note-taking with the power of graph theory

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if you've ever used a computer before,
you've probably seen one of these:

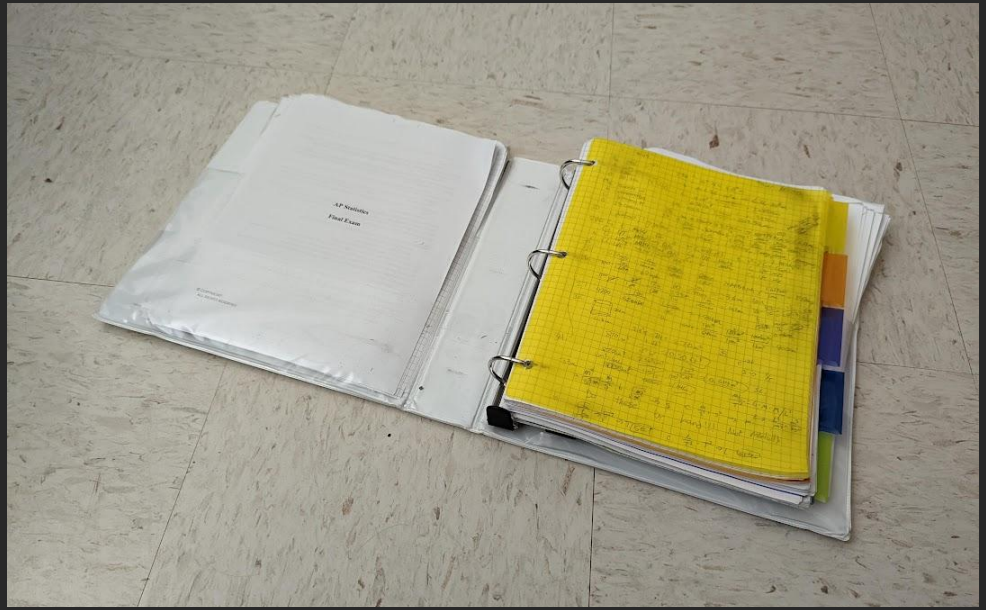
folders are really cool

- let you categorize information
- can be nested to form a hierarchy
- we've been categorizing things like this since before computers even existed!

unfortunately, they have a few issues.

- strict categorization
  - some things belong in more than one section
- information recall
  - good luck finding anything in here!

- digitizing folders and files helps alleviate the worst of these issues
  - *but doesn't fully solve them*
  - let's discuss



one of the many binders that got me through high school.
it should probably be declared a superfund site at this point.

strict categorization

- a recent example - malloc
  - this first showed up in CSC 230
  - came back ~~to haunt me~~ in CSC 246
- if i use class folders, where do notes on malloc go?
  - keep it in CSC 230?
  - move it to CSC 246?
  - split the file in two?
  - put it somewhere else entirely?
  - use a symlink?
- #tags can be helpful for this predicament
  - can have multiple in one file
  - independent of physical location

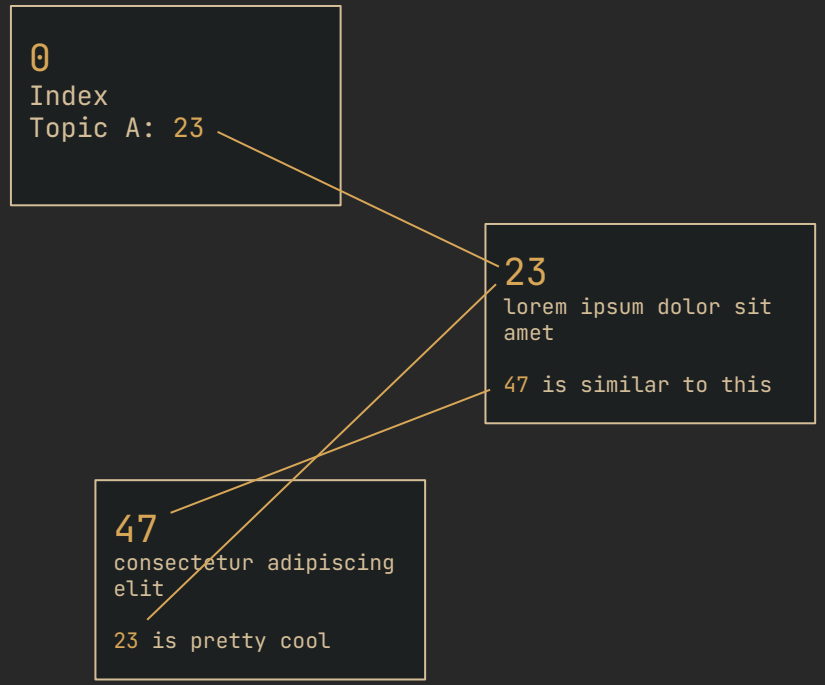
information recall

- **the entire point of taking notes, right?**
- computers *can* make searching through folders easier
  - still a pain with large volumes of information
  - difficult to find related topics
  - difficult to make connections between topics

your brain doesn't put knowledge into folders, so why should your notes?

