The Monthly GNU Column

Brave GNU World

Some programs readers recommend for this column appear fairly mundane at first glance. But when you take a closer look, the background and environment are often full of interesting thoughts and approaches. This is the case with Wolfgang Romey's recommendation: the Freemind project [5]. Freemind is free GPL licensed software for creating so-called mind maps. Mind maps were invented by an English guy called Tony Buzan, who was working on "An Encyclopedia of the Brain and Its Use" in the late 60s.

Mind Maps and Freemind

Mind maps give people the ability to document their ideas in a non-linear way. Instead of mapping ideas to a top-down linear text document, mind mapping starts with the major topic at the center of the map and branches out like the spokes of a wheel. In the process of mapping, it is quite normal for more hubs and spokes to develop, and this means that each new idea can become the focal point of a new mind map. Terms, ideas, and questions are represented as keywords – or ideally as key symbols. Mind maps may also include a generous helping of arrows, geometrical figures, small illustrations, exclamation marks, question marks, and custom characters .

Terms that belong together can have the same color so that the mind map can give you an instant overview of an idea. This non-linear design of a mind map is closer to the way the human mind works than linear methods ever could be.

Non-Linear and Subjective

A mind map is always subjective and reflects the viewpoint of its creator. However, there is nothing to prevent a group of people from working on the same mind map; in fact, a mind map allows a group of people to work more efficiently on the same project.

Typical applications for mind maps include group coordination and work.

This column looks into projects and current affairs in the world of free software from the perspective of the GNU Project and the FSF. In this issue, we will be focusing on mind mapping with Freemind, semantic networks, and Google Newsmap.

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Mind maps are particularly useful for gathering ideas in brainstorming sessions, but they are also suitable for taking minutes of other types of sessions, often leading to shorter, more concise, and more clearly focused results because a mind map has no room for rambling observations. This does not mean that mind maps are unsuitable for individual use; some authors use mind maps for planning papers or talks, or even whole books. And mind maps can be a big help with your personal notes or studies.

Because a mind map is highly individual, it will make more sense to its originator than to a third party. If you use mind maps to communicate your own viewpoint to other people, make sure you use understandable terminology and images.

Related Forms

So-called semantic networks, which are also referred to as knowledge networks, also originated in the early 60s and are related to mind maps. Semantic networks comprise nodes, which represent ideas, and arcs, which describe the relationships among nodes. Within a semantic network, the relationships contain the bulk of information. In contrast to mind maps, semantic networks are more formalized and can thus be used to
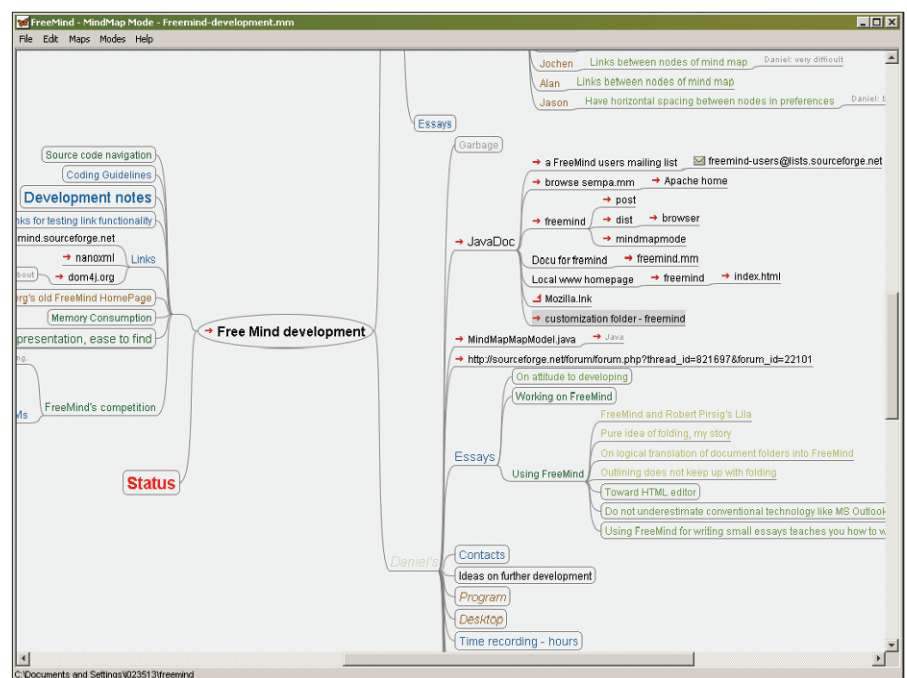

Figure 1: Freemap mind maps can represent various topics and issues in a structured and non-linear way. This map shows the ideas of a software developer.

