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## English Title

Deutscher Titel

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# Abstract

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When scaling software projects, knowing when and how to start scaling maintainability is the key to success. Maintainability manifests in many different ways, be it well documented API's, a comprehensive wiki or sensible tests. Maintainability can be aided by automating many processes, as this takes strain away from developers and lowers the barrier of entry for new team members looking to contribute.

Problem

Background

In our project, we employed many of these techniques, and this thesis aims to illustrate the goals and ideas behind the processes involved. Primary focus is the journey from a single-file project to the pip-package 'recommerce' with its automated testing pipeline, code-style checks and comprehensive documentation using automated tools such as 'Sphinx' and 'interrogate'.

Objective

Methodology

Analysis of the process shows that while tests are useful in aiding developers to understand code it must always be kept in mind that while tests make certain aspects of the software development process more accessible, they are also to be maintained.

Results - focuses on tests while leaving out documentation and pip (which comes in conclusion!!?)

One of the biggest and most costly undertakings was the introduction of pip-packaging the project, which leads to the conclusion that while building and maintaining a clear vision of the desired state of the product as early as possible can lead to an overhead early in the process, it will also make the project grow more sustainably, leading to higher maintainability in the long run.

Conclusion



# Zusammenfassung

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# Acknowledgments

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Part I

Introduction



# 1

## Knowing your Users(?)

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**1.1 Feather by SAP**

**1.2 Alex == Research**



# 2

## Related Work(?)

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### **2.1 Packaging discussion in the Python community**







## Part II

# Challenges



# 3 Private repository (less tools)(?)

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# 4

## Documentation

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### 4.1 Wiki

### 4.2 Docstrings

### 4.3 Tests



### **5.1 Pytest**

#### **5.1.1 Setup & Teardown == Automation**

#### **5.1.2 Parametrization**

### **5.2 What to test**

### **5.3 Types of tests (e.g. Unit vs. Acceptance)**

### **5.4 Writing maintainable tests**

### **5.5 Measuring Coverage**







## Part III

# Automation Tools



# 6

## Pre-commit

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### 6.1 Flake8

### 6.2 Interrogate















## Part IV

# Packaging the Project



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## Why package the project?

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**10.1 Our history with pip/imports**

**10.2 Different approaches**

**10.3 "Final Implementation"**

**10.4 What we can do now we couldn't before (kind of part of Conclusion)**









# Bibliography

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# Declaration of Authorship

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I hereby declare that this thesis is my own unaided work. All direct or indirect sources used are acknowledged as references.

Potsdam, 23rd March 2022

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