A Complete Thesis Writing in LaTeX

A Thesis

Submitted in partial fulfillment of
the requirements for the degree of

Doctor of Philosophy
by
Author name

Supervisor: **....**

Write the Department Name at This Place
Write the University Name at This Place

December 5, 2018

Dedicated to my . . . .

Acceptance Certificate

Write the Department Name at This Place

Write the University Name at This Place

The project report entitled “Title of the Report” submitted by Mr. Author Name (Roll No. xxxxxxx) may be accepted for being evaluated.

Date: December 5, 2018

Signature
(Name of guide)

Acknowledgments

I would like to thank . . . .

Declaration

I, (Name of the candidate), hereby declare that all the information submitted by me in the report is correct, true and valid. I will present the supporting documents as and when required.

Author Name
(Roll No.)

Date: December 5, 2018

Abstract

The abstract includes a concise description of the thesis âĂŞ the problems discussed in it and their proposed solution. The abstract must focus on the result of the scientific investigation, rather than giving the background and methodology for the investigation. This is why people read the abstract: to find out what you have discovered. The abstract is a self-contained text and should not contain references. If this is needed, then you can include the whole reference in the abstract.

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List of Symbols

ν	momentum diffusivity, m^2/s	6
d	distance, m	6
t	time, s	6
v	velocity, m/s	6

1

Introduction

LaTeX is a high-quality typesetting system; it includes features designed for the production of technical and scientific documentation. LaTeX is the de facto standard for the communication and publication of scientific documents. LaTeX is available as free software.

LaTeX is widely used in academia for the communication and publication of scientific documents in many fields, including mathematics, statistics, computer science, engineering, chemistry, physics, economics, linguistics, quantitative psychology, philosophy, and political science. It also has a prominent role in the preparation and publication of books and articles that contain complex multilingual materials, such as Tamil, Sanskrit and Greek. LaTeX uses the TeX typesetting program for formatting its output, and is itself written in the TeX macro language. See figure 1.2a, 1.2b of 1.2

LaTeX is intended to provide a high-level language that accesses the power of TeX in

Figure 1.1: Caption of fig. 1.

an easier way for writers. In short, TeX handles the layout side, while LaTeX handles the content side for document processing. LaTeX comprises a collection of TeX macros and a program to process LaTeX documents. Because the plain TeX formatting commands are elementary, it provides authors with ready-made commands for formatting and layout requirements such as chapter headings, footnotes, cross-references and bibliographies.

In order to create a document in LaTeX, you first write a file, say document.tex, using your preferred text editor. Then you give your document.tex file as input to the TeX program (with the LaTeX macros loaded), and TeX writes out a file suitable for viewing onscreen or printing. This write-format-preview cycle is one of the chief ways in which working with LaTeX differs from what-you-see-is-what-you-get word-processing. It is similar to the code-compile-execute cycle familiar to computer programmers. Today, many LaTeX-aware editing programs make this cycle a simple matter of pressing a single key, while showing the output preview on the screen beside the input window. Some online LaTeX editors automatically refresh the preview. Other online tools provide incremental editing in-place, mixed in with the preview in a streamlined single window.

1.1 Subfigure

A useful extension is the subcaption package, which uses subfloats within a single float. The subfig package (subfigure package is deprecated) is a useful alternative when used

(a)

(b)

Figure 1.2: Two figure side by side

Table 1.1: Random table

1	2	3	4	2	3	4
5	6	7	8	2	3	4
9	10	11	12	2	3	4
13	14	15	16	2	3	4

in-conjunction with LaTeX templates (i.e. templates for journals from Springer and IOP, IEEETran and ACM SIG) that are not compatible with subcaption. These packages give the author the ability to have subfigures within figures, or subtables within table floats. Subfloats have their own caption, and an optional global caption.

1.2 Table

Tables are a common feature in academic writing, often used to summarize research results. Mastering the art of table construction in LaTeX is therefore necessary to produce quality papers and with sufficient practice one can print beautiful tables of any kind.

Keeping in mind that LaTeX is not a spreadsheet, it makes sense to use a dedicated tool to build tables and then to export these tables into the document. Basic tables are not too taxing, but anything more advanced can take a fair bit of construction; in these cases, more advanced packages can be very useful. However, first it is important to know the basics. Once you are comfortable with basic LaTeX tables, you might have a look at more advanced packages or the export options of your favorite spreadsheet. Thanks to the modular nature of LaTeX, the whole process can be automated in a fairly comfortable way. Table 1.1.