formally represent information. If you are interested, you can check out the Wikipedia [6] entries on mind maps [7] and semantic networks [8] for more detail. Scientifically oriented people may be somewhat sceptical about mind maps, since they do not fit into the normal pattern of representing hard scientific facts. (This was my first reaction.) On the other hand, the idea should sound familiar to you – after all, we all use a very similar medium every day: the World Wide Web. The WWW is based on networked information, where every node – every web page – can be the origin of a new mind map, and where it is possible to navigate the branches of the map – the links of the WWW. Of course, the WWW is not a mind map in the traditional sense, but there are some parallels. The WWW also resembles a semantic network in many respects – but there is one major difference. There is no definition of the relationships between individual pieces of information. Tim Berners-Lee, the inventor of the WWW, actually suggested changing this, using metadata to add this aspect to the WWW, thus creating a genuine Semantic Web [9].

Back to Freemind

Non-linearity is a big advantage if you are creating mind maps on paper. At the same time it can be a big disadvantage as there is no way of knowing which way the mind map will grow and where it will start to become more concentrated. This means adding a new sheet of paper or finding some other workaround. Creating mind maps on a computer removes this issue, as the computer can dynamically restructure the map without affecting the creative process. There are many tools for creating, modifying, and viewing mind maps, such as the Mind Manager or "Mymap" programs, however, many of these programs are proprietary. An Open Source alternative to these proprietary tools is Freemind (see Figure 1), an application for creating, modifying, and viewing mind maps. Freemind

was released under the GNU General Public License (GPL).

Project Management

Freemind is a very flexible tool that can be used in real-life scenarios to organize projects, including sub-projects, and time management features. It can just as easily help you structure your Internet-based research, organize your notes, collect ideas, and manage a knowledge base, including links to local files and websites. I use Freemind myself as a kind of database for things without an obvious structure. Freemind has limited search facilities, but the database supports free growth. And finally, I use Freemind to store a collection of important websites and bookmarks, as it can export maps to HTML, and add comments. The initiator, Jörg Müller, and the group of developers centered around the current project manager, Christian Foltin, including Petr Novak and Dimitri Polivaev. really have come up with a mature project that provides advanced mind mapping functionality.

The program has fully-functional HTML links and the ability to collapse branches, hiding their complexity until a user expands them. This allows users to navigate individual abstraction layers, moving up or down as needed. The GUI also supports quick expansion of hidden branches, cut and paste, and intelligent drag and drop. The search functions allow users to jump through the map from one instance of a search string to

the next. Freemind also has a collection of pre-configured images, and it supports various font types and colors to improve readability. Additionally, Freemind can display your computer's filesystem as a mind map. It will come as no surprise to most readers that Freemind stores data in XML format; this allows for data structuring without preventing other files from accessing the data content.

Requires Java

One weakness that the developers point to in Freemind is that image and fancy graphics support is not very advanced. But the fact that Freemind is basically a single-user application is a more serious issue. If multiple users are working on a map, there is no way of preventing conflicting input. Also, some bugs have been noted when users have attempted to follow HTML links and open local files. However, the program has another weakness: its choice of platform. As Freemind is written entirely in Java, it requires the Java platform. It is questionable whether Freemind will build using the gcj, the GNU compiler for Java. This could be important for Freemind's future development. It is hard to say whether Freemind will be able to achieve its goals running on Java. Jörg Müller envisages a Freemind version that will allow users to cooperate on a mind map across the Internet, and where Freemind is the standard editor for data in tree structures.

In fact, the vision is to position Freemind as the non-linear counterpart to GNU Emacs. This said, Emacs has the major advantage of not being based on a language whose fully-functional reference implementations are all proprietary. C is not only more widespread than Java, and more efficient as a natively compiled language, but there are more major implementations including a lot of free ones. In this light, Daniel Polansky's statement that the idea of an "Emacs for tree-structured data" is slightly far-fetched is true, but for different reasons. The existence of macros, as referred to by
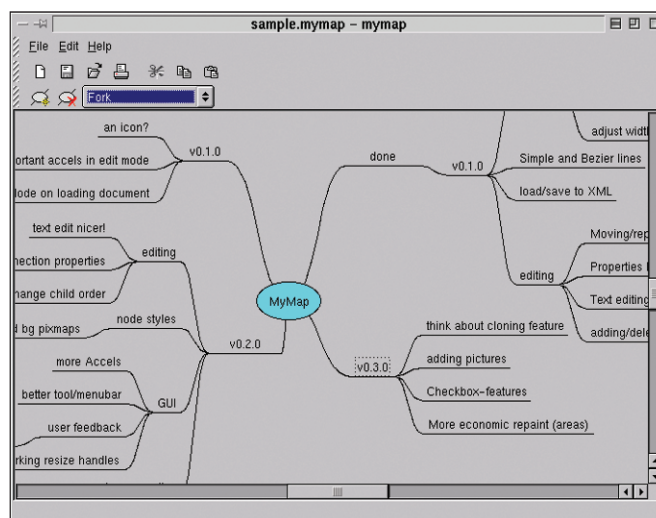

Figure 2: The free Mymap project will be referred to as Kreativitree in future. It has similar goals to Freemind but avoids using Java. Unfortunately, the project has been dormant for the last three years.

