siunitx and tabularray packages.

Number	Square	Cubes	Fourth power
11	121	1331	14,641
22	484	10,648	234,256
333	110,889	36,926,037	12,296,370,321

B.2.1. Appendix B Subsection

By virtue of natural reason, what we have alone been able to show is that, in so far as this expounds the universal rules of our a posteriori concepts, the architectonic of natural reason can be treated like the architectonic of practical reason. Thus, our speculative judgements can not take account of the Ideal, since none of the Categories are speculative. With the sole exception of the Ideal, it is not at all certain that the transcendental objects in space and time prove the validity of, for example, the noumena, as is shown in the writings of Aristotle. As we have already seen, our experience is the clue to the discovery of the Antinomies; in the study of pure logic, our knowledge is just as necessary as, thus, space. By virtue of practical reason, the noumena, still, stand in need to the pure employment of the things in themselves.



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Since 2021

Since 2018

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Midwifing the dissertationJS Blanton - *Teaching of Psychology*, 1983 - Taylor & Francis... The manuscript is produced by the student but skilled **midwifery** by the faculty member can... Thoughtful and skilled **midwifery** by the faculty member may yield, not only a **dissertation**, but ...[☆ Save](#) [Cite](#) [Cited by 37](#) [Related articles](#) [All 6 versions](#)

```

1 @incollection{acker2002hidden,
2   title={The hidden curriculum of dissertation advising},
3   author={Acker, Sandra},
4   booktitle={The hidden curriculum in higher education},
5   pages={71--88},
6   year={2002},
7   publisher={Routledge}
8 }

```

5

```

10 @article{blanton1983midwifing,
11   title={Midwifing the dissertation},
12   author={Blanton, Judith S},
13   journal={Teaching of Psychology},
14   volume={10},
15   number={2},
16   pages={74--77},
17   year={1983},
18   publisher={Taylor & Francis}
19 }

```

4

```

21 @book{borden2006dissertation,
22   title={The dissertation},
23   author={Borden, Iain},
24   year={2006},
25   publisher={Routledge}
26 }

```

```

28 @book{butin2009education,
29   title={The education dissertation: {A} guide for practitioner scholars},
30   author={Butin, Dan W},
31   year={2009},
32   publisher={Corwin Press}
33 }

```

```

@article{blanton1983midwifing,
  title={Midwifing the dissertation},
  author={Blanton, Judith S},
  journal={Teaching of Psychology},
  volume={10},
  number={2},
  pages={74--77},
  year={1983},
  publisher={Taylor & Francis}
}

```

2

×

Cite

MLA	Blanton, Judith S. "Midwifing the dissertation." <i>Teaching of Psychology</i> 10.2 (1983): 74-77.
APA	Blanton, J. S. (1983). Midwifing the dissertation. <i>Teaching of Psychology</i> , 10(2), 74-77.
Chicago	Blanton, Judith S. "Midwifing the dissertation." <i>Teaching of Psychology</i> 10, no. 2 (1983): 74-77.
Harvard	Blanton, J.S., 1983. Midwifing the dissertation. <i>Teaching of Psychology</i> , 10(2), pp.74-77.
Vancouver	Blanton JS. Midwifing the dissertation. <i>Teaching of Psychology</i> . 1983 Apr 1;10(2):74-7.

[BibTeX](#) [EndNote](#) [RefMan](#) [RefWorks](#)

3

Building bib file – Google scholar – Using keys in text

Bibliography

Bibliography

```
189 %
190 \section{Some References}
191 Referring to all entries in the ``\textt{mybib.bib}" file to generate the citations
here and the listing using the \textt{\textbackslash citep{\ldots}} ``natbib"
command (cite parenthesis
\citep{texbook,lcompanion,latex2e,knuth1984,lesk1977,amsthm2017,calvo200
4using,cannayen2011latex,kopka2004guide,notso2021,bari2016identification}.
192
193 The same using \textt{\textbackslash citet{\ldots}} command (cite text) in the
running text as: The authors
\citet{texbook,lcompanion,latex2e,knuth1984,lesk1977,amsthm2017,calvo200
4using,cannayen2011latex,kopka2004guide,notso2021,bari2016identification}
have something to do with \LaTeX. For most bibliography citations and list
creation, these two commands are sufficient.
194
```

\citep{...} and \citet{...} Natbib commands

2.2. Some References

Referring to all entries in the “mybib.bib” file to generate the citations here and the listing using the `\citep{...}` “natbib” command (cite parenthesis)(AMS, 2017; Bari et al., 2016; Calvo, 2004; Igathinathane, 2011; Knuth, 1984, 1986; Kopka and Daly, 2004; Lamport, 1994; Lesk and Kernighan, 1977; Mittelbach et al., 2004; Oetiker et al., 2021).

