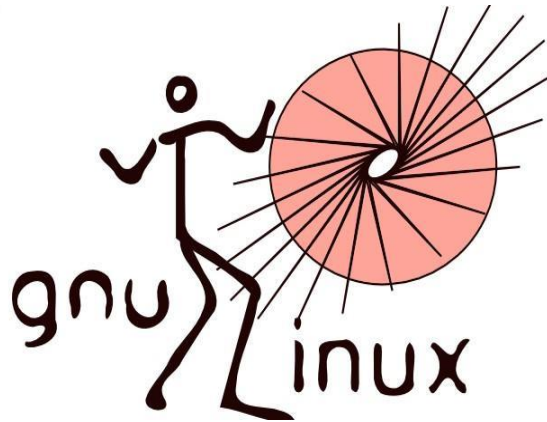# Freesw4skoolz

A Catalogue of Free and Open source (FOSS) in Education

Compiled By
Sindhuja M.sc, M.phil

INFORMATION COMMUNICATION TECHNOLOGY

Images from Internet

www.duckduckgo.com
www.wikipedia.com
www.sourceforge.net
www.kde.org
www.gnu.org
www.fsf.org
www.fsf.org.in
www.fsmi.in
www.fsftn.org
http://fshm.in/
http://www.osv.org.au/
http://ictschools.gov.in/

Acknowledgement

Table of Contents

Why we consider Free & Open source Software in Education?

Free software is software that respects the user freedom to use, share, study and modify it. To use free software is to make a political and ethical choice asserting the right to learn, share what we learn with others.

Free software has become the foundation of a learning society where we share our knowledge in a way that others can build upon and enjoy. Currently, many people use proprietary software that denies users these freedoms and benefits. If we make a copy and give it to a friend, if we try to figure out how the program works, If we put a copy on more than one of our own computers in our own home. we could be caught and fined or put in jail. That's what's in the fine print of the license agreement you accept when using proprietary software. The corporations behind the proprietary software will often spy on your activities and restrict you from sharing with others. And because our computers control much of our personal information and daily activities, proprietary software represents an unacceptable danger to a free society.
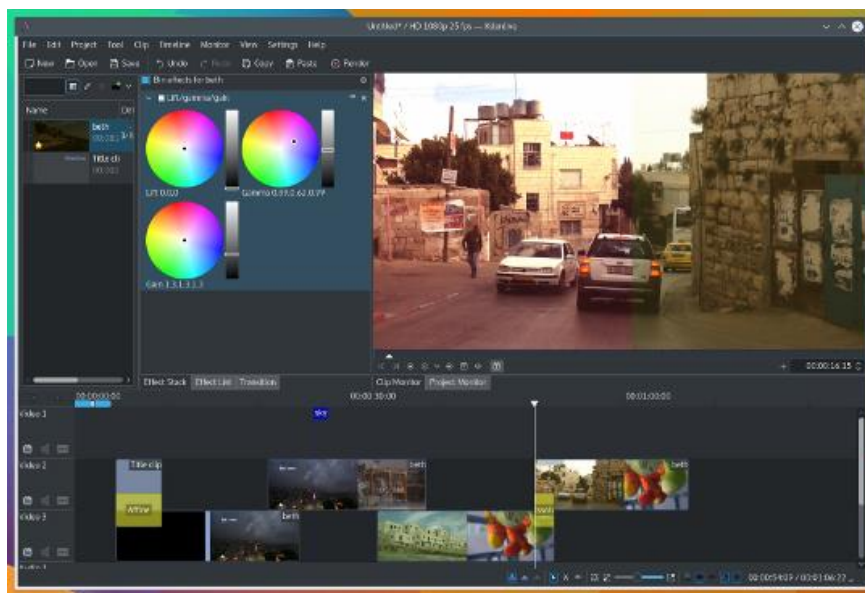
How to use this Catalog?

In this book majority of the document is a catalog of education oriented applications which helps you to make the better understanding of the software. In order to make the best use of the catalog, it is important to understand what information it provides and how to find it.

The main catalog concerns itself with software which is of direct interest to schools, students and teachers. The catalog is segmented into broad categories, such as Applications, Computer Programming, Animation, Early learning and more.

Each chapter gives an introduction and purpose of the software, software title is provided along with easy description, an indicative screenshot, and web (URL) location with more information and from where that software application can be downloaded from.

Here's an example

Title of Application is shown here

http://www.URLofapplication

A Note on the Software

We make this catalog available as an information resource. We don't specifically endorse the quality or efficiency of the software for your needs or requirements.

How to improve the knowledge through ICT?

In modern society Information & Communication Technology plays a remarkable role in School Education. ICT in schools provide lots of opportunities to teachers to transform their traditional way of teaching into advanced level of teaching. ICT improves the learning process through the provision of more interactive tools that increase learner's motivation and facilitate the easy acquisition of basic concepts. ICT not only enhances the learning experience of student but also helps them develop the skill essential to participate effectively in the world of affairs. Knowledge of ICT and skills to use ICT has benefited immense importance for today's teacher. The new learning environment developed by the ICT is called Interactive Learning Environment. ICT cannot replace the great teachers, but technology in the hands of great teacher can be transformational. It helps to improve the students traditional learning system to self-study.   The emergence of knowledge -based society is changing the global status of education. It is the time to create a new knowledge based global society.

"**Teaching is good, with digital technology teaching is easy**"
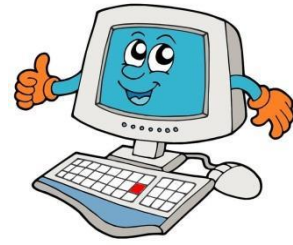
Basics of Computer

Computer System is electronic machine that operates on data accepted by it as input, process the data in a predefined way and produces the output known as information.

Computer = Software + Hardware+ User

COMPUTER – Common Oriented Machine Particularly Used for Trade and Engineering Research.

Software

Software is set of programs written by programmer that controls the operations of the computer for computation and processing . Software is divided into three main categories. They are

- System Software
- Application Software
- Embedded Software

System Software

System Software comprises of those programs which can interact with the hardware.

Eg. Operating Systems

Compliers

Interpreter

Languages and Translators.

Utility Programs.

Operating System

Operating System is a interface between user and computer i.e the user can communicate with computer by giving commands. These programs are provided by the manufacturers along with the computing systems, as the instructions sets are different for different computer system.

Eg. MSDOS, UNIX, Linux, Windows etc..
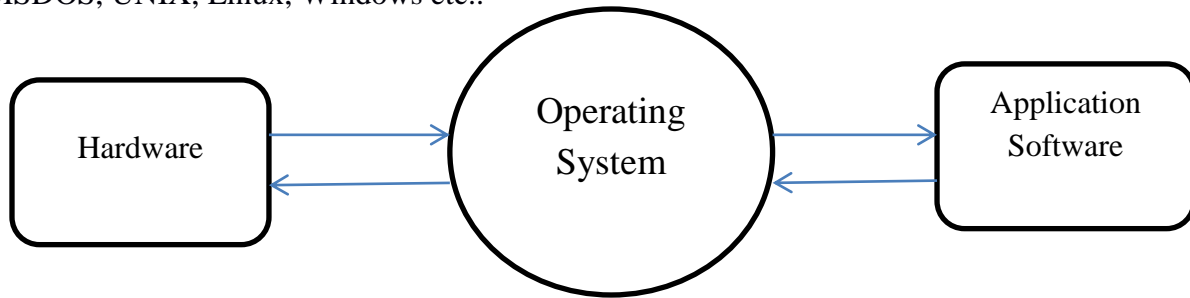
Translators

Translators is used to converts high level language (i.e. English) to low level languages (i.e. 0's and 1's). There are three types of translators:

- Compliers

- Interpreter

- Assembler

Complier

Complier is translator. It is used to translate the entire program which is in high level languages (i.e. source code) to low level languages (i.e. object code). The object code is a semi-finished machine code, which has to be linked by a linker program to obtain an executable version of the file, which is the total set of instructions in machine language. It translates the code page by page.

E.g. C Compiler, C++ Compiler

Interpreter

Interpreter is similar to compiler. But, it translates the code line by line. When the error occurs in the first line. It does not execute the second line.

E.g. HTML, Java Applet

Assembler

Assembler is programs which converts assembly language code into machine language. Assembly language is different for each processor, and thus assemblers are different for different computers. Assemblers are machine dependent.

Utilities

Utilities are small programs which are supplied by the manufacturers along with operating systems to perform routine housekeeping tasks such as copying files, making backups etc...

E.g. Notepad, Disk fragmentation, Disk Cleanup

Application Software

Application Software includes the computer programs and related documentation that able to solve the real world problems.

E.g. Office Automation

Animation Software

Accounting Software

Office Automation

Office automation is used to solve the real world problems like billing, information management, storage and retrieval graphics etc.

E.g. Libre office, Open office, My SQL etc..

Animation & Accounting Software

Animation software is used to create games. Accounting is mainly in stock markets and other business purposes.

E.g. GIMP, Blender

Embedded Software

Embedded software is software that has embedded into computer hardware, which makes a system dedicated for an application(s) or specific part of an application or part of a larger system.

