

Preparation of articles for e-Informatyka.pl in LaTeX

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Abstract

This document describes the process of making articles for e-Informatyka.pl portal in the \LaTeX system. It is not a complete guide to \LaTeX , which itself is a very complex solution. This document is rather a set of advices for users who want to prepare and publish their own articles in e-Informatyka.pl using a \LaTeX document format. It also describes some requirements, restrictions and guidelines these articles should follow.

Keywords: preparation article template LaTeX

1 Introduction

\LaTeX (pronounced "LAY-tech" or "LAH-tec") was made by Leslie Lamport as an extension of \TeX system (whose author is Donald E. Knuth). It is recognised as very good standard for creating articles, publications, manuals, etc. Because of that e-Informatyka.pl team decided to enable authors to publish their articles using the \LaTeX system. However, such article has to comply with specific conditions in order to be published. This guide is accompanied by a document named 'einfo_sample_en' (that can be obtained at e-informatyka.pl). That document can be used as template to be filled with your content.

2 Description of making and publishing processes

To publish an article you have to make it first. An article written in \LaTeX is nothing more but a common text file (usually with .tex extension) that contains (along with the article's content) commands and environments which allow \LaTeX to adjust the visibility of all contents within the article. It is difficult to make such a file without any software supporting \LaTeX . e-Informatyka's team suggests using TeXnicCenter (available at <http://sourceforge.net/projects/texniccenter/>). To make it work you will also need a text processor, like MiKTeX (available at <http://www.miktex.org/>).

To make articles for e-Informatyka.pl in \LaTeX you also need the document class file. This file is 'einformatyka.cls' and you can obtain it at e-informatyka.pl. After

you downloaded the file you have to put it in the same directory (folder) where you keep your L^AT_EX documents.

An article made by you can contain bibliography included from separate files (with .bib extension) as well as pictures (from .jpg, .png, .eps files).

When you have the article ready, but before publishing it *you really have to make sure that your article is built with no errors*. Then you can attempt to publishing the article in the portal. To do so eInformatyka's team suggests placing all the required files (those are .tex, and others if necessary: .bib and images) in a single .zip or .tar.gz archive without any directories.

If you have the archive file ready you should login into the portal and start the publishing procedure. You will be guided step by step on how to complete the publishing procedure. To find a more detailed description on the procedure refer to portal's resources.

3 Structure of article's file

Structure of file containing the article is shown below:

```
\documentclass{einformatyka}

\begin{document}

\title{Title of article}

\begin{articleinfo}

\begin{authorgroup}
  \begin{author}
    \firstname{John}
    \surname{Smith}
    \orgname{University}
    \orgdiv{Faculty}
    \email{author@email.com}
  \end{author}
\end{authorgroup}

\keywordset{keyword another\_keyword}

\begin{abstract}[en]
Abbreviation of article.
```

```
\end{abstract}
```

```
\end{articleinfo}
```

```
\end{document}
```

This is a "minimal version document" which can be extended by contents and additional information. The document begins with information that it is compatible with 'eformatyka.cls' document class (of course the directory with the article must contain that file). The next element contains the document contents:

```
\begin{document}
```

```
\end{document}
```

The beginning of the document must contain a section with basic information about article. The section follows command:

```
\begin{articleinfo}
```

The data about the article you are required to provide is:

- information about authors (authorgroup),
- keyword set,
- abbreviation of article with information about language (begin{abstract}[en]).

Section 'authorgroup' contains information about authors (because article can be written by more than one person). Each of the authors must be described in the following manner:

```
\begin{author}
```

```
\firstname{John}
```

```
\surname{Smith}
```

```
\orgname{University}
```

```
\orgdiv{Faculty}
```

```
\email{john.smith@university.edu}
```

```
\end{author}
```

To describe the author you have to place his/her firstname, surname, name of organization (orgname), organization's division name (orgdiv) and e-mail address (e-mail).

Next,

```
\keywordset{}
```

keyword set has to be defined.

Then you have to place a short description of article (abstract) that is followed by information about the article's language (i.e. [en]):

```
\begin{abstract}[en]
Abstract's content
\end{abstract}
```

Now you have all the information required by e-Informatyka.pl. You can also insert an epigraph if you like. To do so you have to use one more section:

```
\begin{epigraph}
text of epigraph text of epigraph text of epigraph
text of epigraph text of epigraph text of epigraph
--Author of epigraph
\end{epigraph}
```

Author of epigraph is placed in it's last line after two dashes.

At last you have to close the section with the information about the article:

```
\end{articleinfo}
```

Next, before the end of the document:

```
\end{document}
```

you have to put "essence" of article. Below you can read instructions on how to do it.

4 Content of article

4.1 Partition of document into sections

Article has to be divided into sections. To do so use the following commands:

```
\section{Title of section}
\subsection{Title of subsection}
\subsubsection{Tile of subsubsection}
```

Contents of article should be always divided into sections. Sometimes you should divide some sections into subsections or even subsubsections because it makes the article easier to read. Sections (also subsections and subsubsections) are enumerated automatically by 1, 2, 3 (1.1, 1.2 and 1.1.1, 1.1.2) and so on.

4.2 Placing text

Text that is common, "ordinary" content is placed just between other commands and environments. To make a new paragraph you have to precede it with an empty line. To force a new line you have to insert a double backslash or use the following command:

```
\newline
```

To insert an ellipse (... , triple dots) you have to use command:

```
\ldots
```

Examples of other "basic" commands can be found in `info_sample_en.tex` file.