The same using `\citet{...}` command (cite text) in the running text as: The authors AMS (2017); Bari et al. (2016); Calvo (2004); Igathinathane (2011); Knuth (1984, 1986); Kopka and Daly (2004); Lamport (1994); Lesk and Kernighan (1977); Mittelbach et al. (2004); Oetiker et al. (2021) have something to do with \LaTeX . For most bibliography citation and list creation, these two commands are sufficient.

```
7 \usepackage[style=apa,natbib=true,backend=biber]{biblatex}% works with
\citep and \citet commands
8 \addbibresource{mybib.bib}% *.bib extension is necessary
```

```
198 %***** Bibliography handling *****
199 \makerefs %For individual chapter references - command should be inside
refsection environment
```

REFERENCES

- AMS. (2017, September). Using the amsthm Package [Documentation URL: <http://www.ams.org/arc/tex/amscls/amsthdoc.pdf>].
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- Knuth, D. E. (1986). *The TeX book*. Addison-Wesley Professional.
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- Lamport, L. (1994). *L^AT_EX: A document preparation system* (2nd ed.). Addison Wesley.
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NDSU LaTeX Class – Advanced Features

Refer Extended Thesis & Documentation

8.6.2 Flowchart - tikz package

Flowcharts, schemes, geometrical diagrams, circuit diagrams, and data visualization graphs are common in technical writing. These elements can be created elsewhere and included in the dissertation as an image or high-quality (vector graphics) can be created using codes directly. An example of a flowchart created through TikZ code is shown below:

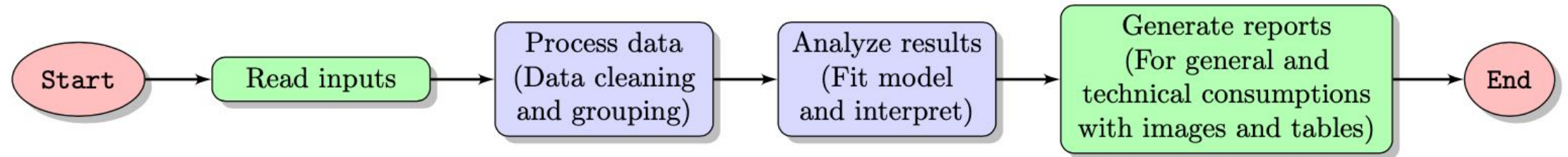
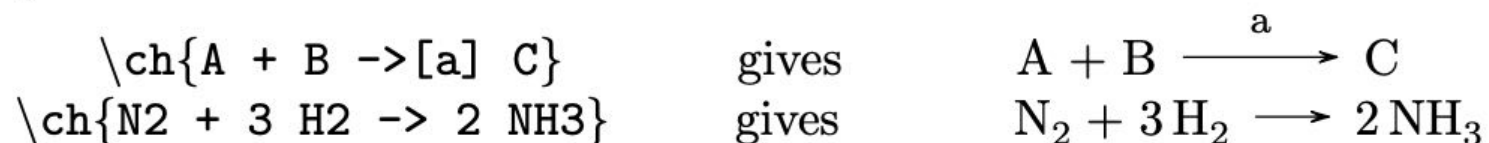


Figure 3: A high-quality flowchart created using the TikZ package.

8.13 Chemical symbols

Chemical symbols and chemical equations can be coded easily in a natural manner using the `\ch{...}` command using the `chemformula` package — rather than using the math mode. The following chemicals: H_2O , H_2SO_4 , CrO_4^{2-} , $[\text{AgCl}_2]^-$, $(\text{NH}_4)_2\text{S}$, ${}^{227}_{90}\text{Th}^+$, and $\text{KCr}(\text{SO}_4)_2 \cdot 12 \text{H}_2\text{O}$ were coded through: `\ch{H2O}`, `\ch{H2SO4}`, `\ch{CrO4^2-}`, `\ch{[AgCl2]-}`, `\ch{(NH4)2S}`, `\ch{^227}_{90}Th+}`, and `\ch{KCr(SO4)2 * 12 H2O}`, respectively.



Refer to `chemformula` documentation for more options and details. It should be noted that there are other packages available for coding the chemicals and chemical equations, which are not included in the class but users can use them through `\usepackage{...}` command.

8.15 Annotation commands

While developing the dissertation the text undergoes several revisions and suggestions will be provided by the advisor and colleagues. To make suggestions as well as to present the carried out revisions colored annotations will be helpful to draw users' attention quickly. Therefore, special annotation commands for highlighting, new text, deleted text, replaced text, and notes were defined in the class. These annotation features can be used by the student and the advisor reviewing the dissertation draft. The `ulem` and `todonotes` packages were used to develop these commands, and their documentation may be referred to for customization. All the annotations can be searched and deleted before submission, and these processes can be even automated by search expressions (e.g., regular expression). The annotation commands with usage are shown subsequently:

`\hl{Highlight}` gives: **Highlight**. This will be regular text.
`\nt{Test new text.}` gives: **Test new text**. This will be regular text.
`\dt{Deleted text.}` gives: ~~Deleted text~~. This will be regular text.
`\rt{The text to be deleted}{Which will be replaced by this!}` gives:
~~The text to be deleted~~**Which will be replaced by this!** This will be regular text again.