E.g. Traffic Signals, Railway operations, Banks etc..

Hardware

Hardware is physical components of a computer system. It is something which is visible and tangible.

E.g. PCB(Printed circuit board)

Keyboard

Monitor

Components of Computer System

Computer is a device which accepts the data, process the data and produce an information. The below block diagram shown in the Fig. 2

Input Unit

The user gives the data to the computer via keyboard , mouse and scanner.

Processing Unit

Central Processing Unit is the brain of the computer. The CPU work according to the instruction given through a software program. Now-a-days most of the components of a computer are incorporated in a Microprocessor and systems based on this chip are termed as Micro Computers. The processor is divided in three parts.

- Arithmetic Logic Unit
- Control Unit
- Memory Unit

    Memory Unit:

It facilitates the remembrance power to computer System. It refers to the physical devices used to store programs or data on a temporary or permanent basis for use in a computer or other

digital electronic device. Memory can be categorized into Volatile and Non-volatile memory.

Fig 2 Architecture of the computer
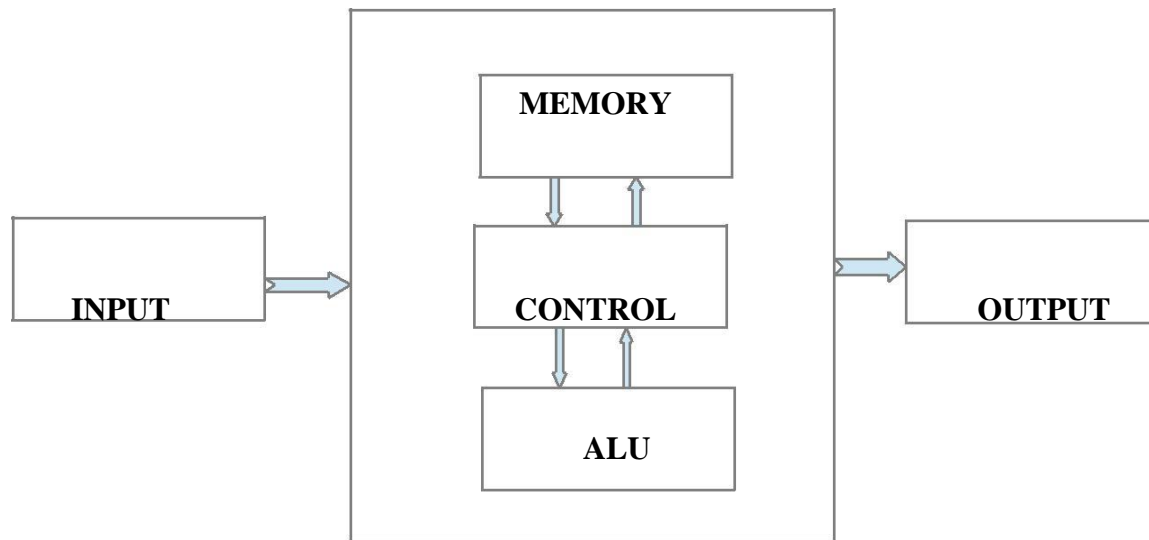
Volatile Memory (Random Access Memory)

Volatile memory is a computer memory that requires power to maintain the stored information. Most modem semiconductor volatile memory is either Static RAM or Dynamic RAM

Static RAM retains its contents as long as the power is connected and is easy to interface to but uses six transistors per bit.

Dynamic RAM is more complicated to interface to and control and needs regular refresh cycles to prevent its contents being lost. However, DRAM uses only one transistor and a capacitor per bit, allowing it to reach much higher densities and, with more bits on a memory chip be much cheaper per bit. SRAM is not worthwhile for desktop system memory, where DRAM dominates, but is used for their cache memories.

Non-Volatile Memory (Read Only Memory)

Non-volatile memory is computer memory that can retain the stored information even when not powered.

E.g. Flash Memory, ROM/PROM/EPROM memory (used for firmware such as boot programs).

Units of Memory

The smallest unit is bit, which mean either 0 or 1.

1 bit = 0 or 1

1 Byte = 8 bit

1 Nibble = 4 bit

1 Kilo Byte = 1024 Byte

1 Mega Byte =1024 KB = 1 MB

1 Gega Byte =1024 MB = 1 GB

1 Tera Byte =1024 GB = 1 TB

1 Peta Byte =1024 TB = 1 PB

1 Exa Byte =1024 PB = 1 EB

1 Zeta Byte =1024 EB = 1 ZB

1 Yotta Byte =1024 ZB = 1 YB

Arithmetic Logic Unit:

ALU is to perform all the mathematical calculations and logical operations. All operations like additions, subtractions, multiplications, divisions and comparisons such as less than, equal to, or greater than, etc., are performed in the Arithmetic Logic Unit (ALU).

Control Unit:

The control unit controls the operations of the computer system. It directs the flow of information within the computer, e.g. between the memory unit and the ALU, or between the Memory Unit and Devices etc. It also controls the functions of other parts of the computer system.

Output

The user gets information from the computer via Printer, Monitor.

Booting

The process of loading the system files of the operating system from the disk into the computer memory to complete the circuitry requirement of the computer system is called booting. There are two types of booting are

Cold Booting

If the computer is in off state and we boot the computer by pressing the power switch 'ON' from the CPU box then it is called as cold booting.

Warm Booting

   If the computer is already 'ON' and we restart it by pressing the RESET button from the CPU box or CTRL, ALT and DEL key simultaneously from the keyboard then it is called warm booting.

1.5 Types of Computer

Analog Computer:

   An analog computer that is used for continuous physical phenomena such as electrical, mechanical or hydraulic quantities to model the problem being solved.

E.g. Thermometer, Speedometer, Petrol pumps Indicator.

Digital Computer

 A computer that performs calculations and logical operations with quantities represented as digits, usually in the binary number system.

Hybrid Computer   Hybrid = Analog + Digital

   A combination of computers those are capable of inputting and outputting in both digital and analog signals. A hybrid computer system setup offers a cost effective method of performing complex simulations. The instruments used in medical science lies in this category.

Super Computer

   A supercomputer is a computer with great speed and memory. This kind of computer can do jobs faster than any other computer of its generation The figure shown below.

Mainframe Computer

A data processing system employed mainly in large organizations for various applications, including bulk data processing, process control, industry and consumer statistics, enterprise resource planning, and financial transaction processing.

Mini Computer

A minicomputer is a type of computer that possesses most of the features and capabilities of a large computer but is smaller in physical size.

Define Microprocessor and Micro controller

Microprocessor

Microprocessor is an IC which has only the CPU inside them i.e only the processing powers such as Intel's Pentium 1,2,3,4, core 2 duo,i3,i5 etc. These microprocessors don't have RAM,ROM, and other peripheral on the chip. A system designer has to add them externally to make them functional. Application of microprocessor includes Desktop, PC's , Laptops

Micro controller

Micro controller is designed to perform specific tasks. Specific means applications where the relationship of input and output is defined. Depending on the input, some processing needs to be done and output is delivered. For example, Keyboard, mouse, digicam etc.. Since the application are very specific they need small resources like RAM, ROM, I/O ports etc. and hence can be embedded on a single chip. This in turn reduces the size and the cost.
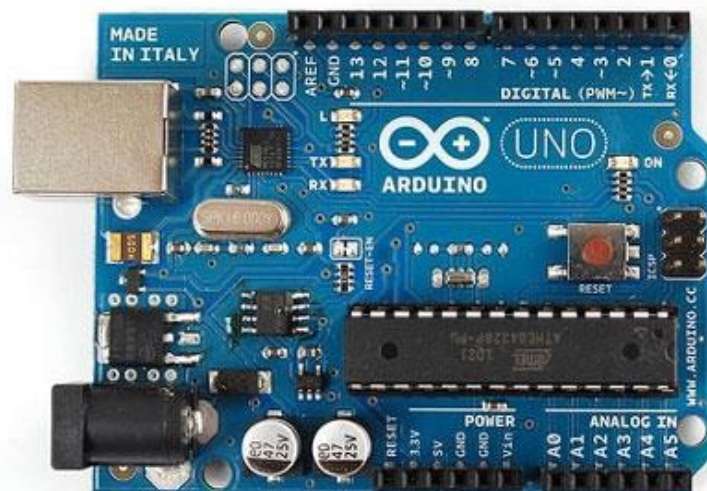
Introduction to Free Software

"Free Software is not a free ware "

Define Free Software?

Free software refers to freedom to use the software without any restrictions. Free software is matter of liberty, not about price. Free software provides four kinds of freedom to the users of the software

Freedom 0: The freedom to run the program, for any purpose

Freedom 1: The freedom to study how the program works, and adapt it your needs.(Access the source code)

Freedom 2: The freedom to copy the software and give it your neighbors

Freedom 3: The freedom to improve the program and release the modified version to the public, so that the whole community benefits.

A program is free software if users have all of this freedom. Thus you should be free to redistribute copies, with or without modifications, either gratis or charging a fee for distribution to anyone anywhere. Being free to do these things means that you do not have to ask or pay for permission.

