

An up-to-date look at free software and its makers

PROJECTS ON THE MOVE

Free software not only gives developers and users more freedom of choice, it can even help fight poverty: Gntusolidario supplies the Medical OpenERP solution to hospitals, and GOSM provides a free alternative to Google Earth. **BY CARSTEN SCHNOBER**

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any problems, but it could lead to more efficient use of existing resources. The Argentinian Gntusolidario [1] project steps in as a portal that provides a collective umbrella for free projects in the educational and health fields.

Software Medical [2] is Gntusolidario's flagship project in the medical field (Figure 1). Medical is based on the free OpenERP [3] business solution and provides all the features that exist in that mature project. This includes the easily scalable installation, which makes it possible to deploy Medical both on low-power PCs in small surgeries and on powerful servers in hospitals. The granular security system that Medical inherits from OpenERP plays an important role in the latter scenario by restricting access to potentially sensitive medical records.

All Kinds of Data

The OpenERP relationship is hard to overlook. Of course, you have patients instead of customers, and the data are different from a non-medical business. A practitioner working with Medical would be able to store the patient's medical history and development. This includes not just obvious facts, such as allergies and previous illnesses, but also background data that indirectly influence a patient's health: socioeconomic status, the family's case history, the patient's education, living conditions, nutrition conditions, and sex life.

For each patient, medical practitioners can store external files such as photos or x-rays. Special modes handle the data of newborn children. Medical's modular structure also makes it possible to implement any special extensions needed.

Besides patient management, Medical also supports management of the entire medical facility. The software generates invoices, keeps personnel records, manages incoming and outgoing medication, and tracks payments, and it has a calendar for managing appointments.

The Medical team also takes research and disease containment into account with its statistics feature, and it supports a variety of standard medical data exchange formats. This feature is important, especially when it comes to fighting epidemics, and the ability to store social background data can be a big help in causal research.

In Use

A Medical trial project went online in January this year in La Rioja, northern Argentina. The software can really demonstrate its potential in this scenario as local staff collect a wide range of statistical data on the health and social framework conditions in the villages of this less-than-prosperous region. The data help in providing medical care to the local population while giving health authorities useful information on any required measures. The underlying infrastructure shows that Medical does not require anything special; in fact, the system uses a standard Ubuntu system with a PostgreSQL database.

Free software and humanitarian projects – this sounds like a good team. On one hand, poorer regions in particular do not have sufficient funds to purchase existing proprietary solutions. On the other, an ideal relationship exists between the idea of developing free software for everybody and voluntary aid for those in need.

Education and Health

The lack of educational and health care facilities is one of the most urgent problems facing humankind today. Just having the right software isn't going to solve

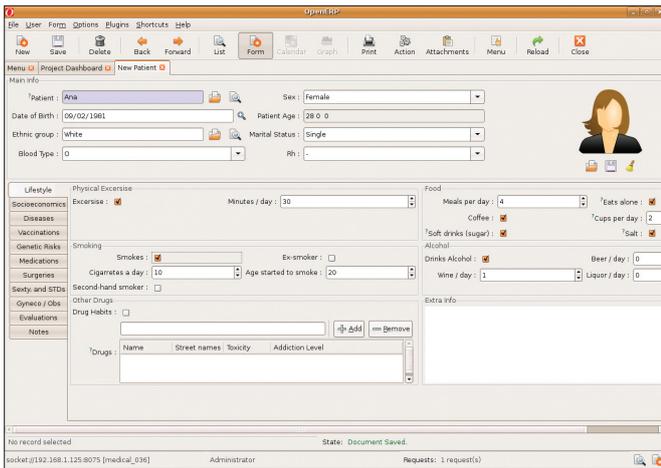


Figure 1: Medical provides the infrastructure for managing patient records and various other pieces of information.

Gnusolidario also cooperates with Fundaleu [4], the Argentinian leukemia research center. The Gnusolidario project has been working on supplying Linux laptops to Fundaleu's neighboring hospital and improving the institution's computer infrastructure by introducing free software.