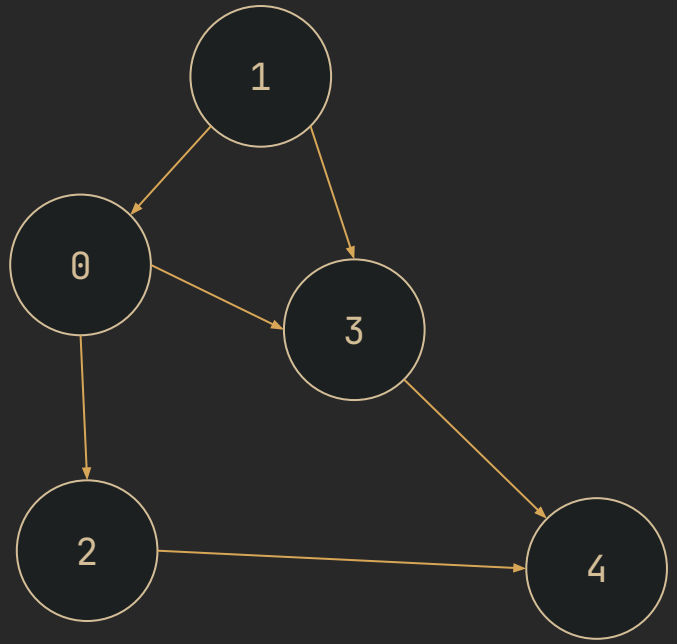
enter zettelkasten ("slip box")

- been around since the 1600s
- put knowledge on notecards
- number them
- build a network of references using these numbers
- organize to facilitate lookup
- can create an index to jump to specific topics
- like links or pointers



