



An Invitation to Free Software

SPACE, Thiruvananthapuram

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Alternative Computing and Employment**
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For free distribution

Freedom is elixir
Freedom is life
For people with self-respect
Dependence is worse than death

Kumaranasan
Malayalam poet

An Invitation to Free Software

Information Communication Technology, or ICT, is possibly one of the most powerful and useful technologies humans have developed. As with any other, the benefits of this technology should also surely reach the entire society. It should certainly not be confined to some people or some companies. But, obviously, all the benefits of this technology are not reaching the whole human society. Apart from socio-economic reasons for this so-called *digital divide*, we can also see that the laws in existence prevent all the benefits of this technology from reaching the people. Laws are still those designed for an older technological regime. And these laws often help some large corporations to increase their profits.

Free Software is known all over the world, though sometimes by some other name. But many governments, private agencies, civil society organisations and individuals have already started using it. The Extremadura province in Spain, Kerala state in India, Munich city in Germany and companies like Google, Yahoo!, the Life Insurance Corporation of India and ELCOT in Tamil Nadu, India, are examples. The Free Operating System GNU/ Linux is posing the main challenge to the monopoly of Microsoft in the world of personal computers. In Kerala, for instance, the government has adopted a policy that promotes Free Software, and some other states in the country are moving in the same direction.

Why Free Software?

In the term Free Software, the word *Free* refers to freedom, and not to cost. (Since the English word *free* has more than one meaning, here we use the word with an upper case 'F' to denote Freedom.) Think of terms like *free speech* or *free bird*, not *free food*. Free Software is software that gives users freedom. It gives four freedoms to the users: The freedom to use on any number of computers for any purpose is the first. You may know that proprietary software allow users to use it only on a fixed number of computers. The second freedom allows users to share the software with others. The third freedom is to study what the software does and how it does it, and to make changes, if needed. Therefore, the original form of the software, called source code, of all Free Software should be readily available. And the fourth freedom is to redistribute modified software. Only the software that gives all these four freedoms can be called Free Software. Software that we buy from the market does not give us any of these freedoms. Richard Stallman, the founder of Free Software, believed that software is like knowledge, and, like knowledge, software also should be free. That is why he decided to build software that gives users these freedoms.

It is natural for a person to wonder how these freedoms are worth for her when she does not know programming. There are two responses to this. One is that I could engage someone to modify the software for me. Most people wouldn't need to modify software, or wouldn't think of getting it done. But this freedom will certainly be useful for enterprises and governments. Further, there are many instances of society itself benefiting from the freedom. For example, it is often necessary for the graphical interface to be available in the local language so that people who are not familiar with English can use it comfortably. And the graphical interfaces of GNU/Linux have been *localised* in this manner by young enthusiasts. Thus, for instance, GNU/Linux is now available in most of the main languages in India. And in every case, it is the local community that has made this possible. They continue to translate newer versions of the software and provide other support, such as new fonts in the language and tools to type the language using a standard keyboard such as a dictionary or a transliteration tool. Moreover, this freedom movement is influencing other areas of human activity too, leading to things like Wikipedia, a Free encyclopaedia built on voluntary basis by millions of users. Today it has several million articles in more than 250 languages.

It must be clear that all this was possible only because of the freedoms provided by Free Software. For such reasons, it is always better for individuals and society to use Free Software. But one may wonder what kinds of software is available as Free Software. We try to answer this in the following pages. Only the applications that ordinary people may need are discussed here. There are several other applications for specialised purposes, which are mentioned at the end. Moreover, there are often more than one application available for a given purpose. Only one application is discussed, though the names of a few others are mentioned.

Office Applications

OpenOffice

Perhaps, the most commonly used computer applications are: word processor, spreadsheet and multimedia presentation, commonly known together as *Office applications*. They usually come as a single package. One such Free Software is OpenOffice.org, often called just OpenOffice. Apart from a word processor, a spreadsheet and a multimedia presentation, this also contains applications for creating vector graphics, html pages and databases. The applications save files in the ISO standard format known as ODF (Open Document Format). In addition, it can easily create PDF versions of any document and OpenOffice Draw can open PDF files for editing. KOffice is another popular office suite. (<http://openoffice.org>)



Figure 1: The window that you get when you start OpenOffice.