You should also have the freedom to make changes and use them privately in your won work or play, without even mentioning that they exist. If you do publish your changes, you should not be required to notify anyone in particular way.

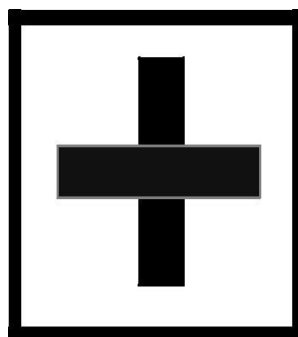***Freedom 0:*** *Freedom to use the work and enjoy the benefits of using it.*

Freedom 1: *Freedom to study the work and the apply the knowledge acquired from it.*
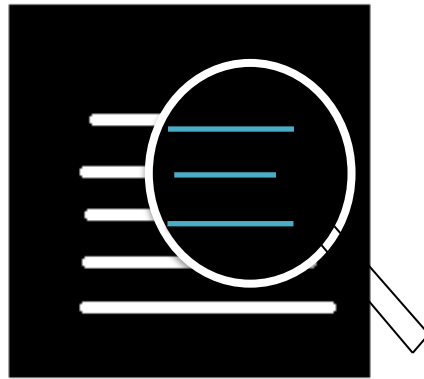
Freedom 2*: Freedom to make and redistribute copies in whole part of information or expression.*
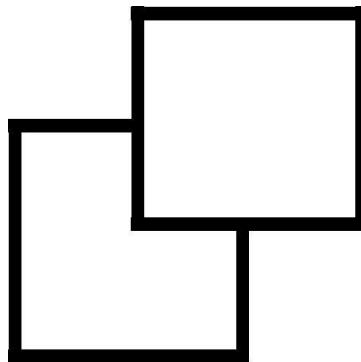
Freedom 3: *Freedom to make changes and improvements and distribute derivative works.*

Why Free Software?

To understand the free software philosophy, I would like to tell a story. An anthropologist proposed a game to the African school children. He placed a basket of sweets and Candys' near a tree and made them stand 100 meters away from it. He announced that whoever reaches the basket first would get all the sweets in it. When he blowed his whistle do you know what these children did ? To his astonishment, the kids held each other's hands and ran towards the tree together, divided the sweets among them and enjoyed it. When the anthropologist asked them why they did so, they replied "GNU/LINUX".

They all know the importance of knowledge sharing. Some people object to sharing as they fear that if I share my piece of knowledge with everyone I will lose the X-Factor of mine which actually keeps me always recognized by my management and someone else would ripe the fruits of my ideas. But this is a fallacy, we should not share with anyone anything but if it's about working in teams one should develop a habit of sharing your knowledge.

What really Propriety license represents?

"The licenses for most software are designed to take away your freedom to share and Change it"

Propriety License represents the user

Don't use the Software for any purpose.

Don't open the software source code

Don't change the source code

Don't distribute the modified copy of the software

If you violate these rules you are punished under intellectual property violation act.

Why software not have owner?

"Digital information technology contributes to the world by making it easier to

copy and modify information. Computers promise to make this easier for all of us."

Not everyone wants it to be easier. The system of copyright gives software programs "owners," most of whom aim to withhold software's potential benefit from the rest of the public. They would like to be the

only ones who can copy and modify the software that we use.

The copyright system grew up with printing—a technology for mass production copying. Copyright fit in well with this technology because it restricted only the mass producers of copies. It did not take freedom away from readers of books. An ordinary reader, who did not own a printing press, could copy books only with pen and ink, and few readers were sued for that. Digital technology is more flexible than the printing press: when information has digital form, you can easily copy it to share it with others. This very flexibility makes a bad fit with a system like copyright.

What does society need?

It needs information that is truly available to its citizens – for example, programs that people can read, fix, adapt, and improve, not just operate.   But what software owners typically deliver is a black box that we can't study or change.

Society also needs freedom. When a program has an owner, the users lose freedom to control part of their own lives. And, above all, society needs to encourage the spirit of voluntary cooperation in its citizens. When software owners tell us that helping our neighbors in a natural way is "piracy", they pollute our society's civic spirit.

This is why we say that free software is a matter of freedom, not price. As a computer user today, you may find yourself using a proprietary program. If your friend asks to make a copy, it would be wrong to refuse. Cooperation is more important than copyright. But underground, closet cooperation does not make for a good society. A person should aspire to live an upright life openly with pride, and this means saying no to proprietary software.

You deserve to be able to cooperate openly and freely with other people who use software. You deserve to be able to learn how the software works, and to teach your students with it. Your deserve to able to hire your favorite programmer to fix it when it breaks. You deserve **free software.**

Let's Learn with Fun

Tux Paint

Tux Paint is a drawing tool you can use to create simple or elaborate drawings. It is used in schools around the world as a computer literacy drawing activity. It combines an easy-to-use interface, fun sound effects, and an encouraging cartoon mascot who guides children as they use the program.

http://www.tuxpaint.org/
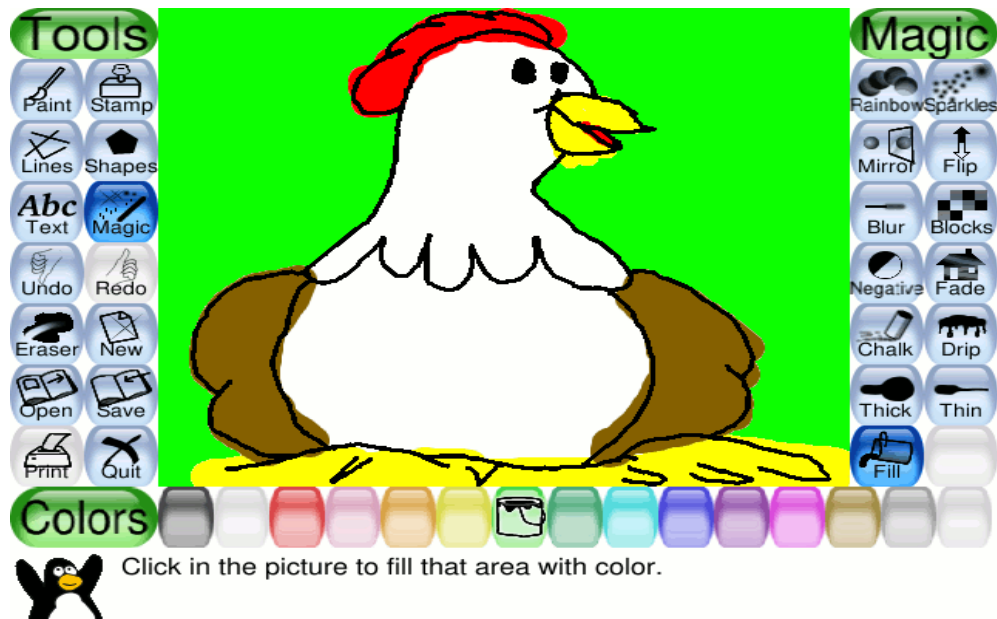
MyPaint

MyPaint is a fast and easy open-source graphics application for digital painters. It lets you focus on the art instead of the program.

http://mypaint.intilinux.com/

Flow Paint

It is a cross platform free and open source painting application for next generation that focuses on usability and power. It supports pressure sensitive, graphics tablets etc.

http://www.flowpaint.org/

Drawpile

It is free collaborative drawing software that allows multiple users to sketch on the same canvas simultaneously.

http://drawpile.net/
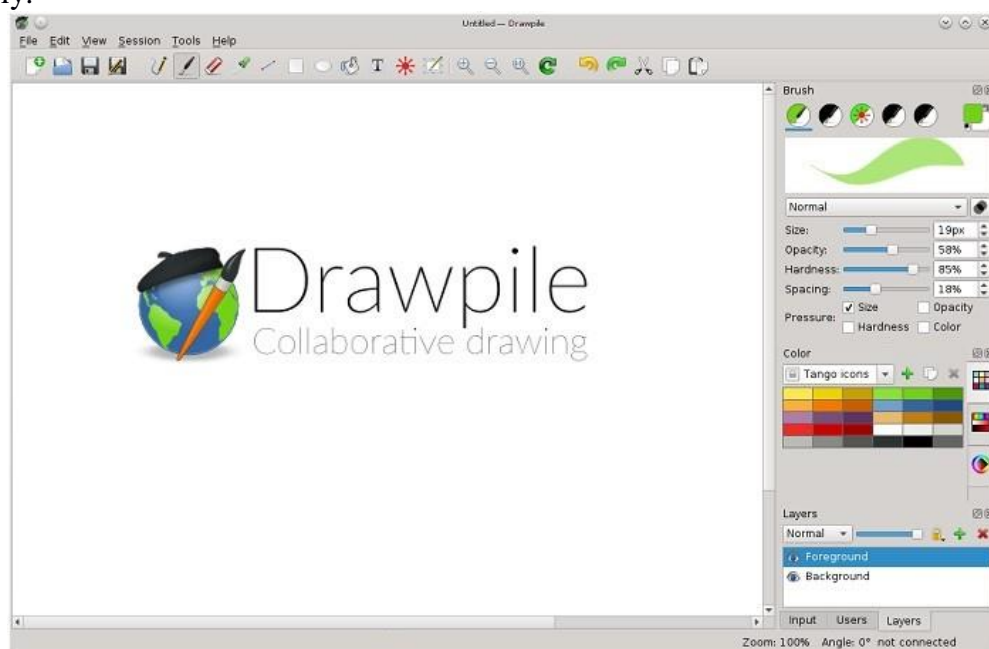
KolourPaint

It is free, easy painting software to quickly create raster images. It is useful as touch-up tool and simple image editing tasks.