Gnusolidario doesn't have a similarly advanced solution in the education field right now, but, fortunately, many free projects cover this field. In many cases, it is sufficient to set up desktops and servers to give teachers and students low-budget access to educational software and the Internet. Gnusolidario shows other projects how to do this with examples, such as the Linux-based network at the Ortes Los Pereyra school in Argentina's Santiago del Estero province.

OpenStreetMap Without a Browser

Most people are familiar with Google Maps [5] and Google Earth [6]. Both the web service and the desktop software are free, with the exception of a couple of add-on features, but they are not free as in freedom. Google's map material is not available for other purposes. This was reason enough for the OpenStreetMap project [7] to launch a genuinely free alternative to Google Maps five years ago. OpenStreetMap is based on the wiki principle: Users contribute information to gradually put together maps that cover many regions of the globe for free access on the World Wide Web.

OpenStreetMap provided the inspiration and a basis for programmer Sebas-

tian Kürten to develop a free alternative to Google Earth. His project, GOSM (Gtk OpenStreetMap Tool), runs as a desktop program, much like Google Earth, drawing on data from OpenStreetMap, which it displays in a GUI of its own.

GOSM supports three view modes. Instead of the Osmarender tool [8] used by OpenStreetMap, GOSM relies by default on Mapnik [9] for a graphical rendering of map material. This ensures a more granular and thus more easily readable view. If you like, you can experience the difference yourself by trying out the second, and alternative, Osmarender view mode.

A Few Disadvantages

The third mode is a *Cycle* mode, a feature unique to GOSM. Instead of showing typical roads, this mode focuses on cycle paths – a useful tool if you are planning a cycling tour, although some regions are not completely covered. The areas in which OpenStreetMap and GOSM can't compete with their giant competitor, Google, mainly relate to server speed – you can expect some delays, but not so long that they seriously affect the user experience. Also, Google's map material is still more extensive.

Google has an advantage in other features, too. Both OpenStreetMap and GOSM lack route planners and instead simply measure the distance as the crow flies. Also, GOSM does not currently have a search function, just a long list of locations. Although you can enter the first couple of letters to find the location you need, this can't replace a full-fledged search feature.

GOSM is a great example of the benefits of free software – or free data as it happens to be in this case. The *Export* feature allows users to export selected areas of a map to PNG image files for further use, which is exactly what the owners of proprietary map material have prevented users from doing thus far. A

special *Atlas* mode draws a map as a series of image files or as a PDF, which you are legally entitled to print, reproduce, and use. Users also can define their choice of paper format, thus defining the level of detail and total size. This means that you can print a map in a practical pocket-sized format for a cycling trip and take larger maps on your motor home tour of the United States.

GOSM will work without an Internet connection if you have the corresponding map material on disk. When you surf the world, the program automatically saves any data you download from the server in your local cache directory to remove the need for repeated downloads. That said, cached data ends up in the */tmp* directory, where it will be cleaned up by the system at regular intervals. To avoid this, you can use the setup dialog to define a different target for your cache, and presto, the next time you explore a part of the globe you have already visited, the map material is available locally without the Internet.

GOSM developer Sebastian Kürten welcomes contributions from anybody prepared to help. If you are interested in getting involved with this project, just send email. Non-programmers can also make contributions to GOSM by supporting OpenStreetMap. The only limits are imposed by Mother Nature herself. Cartographers all over the world are invited to join in by providing GPS data for previously unmapped territory, by drawing or categorizing streets, and many other things. Check out the OpenStreetMap wiki for details. ■

INFO

- [1] Gnusolidario: <http://www.gnusolidario.org> (in Spanish)
- [2] Medical: <http://medical.sourceforge.net>
- [3] OpenERP: <http://www.openerp.com>
- [4] Fundaleu: <http://www.fundaleu.org> (in Spanish)
- [5] Google Maps: <http://maps.google.com>
- [6] Google Earth: <http://earth.google.com>
- [7] Openstreetmap: <http://www.openstreetmap.org>
- [8] Osmarender: <http://wiki.openstreetmap.org/index.php/Osmarender>
- [9] Mapnik: <http://mapnik.org>