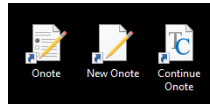


Using Emacs Org Mode for everything (including this blog)

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The purpose of this web site has been to give me some suitably-scoped coding tasks to amuse me and pass my time, not to make important information available. This is true in particular of the most recently added feature: this blog. I have dug up some old texts from other forums to put here, just to see if my creation is functional. However, I have also tried to set things up so as to minimize the threshold for writing new things. Ideally, whatever I'm currently working on, it should be a very short practical step to write a blog entry about it. Accordingly, here I'll explain some things about how this blog works, and especially how the tool for creating new blog entries is integrated into my general system for taking notes and producing documents.



1 The search for a good note taking system

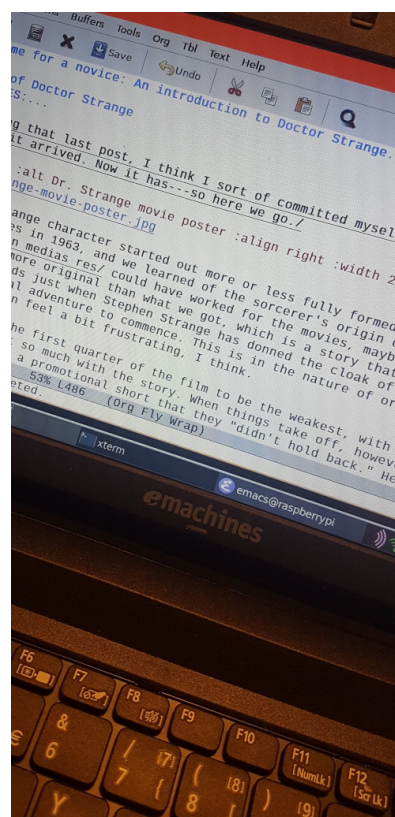
For almost as long as I can remember, work has for me consisted mainly in reading things, taking notes, and then turning those notes into a document, for myself or for others to read. I have relied on a number of note taking systems over the years and never been fully satisfied with them. I used Evernote for a long time. Evernote is good, but it doesn't allow me to arbitrarily reorder notes to reflect the disposition of an eventual document. It also had some bugs, especially when it came to printing notes. (They may be fixed by now.) For these reasons I started using Google Docs instead some years ago. While Google Docs is good at what it

does, it's mainly a word processor, not a system for taking notes. This has tended to turn my notes into full-fledged documents prematurely, which is not helpful. I have also tried for example Microsoft OneNote and Google Keep. The former lets you rearrange paragraphs, but *too* arbitrarily for my taste, and the latter is just too simple for my needs. (In particular, there's no way of creating multiple folders for notes.) I even used something called WriterDuet—which is for writing film manuscripts!—while writing one of the chapters for my PhD thesis. It had some useful functions (especially the digital sticky notes) but it costs money and was just overkill for me. Thus, the search continued.

2 Enter the eMachine

A while back I found a "netbook" computer from around 2010 among my old gadgets. This is a tiny laptop with technical specifications that were pretty sad even at launch, especially the intel atom processor and 1 GB of RAM. However, I realized that I loved having a 10.1" device that fits easily in my small everyday bag but has a real, physical keyboard. (Screen keyboards are of course useless for doing any real work.) The build quality is also really good. This *eMachine* can't run modern MS Windows, but has no problem with a lightweight version of Linux (I use Puppy Linux). I also managed to order a new battery for it, giving it about nine hours of running time rather than three at best, which makes a world of difference for portability.

I've used the text editor Emacs for coding for decades, so it was the obvious choice for taking notes on the eMachine. Emacs is a lightweight application compared to most word processors, so suitable for the eMachine, but also famous for being endlessly extendable with modules. It's also been around forever, so I assumed that someone had written an Emacs extension specifically for taking and working with notes. This all



lead to the glorious discovery of Emacs's Org Mode!

3 Emacs Org Mode

Org Mode is a "mode" that adds a lot of functions to the standard text editor, and comes installed with most distributions of Emacs. I can't even begin to describe what functions it has—I don't know most of them. But here are the main features from the perspective of my needs:

- Operates with plain text. This is very fast and responsive, which matters when jotting down thoughts.
- Allows simple formatting of text, section headers, lists, etc. using plain-text markup.
- Has keyboard shortcuts for rearranging and reordering the contents of a note in all kinds of ways. E.g., use the arrow keys for moving a paragraph, a list item, or a whole section up and down within the text, or for changing the level of a section header and all text below it. Incredibly useful for processing and refining your notes on the way to creating a proper document.
- It's easy to embed images.
- Has many built-in features for creating and working with tables (and these even have spreadsheet features, as in you can enter equations into cells). These tables remain plain-text constructs.