https://www.kde.org/applications/graphics/kolourpaint/
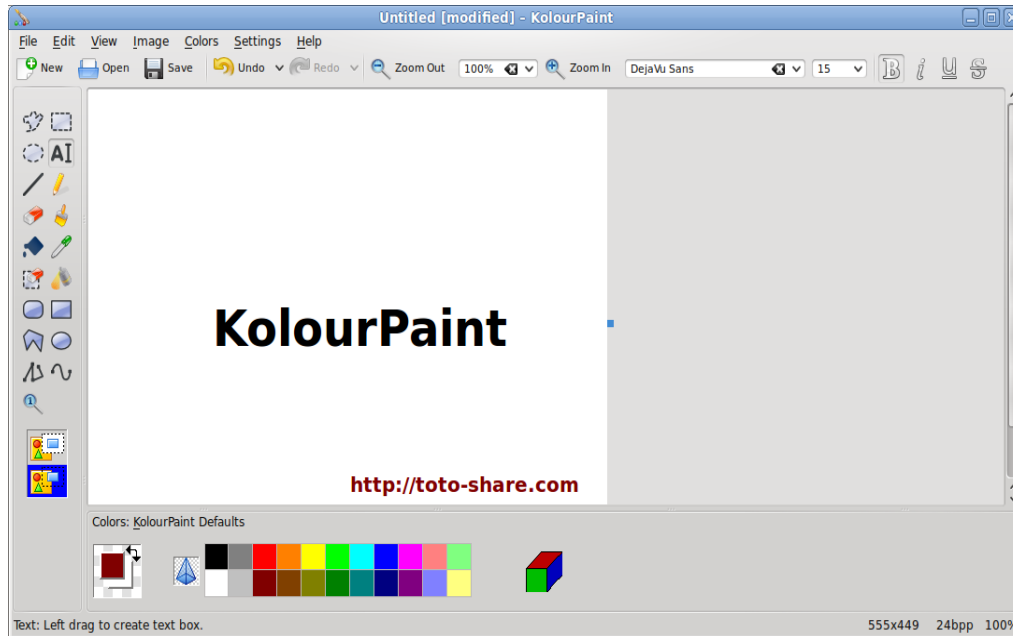
mtPaint

It is a drawing application which provides full-fledged features of painting software. It offers showing/hiding toolbars, splitting window and also various effects, channels or layers.

http://mtpaint.sourceforge.net/
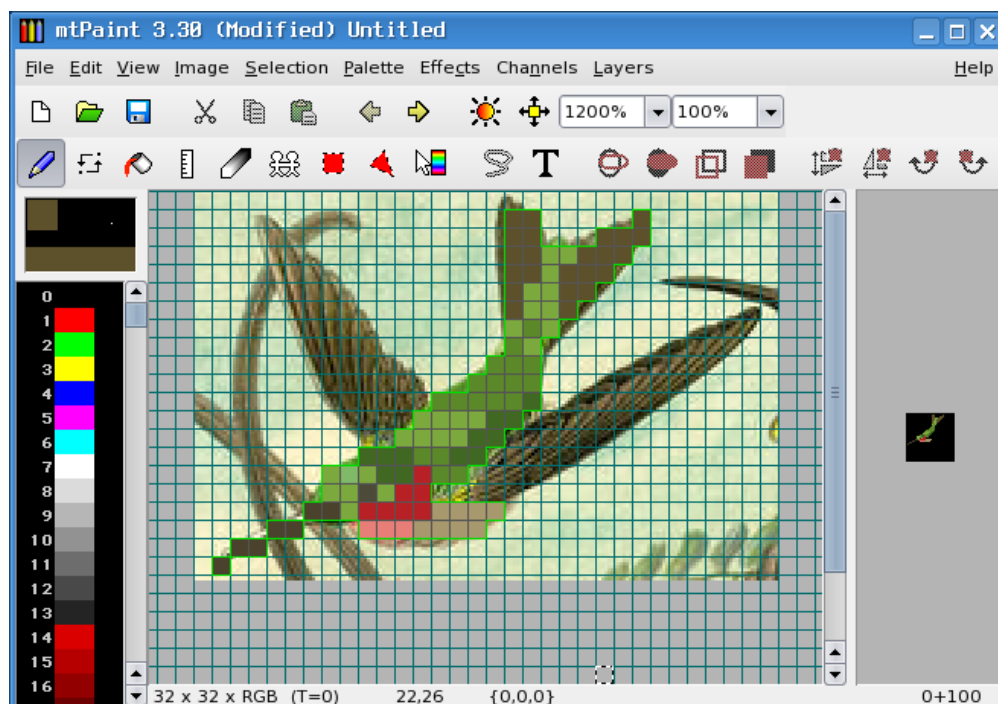
Pinta

It is free, open source drawing/editing software provides the basic tools such as shapes, color box, sketches etc. It is platform independent(Linux, Windows, Mac).

http://pinta-project.com/
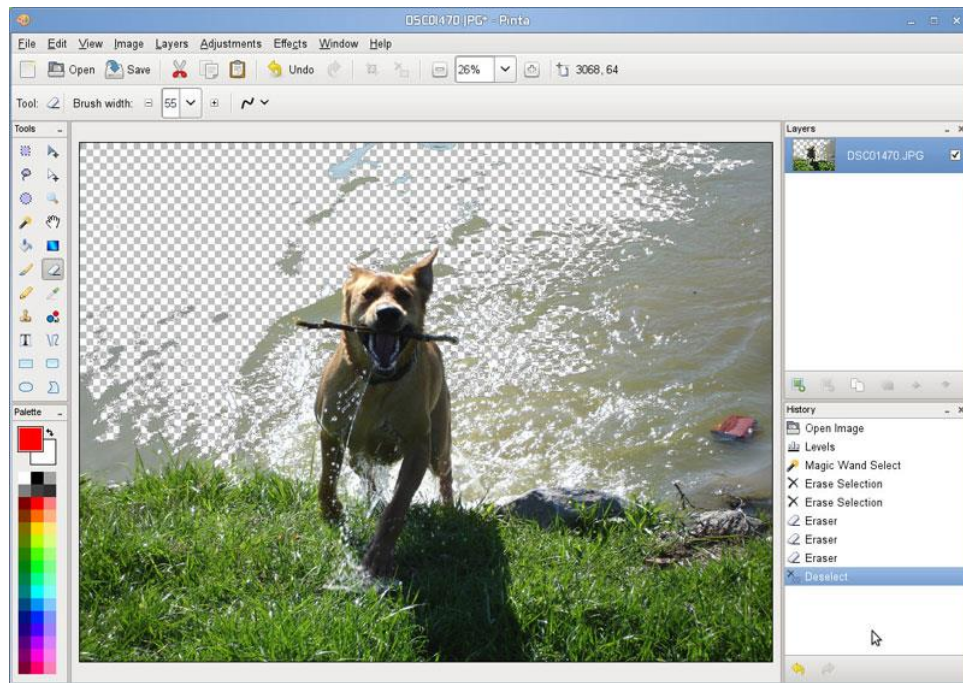
Rassam Paint

It is free and open source image editing and drawing tools with the advanced features of Free Selection, Tool Zoom, Undo Text, Tool Color etc…

http://sourceforge.net/projects/rassampaint/
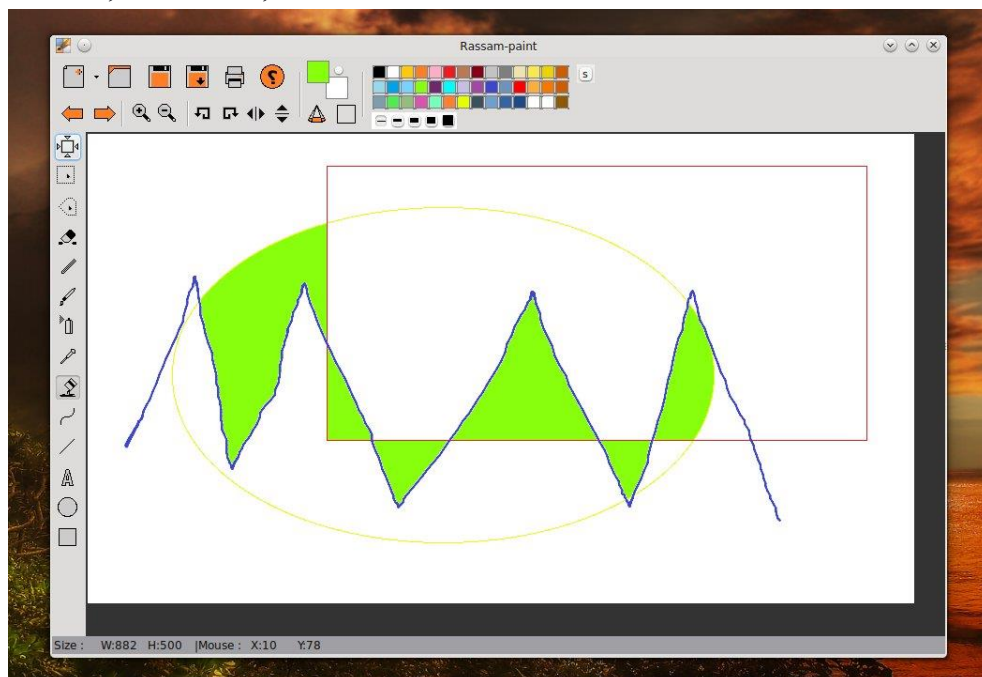
Gimp Painter

