

**AN ODE TO WABI-SABI:
HOMAGE TO A GREAT AND WONDERFUL PERSON**

by
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The following individuals read and discussed the dissertation submitted by student Wabi-sabi Admirer, and they evaluated the presentation and response to questions during the final oral examination. They found that the student passed the final oral examination.

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The final reading approval of the dissertation was granted by Wabi-sabi The Great, Ph.D., Chair of the Supervisory Committee. The dissertation was approved by the Graduate College.

DEDICATION

dedicated to Wabi-sabi

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The author wishes to express gratitude to Wabi-sabi. This work would have been partially supported by some particular grant, if there was one.

AUTOBIOGRAPHICAL SKETCH

Wabi-sabi Admirer was born admiring Wabi-sabi. Wabi-sabi Admirer has been tinkering with admiration of Wabi-sabi for a long time. Now it is time to be blessed by Wabi-sabi.

ABSTRACT

An *abstract* is a brief summary of the document. A typical abstract provides a brief introduction, enough to provide context for the document, explains the purpose of the thesis or dissertation or project, and summarizes the major results and conclusions. Keep in mind that a casual observer is likely to judge the content of the document by the abstract and title alone. (There is an old adage: “in a joke, the punchline comes at the end; in a paper [or thesis], it comes in the abstract.”) A single concise paragraph usually suffices for the abstract. If it spills onto a second page, it is probably too long.

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CHAPTER 1

INTRODUCTION

1.1 What is this?

This is a template that allows you to typeset your dissertation (or thesis or project report) in the format approved by the Boise State Graduate College. It greatly reduces your typesetting work and helps you produce an aesthetically pleasing and consistent document. The template depends on a style class, titled `bsu-cs.cls` that was specifically designed for Boise State Computer Science students but would also work for students from other departments.

1.1.1 Where are the style class files?

Please consult the guide from Graduate College (Graduate College 2021) for resolving any style issues that are not addressed by the style class files that are provided along with this document. The files associated with this style can be found on the GitHub website (Jain 2025).

The file `bsu-cs.cls` contains the formatting directives for the *bsu-cs* style. It is based on the standard LaTeX `report` style with 12 point font option.

TO-DO: Update this list relevant to Quarto

1. Simply copy `bsu-cs.cls` to the directory containing your \LaTeX document.

That way, LaTeX will find it, because it looks in current directory by default.

2. Upload the `bsu-cs.cls` file along with this template (and associated files) to Overleaf to use web-based LaTeX.
3. The current style class file may be installed in some directory available system wide. (Ask your systems administrator if this is the case). You will have to include that directory in the path LaTeX uses to search for input files. Under Linux, this is controlled by the `TEXINPUTS` environment variable, which can be set in the `.bashrc` file in your home directory. For example

```
TEXINPUTS=./usr/local/texinputs/:/usr/share/texmf// export TEXINPUTS
```

adds `/usr/local/texinputs`, a possible location for `bsu-cs.cls`, although it will not take effect until you `source` the `.bashrc` file, or log in again. 4. Install the style class files in a directory under your accounts and set the `TEXINPUTS` variable accordingly.

The first or second way is recommended, because they involve making a local copy of the style file. This assures your document format will not be affected affected by subsequent updates to `bsu-cs.cls` (but gives you the option to copy the updated file if you want).

1.2 Get ready for Wabi-sabi

So who is Wabi-sabi? We need a lot of text in here to see what happens when we hit the bottom of a page with text and try out things like footnotes ¹. So here is some extra stuff: ²

¹What's not to like about footnotes, anyway? Brian O'Nolan and George MacDonald Fraser both used them to great effect.

²Too many footnotes, however, can be distracting.

[illegible]

CHAPTER 2

THE GREATNESS OF WABI-SABI

2.1 Previous work

The greatness of Wabi-sabi The Great derives from her early work as documented in her books Great (1952).

2.2 What are their names?

Please consult the articles by Admirer (Admirer 1970) and Admirer, Smith and Doe (Admirer, Smith, and Doe 1972) for more details. Note that the references are cited by the last names of all authors for three authors or less. For more than three authors, “et al” can be used.

Check the References on page [13](#) for an example of how to format the references.