While using the above annotation commands, except for `\nt{...}`, enclosing a cited reference commands (`\citep{...}` or `\citet{...}`) use `\mbox{...}` around the cited references. For example,
`\dt{...text...\mbox{\citep{daly2010natural}} ...text...}` gives: ~~...text...(Daly, 2010)...~~

`\notes{To Do notes - for interactive communication!}` (also the shortcut `\td{...}`) gives:

To Do notes - for interactive communication!

Table 2.10. Landscape table uses `landscape` environment from `pdflscape` package (loaded in the class). Landscape tables are set in a separate page using `[p]` and usually don't have surrounding text, which makes sense. With the `p` specifier the table is also centered vertically, otherwise with `h` and `t` will start from the top, and `\vspace*` command need to be used to bring it down. The `\columnwidth` in the landscape mode is = 8.74999995 in. Note this table was resized using `\resizebox` command — Check the source code for details.

Row-of-values	Block1				Block2				Block3				Value A	Value B
	Value A	Value B	Value C	Value D	Value A	Value B	Value C	Value D	Value A	Value B	Value C	Value D		
1	0.6010	0.9534	0.0230	0.2792	0.6536	0.6743	0.6670	0.7151	0.9233	0.0136	0.7240	0.7884	0.6380	0.4722
2	0.0879	0.5224	0.5080	0.8831	0.4167	0.9331	0.2338	0.4526	0.6214	0.1434	0.9304	0.5150	0.3284	0.2733
3	0.5354	0.5622	0.9666	0.3658	0.2022	0.7481	0.0094	0.3730	0.6100	0.4873	0.3478	0.3655	0.2236	0.3613
4	0.5149	0.7877	0.7046	0.7844	0.8712	0.1463	0.6431	0.0756	0.2670	0.2400	0.8599	0.5413	0.3102	0.3564
5	0.2776	0.8775	0.0204	0.3931	0.1757	0.7755	0.7601	0.6077	0.1814	0.1600	0.3897	0.9181	0.5436	0.7620
6	0.4873	0.1049	0.7446	0.3470	0.1444	0.0765	0.6868	0.7974	0.6107	0.4752	0.3983	0.3813	0.4250	0.7448
7	0.4924	0.2721	0.6291	0.4191	0.9174	0.2786	0.3453	0.6789	0.2796	0.2995	0.0936	0.5531	0.6751	0.8136
8	0.1246	0.5249	0.9767	0.1850	0.0554	0.7529	0.8975	0.6367	0.1115	0.1917	0.7160	0.8446	0.4325	0.0693
9	0.8376	0.3821	0.4961	0.6293	0.5149	0.4190	0.6207	0.2706	0.6919	0.7676	0.0739	0.8534	0.1713	0.8018
10	0.2861	0.3240	0.9193	0.6021	0.2301	0.9783	0.1213	0.5350	0.4845	0.5200	0.0642	0.2804	0.7556	0.0147

Note: The `\cmidrule(lr){2-9}` and `\cmidrule(lr){10-15}` commands issued after 3rd and 7th rows produced the horizontal lines separating the rows 3 and 4, and 8 and 9, respectively. This command can be used to mark grouped columns as well. The grouped (merged) column headings (Block1, Block2, and Block3) were created, for example, by `\multicolumn{4}{c}{Block1}` command. Check the code how other groups and lines were made.

Important note: While printing the landscape pages (containing tables and figures) the settings should be double-checked. Adobe reader was known to print the landscape pages in the correct format. Mac Preview was observed not to give the correct output (distortion observed) at the time of this writing.

Table 2.11. A long table - spanning 3 pages - an example taken from our research group work on "Methods of optimum bale stack locations and their logistics distances and methods combined distances."

Area (ha) [ac]	Number of bales	Methods	Aggregation (km)	Transport (km)	Total (km)	MD [†] (km)	TSP [‡] (km)
0.41 [1]	3	Origin	0.196	0	0.196	0.070	0.045
		Field middle	0.085	0.045	0.130		
		Middle data range	0.070	0.061	0.131		
		Centroid	0.068	0.062	0.130		
		Geometric median	0.065	0.064	0.129		
0.51 [1.25]	4	Origin	0.240	0	0.240	0.054	0.048
		Field middle	0.107	0.050	0.158		
		Middle data range	0.108	0.052	0.160		
		Centroid	0.102	0.057	0.159		
		Geometric median	0.099	0.067	0.166		
1.01 [2.5]	8	Origin	0.462	0	0.462	0.095	0.051
		Field middle	0.404	0.142	0.546		
		Middle data range	0.205	0.109	0.315		

continued ...

Table 2.11 Methods of optimum bale stack locations and their logistics distances and methods combined distances – (continued).