2

Literature

Literature, most generically, is any body of written works. More restrictively, literature refers to writing considered to be an art form or any single writing deemed to have artistic or intellectual value, often due to deploying language in ways that differ from ordinary usage.

2.1 Equation

One of the greatest motivating forces for Donald Knuth when he began developing the original TeX system was to create something that allowed simple construction of mathematical formulae, while looking professional when printed. The fact that he succeeded was most probably why TeX (and later on, LaTeX) became so popular within the scientific community. Typesetting mathematics is one of LaTeX's greatest strengths. It is also a large

Table 2.1: Random table-2

a	b	c	d	b	c	d	b	c	d
5	6	7	8	b	c	d	b	c	d
9	10	11	12	b	c	d	b	c	d
a	b	c	d	b	c	d	b	c	d
5	6	7	8	b	c	d	b	c	d
9	10	11	12	b	c	d	b	c	d
a	b	c	d	b	c	d	b	c	d

topic due to the existence of so much mathematical notation.

The velocity, v ($v = d/t$) is ....

$$v = \frac{\mu}{\rho} \tag{2.1}$$

3

Experiments

3.1 First section of this chapter

An experiment is a procedure carried out to support, refute, or validate a hypothesis. Experiments provide insight into cause-and-effect by demonstrating what outcome occurs when a particular factor is manipulated. Experiments vary greatly in goal and scale, but always rely on repeatable procedure and logical analysis of the results. There also exists natural experimental studies.

3.1.1 First subsection of this chapter

A child may carry out basic experiments to understand gravity, while teams of scientists may take years of systematic investigation to advance their understanding of a phe-

nomenon. Experiments and other types of hands-on activities are very important to student learning in the science classroom. Experiments can raise test scores and help a student become more engaged and interested in the material they are learning, especially when used over time. Experiments can vary from personal and informal natural comparisons (e.g. tasting a range of chocolates to find a favorite), to highly controlled (e.g. tests requiring complex apparatus overseen by many scientists that hope to discover information about subatomic particles). Uses of experiments vary considerably between the natural and human sciences.

An experiment usually tests a hypothesis, which is an expectation about how a particular process or phenomenon works. However, an experiment may also aim to answer a "what-if" question, without a specific expectation about what the experiment reveals, or to confirm prior results. If an experiment is carefully conducted, the results usually either support or disprove the hypothesis. According to some philosophies of science, an experiment can never "prove" a hypothesis, it can only add support. On the other hand, an experiment that provides a counterexample can disprove a theory or hypothesis, but a theory can always be salvaged by appropriate ad hoc modifications at the expense of simplicity. An experiment must also control the possible confounding factorsâĂŤany factors that would mar the accuracy or repeatability of the experiment or the ability to interpret the results. Confounding is commonly eliminated through scientific controls and/or, in randomized experiments, through random assignment.

3.1.1.1 First subsubsection of this chapter

In engineering and the physical sciences, experiments are a primary component of the scientific method. They are used to test theories and hypotheses about how physical processes work under particular conditions (e.g., whether a particular engineering process can produce a desired chemical compound). Typically, experiments in these fields focus on replication of identical procedures in hopes of producing identical results in each replication. Random assignment is uncommon.

First paragraph of this chapter. According to his explanation, a strictly controlled test execution with a sensibility for the subjectivity and susceptibility of outcomes due to the nature of man is necessary.

Examples of citation in brackets [Whitesides, 2006] and without brackets Has [2018].

Appendices

A

Supporting Information

Figure A.1: Caption of image 2.

Refrences

C. Has. How to write thesis in LaTeX. *Tutorial created by Chandra Has*, xx-xx:xx–xx, 2018.

G. M. Whitesides. The origins and the future of microfluidics. *Nature*, 442:368–373, 2006.

List of Publications and Presentations

Refereed Journals/Manuscripts Under Preparation

1. A. Autohr, and B. Author. Article title, *Journal Name*, year, **vol.**, xxxx–xxxx.

Book

1. A. Autohr, *Book title*, Under preparation.

Conference Abstracts/Posters/Presentations

1. A. Autohr, B. Author, and C.D. Author, Title of the talk/poster, *Conference Name*, Place, Country, day month year.

2. A. Autohr, B. Author, and C.D. Author, Title of the talk/poster, *Conference Name*, Place, Country, day month year.