A workshop on

Documentation

Book Club Meetings, Kingston, Canada

AmirHossein Sojoodi

2023-10-12

We will discuss

- Introduction to documentation

- Why do we care

- Types and examples

- Taking notes

- Tips and tricks, here and there!

- Demos

We will not discuss

- How to be more organized

- How not to procrastinate

- How to tidy up the desktop folder

- ...

But! By the end of today, hopefully you are motivated to do so on your own.

What is documentation?

Types of documents

Any data that worth keeping.

- User manuals

- Code comments, READMEs, etc

- Task (issue) list

- Standard Operating Procedure (SOP)

- Troubleshooting guide

- Policy document, bylaw

- Personal files/pictures (subjective)

Reasons for documentation?

- Knowledge preservation and transfer

- Sometimes crucial, sometimes nice-to-have

- Does it differ in various contexts? How?

  - Healthcare

  - Software engineering

  - Research

  - Personal life

Famous Failures Related to Poor Documentation

- [Mars Orbiter](#) (1999) - Loss of 125 Million $

- [Space Shuttle Challenger](#) disaster (1986) - Loss of challenger and 7 crew members.

- [Therac-25 radiation machine](#) (1980s) - Several serious injuries, including 6 deaths.

Taking Notes

Tips and Tricks No.1

- If you already have a system in place, don't change it
  dramatically. The key is gradual but steady improvement.

Not to be confused with:

- If it works, don't touch it!

Note Taking - Why and How?

- You cannot memorize everything.

    - This is a rule, make peace with it

    - We need a method to save and retrieve information

- Steps:

    - Before session/reading

    - During session/reading

    - After session/reading

Note Taking - Before Class/Reading

- Spend only 5 minutes thinking/writing about:

- What do you know about the topic?

- Why do I care about the topic?

- What do I expect to find out by reading the topic?

Note Taking - During Class/Reading

- Goal: Write down as little as possible. Why?

- Only **BIG** ideas

- Are you a paper-fan or computer-fan?
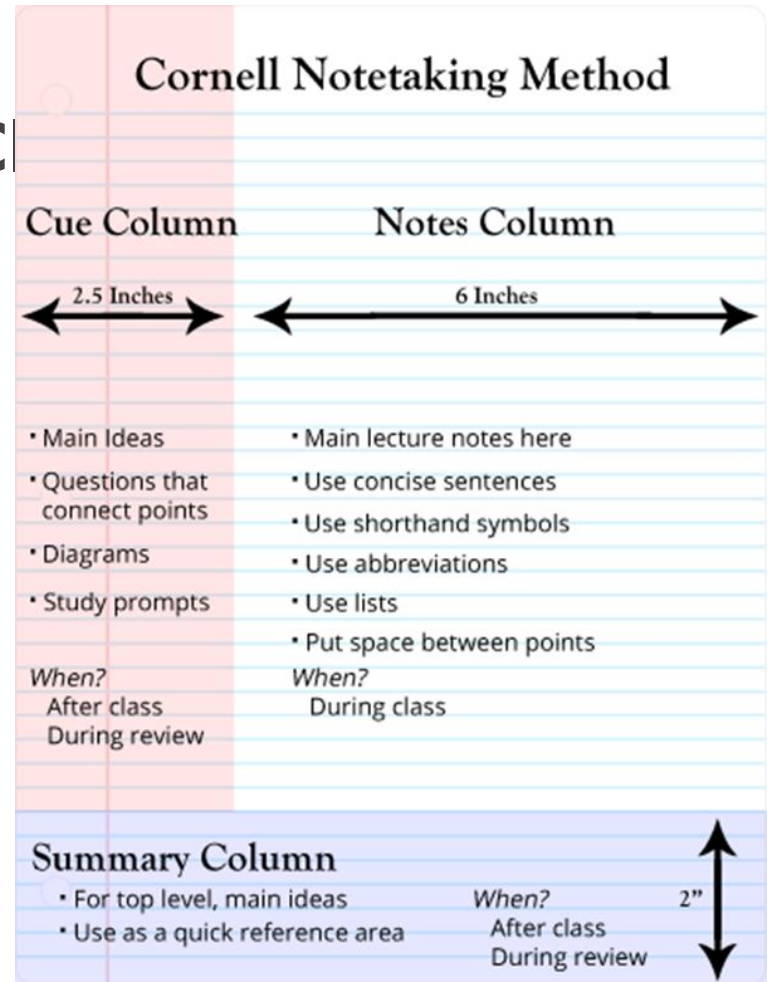
Note Taking - During Class/Reading