OpenOffice Writer

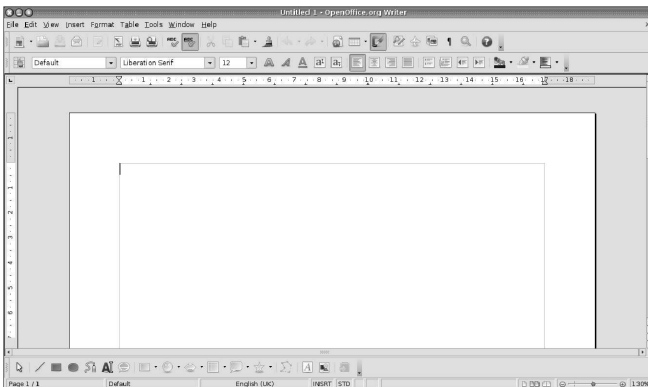


Figure 2: The OpenOffice.org Writer window.

OpenOffice Writer is a word processor that has more features than most others used commonly. Apart from automatic word completion, which is helpful especially for people who cannot type fast, it also has features that are more common in DTP applications, such as text flowing from one frame to another and horizontal scaling of fonts. Possibly because of that, many activities are based on the *style* function. Simple documents like newsletters and brochures can be easily typeset in Writer. It can open files created

in many other word processors, including Microsoft Word and Word Perfect, and save files in those formats also. Writer has support for complex scripts including Indic and other Asian languages. Abiword and KWord are other popular word processors.

OpenOffice Calc

Spreadsheet is an application used for doing simple computations. The spreadsheet application in the OpenOffice package is called Calc. A screenshot of the Calc window is shown in Fig. 3. Files created using other spreadsheet applications like Lotus123 and Microsoft Excel can be opened in this. And the files created in this can be saved in the formats used by those applications too. Tables created in Calc can be easily embedded in Writer. Gnumeric and Kspread are other popular spreadsheet applications.

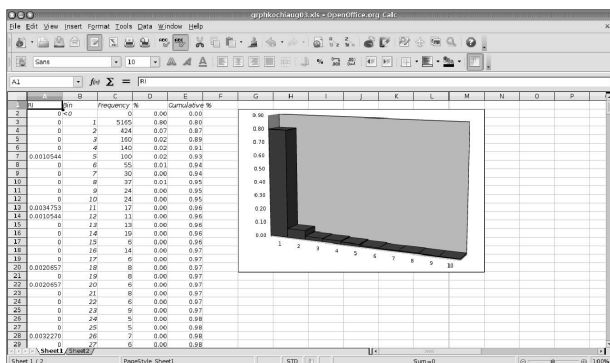


Figure 3: The window of OpenOffice Calc.

OpenOffice Impress for Multimedia Presentations

In Fig. 4, you can see a screenshot of the OpenOffice Impress window with a presentation on Free Software opened. Impress has the facilities to beautify text, convert text into three dimensional objects, give shadow, and so on. It also has facilities to include sound and video files. It has powerful graphic features due to its integration with the OpenOffice Draw package. One can create two or three dimensional objects and even do simple animations.

Gimp for Image Editing

'Gimp' is the acronym for Gnu Image Manipulation Program. It is an application with many features for image editing. In Fig. 5 you can see the

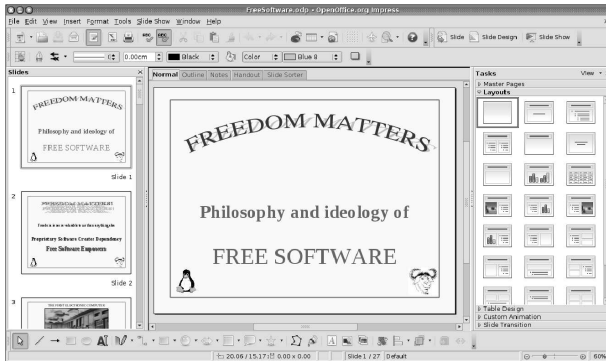


Figure 4: The OpenOffice Impress window with a presentation on Free Software opened in it.

screenshot of the Gimp window with a poster on Gimp opened in it. Gimp can combine pictures using layers, create and delete layers or hide some of the layers, and so on. It has a facility to quickly create good-looking logos using a given word or words, web page themes, buttons and arrows, etc. It also has a facility to create simple animations, such as ripples or waves, in pictures. A different form of Gimp, called *Cinepaint*, has been used in creating some movies. (<http://gimp.org>)

