**BibTeX Management System**

**Requirements and Analysis Document**

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Revision History

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|  |  |  |  |

# Introduction

## Goal

This document covers all information concerning the requirements analysis phase of the project.

## Scope

BibTeX management system provides a smart and effective functionality of managing a bibliography entries’ database. The database itself is basic, importable and exportable to a text file. The system will also enable the user to store different variations of an entry. It can handle many abbreviation styles and user changes to already existing styles. Target users are people who are fluent with LaTeX.

## Definitions, acronyms, and abbreviations

Database

Bibliography item

File

Style

Backup system for imported files used to secure the data from unwanted modification or deletion.

Bibliography entry containing specified parameters. Each entry has a type and a style. It also has a unique identification number.

File with extension ‘.tex’ or ‘.bib’. Those files are handled by the BibTeX management system.

Abbreviation style(trend) defining how an entry should look like. Each bibliography item can have different style and also appear as multiple variations considering its trend.

Filter

Style configuration

## References to other documents

<https://latex-project.org/intro.html>

<http://www.bibtex.org/Format/>

<http://www.bibtex.org/Using/>

## Short review

The planned system will be developed on the basis of already existing system. One of the main issues will be to efficiently use existing parts of the system’s structure and its implemented functionalities.

Current system supports:

* importing / exporting a file with unique BibTeX identifiers at any time
* filtering BibTeX files so as to extract only those identifiers that appear in a presented text file

Functionalities to be implemented:

* handling backup of imported files to secure the data
* logging all actions that modify the content of the BibTeX file to provide a possibility of undoing them
* managing non-unique identifiers, and assisting to achieve their uniqueness.
* analyzing the presented BibTeX file, taking into account that different entries may follow different styles. The system should identify each style, and enable converting styles automatically with an optional approval of the user
* managing the styles of BibTeX files:
* multiple styles should be available
* each style should have an editable list of abbreviations
* each style should make it possible to ignore selected fields of the entries in the exported text file
* the user should be able to manually add certain versions of the entries for different styles

# General description

## Useful values, usefulness of intended system

The system even further widen features of the LaTeX, allowing for more customization. It also facilitate the management of the styles.

## General possibilities of intended system

The BibTeX management system will be capable of:

- importing and exporting of a file with unique BibTeX identifiers at any time

- creation of the backup of all the files imported

- creation of logs of all the actions performed on the file, and possibility to revert them

- management of non-unique identifiers, and assist in achieving their uniqueness

- management of styles of BibTeX files, with handling of general rules and exceptions

- automatic conversion of the styles

- handling of the entries resulting from different styles

- filtering of certain kinds of identifiers

## General constraints

The system must be developed using Visual Studio and C# or C++ language.

## Characteristics of users

Out of concern.

## Operation environment

Hardware:

Desktop computer with at least:

* + 32 bit or 64 bit processor with at least 1GHz frequency
  + 512 MB RAM

Software and system:

System:

* + Windows XP/Vista/7/8/8.1/10

Software installed:

* + .Net Framework ver. 4.0 or higher.

## Assumptions and dependencies

The system will operate on two types of files. It is assumed that the files are created in a proper fashion. The user is responsible for writing them according to LaTeX and BibTeX standards.

# Specific requirements

## Functional requirements

BibTeX management system should:

1. Import / export a file with unique BibTeX identifiers at any time.
2. Backup all of the files imported, so as to secure the data.
3. Log all the actions that modify the content of the BibTeX file, and provide the possibility of undoing them.
4. Securely manage non-unique identifiers, and assist (but not harass) in achieving their uniqueness.
5. Manage the styles of BibTeX files:
   1. multiple styles should be available;
   2. each style should have an editable list of abbreviations (regarding every field of

BibTeX entries);

* 1. each style should make it possible to ignore selected fields of the entries (so that

they do not appear in the exported text file);

* 1. the user should be able to manually add certain versions of the entries for different styles
  2. the user should be able to save current style configuration
  3. the user should be able to import a filter at any time

1. Intelligently analyze a presented BibTeX file, taking into account that different entries may
   1. follow different styles. Identify each style, and provide the possibility to convert the styles automatically with an optional approval of the user.
   2. Filter the BibTeX files so as to extract only those identifiers that appear in a presented text file (e.g. containing a LaTeX source text).

## Non-functional requirements

BibTeX management system should be:

1. Stable and not lose data on some external malfunctioning (e.g. system immediate shutdown)
2. Faster at performing actions from point 3.1 comparing to now (especially importing of BibTeX files)
3. Intuitive to user

# Appendices.

Files with the extension .tex should be written according to known LaTeX standard (<https://latex-project.org/intro.html>). Many useful guides can be found on the main page.

To know how to create BibTeX files one can have a look at <http://www.bibtex.org/Using/> and <http://www.bibtex.org/Format/> .