LaTeX Help for a JoSSonline Article Submission
[How to use LaTeX and the JoSSonline class.]

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ABSTRACT

This article explains how to use LaTeX and the JoSSonline class in two parts.

1. HOW TO USE LATEX

LaTeX is a software used to create optically appealing documents to allow the user to concentrate on the content. It produces a `.pdf` file from a `.tex` file. The `.tex` file has to be created by the user. It contains the document content as well as instructions on the structure of the text: headings or captions need to be defined, for example. The user does not have to care so much about the layout of the final document. JoSS decided to advise the use of LaTeX as it will make it easier to create an optically uniform journal.

In order to use LaTeX, it is necessary to install a compiler and an editor software. It is recommended to download and install the compiler MiKTeX first and the editor Texmaker afterwards, as these are easy to use. For instance, MiKTeX comes with a variety of packages and automatically downloads additional packages if needed. This would be a cumbersome process if it had to be done manually.

In Texmaker, a `.tex` file must be created which contains the article content. Additionally, the structure of the text has to be provided: commands as `\chapter`, `\section` or `\subsection` describe different levels of headings. The layout of the text is later taken care of by the compiler.

A very simple example of a `.tex` file is the following:

```
\documentclass[conference]{../joss-pretty}

\title{Insert title here}

\keyword{[This will be shown as the subtitle.]}

\author{
        John Doe \\
        Generic Research Corporation\\
        Los Angeles, 11111 CA, USA
}

\abstract{Insert abstract here}

\begin{document}
\maketitle

\section{Insert section title here}
The article content will be written here.

\end{document}
```

The compiled example file will look like this help document. The example consists of two parts.

The text and commands in between the `\begin{document}` and `\end{document}` commands will be processed to compose the final document.

Information about the document, such as title or author, has to be provided before the `\begin{document}` command. The `\maketitle` command uses this information to create a title page or to include it in the beginning of the document.

The `\documentclass` command defines the type of document and gives a location for the `.cls` class file. A more detailed explanation is given in part 2 of this document.

In Texmaker, 'Quick Build' or 'PDFLaTeX' needs to be chosen in the dropdown menu in the top toolbar. The compile command is given by clicking the arrow to the left of the dropdown menu. Alternatively, the F6 button may be pressed. In order to view the compiled file, the arrow to the right of the dropdown menu in the toolbar has to be clicked (or the F7 button pressed). Once the file contains a bibliography, that bibliography information is processed by pressing the F11 button. If the document contains cross references (e.g. to tables, figures, headings) and the order of these parts is shuffled around, the F6 button may have to be pressed twice to get the references right.

To summarize, it is never wrong to use the following commands (in this order) to compile and view the document: F6, F6, F11, F6, F7.

It is possible to create complex documents using LaTeX, and their appearance can be manipulated to great extent. For example, text can be displayed italicized or bold, figures, tables and equations can be included in the document, and a bibliography or an index can be added. The commands necessary for many of these actions are used in the three JoSSonline templates. Please use the templates or refer to the internet to include the features correctly.

2.   HOW TO USE THE JOSSONLINE CLASS

As shown in the example above, the location of the class on the hard drive is an input in the `\documentclass` command (in curly brackets). In the example, it is located in a folder one level higher than the `.tex` file. This is indicated by the `../`.

The document type is given in square brackets. By changing the document type, the whole layout is altered, based on the commands in the class file. Three types of documents have been defined in the class file: submit, conference and journal.

As can be seen in the sample files, the submit type produces a document with wider line spacing than the conference type. The journal type, on the other hand, produces a document with two columns.

A problem can occur if the document type is changed to journal and it contains wide figures or tables. As can be seen in the journal sample file, the problem can be solved by either restricting the figure width or using the alternative commands `\figure*` and `\table*`. This will place the object on top of a page, spanning both columns.