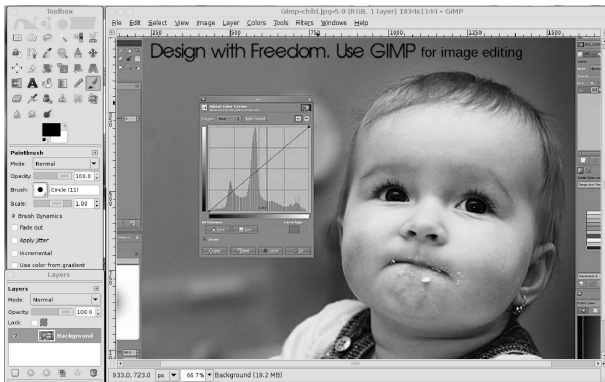


Figure 5: A poster on Gimp opened in Gimp

Inkscape for Vector Graphics

Digital pictures can be of two kinds. What we get when we take a photograph or scan a document is called a *raster* image. Such pictures lose their clarity when enlarged. On the other hand, *vector* images never lose their clarity however much you enlarge them. If Gimp is for editing raster images, there is Inkscape for creating or editing vector images. In Fig. 6 you can see a tutorial for Inkscape created in Inkscape. Another popular application for editing vector images is OpenOffice Draw. (<http://www.inkscape.org>)

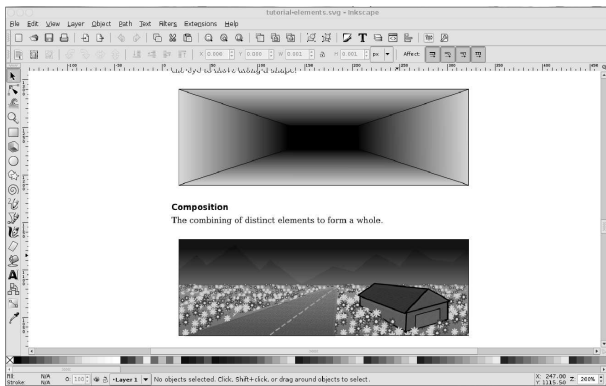


Figure 6: The window of Inkscape with a tutorial of the application opened.

Applications for the Internet

Firefox for Browsing

Mozilla Firefox is a browser that is rapidly becoming popular. Over a period of just above five years, it has gained more than one-third of the market share of the Internet Explorer. Firefox brought new features to the browser, and also provided for easily creating new ones with plug-ins that anyone can write. A number of plug-ins have been created for Firefox. Its lightness, security features and speed in browsing have helped to make it very popular even among users of Microsoft Windows. Some of its other interesting features include pop-up blocking (that prevents a site from launching additional pages), adblock (available as a plug-in to prevent advertisements on web pages) and the option to save all open tabs so that all of them will reappear when the browser is restarted. It also has a number of themes created by third parties. Konqueror, Mozilla and Google Chrome are other popular Free browsers. (<http://mozilla.org>)



Figure 7: Several tabs opened in a firefox browser.

Evolution for Email

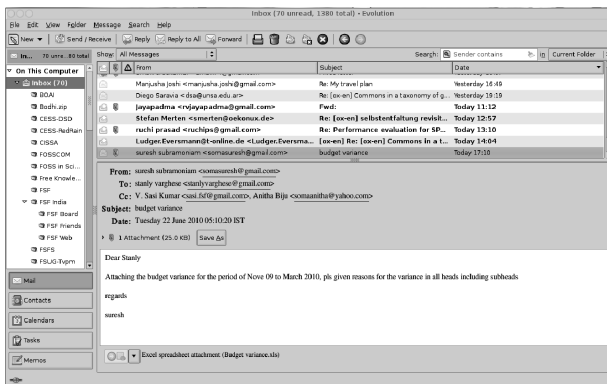
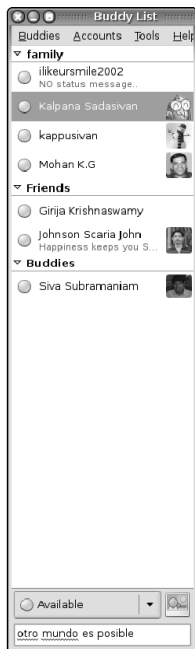