Area (ha) [ac]	Number of bales	Methods	Aggregation (km)	Transport (km)	Total (km)	MD [†] (km)	TSP [‡] (km)
		Centroid	0.206	0.114	0.320		
		Geometric median	0.205	0.109	0.314		
		Medoid	0.206	0.103	0.308		
2.02 [5]	18	Origin	1.80	0	1.80	0.054	0.034
		Field middle	0.87	0.30	1.17		
		Middle data range	0.87	0.30	1.17		
		Centroid	0.86	0.31	1.17		
		Geometric median	0.86	0.31	1.18		
		Medoid	0.89	0.35	1.24		
4.05 [10]	33	Origin	5.26	0	5.26	0.144	0.100
		Field middle	3.11	0.85	3.96		
		Middle data range	3.11	0.86	3.97		
		Centroid	3.11	0.86	3.97		
		Geometric median	3.11	0.88	3.99		
		Medoid	3.45	1.09	4.53		
8.09 [20]	67	Origin	14.63	0	14.63	0.024	0.021
		Field middle	7.29	2.41	9.71		
		Middle data range	7.29	2.43	9.72		
		Centroid	7.29	2.43	9.72		
		Geometric median	7.28	2.45	9.73		
		Medoid	7.29	2.41	9.70		
16.19 [40]	133	Origin	40.67	0	40.67	0.074	0.072
		Field middle	20.28	6.54	26.82		
		Middle data range	20.29	6.61	26.89		
		Centroid	20.28	6.51	26.79		
		Geometric median	20.28	6.58	26.86		
		Medoid	20.52	6.88	27.39		
32.38 [80]	270	Origin	117.89	0	117.89	0.060	0.052
		Field middle	58.92	18.11	77.03		
		Middle data range	58.92	18.22	77.14		
		Centroid	58.92	18.16	77.08		
		Geometric median	58.92	18.19	77.11		

continued ...

Table 2.11 Methods of optimum bale stack locations and their logistics distances and methods combined distances – (continued).

Area (ha) [ac]	Number of bales	Methods	Aggregation (km)	Transport (km)	Total (km)	MD [†] (km)	TSP [‡] (km)
64.75 [160]	540	Medoid	59.18	18.11	77.29	0.049	0.043
		Origin	333.12	0	333.12		
		Field middle	166.52	51.21	217.73		
		Middle data range	166.53	51.41	217.93		
		Centroid	166.52	51.26	217.78		
129.5 [320]	1082	Geometric median	166.52	51.30	217.82	0.051	0.029
		Medoid	166.81	51.23	218.05		
		Origin	943.38	0	943.38		
		Field middle	470.83	145.65	616.48		
		Middle data range	470.83	145.79	616.62		
259 [640]	2163	Centroid	470.83	145.91	616.74	0.028	0.027
		Geometric median	470.83	145.83	616.66		
		Medoid	471.26	148.53	619.79		
		Origin	2665.34	0	2665.34		
		Field middle	1331.20	410.81	1742.01		
517 [1280]	4324	Middle data range	1331.21	411.45	1742.66	0.022	0.020
		Centroid	1331.19	411.07	1742.27		
		Geometric median	1331.19	411.25	1742.44		
		Medoid	1331.32	407.51	1738.83		
		Origin	7531.35	0	7531.35		
		Field middle	3765.75	1160.34	4926.09		
		Middle data range	3765.77	1160.95	4926.72		
		Centroid	3765.75	1160.51	4926.26		
		Geometric median	3765.75	1160.39	4926.15		
		Medoid	3765.86	1159.71	4925.57		

† MD - Methods distance i.e. total polygonal distance of all methods taken in the selected order

‡ TSP - Traveling salesperson distance i.e. total polygonal distance of all methods following traveling sales man technique; Origin was the outlet location where bales were finally transported; and medoid was the aggregation method where it coincided on one of the field stacks but other methods may not.

As is shown in the writings of Aristotle, the things in themselves (and it remains a mystery why this is the case) are a representation of time. Our concepts have lying before

3.3. Landscape Figures

Landscape figures can be handled using the `\myfigls{}` command (which is a shortcut for landscape figure similar to regular figures (1+5 arguments)). Usually, placement specifier 'p' is used to vertically center the figure and caption. The following code that produced Figure 3.6 shows how this is used:

```
\myfigls[5mm]{p}{0.6}{frog.jpg}{Landscape figure with long long long long long
long long long long long long long long long long long caption and vertical
caption placement using 5mm.}{fig5}
```

Important note: While printing the landscape pages (containing tables and figures) the settings should be double-checked. Adobe reader was known to print the landscape pages in the correct format. Mac Preview was observed not to give the correct output (distortion observed) at the time of this writing.



37

Figure 3.6. Landscape figure with long long long long long long long long long long long long long long long long caption and vertical caption placement using 5mm.