It provides workspace for painting. It is modified and enhanced version of GIMP Image Editing software.

https://osdn.jp/projects/gimp-painter/
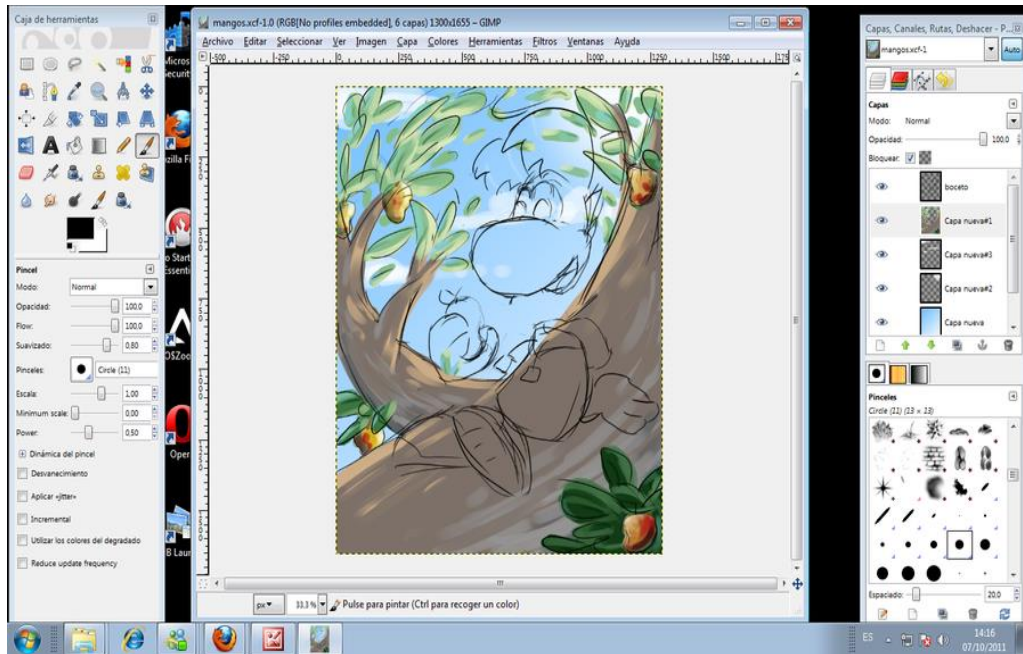
GrafX2 ,Xpaint, Tkpaint, Office Draw are some of the software that will help you to draw pictures

Knowledge Through Entertainment

Tux Math

 Tux Math is software to learn arithmetic operations through games. Tux math is a game which helps you to score pints by doing these calculations quickly.
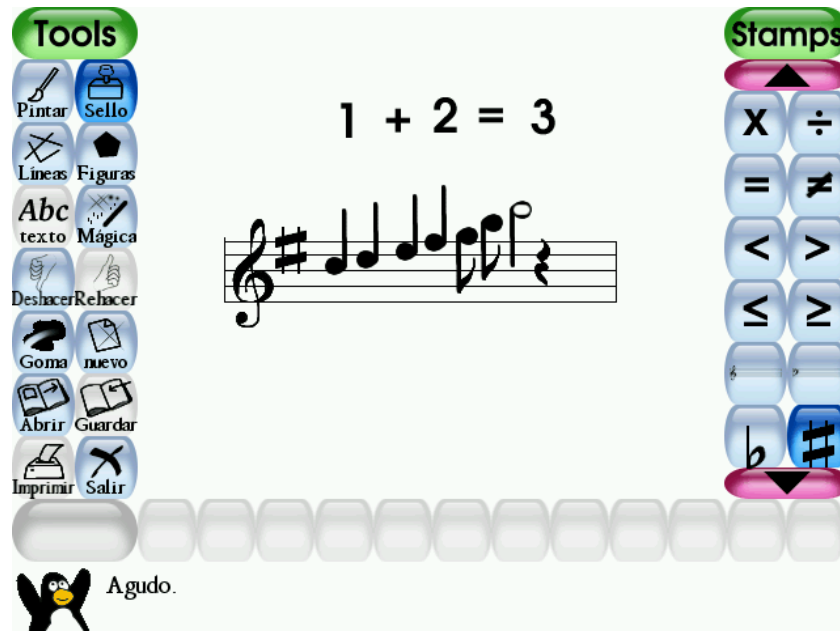
Tux Type:

Tux type is software to learn typing via games. Tux type is game to type letters and words in English. Open the game window as shown below

http://tux4kids.alioth.debian.org/
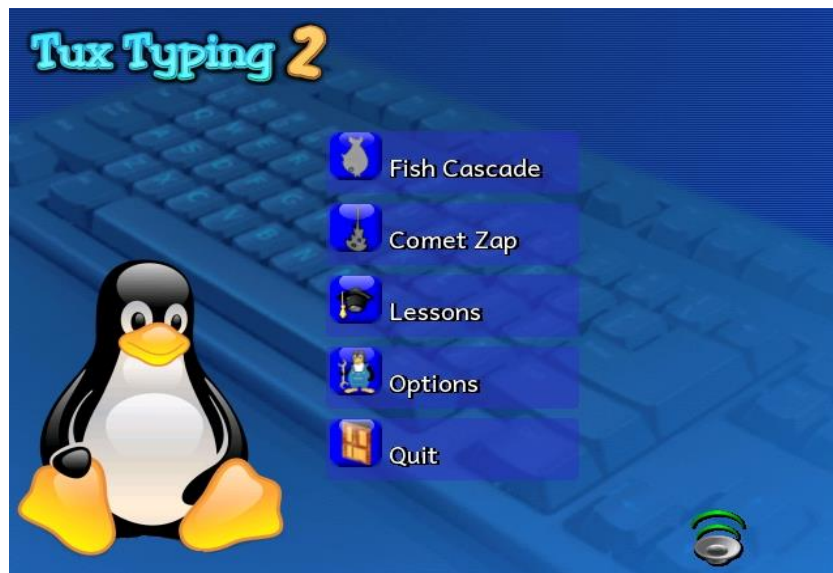
KTouch

Touch software is to measure typing speed and accuracy. It currently supports English, German, Norwegian, Latin American, Portuguese and French Keyboards.

https://edu.kde.org/applications/all/ktouch
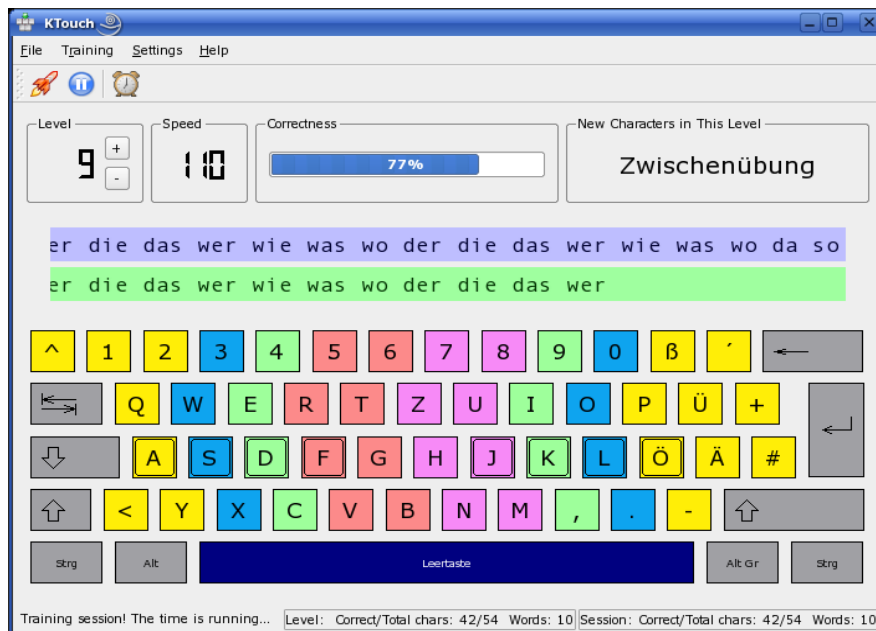
KhangMan

It is classical hangman game. It is used to improve your vocabulary. The child should guess a word letter by letter. At each miss, the picture of a hangman appears. After 10 tries, if the word is not guessed, the game is over and the answer is displayed.

