Tools Seminar

Week 2 - Markup Languages & Scientific Literature

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Nov 22, 2019

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- Markup Languages
- Scientific Literature
 - Rankings in CS
 - Literature Resources
 - Paper Structure
 - Literature Management
- Summary

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Markup Languages



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Markup Languages

A markup language is a system for **annotating a document** in a way that is syntactically distinguishable from the text. — Wikipedia

Some commonly used markup languages:

- XML (Extensible Markup Language)
- HyperText Markup Language (HTML), Markdown
- TEX, LATEX

Data serialization language:

- JSON (JavaScript Object Notation)
- YAML (YAML Ain't Markup Language)

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XML

```
<?xml version="1.0" encoding="UTF-8"?>
<note>
    <from>Reddie</from>
    <to>Cedric</to>
    <heading>FAIL</heading>
    <body>You fail the exam!</body>
</note>
```

- Inherent tree/graph representation
- ullet Resource Description Framework (RDF) o Knowledge graph

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JSON & YAML

Commonly used in data serialization (left: JSON, right: YAML)

```
{"Notes": {
                                    # Notes
"Note one": {
                                     Note one:
   "from": "Reddie"
                                        from: Reddie
   "to": "Cedric"
                                        to: Cedric
   "body": "Hi"
                                        body: Hi
},
"Note two":{
                                     Note two:
   "from": "Cedric"
                                        from: Cedric
   "to": "Reddie"
                                        to: Reddie
   "body": "Hi too"
                                        body: Hi too
}}}
```

A real-life configuration example:

- Set your username & password in a yaml file
- Load the sensitive information from yaml
- .gitignore it to prevent leaking personal information = = > < -

HTML

Basic elements of HTML: w3school (let's view page source)

- <h1>This is a heading</h1>
- This is a paragraph.
- This is a link
-
- * Notice nobody directly writes HTML to render webpages nowadays

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Markdown

"to write using an easy-to-read and easy-to-write plain text format, optionally convert it to structurally valid HTML" — John Gruber

Markdown - A very lightweight markup language

- Often used to format readme files (README.md), e.g. Github
- For writing messages in online discussion forums, e.g. Zhihu, top-tier conference submission system
- To create rich text using a plain text editor, e.g. taking notes

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Markdown

Online Preview: Dillinger (Actually, there're many)

- #, ##, ###, ####
- *bold*, **italic**, 'monospace'
- 1. 2. 3., * * *
- [url name](http://url.com)
- ![image](image_path)
- | | (table)
- > (quote)
- '''cpp "'
- Inline HTML is also supported

Variant: Github Flavored Markdown (GFM)



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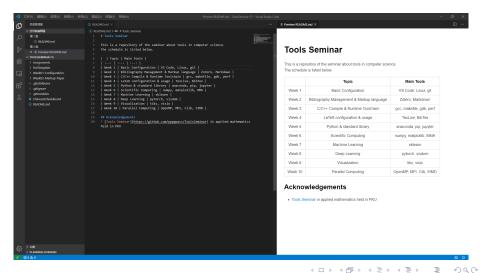
Markdown & HTML (Fig from wiki)

