Open Source Software Lab-1

Introduction to LaTeX

February 28, 2019

1 List the use of 10 common tags in LaTeX.

beginsection : creates a section

beginenumerate : Creates a unordered list.

beginitemize : creates a ordered list.

begintabular : creates a table.

includegraphicsuniverse : used to include images in document.

beginbibliography : Creates a bibliography.

usepackage : Used for importing packages that are predefined.

frac : Used to write fractions in LaTeX.

int : Used to write integrals in LaTeX.

textbf,textit : Used to make the text in bold and italics respectively.

2 Explain Version Control in LaTeX.

Overleaf also borrows some ideas from version control systems, such as git: You can save "labelled versions", which are like commits, to make sure that even if others edit your document, you can always get back to and compare with important versions, like a 'first draft' or a version that was submitted for grading or publication. You can also access your projects via git, to make it easier to work offline.

The technology that powers our collaborative editing is called Operational Transformation, or OT for short. Your edits on Overleaf are sent back to the server every few seconds and saved. If two or more people edit the file at at the same time, the server is able to "rebase" each change on top of the other change, so that all of the clients end up at the same version. To notify clients of changes made by other clients, we use web sockets, which are a relatively new technology that allows servers to push updates to connected clients.

3 Explain how to add collaborators in LaTeX.

One of the main features in Overleaf is to allow teams to edit documents simultaneously and interact in real time. This article explains how to add collaborators to your project, and also how to share a project publicly. To do the same we follow the following procedure :-
After opening your project, move your cursor to the upper right corner of the page and click the Share icon.
Enter your collaborator's email address in the input box that pops up. If your collaborator already has an account on Overleaf, this should be the email address they use to login to Overleaf. Right below the text box, you will see a dropdown menu where you can set the permissions the new collaborator will have: Can Edit or Read Only. Then click the button Share.
After adding a new collaborator, you will see the corresponding email in the list. You can remove a collaborator from this project by clicking the x.
Once you've added a collaborator to your project, said project will show up in your collaborator's Projects page, and the name of the owner is also displayed. Notice that the projects you own have "You" in the OWNER column. Now your collaborator can start editing the document simultaneously with you.

4 Creating Tables in LaTeX.

Col1	Col2	Col2	Col3
1	6	87837	787
2	7	78	5415
3	545	778	7507
4	545	18744	7560
5	88	788	6344

Subject	Scores	Outoff
Maths	98	100
Science	89	100
History	84	100
English	93	100
Political science	46	50
Geography	42	50
Physical Education	20	20

5 Writing Mathematical equations in LaTeX.

LaTeX is great at typesetting mathematics.

$$\int_1^2 \frac{1}{x} = log_e 2 \tag{1}$$

If f(x) = log(x) then

$$\frac{d}{dx} f(x) = \frac{1}{x} \tag{2}$$

$$F = ma \tag{3}$$

$$E = mc^2 \tag{4}$$

6 Inserting figures in LaTeX.

First you have to upload the image file (jpeg, png or pdf) from your computer to writeLaTeX using the upload link the project menu. Then use the includegraphics command to include it in your document. Use the figure environment and the caption command to add a number and a caption to your figure. See the code for Figure in this section for an example.

Figure 1: wallpaper

Figure 2: secenary

Figure 3:

7 Creating Glossary in LaTeX.

Defining glossary entries : To use an entry from a glossary you first need to define it. There are few ways to define an entry depending on what you define and how it is going to be used. Note that a defined entry won't be included in the printed glossary unless it is used in the document. This enables you to create a glossary of general terms and just include it in all your documents.

Defining terms : To define a term in glossary you use the newglossaryentry macro:
newglossaryentry¡label¿¡settings¿ ¡label¿ is a unique label used to identify an entry in glossary, ¡settings¿ are comma separated key=value pairs used to define an entry. For example, to define a computer entry: computer name=computer, description=is a programmable machine that receives input, stores and manipulates data, and provides output in a useful format

8 Creating Table of Contents and list of figures.

Generating a table of contents can be done with a few simple commands. LaTeX will use the section headings to create the table of contents and there are commands to create a list of figures and a list of tables as well. Following is a small example code to create a table of contents of this file itself :

Contents

The generation of a list of figures and tables works in the same way. It is as shown below :

List of Figures

List of Tables

9 Creating a bibliography in LaTeX.

References

Open Source Software Lab
*V*eermata Jijabai Technological Institute
S.Y.B.Tech Information Technology

10 Inserting Citations in LaTeX.

We use the cite command to insert citations. Following code shows how citations are inserted in LaTeX :-
[**?**]articlemiller1993introduction, title=An introduction to the fractional calculus and fractional differential equations, author=Miller, Kenneth S and Ross, Bertram, year=1993, publisher=Wiley-Interscience