https://edu.kde.org/khangman/
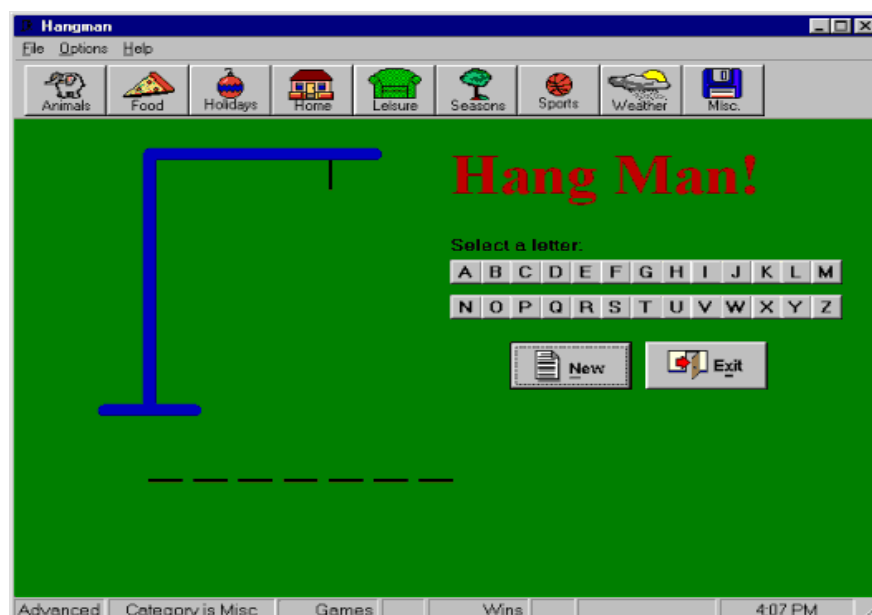
Sun clock :

Sun clock is a software application that delineates the countries experiencing day or night at a given time on a world map using light and shade numerous facts including time differences across countries, distance between regions, and longitudes and latitudes of various places are available on sun clock.

http://linux.softpedia.com/get/Utilities/Sunclock-5495.shtml

Gcompris

Gcompris is free software. It is used to learn computer operations such mouse practice, keyboard general knowledge related to countries, arithmetical operations such as addition, multiplication, Vocabulary etc...

http://gcompris.net/index-en.html

Child's play

Child's play is software to activity based learning for kids.

http://childsplay.sourceforge.net/

Canorus

It is a free and open music editor. It supports note writing, scripting support, import/export of various file formats. It is cross platform inderpendent(Windows,Linux, MacOSX)

http://sourceforge.net/projects/canorus/

Office Tools for Manipulation

Office tools plays vital role in our day to day life. It's an extremely versatile too-ideal for creating short documents, such as letters and reports, with enough layout and graphics – handling capabilities also to make it suitable for sophisticated publishing chores.

Open Office Writer

It is free software used for documentation purpose such as Newspaper article, letters etc. It is like MS-Office. Comparatively the performance is much better than MS-office. Open office offers to convert the document into Portable document format (PDF). When the user type anything in writer automatically it gives suggestions to the word. The open office Writer is shown below Pictures.
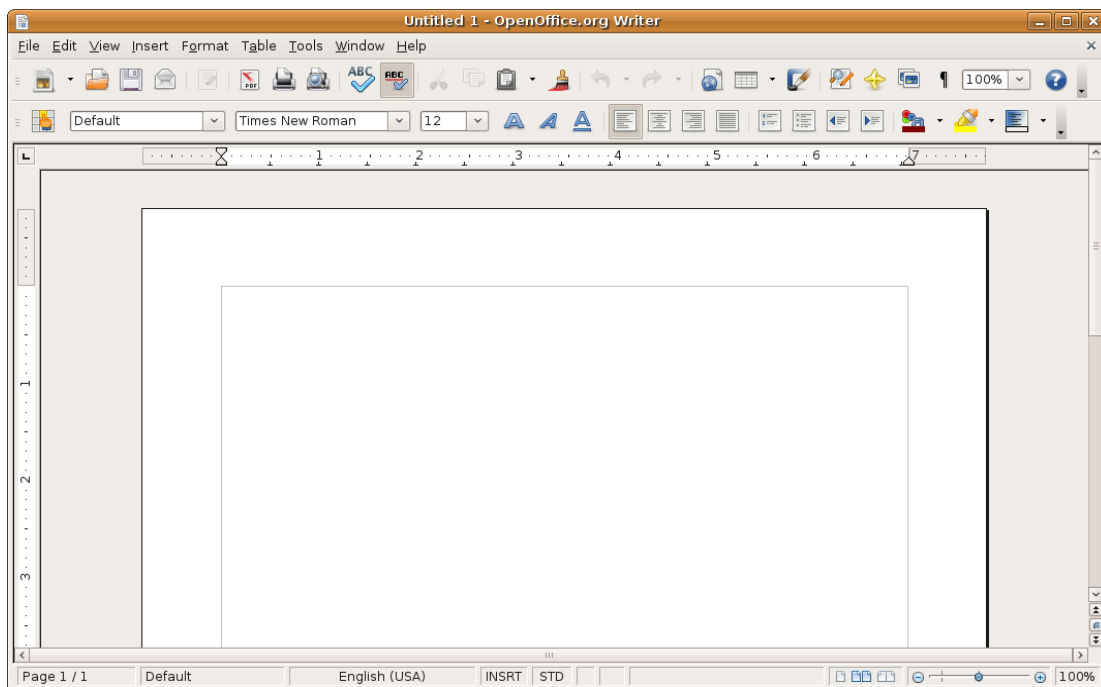
Open office Calc:

It is used to create the spreadsheets much like paper ledgers that can perform automatic calculations. Mainly used for calculation and charting. It is also used as backend database. Each file is a workbook that can hold many worksheets. The worksheet is a grid of columns and rows. The letters and numbers of the columns and rows are displayed in gray buttons across the top and left side of the worksheet. The intersection of a column and a row is called a cell. Each cell on the spreadsheet has a cell address tat is the column letter and the row number cells can contain text, numbers or mathematical formulas. Thre Open office calc is shown below Pictures.

AOO Downloads by Country.ods - OpenOffice Calc

File Edit View Insert Format Tools Data Window Help

G200   =RANK(E200;$E$2:$E$202)

	Country	Downloads	Population (per Wikipedia)	Internet Users per 1k	AOO per 1K population	AOO per 1K internet users	Rank (AOO per Population)	Rank (AOO per Internet Users)
188	San Marino	1,067	32,457	15,781	32.874	68	13	4
189	Netherlands	568,068	16,751,323	15,371,396	33.912	37	12	14
190	(Malvinas)	100	2,563	2,908	39.017	34	11	18
191	Finland	212,152	5,387,000	4,700,192	39.382	45	10	10
192	Switzerland	333,002	8,000,000	6,688,285	41.625	50	9	9
193	Estonia	55,255	1,294,000	981,467	42.701	56	8	7
194	Germany	3,602,587	81,799,600	67,621,622	44.042	53	7	8
195	Belgium	529,150	11,041,266	8,136,552	47.925	65	6	6
196	Ukraine	224,151	4,570,610	13,811,220	49.042	16	5	44
197	Italy	3,160,660	60,813,326	34,657,545	51.973	91	4	2
198	Luxembourg	29,788	517,000	457,451	57.617	65	3	5
199	Monaco	2,348	35,000	22,940	67.086	102	2	1
200	France	4,561,852	65,350,000	51,962,632	69.806	88	1	3
201	Poland	113,929	38,216,000	24,940,902	0.470	5	133	126
202	Indonesia	134,095	242,325,000	44,291,729	0.553	3	132	142

Downloads Per Country

Sheet 1 / 3   PageStyle_Sheet1   STD   Sum=1   100%

Note: Different types of spreadsheets are OpenOffice.org calc, Libre Office calc, G Numeric, K-spread, Lotus 1,2,3 etc..

Open office Impress

Impress is a presentation software program that is part of the Office package. You can present an idea effectively and interestingly before an audience with necessary sounds and picture. Impress uses a graphical approach to presentations in the form of slide shows that accompany the oral delivery of the topic. This program is widely used in business and classrooms and is an effective tool when used for training purpose.