Text using Markdown syntax	Corresponding HTML produced by a Markdown processor	Text viewed in a browser
Heading	<h1>Heading</h1>	Heading
		ricading
	<h2>Sub-heading</h2>	
## Sub-heading		Sub-heading
Paragraphs are separated	<	Paragraphs are separated by a blank line.
raragraphs are separated by a blank line.	by a blank line.	
y 0 020m 22m;	Two spaces at the end of a line(br />	Two spaces at the end of a line
Two spaces at the end of a line	produces a line break.c/p>	produces a line break.
produces a line break.		Text attributes italic bold, monospace
	Text attributes italic ,	rext attributes hard, bottl, monospace .
Text attributes _italic_,	<pre>bold, <code>monospace</code>.</pre>	Horizontal rule:
bold, `monospace`.		
	Horizontal rule:	
Horizontal rule:	chr. />	Strikethrough:
	(hr />	11.2.2.3
	Bullet list(strikethrough
Strikethrough:	sprouzec zzeropr	
strikethrough	cul>	Bullet list:
-	apples	
Bullet list:	oranges	apples
	pears	oranges
* apples		• pears
* oranges		Numbered list:
* pears	Numbered list:	Numbered list:
Numbered list:	(0)	1. lather
	cliplathers/lip	2. rinse
1. lather	<pre>cli>rinse</pre>	3 repeat
2. rinse	repeat	
3. repeat		An example 9.
		1
An [example](http://example.com).	An example .	
[Image](Icon-pictures.png "icon")	<pre>cp>cing alt="Image" title="icon" src="Icon- pictures.png" /></pre>	
Mankdown uses email-style > characters for	pictures.png" />	Markdown uses email-style > characters for blockquoting.
> narkaown uses email-style > characters for blockauotina.	 	markdown uses email-style > characters for blockquoting.
ototing of the state of the sta	<pre>cp>Harkdown uses email-style > characters for</pre>	
Inline <abbr title="Hypertext Markup</td><td>blockquoting.</td><td>Inline HTML is supported.</td></tr><tr><td rowspan=5>Language">HTML</abbr> is supported.		
Inline <abbr title="Hypertext Markup</p></td><td></td></tr><tr><td>Language">HTML</abbr> is supported.		

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Markdown × VS Code

Markdown Preview Enhanced



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Scientific Literature



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Official Rankings in CS

- Conference / Journal Ranking: China Computer Federation (CCF)
- University Ranking: CS Rankings

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Top Schools in CS

CS Ranking by CSRankings (2019.11.19)

- Carnegie Mellon University (CMU)
- Massachusetts Institute of Technology (MIT)
- Univ. of Illinois at Urbana-Champaign (UIUC)
- Stanford University
- University of California Berkeley (UCB)
- Cornell University
- University of Michigan
- University of Washington
- University of California San Diego (UCSD)

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Literature Resources

All the resources can be accesses with a school IP address

- IEEE Xplore Digital Library
- ACM DL Digital Library
- arXiv: Electronic preprints
- dblp: Computer Science Bibliography
- Google Scholar
- LinkedIn, personal webpage

For CS, conference >> journal

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Paper Structure

Mainly research paper, not survey:

- Title, Author list (first, corresponding, last)
 - Pay attention to their affiliation, group, relationship
- Abstract, Keywords
- Introduction, Background & Motivation (fundamental important)
- Methodologies
- Experiments: Pay attention to their settings
- Related Work
- Conclusions & Discussions
- Acknowledgments
- References: Once you use others' points of view / results / conclusions, you MUST cite!
- * Take TVM [OSDI'18] & GraphDynS [MICRO'19] paper as examples

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Bibliography

BibTFXfile:

- Title
- Authors
- Conference / Journal
- (Book: publisher, pages)
- Year
- * Download citations from ACM/IEEE

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How to Read / Write Papers?

Not our topic today, but you can refer to

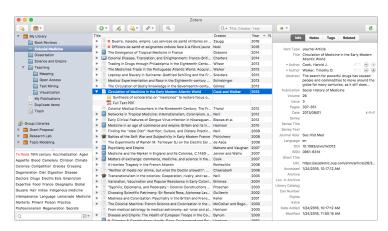
- Scientific Reading & Writing, lectured by Huawei Huang (2019 Fall in SYSU)
- Adrian Wallwork, English for Writing Research Papers
- * Grammarly for proofreading

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Literature Management

Zotero: collect, organize, cite, and share research



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Zotero

- Brower support
- Retrieve PDF metadata
- Duplicate detection
- Generate bibliographies (BibTEX)
- Sync with your account

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Summary



Week 2 - Markup Languages & Scientific Literature

- Markup languages: XML, Markdown
- CS Ranking
- Literature resources: ACM, IEEE, arXiv
- Paper structure
- Literature management: Zotero



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