

Презентация лабораторной работе №6

Working with Bibliography

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Цель работы

Целью данной лабораторной работы является освоение методов работы с библиографией в LaTeX, включая использование систем BibTeX и biblatex для управления цитированием и списками литературы.

The purpose of this lab work is to learn how to work with bibliography in LaTeX, including using BibTeX and biblatex systems for managing citations and reference lists.

Задание

1. Освоить workflow с natbib и BibTeX для работы с библиографией
2. Освоить workflow с biblatex и Biber и их особенности
3. Сравнить два подхода к работе с библиографией и их применение
4. Выполнить практические упражнения по созданию и управлению библиографическими ссылками

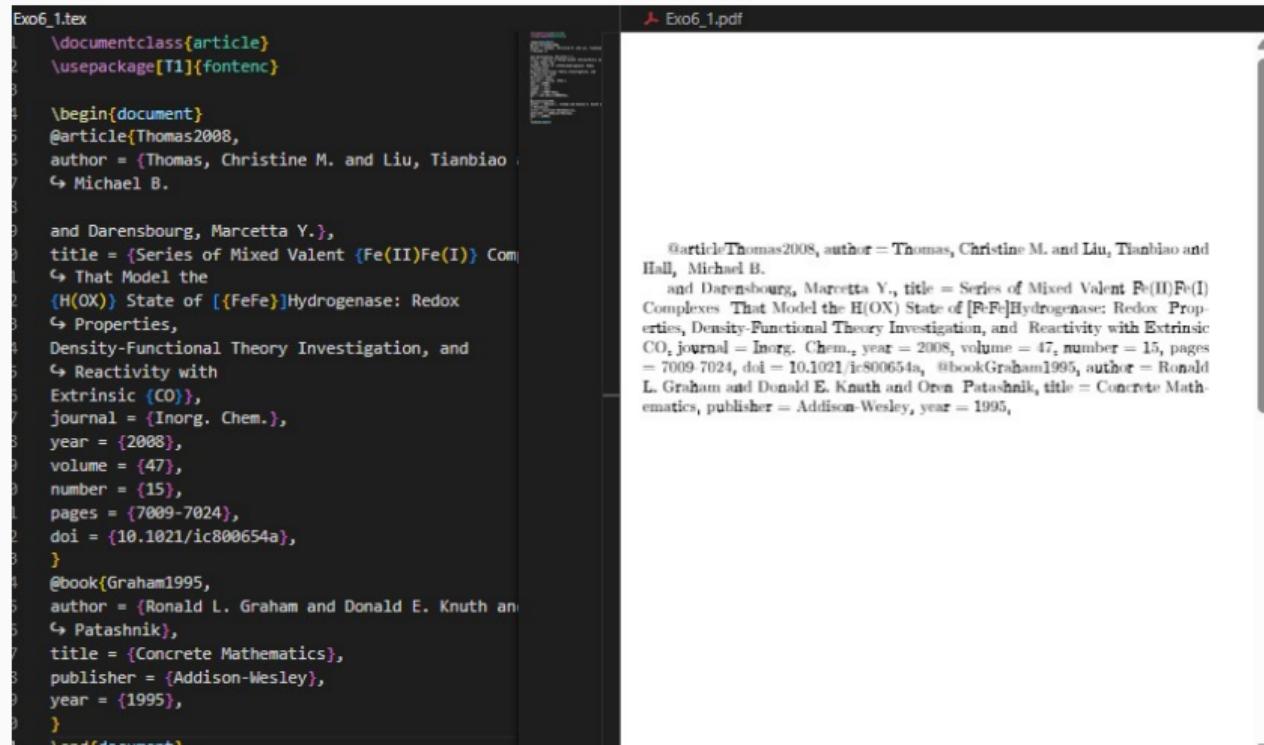
Теоретическое введение

6 Работа с библиографией / Working with Bibliography

Для библиографических ссылок обычно используется информация из внешних файлов - библиографических баз данных. For bibliographic citations, information is typically retrieved from external files - bibliographic databases.

6.1 Библиографические базы данных / Reference Databases

Базы данных BibTeX содержат записи с различными полями. BibTeX databases contain entries with various fields.