Presentation can be made into photo albums, complete with music or narrations, to distribute on CDs or DVDs. The Open office impress is shown in Pictures.
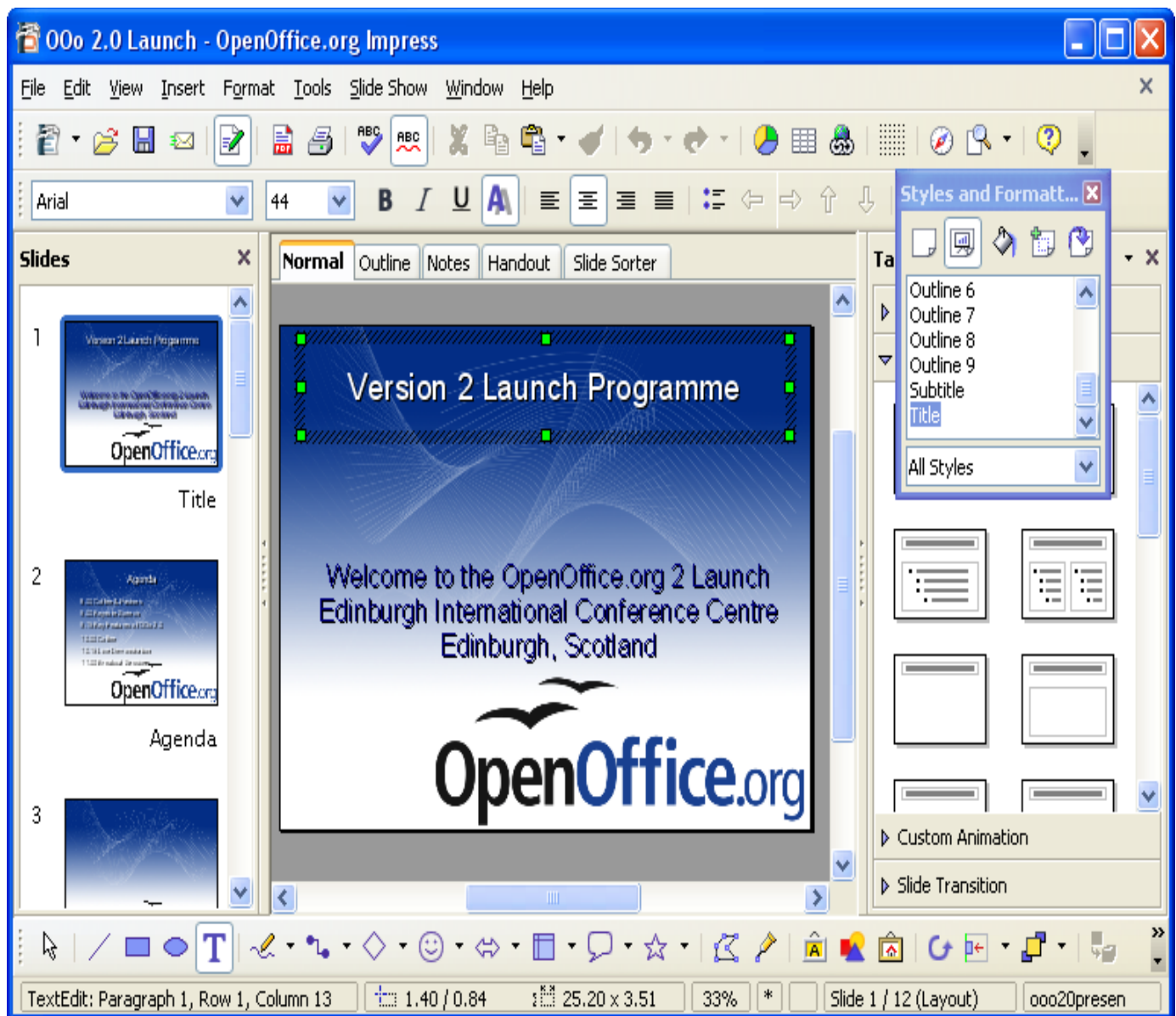
Note: Open Office contains Writer, Impress, Calc, Draw, Database, Document Viewer etc..

Open office Base:

It is database management system used to create and store the database for future use. It provides to retrieve existing data quickly to add new data and to remove data.. Database applications that allow secured handling of databases with mechanism to pre-empt errors. Database is container to store the data in table form. Table consists of attributes and records.

E.g. Employee is database. It contains many tables such as personal_details, Salary_det etc.. The Open office Base is shown in picture

https://www.openoffice.org/download/

Evince

Evince is free software. It is used to read PDF files. It is similar to Microsoft Adobe Acrobat Reader.

https://wiki.gnome.org/Apps/Evince

Gedit:

Gedit is a desktop editor. It is similar to WordPad.

https://wiki.gnome.org/Apps/Gedit
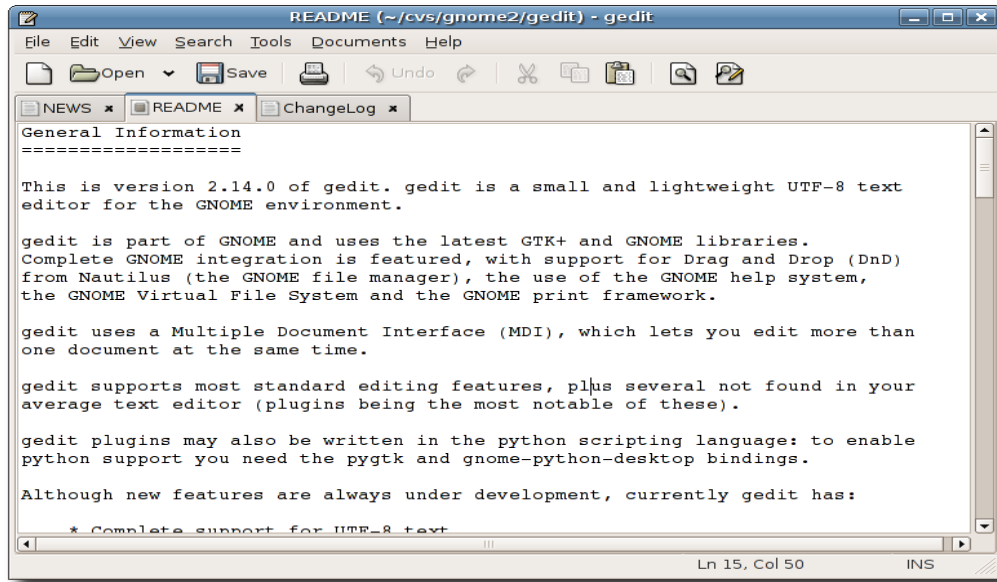
Emacs

Emacs is one of the oldest and most versatile text editors available for Linux and UNIX-based systems. It is also more than just a text editor; it can be customized and extended with different "modes", enabling it to be used like an Integrated Development Environment (IDE) for programming languages like Java, C or Python.

http://www.gnu.org/software/emacs/

Geometry Make Interesting

Learning Mathematics is very difficult at least for a small group of children. The unawareness of the concepts like point, line, plane etc. becomes a hindrance to the learner in Maths. To overcome this, pictures, shapes cut out of cardboard etc. can be used. But here we can make use of IT enabled methods for the formation of idea. Geogebra is good example software, which helps us in learning Geometry. It is a free software, which functions in GNU Linux Operating System as well as in Windows

https://www.geogebra.org/
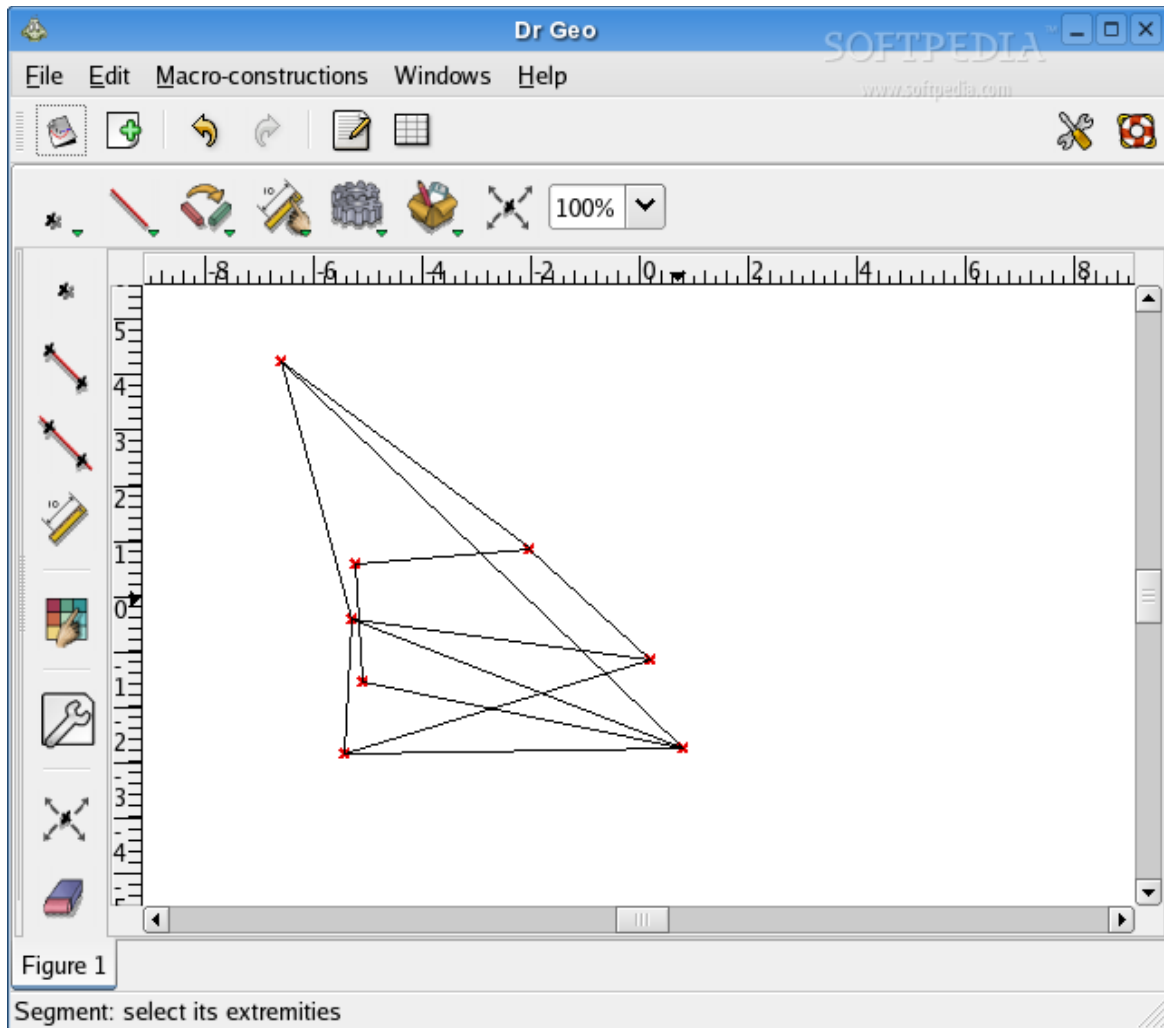
Window of Dr. Geo is shown in Picture.1. We can see a tool bar above the drawing canvas and another one on the left side of the canvas. All the tools are available in the main tool bar, which is seen above the canvas. The tool bar on the left side contains the tools we use frequently.