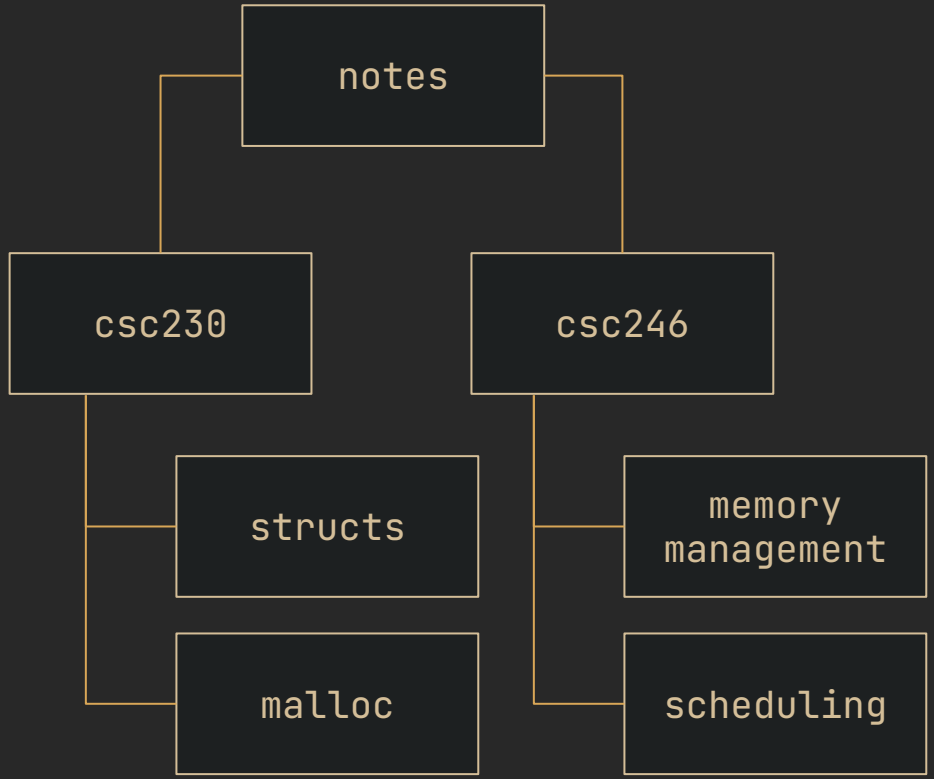
a quick little graph theory primer

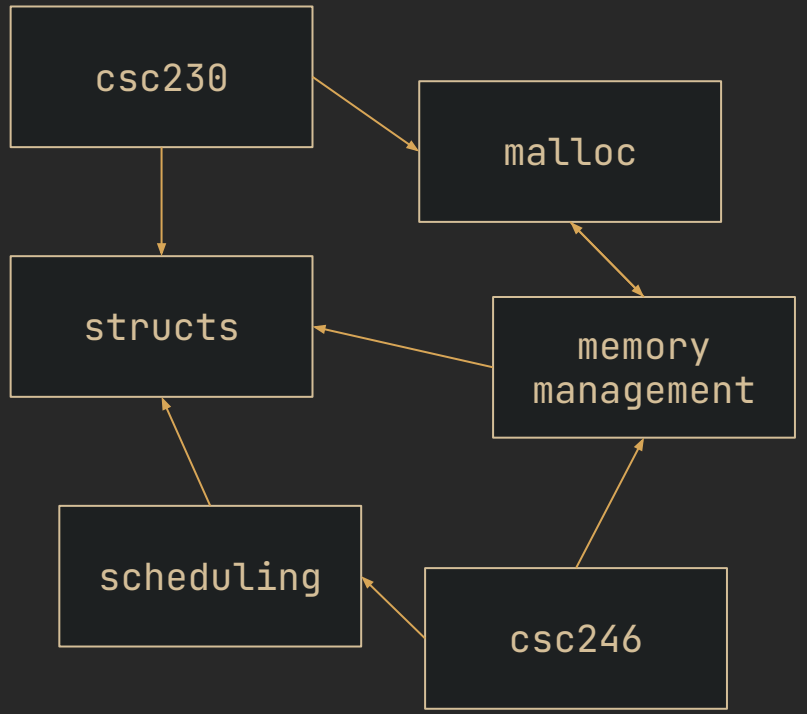
- a graph is a collection of vertices, with edges that link them together
- for the astute observer, zettelkasten seems a lot like a *directed graph*
  - each notecard is a vertex
  - links are the edges, which are directional (directed)
- graphs give more flexibility than a file tree
- easy to work with in software



zettelkasten for the digital age

- don't need numbers anymore
  - just reference files by name
  - some people still use them
- can link with more specificity than the file level
  - many tools support links to subheadings and specific lines
  - [[wikilink]] syntax is common
- indexes are still used, sometimes called MOCs
  - "map of content"
  - one might have an MOC for computer science
  - that could then point to an MOC on the C programming language
  - don't have to use them at all


notes
csc230
csc246
structs
memory management
malloc
scheduling


csc230
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evergreen notes

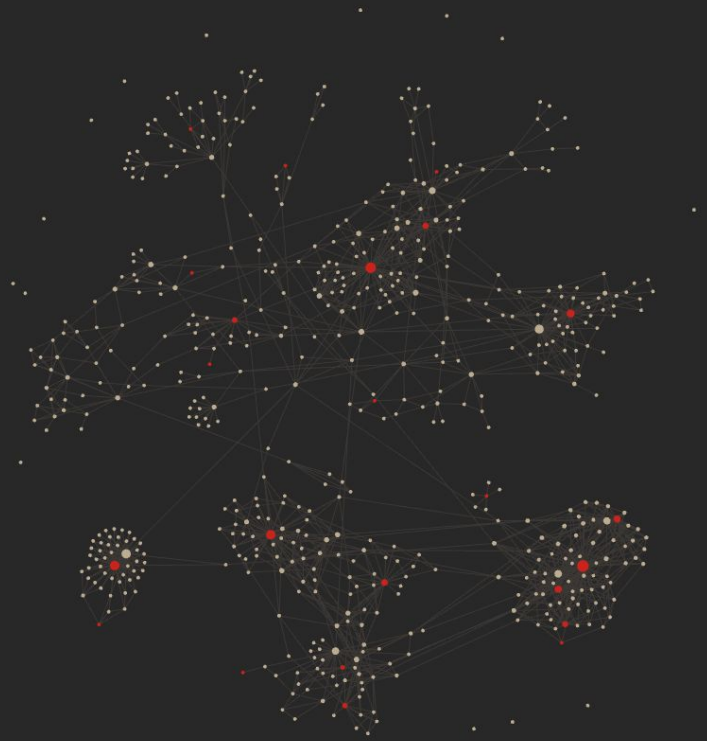
- evergreen notes should be atomic
- evergreen notes should be concept-oriented
- evergreen notes should be densely linked
- prefer associative ontologies to hierarchical taxonomies
- write notes for yourself by default, disregarding audience
- *notes start as transient but should solidify over time*