Two additional features of Org Mode led to it basically taking over my whole workflow:

- Sections can be collapsed by pressing tab on the section header, and Org files standardly open with all sections collapsed.
- Org files can be exported to all sorts of formats, and in particular PDF and HTML.

The first point may seem like a small deal but it's been a game changer, because it means that however much stuff I cram into a single note file it never gets cluttered as long as I put things under proper section headers. This means I can keep *one file per project* regardless of its size. No more accumulating more and more note files in a project folder until I have no idea where I put that useful snippet. I didn't even realize that this was a big problem until Org Mode solved it.

The second point is even more useful than it seems. Org Mode can export your notes to $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$ and then render it to PDF. Its $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$ output can be tweaked in every way, globally, for a single document, or for a single section in a document. The same goes, *mutatis mutandis*, for HTML export. (These are the formats I use.) It can also export a *single section* of a note file. This, again, looks like a minor feature, but it conspires with the first point above to create something very powerful.

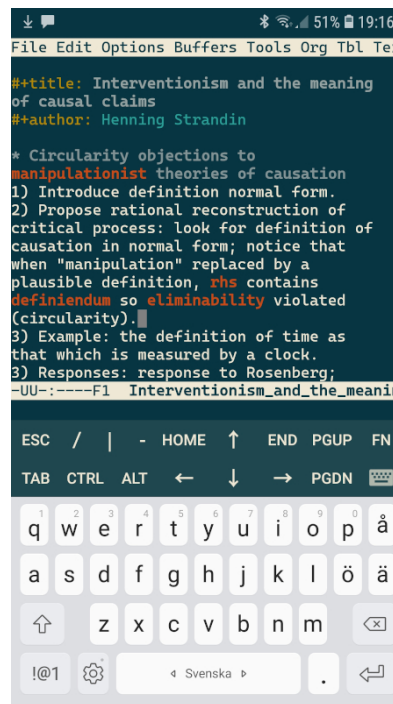
It is now possible, not just to keep all your *notes* relating to a project in a single Org file—if the project is to culminate in some official documents, these can be part of the same file, located under their own section headings. I have done this for several projects, and it has worked very well. Org Mode is not just for taking and processing notes—it can accommodate the whole process that terminates in a finished report or article.

Wonderful. None of this matters, however, if all of my work is stuck on my eMachine. Every other note taking solution I have used has saved the notes online and made them accessible from all of my devices. This is a crucial feature.

4 A homemade "cloud"

This web site is hosted on a Raspberry Pi 4 sitting in my apartment. The Raspberry Pi is running Linux and the X windows system, which means that it's possible to run Emacs on it remotely, from any device that can run a remote X application (Linux and Windows computers in my case) or simply open a remote terminal (Android devices). Thus, my note taking system, and all of my notes, are accessible from everyone of my devices, just like with Evernote and the other apps.

Emacs lives in a Unix-like environment, which means that everything is configurable at basically every level, and everything can be made to work with pretty much everything else. So it wasn't very hard to set things up in just the way I want them. (I call this whole setup "Onote.") Each one of my devices (PCs, tablets, mo-



bile) has three icons on the desktop, for (1) opening a generic note file containing my ToDo list, (2) opening a new note file for a new project, and (3) opening the note file I worked on last. Single-click access is essential—notes must be quick.

5 Creating a blog entry

The editorial interface for this blog is integrated in the note taking system as well. Any section or subsection of a note file can be exported to HTML, in which case it appears immediately on the blog. (New entries can be hidden behind the site "login" before being proofed and made public.) Custom keyboard shortcuts enter the few necessary configuration directives into the file. With only small tweaks to the source, a PDF version of the blog entry can also be generated and published (and I do this for all blog entries).

6 Hallelujah

Oh yes, it is a glorious thing. Hopefully, given that whenever I work on a project, writing a blog post about it is only one new section heading away, I will write more stuff here. (And perhaps stuff more interesting to the general reader than this post!) So, what are the drawbacks of this system? There are none. (Unless you count it running on a Raspberry Pi in my apartment and sitting behind a less-than-professional-quality connection to the Internet, or the fact that arbitrarily changing the layout of a L^AT_EX document is a pain, or maybe that using any of this depends on a general familiarity with Unix-like environments and a high tolerance for hunting down configuration files and scripting in multiple languages. We're not counting those things today.)

*From The Blog at henningstrandin.me
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