Figure 8: The Evolution window

Email is, perhaps, the most commonly used service in the Internet. One can access email either by logging into one's email account using a browser, or by downloading the mail into one's own computer. For the latter, one needs to use an *email client*. *Evolution* is a popular Free email client. In addition to being an email client, it also has facilities for scheduling appointments (with provision for setting reminders) and maintaining a task list and a contact list. It helps to share programmes with others and can also link with the instant messenger application *Pidgin* (see be-

low). Other popular email clients include Kontact and Mozilla Thunderbird. (<http://projects.gnome.org/evolution>)

Chat with Pidgin



The Pidgin window.

Chat is a facility that is used very commonly in the Internet. While it is difficult to engage in a discussion through email, with chat it is almost like talking to each other directly. Though originally it was meant only to exchange text, it is now possible to actually speak to each other and even see each other with the help of a web camera. It has effectively become a substitute for the telephone.

There are several Free applications for chat. One of the most popular chat clients is Pidgin. Till recently, it could be used only for plain text chat. But now it has supports audio chat, though right now only at a basic level. This single application can substitute for several chat clients including Yahoo messenger, Gmail chat, AOL messenger and even IRC (Internet Relay Chat). It also supports facilities like text formatting and file transfer. It uses much less memory than others like MSN messenger. Other popular chat clients that support text, audio and video are Empathy and Kopete. (<http://www.pidgin.im>)

Applications for the Media

Audacity to Edit Audio

Audacity is an application that can be used for editing sound files or for recording speech or music. It handles stereo sound and can do noise filtering, frequency shifting, adjusting speed, cut and paste and so on. Meant primarily for amateur work, it is good enough for basic professional work. For more professional kind of sound editing, one may prefer Ardor, which handles high quality, multi-track sound, though then one would need computer hardware that supports the kind of sound quality. But Audacity is good enough for people who want to do some simple sound editing at home. (<http://audacity.sourceforge.net>)

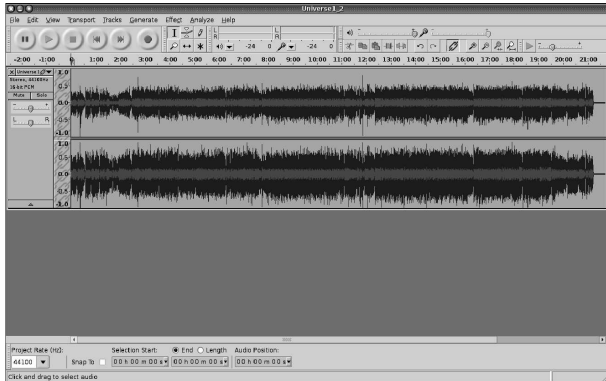


Figure 10: A sound file being edited in Audacity.

Edit videos with PiTiVi

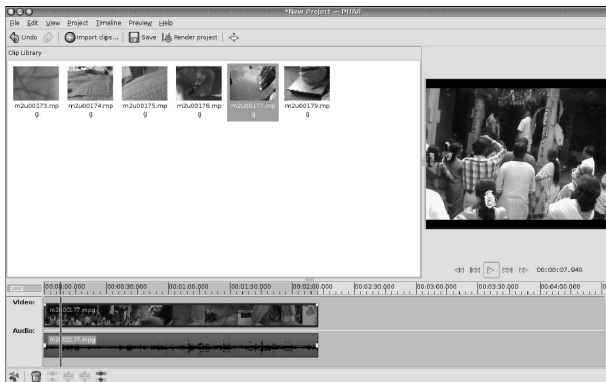


Figure 11: Video bits being edited in PiTiVi.