The image shows a split-screen view. On the left, a code editor displays the LaTeX file 'Exo6_1.tex'. On the right, a PDF viewer displays the generated document 'Exo6_1.pdf'. The LaTeX code defines two entries: one for a journal article and one for a book. The PDF output shows the formatted entries with their respective fields.

```
Exo6_1.tex
1 \documentclass{article}
2 \usepackage[T1]{fontenc}
3
4 \begin{document}
5 @article{Thomas2008,
6 author = {Thomas, Christine M. and Liu, Tianbiao and Daresbourg, Marcetta Y.},
7 title = {Series of Mixed Valence Fe(II)Fe(I) Complexes That Model the H(OX) State of [FeFe]Hydrogenase: Redox Properties, Density-Functional Theory Investigation, and Reactivity with Extrinsic CO}, journal = {Inorg. Chem.}, year = {2008}, volume = {47}, number = {15}, pages = {7009-7024}, doi = {10.1021/ic800654a}, }
8
9 @book{Graham1995,
10 author = {Ronald L. Graham and Donald E. Knuth and Oren Patashnik}, title = {Concrete Mathematics}, publisher = {Addison-Wesley}, year = {1995}, }
11 \end{document}
```

Exo6_1.pdf

```
@article{Thomas2008, author = {Thomas, Christine M. and Liu, Tianbiao and Daresbourg, Marcetta Y.}, title = {Series of Mixed Valence Fe(II)Fe(I) Complexes That Model the H(OX) State of [FeFe]Hydrogenase: Redox Properties, Density-Functional Theory Investigation, and Reactivity with Extrinsic CO}, journal = {Inorg. Chem.}, year = {2008}, volume = {47}, number = {15}, pages = {7009-7024}, doi = {10.1021/ic800654a}, @book{Graham1995, author = {Ronald L. Graham and Donald E. Knuth and Oren Patashnik}, title = {Concrete Mathematics}, publisher = {Addison-Wesley}, year = {1995}, }
```

6.3 Workflow BibTeX c natbib / The BibTeX Workflow with natbib

Пакет natbib предоставляет расширенные возможности цитирования. The natbib package provides enhanced citation capabilities.

6.4 Workflow biblatex / The biblatex Workflow

Пакет biblatex работает несколько иначе, с загрузкой ресурсов в преамбуле. The biblatex package works differently, loading resources in the preamble.

The screenshot shows a LaTeX editor interface with two panes. The left pane displays the TeX code for 'Exo6_3.tex', and the right pane shows the resulting PDF document 'Exo6_3.pdf'.

Exo6_3.tex:

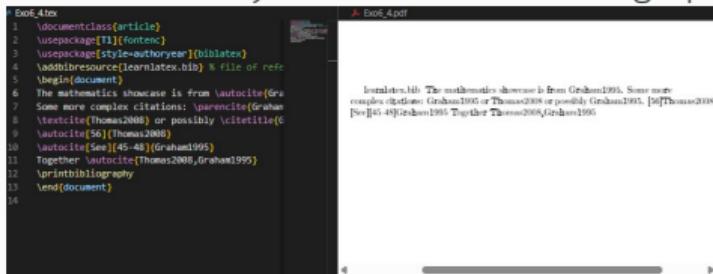
```
1 \documentclass{article}
2 \usepackage[T1]{fontenc}
3 \usepackage{natbib}
4 \begin{document}
5 The mathematics showcase is from \citet{Graham1995}
6 there is some chemistry in \citet{Thomas2008}.
7 Some parenthetical citations: \citet{Graham1995}
8 and then \citet[p.\textendash{}48]{Thomas2008}.
9 \citet[See][pp.\textendash{}45\textendash{}48]{Graham1995}
10 Together \citet{Graham1995,Thomas2008}
11 \bibliographystyle{plainnat}
12 \bibliography{learnlatex}
13 \end{document}
```

Exo6_3.pdf:

The mathematics showcase is from [?], whereas there is some chemistry in [?]. Some parenthetical citations: [?] and then [?, p. 45–48]. [See ?, pp. 45–48] Together [??]

6.7 Гиперссылки / Hyperlinks

Пакет hyperref автоматически создает ссылки в библиографии. The hyperref package automatically creates links in bibliography.



```
Ex06_4.tex
1 \documentclass[article]{article}
2 \usepackage[T1]{fontenc}
3 \usepackage[style=authoryear]{biblatex}
4 \addbibresource{LearnLatex.bib} % file of refs
5 \begin{document}
6 The mathematics showcase is from \autocite{Gra}
7 Some more complex citations: \parencite{Gra}
8 \textcite{Thomas2008} or possibly \citetitle{Gra}
9 \textcite{Thomas2008}[56] (Thomas2008)
10 \autocite{See}[45–48](Graham1995)
11 Together \autocite{Thomas2008,Graham1995}
12 \printbibliography
13 \end{document}
14
```

Выполнение лабораторной работы

Упражнение 1: Сравнение natbib и biblatex

natbib workflow



The screenshot shows a LaTeX editor interface. On the left, the code file `Exer6_9_1.tex` is displayed with the following content:

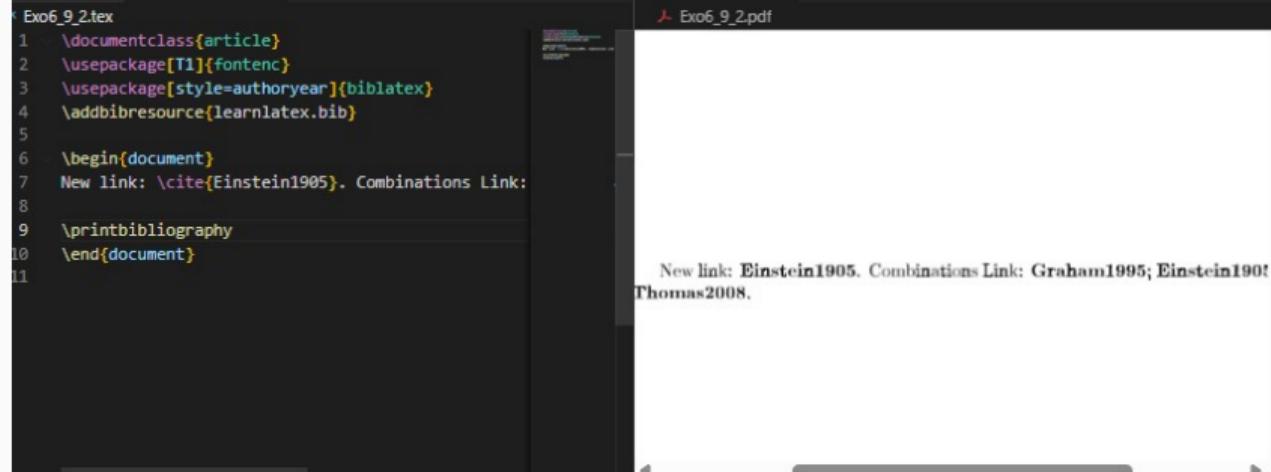
```
1 \documentclass{article}
2 \usepackage[T1]{fontenc}
3 \usepackage{natbib}
4
5 \begin{document}
6 Link to the book: \citet{Graham1995}. Link to the
7
8 \bibliographystyle{plainnat}
9 \bibliography{learnlatex}
10 \end{document}
```

On the right, a preview window titled `Exer6_9_1.pdf` shows the rendered document. The text "Link to the book: [1]. Link to the article [2]." is visible, with the numbers [1] and [2] appearing as small blue links. A status bar at the bottom indicates "Last update today, 1 day ago (with [1]).".

biblatex workflow

Упражнение 2: Создание новых записей

Новая запись в базе данных и ссылки



The image shows a split-screen interface of a LaTeX editor. On the left, the code file `Exo6_9_2.tex` is displayed:

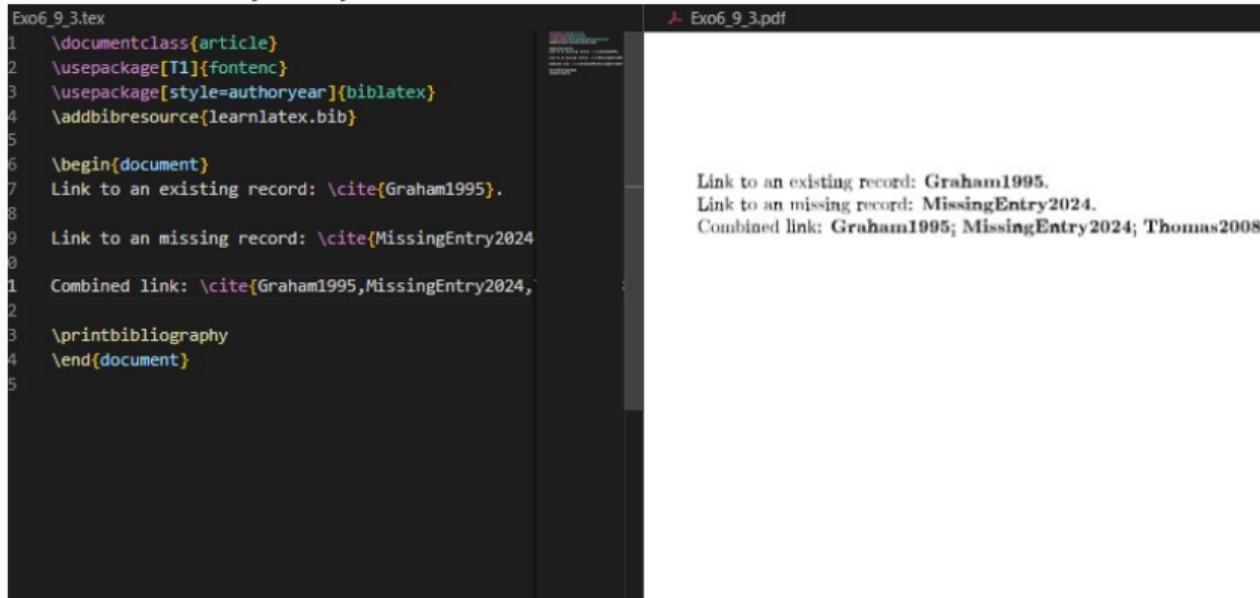
```
1 \documentclass{article}
2 \usepackage[T1]{fontenc}
3 \usepackage[style=authoryear]{biblatex}
4 \addbibresource{learnlatex.bib}
5
6 \begin{document}
7 New link: \cite{Einstein1905}. Combinations Link:
8
9 \printbibliography
10 \end{document}
```