2.3 The code of Wabi-sabi

Thesis and dissertation text is normally “double spaced.” It is customary to single-space literal code. Figure [2.1](#) shows a sample Java program.

```
/**
Compute  $x^n$  using recursive doubling technique.  $O(\lg n)$  multiplications.
@param x  The base value, unlimited precision.
@param n  The exponent, an integer.
@return   The computed power as a BigInteger
*/
public static BigInteger power(BigInteger x, int n)
{
    BigInteger temp = x;
    BigInteger result = BigInteger.ONE;
    while (n != 0) {
        if ((n & 1) == 1)
            result = result.multiply(temp);
        if ((n = n >>> 1) != 0)
            temp = temp.multiply(temp);
    }
    return result;
}
```

Figure 2.1: Repeated Squaring Power Method. This figure also serves as an example of the inclusion of literal code.

2.4 Other mysteries of Wabi-sabi

Here is an itemized list of all the mysteries of Wabi-sabi.

- Mystery 1.
- Mystery 2.
- Mystery 3.
- Mystery 4.

Here is a simple pipe table (<https://quarto.org/docs/authoring/tables.html>).

Table 2.1: The Approximate Time of Parallelizing Each Code

Parallel library/language	WRS Code	OCS Code	ICSAMD Code
MPI	20 hours	2 weeks	1 month
HPF	3 hours	1 1/2 weeks	1 month

CHAPTER 3

THE NOT SO GREAT THINGS ABOUT WABI-SABI

3.1 Figures

Check Figure [3.1](#) for what happens when Wabi-sabi gets compiled. This example shows how to include an image (in PDF, JPG or PNG) into a Quarto document.



Figure 3.1: How to Correct Errors in a Fuzzy Image

Table 3.1: Complexity of Selection and Search in Sorted Matrices

	Sorted $X + Y$	Matrix with sorted rows and sorted columns	Matrix with sorted columns	
	$ X = Y = n$	$n \times m, m \leq n$	$n \times n$	$n \times m$
$k = \Theta(mn)$ or $\Theta(n^2)$	$\Theta(n)$	$\Theta(m \log(2n/m))$	$\Theta(n)$	$\Theta(m \log n)$

Table 3.2: Comparison of Slow MPI Version and the Fast MPI Version

Parameters			Process Number						
N	M		1	5	10	15	20	25	30
128	100	Slow MPI(secs)	2.11	3.91	5.78	8.26	10.91	14.17	19.47
		Fast MPI(secs)	2.10	1.20	1.56	1.95	2.79	3.22	4.07

3.2 Tables

Table 3.1 shows the formatting and labeling for a table. For complicated formats, you can use raw \LaTeX tables (<https://www.overleaf.com/learn/latex/Tables>) inside cross-reference div syntax (<https://quarto.org/docs/authoring/cross-references-divs.html>).

Here are two more examples of tables using raw \LaTeX code with no quarto processing (Table 3.2 and Table 3.3).

Table 3.3: The Speedup of the MPI WRS Code and the HPF WRS Code

Parameters			Process Number						
N	M		1	10	20	30	40	50	60
128	600	MPI(speedup)	1	5.18	7.67	8.24	6.99	5.55	4.49
		HPF(speedup)	1	8.40	12.15	13.98	14.73	13.52	13.21
256	300	MPI(speedup)	1	6.70	7.74	6.47	5.19	3.72	2.94
		HPF(speedup)	0.99	7.24	9.65	10.58	10	9.48	8.73
512	150	MPI(speedup)	1	6.75	10.64	12.14	13.35	13.87	13.98
		HPF(speedup)	0.98	6.72	9.88	11.55	12.86	13.38	13.83
1024	75	MPI(speedup)	1	2.13	2.30	2.36	2.38	2.39	2.40
		HPF(speedup)	0.95	1.94	2.06	2.10	2.13	2.13	2.14

CHAPTER 4

CONCLUSIONS

4.1 What have we done so far?

4.2 Future directions

The coming revolution in Wabi-sabi-lets offers many opportunities for further research.

CHAPTER 5

REFERENCES

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.1 Timing Measurements

Here is Appendix A. See Appendix (**app-Setup?**) for the experimental setup.

.2 Experimental Setup

Here is Appendix (**app-Setup?**).