Today, video is as important as, or more important than, audio. PiTiVi is an application that helps the layman to edit short videos taken using simple video cameras. Though its development started recently, it has become widely popular in a short time. PiTiVi can be used to combine short videos or edit its audio or video part. For more editing features, one may desire to use something like Avidemux or Kdenlive. Kino is a non-linear DV editor for GNU/Linux. It has good features for capture, VTR control, and recording back to the camera. It captures video to disk in raw DV and AVI

formats. LiVES is a video editor and VJ tool at the same time. But Cinelerra is the most advanced non-linear video editor and compositor available under a Free license. (<http://www.pitivi.org>)

Use Blender for 3D Animation

While full length 3D animation movies are being produced on the one hand, many movies are also being produced with some parts animated. Blender is the Free world's response to this need. It is used for 3D modelling, 3D animation, video editing and creating 3D games. As a reviewer said, "It is incredible to me that Blender is free software. It is so full of features that it really puts to shame a lot of commercial software that asks money for barely anything." A few movies, such as *Big Buck Bunny*, built using Blender are available at their website for free download. (<http://www.blender.org>)

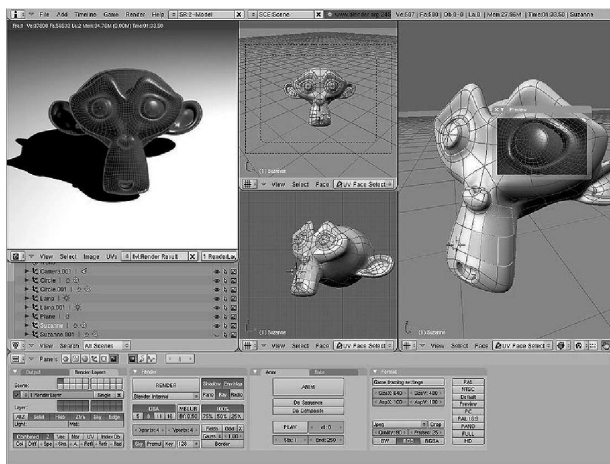


Figure 12: The Blender window

Applications for Scientific Computation

Research is one area where a lot of computational power is used. Several applications for doing scientific computations, analysing data and visualising results are available as Free Software. A very good example is the

software known as GNU R, which is a Free implementation of the statistical language called S. Octave and Scilab are similar applications that can do matrix computations and have extensions that help in specialised applications like image processing. Gnuplot, Grace and Labplot are applications for data visualisation (drawing graphs). Maxima is a powerful application that can do symbolic mathematics, like Mathematica. Sage is a software application which covers many aspects of mathematics, including algebra, combinatorics, numerical mathematics, and calculus. Python is a powerful programming language that is used for a wide range of purposes from creating applications to scientific and numerical computations. The application *Mayavi* for 3D data visualisation was originally built in Python by an Indian student. Geographic Resources Analysis Support System, or GRASS, is a powerful Free GIS application that can handle raster and vector maps and also satellite imageries. What is given here is just a small selection from a wide range of Free Software for scientific computation.

Software Tools

Free Software tools are also available for creating new software. For instance, a large section (about 65%) of the web servers use a Free software called Apache. Php (a Free scripting language) and MySQL (a Free database) are very popular among web developers. The Django framework for Python and the Ruby on Rails framework are very powerful tools for building web sites and web applications. Drupal is a Free content management system and Open ERP is a Free ERP solution. There are several pieces of software for programmers, including Kdevelop, Code::Blocks, QTDesigner, Glade and so on. The integrated development environment known as Anjuta was created in India. The Free compiler known as gcc (GNU Compiler Collection) is often recognised as the best compiler available.

In short, Free Software is desirable from all perspectives. A computer that uses Free Software is not affected by problems like viruses and trojans. The machine does not refuse to work once in a while, sometimes needing reinstallation to make it work again. The data inside the computer is much safer. And the freedom it gives is good for the individual and society. Therefore use Free Software. Support Free Software. Promote Free Software.

To know more about Free Software, visit:

- 1) <http://www.gnu.org>
- 2) <http://www.fsf.org>
- 3) <http://www.gnu.org.in>
- 4) <http://www.gnu.org.in/philosophy-of-free-software>
- 5) http://en.wikipedia.org/wiki/Free_software
- 6) http://en.wikipedia.org/wiki/Linux_distribution
- 7) http://en.wikipedia.org/wiki/Comparison_of_Linux_distributions
- 8) http://en.wikipedia.org/wiki/List_of_Linux_distributions_endorsed_by_the_Free_Software_Foundation

To get CDs with a GNU/Linux operating system and a number of applications, you can contact the local Free Software User Group or Indian Linux User Group. You can also download images of such CDs, write them on CDs and use them. Such images are available from various sources. If you would like to try it out first, you can run your computer from the CD and use it without installing anything in your computer. Any user of Free Software would only be glad to help you.



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