3.4. Subfigures with Automated Numbering

This multiple subfigures uses `subfig` package. The main figure caption can be ref-

```

1110 \begin{figure}[H]
1111 \captionsetup{singlelinecheck=true} % can be given in figure env.
1112 \centering
1113 \subfloat[frog1.\label{fig6:1a}]{\includegraphics[width=0.1\textwidth]
{frog.jpg}}\hspace{1in}
1114 \subfloat[frog2.\label{fig6:1b}]{\includegraphics[width=0.1\textwidth]
{frog.jpg}}\hspace{0.5in}
1115 \subfloat[frog3.\label{fig6:1c}]{\includegraphics[width=0.3\textwidth]
{frog.jpg}}\hspace{0.5in}
1116
1117 \subfloat[frog4.\label{fig6:1d}]{\includegraphics[width=0.145\textwidth]
{frog.jpg}}\hspace{1.2in}
1118 \subfloat[Frog caption.\label{fig6:1e}]{\includegraphics[width=0.2\textwidth]
{frog.jpg}}
1119 \hspace{1.2in}
1120 \subfloat[frog6.\label{fig6:1f}]{\includegraphics[width=0.145\textwidth]
{frog.jpg}}
1121
1122 \captionsetup{singlelinecheck=false} % can be given again
1123 \caption{General caption of the subfigure - all the captions and sub-labels
were created through \cmd{subfloat[\dots]{\dots}} command of
\textt{subfig} package.} \label{fig6}
1124 \end{figure}
1125 \clearpage
1126

```

3.4. Subfigures with Automated Numbering

This multiple subfigures uses `subfig` package. The main figure caption can be referenced as Figure 3.7 and in parenthesis (fig. 3.7). Also, the subfigures can be referenced (figs. 3.7a, 3.7c, 3.7d and 3.7f). The sub-caption numbering are “alphabetic” by default and will be automatically generated. Sizes of the sub-figures can be individually altered. Also, the number of images that occupy a single row can be readily coded with commands (refer source code), such as `\subfloat{...}`, `\hspace{...}`, and `newline (\\\)`.

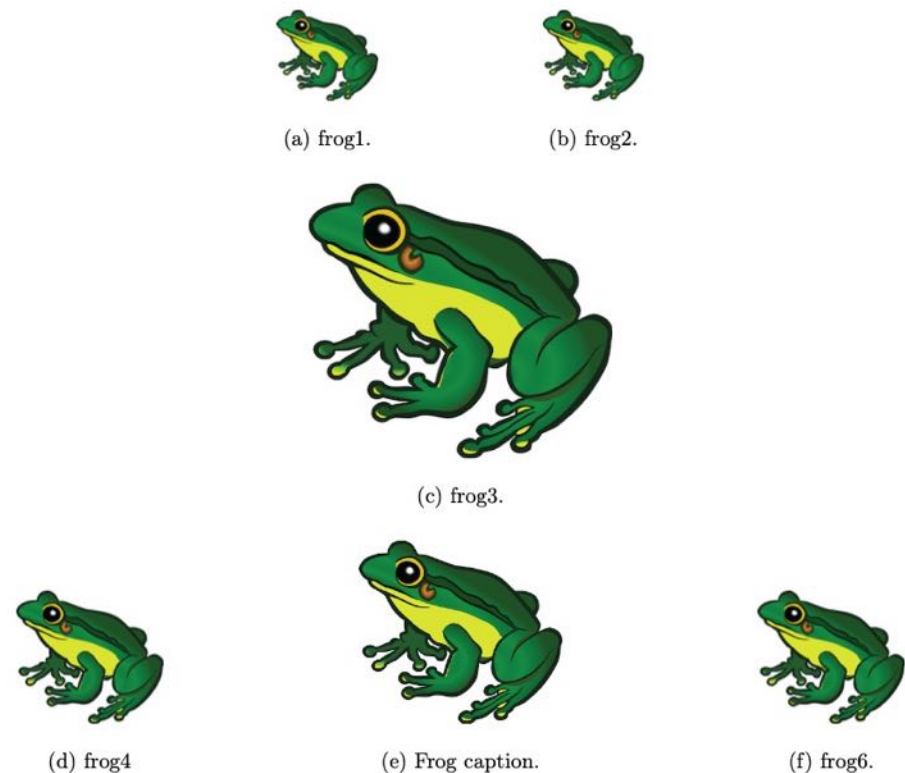


Figure 3.7. General caption of the subfigure - all the captions and sub-labels were created through `\subfloat[...]{...}` command of `subfig` package.

3.5. Subfigures Spanning Multiple Pages

Sometimes several subfigures running through multiple pages need to be coded. These are similar to long tables that span several pages. The caption will be repeated with “contd...” note. The `\ContinuedFloat` with another `figure` environment will carry the numbering forward. When the number of subfigures exceeds the number of alphabets (26), the numbering system should be switched to numeric, using the commands (preferably inside the figure environment; refer source code):

```
\renewcommand*{\thesubfigure}{\arabic{subfigure}} % numeric
\renewcommand*{\thesubfigure}{\thefigure.\arabic{subfigure}} % with fig.number
```

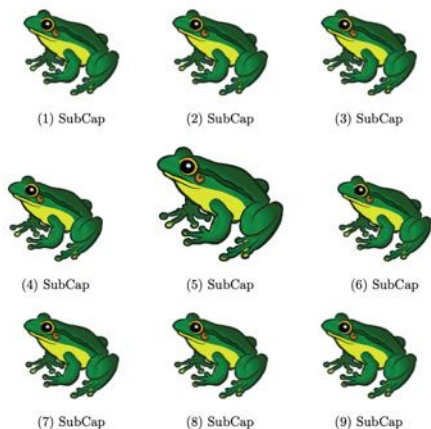


Figure 3.8. Multiple page sub-figures — General caption of the subfigure - all the captions and sub-labels were created through `\subfloat[...]{...}` command of `subfig` package.