On the right, the generated PDF document `Exo6_9_2.pdf` is shown:

New link: Einstein1905. Combinations Link: Graham1995; Einstein1905
Thomas2008.

Упражнение 3: Работа с отсутствующими записями

Ссылки на отсутствующие записи в базе данных



The image shows a LaTeX editor window and its corresponding PDF preview window. The LaTeX code in the editor is as follows:

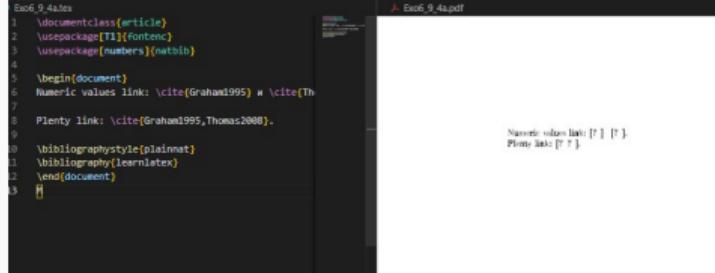
```
Exob_9_3.tex
1 \documentclass{article}
2 \usepackage[T1]{fontenc}
3 \usepackage[style=authoryear]{biblatex}
4 \addbibresource{learnlatex.bib}
5
6 \begin{document}
7 Link to an existing record: \cite{Graham1995}.
8
9 Link to an missing record: \cite{MissingEntry2024}
10
11 Combined link: \cite{Graham1995,MissingEntry2024}
12
13 \printbibliography
14 \end{document}
```

In the PDF preview, the output is:

Link to an existing record: Graham1995.
Link to an missing record: MissingEntry2024.
Combined link: Graham1995; MissingEntry 2024; Thomas2008.

Упражнение 4: Числовые стили библиографии

natbib с числовым стилем



Ex06_9_4a.tex

```
1 \documentclass{article}
2 \usepackage[T1]{fontenc}
3 \usepackage[numbers]{natbib}
4
5 \begin{document}
6 Numeric values link: \cite{Graham1995} и \cite{Th
7
8 Plenty link: \cite{Graham1995,Thomas2008}.
9
10 \bibliographystyle{plainnat}
11 \bibliography{learnlatex}
12 \end{document}
```

Numeric values link: [?] [?].
Plenty link: [? ?].

biblatex с числовым стилем



Ex06_9_4b.tex

```
1 \documentclass{article}
2 \usepackage[T1]{fontenc}
3 \usepackage[style=numeric]{biblatex}
4 \addbibresource{learnlatex.bib}
5
6 \begin{document}
7 Numeric values link: \cite{Graham1995} и \cite{Th
8
9 Plenty link: \cite{Graham1995,Thomas2008}.
10
11 \bibliographystyle{plainnat}
12 \bibliography{learnlatex}
13 \end{document}
```

Numeric values link: [Graham1995] [Thomas2008].
Plenty link: [Graham1995, Thomas2008].
Learnlatex

Выводы

Выходы

В ходе лабораторной работы №6 я освоил методы работы с библиографией в LaTeX. Изучил два основных подхода: традиционный workflow с natbib и BibTeX, а также современный подход с biblatex и Biber. Научился создавать библиографические базы данных, управлять стилями цитирования и создавать гиперссылки в библиографии.

In this lab work #6, I mastered bibliography management methods in LaTeX. I studied two main approaches: traditional workflow with natbib and BibTeX, as well as modern approach with biblatex and Biber. I learned to create bibliographic databases, manage citation styles, and create hyperlinks in bibliography.

Список литературы

Спасибо за внимание
