Software stack for Research writing

Mobile and Cloud Computing Seminar (MTAT.03.280)
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Research/academic Writing

Academic writing

• written by professionals
• Specific to a field
• edited/reviewed by the authors' peers
• often take years to publish.
• language is formal
• list of references

Examples

Non-academic Writing

• written for the mass public
• published quickly
• language maybe informal and casual
• no reference list

Examples
Newspapers, Magazine articles, Personal or business letters, novels, websites
Why is this lecture so important?

Fixed content, but the look/format is different

Example:

1. Introduction

While moving towards a more mature utility computing to offer the computing resources on a demand basis with pay-as-you-go pricing model, Cloud Service Providers (CSPs) are designing and developing serverless platforms, such as AWS Lambda, Google Cloud Functions, etc. Here the cloud services are broken down to the level of individual functions triggered by different events.

This event-driven computing model uses container technology. For each function, a dedicated container is created to run the function. Functions are then hosted on servers and the container is responsible for executing the function. Containers provide a lightweight, isolated environment for running the functions. The containers are created and destroyed quickly, allowing for efficient resource utilization.

In the case of data-intensive cloud applications, it is necessary to efficiently handle the flow of large data volumes. Using different data management tools is necessary to efficiently manage the data. The data management tools should be designed to support the needs of the application. The fundamental processing questions that should be explored include:

- How does the data platform work?
- What are the different types of data platforms available?
- What are the different types of data management tools available?

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Example:
Why is this lecture so important?

• Fixed content, but the look/format is different
  • focus should be on content, not the journal’s format
  • Automated typesetting
• Hundreds of references
• Mathematical equations
• Scientific figures

Software Stack

MiKTeX is a modern TeX distribution for Windows, Linux and macOS.

TextStudio: An integrated writing environment for creating LaTeX documents.

Overleaf: A collaborative cloud-based LaTeX editor used for writing, editing and publishing scientific documents.

Zotero: Free and open-source reference management software.

JabRef: Open-sourced, cross-platform citation and reference management software.

And many more…

One of the most sophisticated digital typographical systems.
Latex

- LATEX is a tool used to create professional-looking documents.
- It is based on the WYSIWYM (what you see is what you mean) idea.
- .tex file extension
- Focus on content, latex will take care of formatting.
  - it separates the content of the document from the style.
- Hundreds of templates available for almost everything from CVs to slideshows.
- Recall HTML: `<b> … </b>` for bold face font
- In Latex: `\textbf{…}` for bold face font
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And many more…
• A collaborative *cloud-based* LaTeX editor.

• Very easy even for beginner:
  • Goto [www.overleaf.com](http://www.overleaf.com) -> login
  • Select *New Project* -> *Blank Project* -> enter *Project name* -> *Create*
  • ...
  • ...
  • ...

Src: [https://www.overleaf.com/learn/latex/Learn_LaTeX_in_30_minutes](https://www.overleaf.com/learn/latex/Learn_LaTeX_in_30_minutes)
Create a new project
- List of templates (ACM double column template)
- University of Tartu template (tag: unitartucs)

Project Dashboard
- Side pane (file Explorer)
- File Outline
- New file, new folder, upload
- Source view -> Rich Text view
- Online output
- Goto PDF location in code + goto code location in PDF

Review + Share + Submit + History + Chat

Menu
- Sync + Spell Check + …..
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Download and Install the full version of MikTex:
• https://miktex.org/download

Download and install TexStudio:
• https://www.texstudio.org/#download

You may refer this old blog:

• ....

• ....

• ....
TexStudio

Editor Walkthrough

• List of symbols
• Math menu
• Wizards -> Quick tabular
• Wizards -> insert image
• Bibliography menu
• Bib file > insert specific bibliography
• Tips:
  • %TODO
  • Make your project a git repository -> no worry if a paragraph is deleted.
    • Options -> Configure TexStudio -> SVN/GIT -> Use Git -> Check-in after File/Save only -> OK
    • To go back to a point: git reset --hard <commit checksum>
    • Use git log to see all commits
Latex

(ACM double column template)

Template: 
https://www.acm.org/binaries/content/assets/publications/consolidated-tex-template/acmart-primary.zip

Src: ACM Primary Article Templates AND Publication Workflow
(https://www.acm.org/publications/taps/word-template-workflow)
Latex commands

- Figures
- Tables
- Equations
  - Inline
- Bullet and Numbering
- Mathematical Symbols
- Algorithms
- Citations (\cite) and references(\ref + \label)
- Bibliography
  - Get bibtex entry from Google Scholar
  - Get bibtex entry from Zotero
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Reference management with Zotero
Reference management with Zotero

- Open an Account in www.Zotero.org
  - 300MB storage [Free]
- Download and Install
  - Zotero
  - Zotero Connector for your preferred browser
- Src: https://www.zotero.org/download/
Reference management with Zotero

- Link Zotero Account
- Open Zotero
  - *Edit* -> *Preference* -> *Sync tab* -> *Settings Tab*
  - Under *Data Syncing*, link your account
  - **Bonus**: You may uncheck *Sync full-text content to save some space*
Reference management with Zotero

- Run Zotero
- Under My Library
  - Create a collection
- Open any research article in web browser
  - e.g.: https://ieeexplore.ieee.org/document/9055172
  - Make sure that Zotero Connector is configured
  - Now click on Save to Zotero Extension
- Go to Zotero, you should see the reference entry.
Reference management with Zotero

Zotero Dashboard

• Layout (collection pane + item pane + tag selector)

• Library
  • Collections

• Group Library

• For each item:
  • Info + Notes + Tags + Related

• Tag selector
Reference management with Zotero

- Adding an Item manually
- Locate
  - Search an item in google search and others
Better BibTex

• an extension for Zotero to manage bibliographic data
  • Goto https://retorque.re/zotero-better-bibtex/installation/
  • Download and install Better Bibtex
Reference management with Zotero

Export bibliography

• Open Zotero
• Select one or more items, or a collection
• Right click and select *Export Items* or *Export Collection*
  • Format: BibTex
  • You may uncheck all “Translator options”
  • Click on OK
Zotero with TexStudio

• Open TexStudio -> Open required .tex file
  • Position your cursor, where you want to cite the reference(s)

• Open Zotero
  • Select one or more items (or references)
  • Right click -> Better BibTex -> Push references to TexStudio
  • Now at the end you may export the selected references
BONUS
References

- https://www.midmich.edu/student-resources/lls/library/find-articles/academic-articles
- https://www.geeksforgeeks.org/difference-between-academic-writing-and-non-academic-writing/
- https://www.zotero.org/
- https://www.overleaf.com/project
- https://www.texstudio.org/
- http://www.tug.org/levels.html
- https://texfaq.org/FAQ-latex
- https://www.latex-project.org/
Q&A

unitartu

tartuylkool