https://notes.andymatuschak.org/Evergreen_notes

pkm

personal knowledge management

- **lots** of tools available
- most tools use files in a directory, some don't
  - usually markdown
- facilities for including images, websites, pdf, etc.
- backlinks help find relevant connections
- visualizing the graph reveals emergent patterns
  - helps to resurface old notes



obsidian

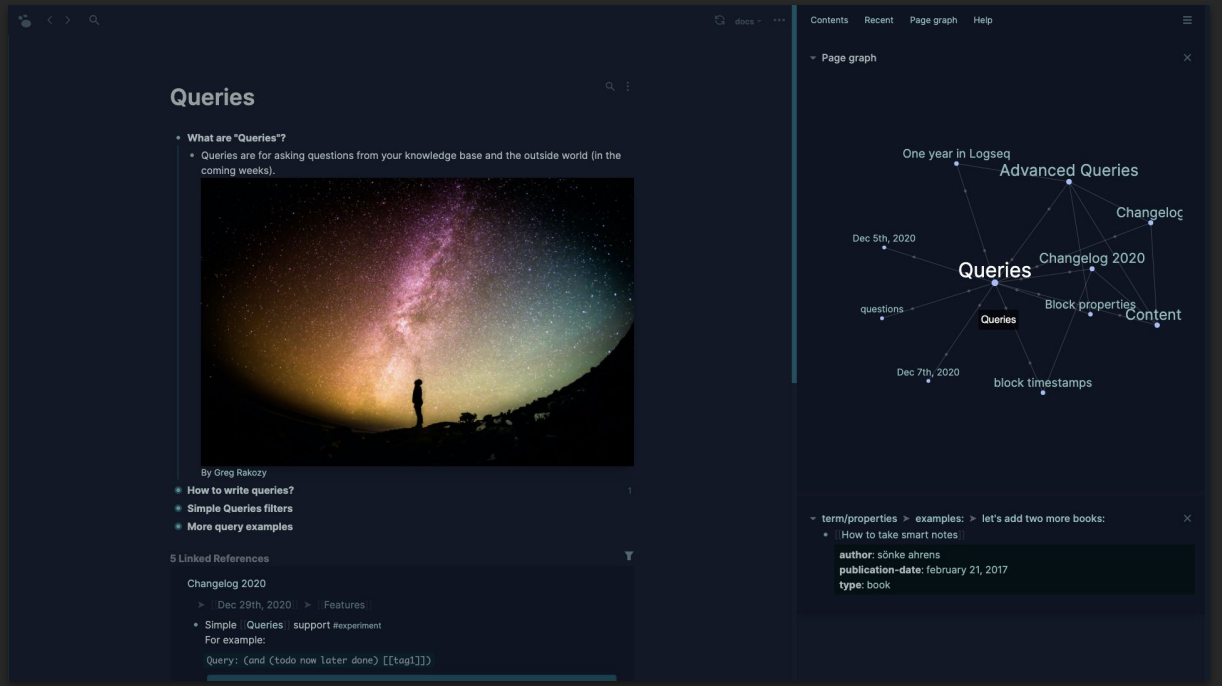
- proprietary
- local-first markdown
- electron-based
- lots of community extensions and themes
- great graph visualization

obsidian.md

logseq

- AGPL-3.0
- supports markdown or org-mode
- local-first
- browser or electron app
- graph view
- journals