4.3 Lists

e-Informatyka allows you to use two types of lists: one of them is an enumerated list (items are preceded by digits or letters), another is an itemized list (items begin e.g. with a big black dot). In both lists items are inserted by the 'item' command. Lists can be nested (up to fourth level). Below you can see a simple example of lists, more complex examples are placed in `info_sample_en.tex`.

```
\begin{itemize}  
  \item punkt  
\end{itemize}
```

```
\begin{enumerate}  
  \item punkt  
\end{enumerate}
```

4.4 Footnotes

Using footnotes is not a problem. To place a footnote use the 'footnote' command:

```
this text requires a footnote\footnote{this is a content of the footnote}
```

Text "this is a content of the footnote" will be placed at the bottom of the page, separated from main content of the article by a horizontal rule and described by an appropriate number.

4.5 Distinguished parts of text

Sometimes some parts of your article have to be *distinguished*. To do so should use the 'emph' command. Sometimes text has to be **bold** or *italic*, in which case you use 'textbf' and 'textit' commands. If you need you can nest and mix these commands and up to a fourth level. Here comes a simple example, to find more complex examples refer to 'einfo_sample_en.tex'.

```
\emph{distinguished text}
\textbf{bold text}
\textit{italic text}
```

4.6 Tables

To place a table in the article e-Informatyka's team suggests you use a template shown below:

```
\begin{table}[h]
\begin{center}
\begin{tabular}{|l|c|r|l|}
longlonglong & longlonglong & longlonglong & longlonglong \\
\hline
short & short & short & short \\
\hline
mediumm & mediumm & mediumm & mediumm \\
\hline
\end{tabular}
\caption{Przykładowa tabela}
\end{center}
\end{table}
```

Optional parameter in the 'table' environment describes where the table should be placed (to find out more see section "Figures" below). Next, the table is placed in the center of the page. The table is created by 'tabular' environment, that allows the use specified number of columns (each column is surrounded by a vertical bar) that can be aligned:

- *l* - left,
- *r* - right,
- *c* - center.

In rows each column is separated by ampersand (&), and rows are separated by double backslash (\\). Command `\hline` inserts a horizontal rule that visually separates rows.

4.7 Placing source code

To place source code or any other text which should not be interpreted by L^AT_EX in your article you should use the 'verbatim' environment. It enables you to place text literally. The code should be surrounded by `\begin{verbatim}` and `\end{verbatim}` commands. You can find examples in `einfo_sample_en.tex`.

4.8 Equations

To place complex mathematical formulas or symbols in your article you have to use so called mathematical mode. The mode is nothing else but a text surrounded by dollars (\$). In the mathematical mode you can create very complex equations in simple way, e.g. subscripts by underscore character (_). More examples can be found in the example file. It is also very easy to make formulas using L^AT_EXeditors, many of which support countless symbols and ways you can use them (e.g. Math menu in TeXnicCenter). The following example:

```
$x^{\{y\}} + z_{\{t\}} - w^{\{3\}}_{\{j\}}/v_{\{j\}}^{\{2a\}} + 7^{\{s^{\{d\}}\}}$\\
$\{-b\pm\sqrt[n]{b^2-4ac}}{\over {2a}}$\\
```

gives:

$$x^y + z_t - w_j^3/v_j^{2a} + 7^{s^d} \\ \frac{-b \pm \sqrt[n]{b^2 - 4ac}}{2a}.$$

4.9 Figures

Your article can also contain pictures (e.g. schemas, diagrams). In order to place a figure you have to prepare two files: one containing the actual picture (in EPS, JPG or PNG format), the other containing the information about the picture's size (the file has .bb extension). eInformatyka recommends placing both files in the same directory you keep your article. The .bb file should contain a line shown below (do not forget to place a space or new line at the end of the line):

```
% BoundingBox: 0 0 width_in_pixels height_in_pixels
```

Placing a figure prepared in such manner inside the article is simple:

```
\begin{figure}[htbp]
  \centering
  \includegraphics[width=1.00\textwidth]{einfo_sample_image.jpg}
  \caption{Caption of figure}
\end{figure}
```

The optional parameter of the 'includegraphics' command specifies the picture's width in the article. You can adjust it by manipulating the factor (in example set to 1.00). Option [htbp] in the 'figure' command specifies vertical position of the figure in the article (usually [tbp]):

- *h* - place picture here,
- *t* - place picture at the top of the page,
- *b* - place picture at the bottom of the page,
- *p* - place picture at the new page.

5 Bibliography

Bibliography has to be placed in a separate .bib file (it is recommended to name it the same as the article's .tex file). Entries from the bibliography are placed in the article using the 'cite' command, e.g.:

```
\cite{SMITH2002}
```

Then the abbreviation of an bibliography entry (made by L^AT_EX) is placed in text of article and the entire entry is included in "References" section at the end of article. If you want to put a position in the "References" section but you do not want to place its abbreviation in the text you can use 'nocite' command, but this is not recommended.

```
\nocite{BROWN2005}
```

Examples of positions of bibliography can be found in 'einfo_sample_en.bib' where you can examine all possible bibliography entry types. In order to associate the bibliography .bib file with the article .tex file you have to place the following two lines at the end of the .tex (but before end{document}):

```
\bibliography{bibliography_file_name}
\bibliographystyle{alpha}
```


It will place the whole required list at the end of article.

The main goal of using a separate bibliography file is to keep all bibliography entries in a single file. Since only the entries included in the article by 'cite' and 'nocite' commands are mentioned in the article, you can use a single bibliography file in many .tex articles. Bear in mind that changes in bibliography will be seen in the article after you build it *three times*.