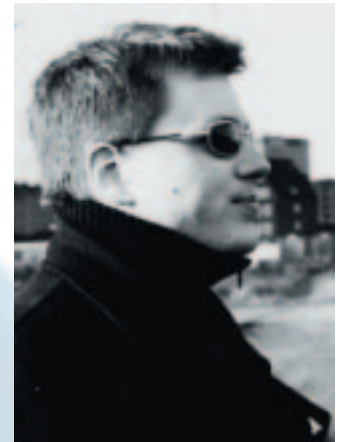# The monthly GNU Column

BRAVE GNU WORLD

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Welcome to another issue of the Brave GNU World. Since all work and no play makes Jack a dull boy, I'll introduce a Free Software game this month. But before I do I'd like to say a few words about Free games in general.

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Free Games?

Because of their small servicing needs and fast-paced market, Free games are a rather problematic area, even if some companies are now port games to GNU/Linux, these games usually remain proprietary.

Of course it is true that games are usually not mission-critical and not the most important part of Free Software. But this does not make them insignificant. Games are often the first contact people have with their computers and play a significant role in "befriending" themselves with their computer. And quite often games are the "killer feature" that makes them install a non-free operating system on their machines.

Another issue is that the gaming industry seems to be replacing innovative ideas with more and more effects. This may be a quite subjective impression and not hold up to scrutiny, but it very often seems that the first games were significantly more witty.

In this area the interaction of a community might open new perspectives for captivating, nonlinear plots. It appears this potential is not yet being used.

Very often lacking a user base is a problem for new areas, so I'd like to introduce Free games in the Brave GNU World more often. If you are having fun with a Free game or are working on one yourself, please get in touch. Also information about a portal that is exclusively dedicated to Free games would be quite useful. Enough introduction for now, let's get started.

Freeciv

Freeciv is a Free implementation of the well-known game Civilization by Microprose under the GNU General Public License.

For those not having experience with the game

Good graphics in Freeciv, a free variant of Civilization.

mentioned above I'd like to say that the game is about becoming the ruler of a civilization and taking care that your people grow and prosper. This involves finding resources, building cities, furthering science and keeping competitors at bay. A major advantage of the game is its nonlinearity and the continuous evolution, which makes it so hard for many to find an end when playing this game.

Freeciv is already quite sophisticated and a player can choose between 47 units and 61 nations that can be played in prepared maps and scenarios. The game is also internationalized, so it speaks to the player in his or her mother tongue and has an in-game help.

One of the extraordinary thing about Freeciv is the very active and lively community that has evolved around it and communicates through the #freeciv ircnet-channel. One reason for this is surely that Freeciv supports up to 30 players that can either be played by an "artificial intelligence" (ai) or by a networked human player (LAN or internet). Also Freeciv runs on all standard Unices as well as Windows and OS/2, given that the Cygnus Unix-environment is installed.

Originally, Freeciv was started by Peter Joachim Unold, Claus Leth Gregersen and Allan Ove Kjeldbjerg, but by now the administration is done by Thue Janus Kristensen and Tony Stuckey. Besides these people, an impressive number of volunteers have contributed to the versions that routinely come out in three-month cycles. You can find the list online at Freeciv.org.

Microsoft-users are currently experiencing the greatest problems, but these could easily be solved by installing GNU/Linux. Other problems are caused by the extreme addictiveness and time-consumption of Freeciv, so if you're currently working on an important project, you might want to postpone trying out Freeciv until the project has been finished.

Stefan Kamphausen, author of the Brave GNU World logo, has tracked down the following project.

XWeb

XWeb allows writing content and structure of web pages in XML/XSL in order to generate HTML pages from it. This does not only offer a performance advantage compared to dynamic pages, it also allows switching to a new layout or design with minimal changes. Especially the often quite significant but seldom entertaining work of creating the navigational structure is done for the user by XWeb.

XWeb is based on Java & XSLT with Saxon as the XSLT processor. Other than with some projects,

everything is based on XML, even the Makefiles. The HTML-pages created by XWeb are entirely independent from XWeb, so they can be transferred to a web server by FTP, for instance.

Other than some XSL-processors, XWeb also allows the automatic generation of buttons, banners and such through an internal renderer or the external generation of "Scalable Vector Graphics" (SVG) by Batik.