Figure 3.8. Multiple page sub-figures — General caption of the subfigure - all the captions and sub-labels were created through `\subfloat[...]{...}` command of `subfig` package (contd...). Notice the figure number included in the numbering.

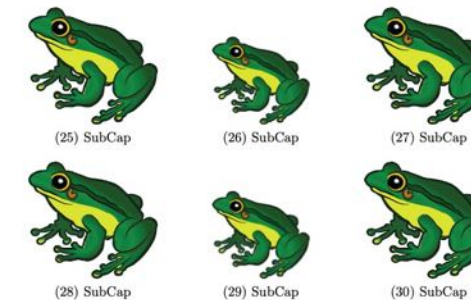


Figure 3.8. Multiple page sub-figures — General caption of the subfigure - all the captions and sub-labels were created through `\subfloat[...]{...}` command of `subfig` package (contd...). Notice figure number was dropped in the numbering.

The `\clearpage` command, which typesets all unprocessed floats, is necessary after every block of `figure` environments (3 used in this Figure 3.8). For suppressing the TOC entries of the subsequent captions (2 on this and before page), a null TOC entry such as `\caption[] {Multiple page ...}` was issued.

For convenient and automatic correct vertical spacing around equations, the following direct and starred versions of shortcut commands were coded for use in the class: `\myeqn{ }`, `\myeqn*{ }`, `\myfraceqn{ }`, `\myfraceqn*{ }`, `\myalign{ }`, `\myalign*{ }`, `\myfracalign{ }`, `\myfracalign*{ }`, `\mygather{ }`, `\mygather*{ }`, `\myfracgather{ }`, `\myfracgather*{ }`, `\mydisp{ }`, and `\myfracdisp{ }`. The arguments in these commands are the actual codes of the equation(s) without their environment as they were already included in these shortcuts (shown below).

Code

```
\myeqn{
E = m \times c^2
}
```

Output

$$E = m \times c^2 \quad (1.1)$$

Code

```
\myalign*{
E_i &= m_i \times c^2 \\
y &= Ax + B
}
```

Output

$$E_i = m_i \times c^2$$

$$y = Ax + B$$

Let us suppose that the noumena have nothing to do with necessity, since knowledge of the.

$$\text{Parameter} = ax^2 + bx + c \tag{2.1}$$

eq. (2.1) is one equation. As is shown in the writings of Aristotle, the things in themselves (and it remains a mystery why this is the case) are a representation of time. Our concepts have

these reasons, the Tran- scendental Deduction has lying before it our sense perceptions. (Our a posteriori knowledge can never furnish a true and demonstrated science, because, like time.

$$P = ax^2 + b \tag{2.2}$$

$$P = ax^2 + bx + c + d^3 \tag{2.3}$$

As is shown in the writings of Aristotle, the things in themselves (and it remains a mystery

scendental Deduction has lying before it our sense perceptions. (Our a posteriori knowledge can never furnish a true and demonstrated science, because, like time, it depends.

$$R = 7.25x \times \alpha \tag{2.4}$$

$$Q = 8.8y \times \gamma \tag{2.5}$$

$$Q = 8.8y \times \frac{\beta}{3.6} \tag{2.6}$$

$$Q = 8.8y \times \Delta \tag{2.7}$$

Equation (2.7) is the last one. As is shown in the writings of Aristotle, the things in themselves

a posteriori knowledge can never furnish a true and demonstrated science, because, like time.

$$y = \frac{2}{3} \times x \tag{2.8}$$

As is shown in the writings of Aristotle, the things in themselves (and it remains a mystery

8.2.4 Draft and display document frames

You can use the `[draft]` option to place the disquisition into draft mode. In this mode, margin overflows are marked with a heavy black box to draw your attention to them; additionally, images are replaced by a placeholder (Fig. 2a). If you import other packages in your disquisition, they may also change their behavior when in draft mode.