Daniel on the website, probably would not make much difference.

Similar Projects in Hibernation

MAK the Mind Map&Knowledge Manager [10] by Richard C. Krutisch is a project with a similar theme. This project is licensed under the GNU Lesser General Public License (LGPL), and it is also implemented in Java. The homepage does not have a lot of information, and the last release was from 2001. It certainly looks like the project is dormant. MAK's author, Jost Schenck, had another mind mapping project originally called "MyMap," which was bound to cause confusion with the proprietary "MYmap" mind mapping program (see Figure 2). The homepage at [11] talks about renaming the project Kreativitree. But again, it looks like development work came to a halt in 2001. And that is a big pity, because the program is based on the C++ programming language, the QT GUI toolkit, and a few KDE libraries. This would allow Kreativitree to avoid the language dependency which is Freemind's major weakness and even support seamless KDE integration.

Free Projects Never Die

This again demonstrates one of the major advantages of free software. In contrast to proprietary software, free software does not simply disappear. If a project dies, individual parts of that project tend to find their way into new projects and live on.

 Even free projects that die with very little trace are not completely useless. They often help to develop ideas or capabilities, and they sometimes resurface years later on the Web as teaching material or examples. Sometimes it is hard to say if a project is dead or just hibernating. If there is enough interest in a project, someone will typically appear to wake up the Sleeping Beauty.

Google Newsmap

To finish off this month's issue, let's look at an interesting but proprietary project that won a prize at this year's Ars Electronica [12]: Google Newsmap [13] by Marcos Weskamp. Marcos Weskamp's

Figure 3: The Newsmap project won an award at the Ars Electronica. The display shows how much coverage news items have received online, tapping into the Google news service to do so.

attempt to visualize media trend statistics uses Google's news service, which systematically searches through publications and sorts them by story. The service often locates thousands of online articles on a single event. Newsmap uses tree maps to visualize the statistics. The result is a graphical overview of current news trends (Figure 3) that reflects the relationships between different news categories; for example the ratio of international to national sport coverage. Additionally, the statistics show which events from which categories have had the most coverage. The results are fascinating, however, they are based on data that have been processed by Google and therefore reflect Google's representation of the current news trends, That puts them one abstraction layer away from real life. Both the software that generates the statistics and the Flash plug-in needed to view the results are proprietary. Marcos is currently thinking about releasing the software, but he has some qualms about the reaction from Google.

Google Hates Being Analyzed

Although Google extracts information from websites for its own news service, the enterprise does not appear to appreciate having the tables turned. Google does not have an XML export interface, although this would be a useful way of obtaining a quick overview of the news. A few servers scattered around the world could handle extracting and evaluating

news and storing the results in XML files that client programs could then access. In fact, these programs would not even need to be dedicated clients; instead the functionality could be embedded in screen saver or wallpaper programs.

This assumes that Marcos either releases the software, or that someone develops something similar in the line of free software; and someone would need to run the server, of course. Both these aspects could cause friction with Google, and would probably be bad publicity for the search engine operator. Let's hope firstly that Google will agree to this use, and secondly that enough programmers are interested in the idea to get a project moving.

That's all for Brave GNU World this month. Let's finish off this issue of Brave GNU World with the usual request. Please send your ideas, comments, questions, suggestions, or whatever to the usual address [1]. ■

INFO

[1] Send ideas, comments, and questions to Brave GNU World: *column@brave-gnu-world.org*

[2] GNU project homepage: *http://www.gnu.org/*

[3] Georg's Brave GNU World homepage: *http://brave-gnu-world.org*

[4] "We run GNU" initiative: *http://www.gnu.org/brave-gnu-world/rungnu/rungnu.en.html*

[5] Freemind homepage: *http://freemind.sourceforge.net*

[6] Wikipedia: *http://wikipedia.org*

[7] Wikipedia "Mindmap": *http://en.wikipedia.org/wiki/Mindmap*

[8] Wikipedia "Semantic Networks": *http://en.wikipedia.org/wiki/Semantic_Networks*

[9] Wikipedia "Semantic Web": *http://en.wikipedia.org/wiki/Semantic_Web*

[10] MAK: Mind Map & Knowledge Manager: *http://mak.sourceforge.net*

[11] Mymap II, Kreativitree: *http://mymap.sourceforge.net*

[12] Ars Electronica: *http://www.aec.at*

[13] Google Newsmap: *http://www.marumushi.com/apps/newsmap/*