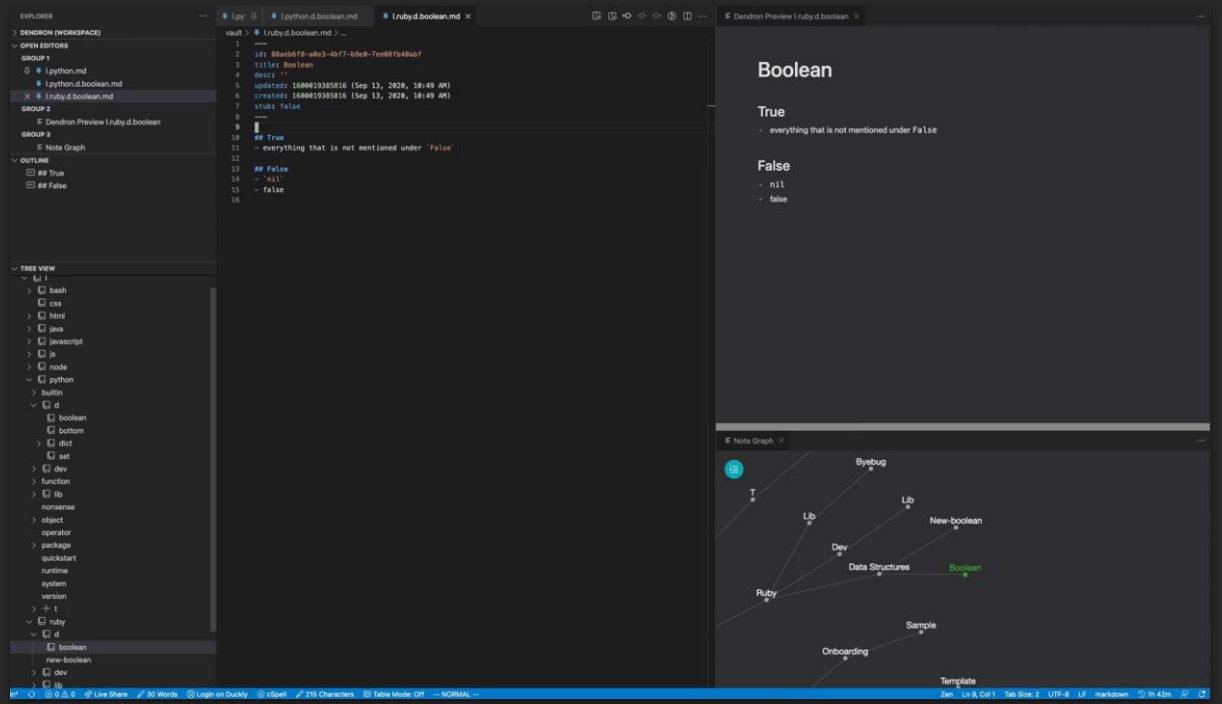
logseq.com



dendron

- AGPL-3.0
- built on vscode
- schema system
  - acts "object oriented"
- integrates with other services via pods

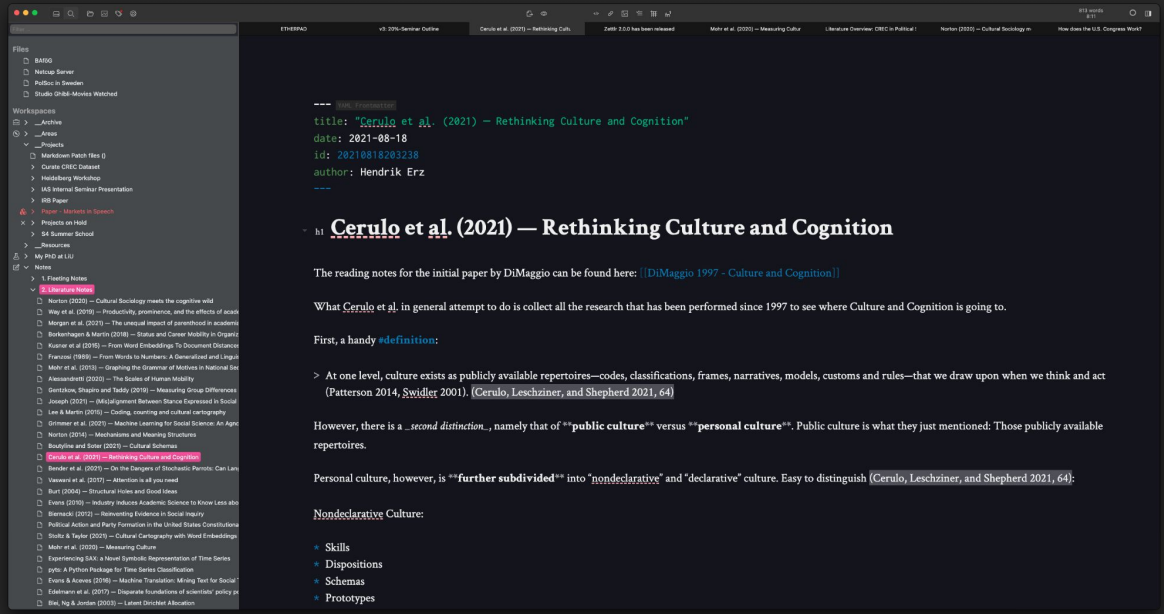
dendron.so



zettlr

- GPL-3.0
- electron-based
- local-first markdown
- popular in academia
  - has tools for citations, etc