These features combined with the flexibility through use of XSLT stylesheets are the specific strengths of XWeb.

The project is mostly pushed forward by its initiator, Peter Becker, who started the project because he was lacking this functionality in another project.

XWeb is Free Software, even if the licensing as "public domain" is not optimal, because it allows anything to putting it under your own copyright. So the freedoms are not protected in any way.

Plans for the future are to complete the program and include support for XSL-FO as well as generating templates for the most often used layouts. Later he'd like to add application-specific frontends (for photo- or MP3-albums, for example) and maybe even a WYSIWYG tool.

Help is welcome especially in form of authors for templates and frontends as well as feedback from users.

General Server Pages

The General Server Pages (GSP) project by Sebastien Devaux is also related directly to the internet, although it is more on the dynamical side. GSP is a preprocessor which allows for extremely easy creation of applications for structured output in different programming languages – which is especially useful for creating CGI applications.

Writing CGI applications very often means repeating big amounts of rather trivial code with

The General Server pages – here with a variation in C

the goal of creating a certain output. Therefore GSP allows specifying the output in a mixture of XML, GSP and the desired programming language in order to be transformed by GSP into a compilable source code or script creating the desired output as HTML, XML, SGML or plain text.

This does not only spare time and nerves, it also increases the reusability of code. Programming languages currently supported by GSP are C, C++, Bash, Ksh, Perl and JavaScript; adding other languages is pretty simple. GSP can also create applications containing several pages and link them with each other.

GSP was written in C++ and published under the GNU General Public License. It is still a rather young project as it started in February 2001. Problems are still the correct handling of MIME extensions as this requires external libraries, but this choice should be up to the user. The modules for the different languages can also be improved and Sebastien would like to make very sure that the generated code is safe. Help is welcome.

IDX-PKI

The IDX-PKI project is the first IETF PKIX standards-compliant "Public Key Infrastructure" available as Free Software. It was developed by the French company IdealX that publishes and maintains it under the GNU General Public License.

Since the term PKI is probably not familiar to many readers, I'd like to give a very terse and abstract introduction into the idea behind it.

In any "Public Key" implementation, like PGP or the Free OpenPGP implementation GnuPG, every user has a keypair. This keypair consists of one private and one public key. The private key must never leave the users hands, while the public key is spread as far as possible.

The private key allows the user to (for instance) sign Emails and everyone can verify the signature with the public key. Signing the mail with the public key is not possible, so the recipient knows that the mail has been signed by the owner of the private key.

But anyone can create a key, so there is no guarantee that the private key really belongs to the person it claims to belong to.

A solution for this problem is a "Certification Authority" (CA). This is often provided by so-called TrustCenters that make sure the identity of the users has been checked. Providing a Certification Authority is one of the primary jobs for a PKI.

The IDX-PKI project allows every company and organization to set up their own CA-structure. This makes it possible to put the exact same amount of trust that you have into the company into every single employee. The tasks of creating and revoking keys is done centrally by the PKI.

A PKI does not only allow identification and authentication, it also allows confidential information, integrity of data and non-repudiation in case of problems.

All these things are important to many companies, but banks, insurances or e-commerce markets depend on it.

Now these companies have access to a Free Software solution, which is a big contribution to Free Software by IdealX.

Originally, the project team tried to get involved in the OpenCA project. But OpenCA is only a CA and not a complete PKI, it only allows for creation of certificates through OpenSSL, but it does not provide certificate management. Therefore IDX-PKI was started in April 2000.

The IDX-PKI uses Perl, PHP, C, Shell as well as some GNU utilities and it is now ready for daily use although it is still being improved. Planned are (among other things) a capability for secure communication between different PKIs, full OCSP support and another abstraction layer that will make it possible to choose the backend (database, LDAP, filesystem). Also the administration will become interface-independent.

So there are still some things in the queue, but according to Benoit Picaud the customers are very interested in this project and actively support the speedy and interactive development of the IDX-PKI-v2. He is even considering this strong cooperation to be one of the big strengths of the project - along with the RFC-compliance.

Since this is a project that is also commercially interesting for many other companies, finding help should not pose a problem.

Enough for this time

That's it for this month, I hope I was able to drive your interests and, as usual, I'm asking for comments, ideas, feedback and project