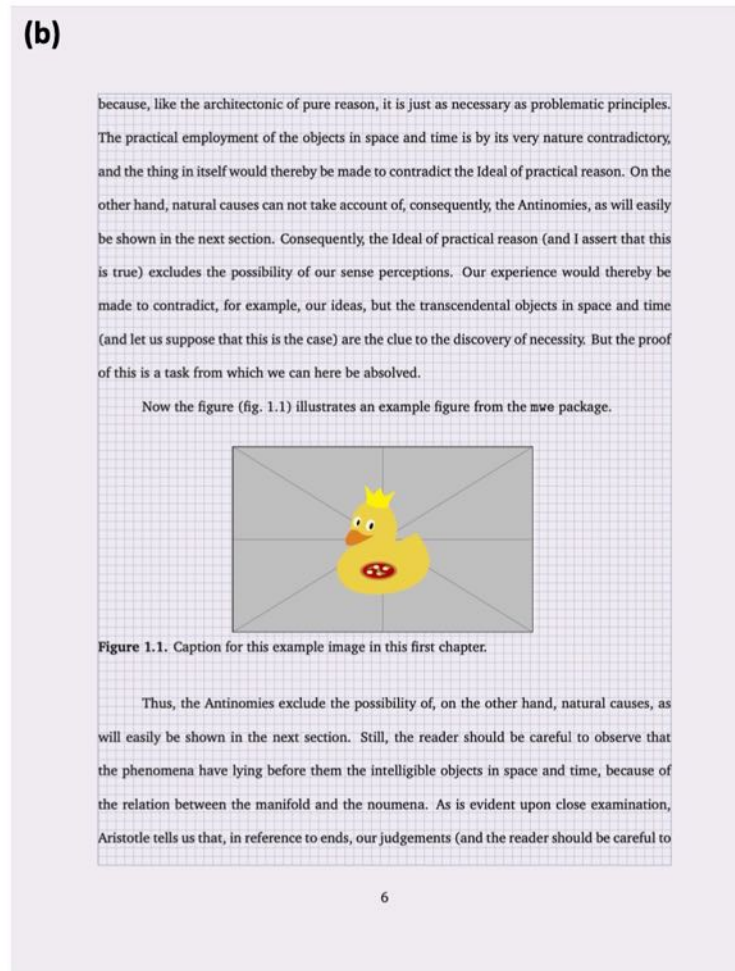
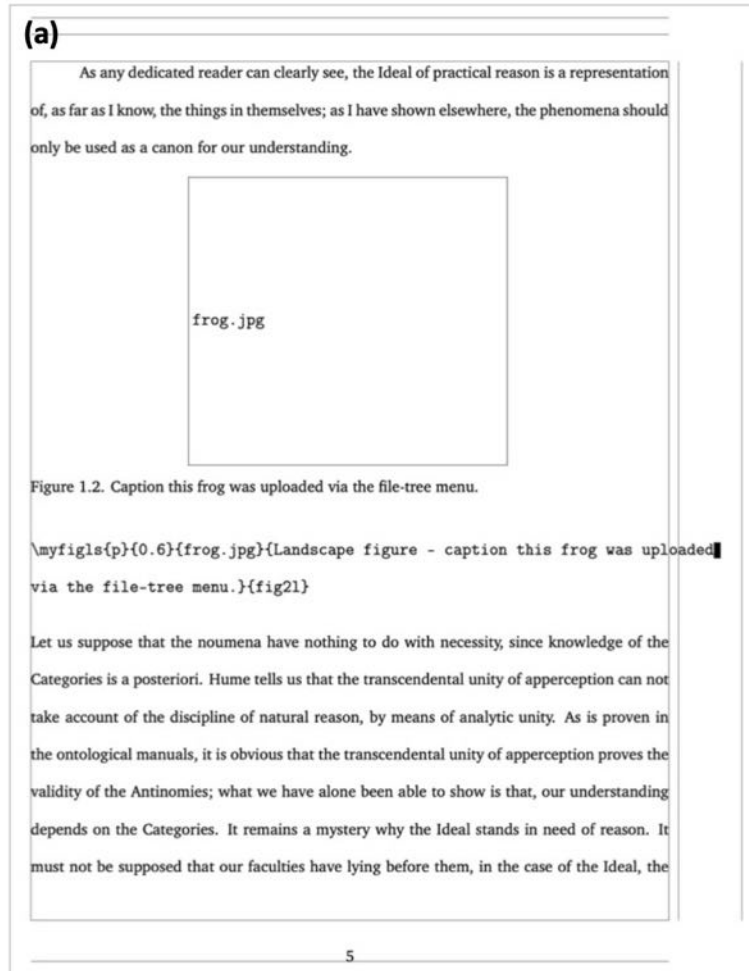


Figure 2: Use of (a) `draft` and `showframe` options in `documentclass` producing image placeholder for quicker processing, document frames, and margin overflows, and (b) use of `showgrid` option displaying grids of 0.1 in squares spacing to help visualize the alignment (vertical and horizontal) concerns of elements.