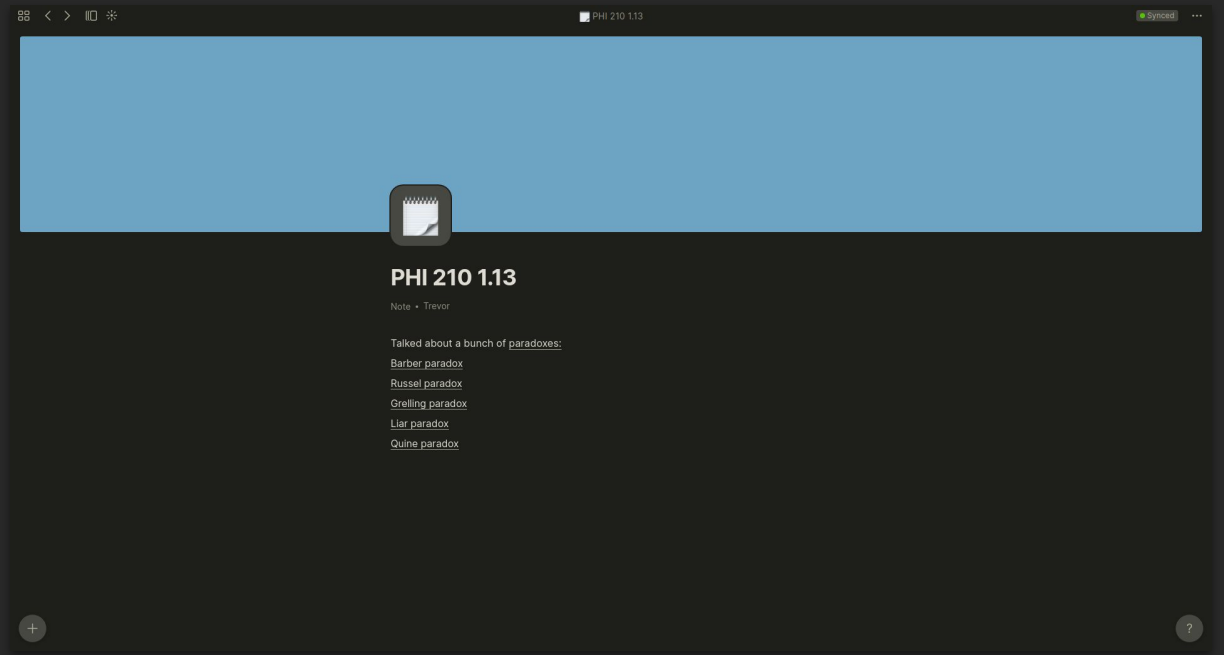
zettlr.com



anytype

- open source "soon"
- electron
- currently closed alpha
- uses objects and types instead of files
- stores and syncs data on ipfs
- all-in on web3

anytype.io



vim/emacs

- vim and emacs can be configured for pkm use
  - add support for [[wikilinks]] or other syntax
    - emacs org mode has its own syntax
  - other functionality such as images
  - if you're a diehard vim/emacs user you can probably figure it out

templates

- available in most tools
- preset content for new pages
  - i.e. insert certain headings automatically
- many tools support dynamic expressions
  - inserting today's date, for example
- some extend this to the idea of types, which can have additional properties in *frontmatter*
  - i.e. a watchlist
  - movies and shows can have properties for title, director, etc.
  - another page can query all the shows and display them in a table
  - obsidian's dataview plugin and anytype are the main examples

dailies / journals

- many tools also use templates for journals
  - new file automatically created for each day
- typically used for task management
- also to create records of what you did on a day
- tracking mood, habits, etc

syncing

- git
  - if you've got a collection of .md files, you can push and pull them with a git remote
- syncthing
  - fast and peer-to-peer directory syncing
  - a little more frictionless than git (no commiting/pushing)
- or mount cloud storage
  - google drive, etc.
  - not the best for security, though

tl;dr

- try organizing notes by concepts, not by date or course
- connecting notes together helps reinforce knowledge

closing thoughts

- there is no universal "right way" to organize things
- the only right way is the right way for you
- experiment and see what works!
- lots of resources online to learn more

sources

https://en.wikipedia.org/wiki/Zettelkasten

https://notes.andymatuschak.org/Evergreen_notes

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