- Five systems:

1. Hierarchy notes

2. Cornell notes

3. Mind maps

4. Charts

5. Computer-based notes

Note Taking - During Cl

2. Cornell notes

It's like Hierarchy v2.0

Cornell Notetaking Method

Cue Column

Notes Column

← 2.5 Inches →

← 6 Inches →

- Main Ideas
- Questions that connect points
- Diagrams
- Study prompts

When?
After class
During review

- Main lecture notes here
- Use concise sentences
- Use shorthand symbols
- Use abbreviations
- Use lists
- Put space between points

When?
During class

Summary Column
- For top level, main ideas
- Use as a quick reference area

When? 2"
After class
During review

Note Taking - During Class/Reading

3. Mind Maps

- Very useful for understanding the big picture

- It can also be used for brainstorming

- A picture speaks a thousand words

  - Let's see an example

Note Taking - During Class/Reading

4. Charts

Great for information

retrieval

	Symptoms	Causes	Treatment
Cold	-Runny nose -Cough	- Virus	- Rest, paracetamol
Flu	-Fatigue -Sneezing -Headache	- Virus	- Rest, painkillers, anti-virals
Migraine	-Severe headache -Eye pain	- Unknown (genetics?)	- Rest, ice pack

Note Taking - During Class/Reading

5. Computer-based

- Pros and Cons?

- First Demo: OneNote

Demo: Microsoft OneNote

- Personal journal

- Collections

- Note taking

- Photo/document attachment

- Personalization

Note Taking - After Class/Reading

- Usually skipped

- It's essential to summarize and remove unnecessary info

- Spend 5 minutes, what are my key takeaways?

Tips and Tricks

Tips and Tricks No.2

"In case you cannot remember where you have put a document, and you start searching in a location, but you find it elsewhere, put that document back where you started searching for it."

TV Remote's Rule

Tips and Tricks No.3

- Have (professional/personal) blog.

- Write about your experiences and findings in your careers, privately, or publicly.

Tips and Tricks No.4

- Bad documentation is worse than no documentation.

- "An unread documentation is like a honey-less bee!"

Beehive's Rule!

Demos

(Files/Docs) Demo: Beyond Compare

- Organizing personal files/directories

- Backup and restore

- More traditional compared to cloud

(Academic) Demo: Mendeley

- Citation management/library

- Academic publications

- Books, theses

- User friendly import/export

- Share notes, highlighting, etc.

(Task Tracker) Demo: Trello

- Task tracker

- Great for personal/enterprise use cases

- Very user friendly

- Tons of extensions

- Desktop, mobile, web app

(Writing Documents) Demo: Markdown

- If you know how to code, you should already know this.

- README files

- Even website

- Several use cases

- You can use (pandoc) for converting other formats to MD

(Personal Files) Demos

- Browsers' Bookmarks Bar

  - Simple yet effective

  - Sync

  - (Out of scope) Various extensions

- Password Managers (KeePass)

Demo: Git / GitHub

- THE most important tool for a programmer in terms of documentation

Other Tools

- Google Docs, Google Draw, etc.

- Confluence, Jira

- Doxygen

- Sphinx

Key Takeaways

Open Discussion

Instead of blaming darkness, light a candle!