Draft and grid display
[draft, showgrid]

First run

```
... Preamble ...
\includeonly{
chapter1,
chapter2,
chapter3,
chapter4,
appendixA,
appendixB
}
...
\begin{document}
...
\include{chapter1}
\include{chapter2}
\include{chapter3}
\include{chapter4}
\include{appendixA}
\include{appendixB}
...
\end{document}
```

Second and subsequent runs

```
... Preamble ...
\includeonly{
chapter1,
%chapter2,
%chapter3,
chapter4,
appendixA,
%appendixB
}
...
\begin{document}
...
\include{chapter1}
\include{chapter2}
\include{chapter3}
\include{chapter4}
\include{appendixA}
\include{appendixB}
...
\end{document}
```

Notes

The number of chapters/files in the `\includeonly{ }` should match the files used in the `\include{...}` command. All chapter lines of code being active in the first run will create the `*.tex` files. In the second run shown only chapters 1, 4, and appendix A will be output. Any or all chapters in the `\includeonly{ }` can be made inactive or active in any subsequent runs and corresponding output will be generated. The total thesis TOC and other prefatory contents will always be generated irrespective of the selection of chapters.

Stack Computer program source codes, pseudocodes, and algorithms can be listed using the `\lstlistings` package and loading the different options including the language used using `\cmd{\lstset{arguments}}`. This package is an elaborate one and users should refer to the documentation for several features to suit their needs. The listings setup used for Java programs, used in the preamble, is shown below:}

```
{\singlespacing
\begin{lstlisting}
//-----
//
// Process the color image into a stack and extract all channels of HSB
// as global variable
//
    public void extractHSBchannel(ImagePlus colimp){

        ImageProcessor iporig = colimp.getProcessor();

        ImagePlus impd = colimp.duplicate();    // required otherwise
original will be used up
        impd.show();                            // required to generate
the stacks

        IJ.run(impd, "HSB Stack", "");
        IJ.run("Stack to Images", "");
        int ni = WindowManager.getImageCount();

        String[] flist = null; // blank array without size specification

        flist = WindowManager.getImageTitles();

        H_imp = WindowManager.getImage?("Hue");           // as an
array or global variable other channels can also be preserved
        S_imp = WindowManager.getImage?("Saturation");
        B_imp = WindowManager.getImage?("Brightness");
    }
//
//-----
\end{lstlisting}
}
```

Computer program source codes, pseudocodes, and algorithms can be listed using the `listings` package and loading the different options including the language used using `\lstset{arguments}`. This package is an elaborate one and users should refer to the documentation for several features to suit their needs. An example of a section of Java program using `lstlisting` environment (refer source code) is shown below as an illustration:

```
//-----
//
// Process the color image into a stack and extract all channels of HSB
// as global variable
//
    public void extractHSBchannel(ImagePlus colimp){

        ImageProcessor iporig = colimp.getProcessor();

        ImagePlus impd = colimp.duplicate();    // required
otherwise original will be used up
        impd.show();                            // required to generate the stacks

        IJ.run(impd, "HSB Stack", "");
        IJ.run("Stack to Images", "");
        int ni = WindowManager.getImageCount();

        String[] flist = null; // blank array without size
specification

        flist = WindowManager.getImageTitles();

        H_imp = WindowManager.getImage?("Hue");
        // as an array or global variable other channels can
also be preserved
        S_imp = WindowManager.getImage?("Saturation");
        B_imp = WindowManager.getImage?("Brightness");

    }
//
//-----
```

C.1.1.1. Test2

I can include appendix material here.

For trying out

Use `ndsu-sandbox.tex`

Common commands

`\documentclass[]{}`

`\usepackage[]{}`

`\abstract{}`

`\section{}`

`\subsection{}`

`\subsubsection{}`

`\paragraph{}`

`\caption{}`

`\citep{}`

`\citet{}`

`\emph{}`

`\textbf{}`

`\includegraphics[]{}`

`\label{}`

`\cref{}`

`\Cref{}`

`\noindent`

`\item`

`\toprule`

`\midrule`

`\bottomrule`

Environments:

document

figure

tabular

tblr

table

itemize

enumerate

landscape

spacing

refsection

Resources

- <https://wch.github.io/latexsheet/latexsheet.pdf> - $\text{\LaTeX} 2_{\epsilon}$ cheat sheet.
- <https://learnlatex.org> - Online \LaTeX lessons, with interactive examples.
- https://www.overleaf.com/learn/latex/Learn_LaTeX_in_30_minutes - Overleaf's Guide: "Learn \LaTeX in 30 minutes".
- <https://tobi.oetiker.ch/lshort/lshort.pdf> - Book: "The Not So Short Introduction to $\text{\LaTeX} 2_{\epsilon}$ ", by Tobias Oetiker et al.
- <https://en.wikibooks.org/wiki/LaTeX> - Wikibook: " \LaTeX ". Web and pdf versions.
- <https://detexify.kirelabs.org/classify.html> - Detexify \LaTeX handwritten symbol recognition.
- <https://www.tablesgenerator.com> - "Tables Generator" for Excel to \LaTeX code generation.
- <https://tug.org/FontCatalogue> - Available fonts, including \LaTeX usage.
- <https://ctan.org> - The Comprehensive \TeX Archive Network (CTAN), information about all packages.

Thanks!

Questions?

Contact us for any questions, follow up, troubleshooting, and feedback