Kig Interactive Geometry

It is free and open-source interactive geometry software, which is part of the KDE edutainment project. It has some facilities for scripting in Python, as well as the creating macros from existing constructions.

https://edu.kde.org/kig/
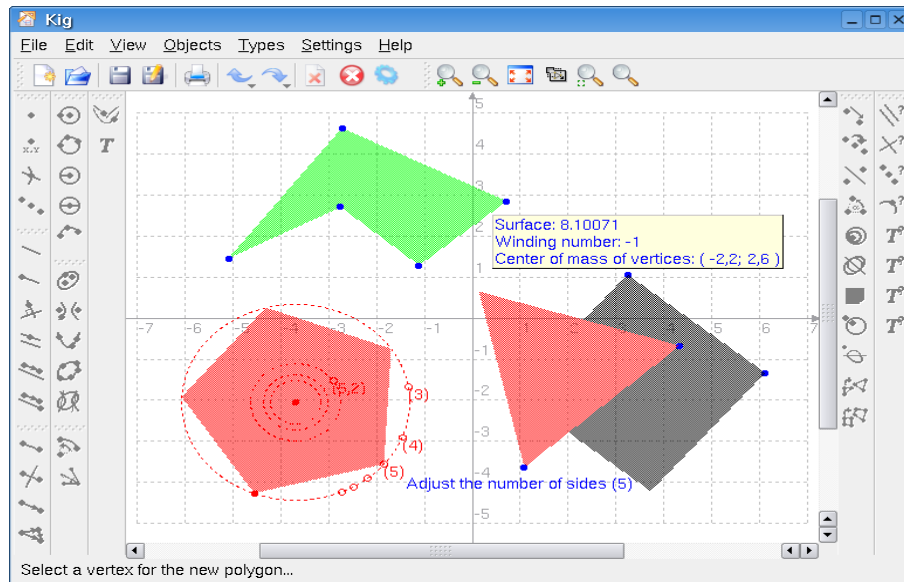
Car Metal

CaR Metal is an interactive geometry program which inherited the CAR engine. It keeps an amount of functionality of C.a.R. but uses a different graphical interface which purportedly eliminates some intermediate dialogs and provides direct access to numerous effects.
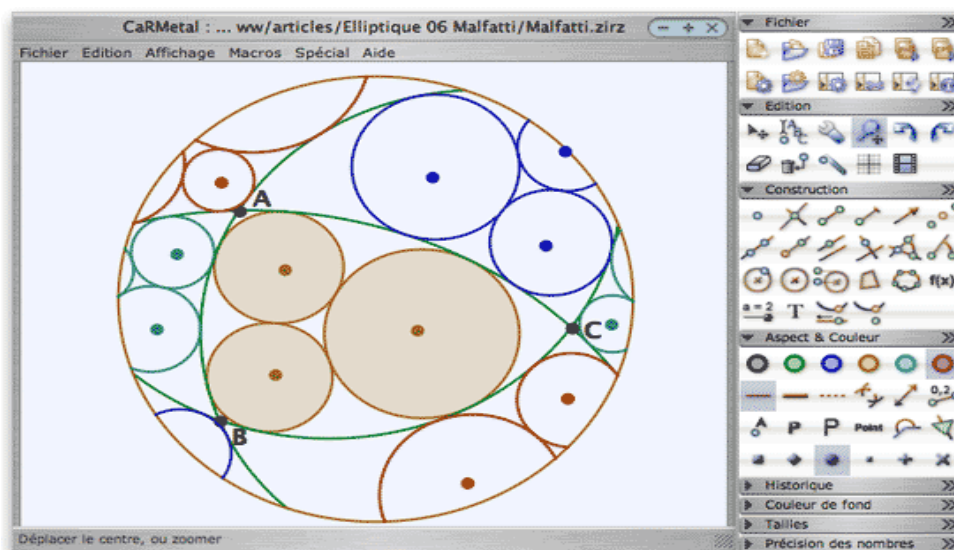
http://db-maths.nuxit.net/CaRMetal/index_en.html

Cantor

It is a front-end to powerful mathematics and statistics packages. Cantor integrates them into the KDE Platform and provides a nice, worksheet-based, graphical user interface.
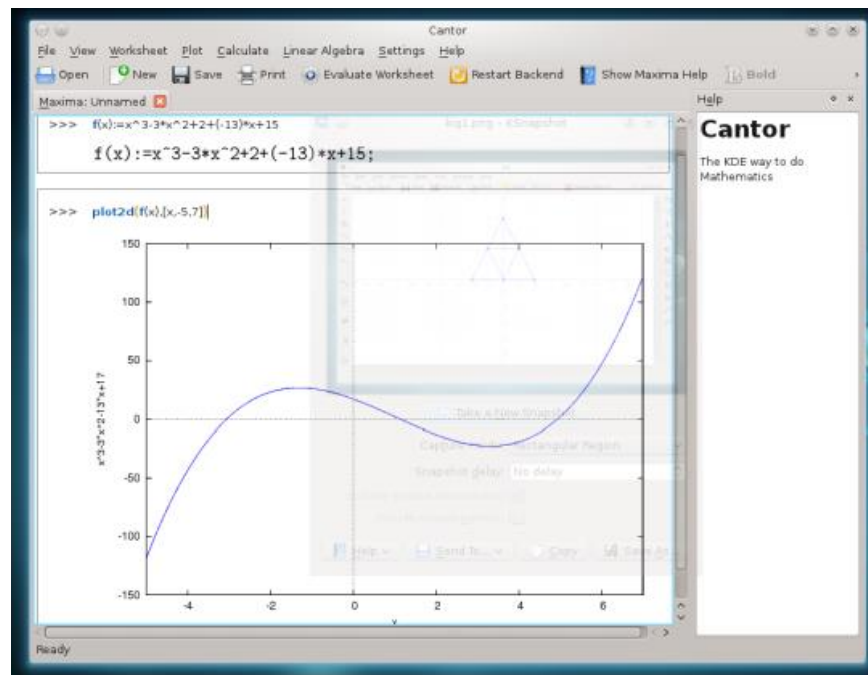
Labplot

It is an application for interactive graphing and analysis of scientific data.
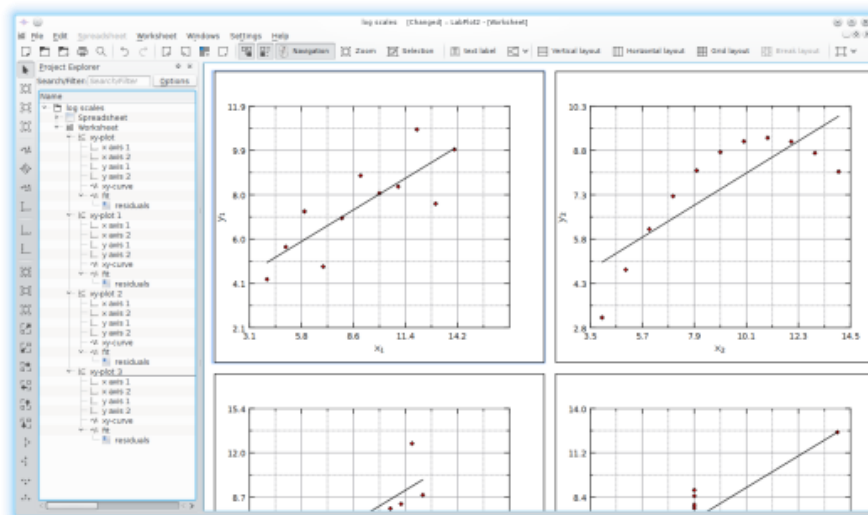
Rocs

It is an application for graph theory IDE for everybody interested in designing and analyzing graph algorithms.It provides an easy to use visual data structure editor and a powerful scripting engine to execute algorithms.
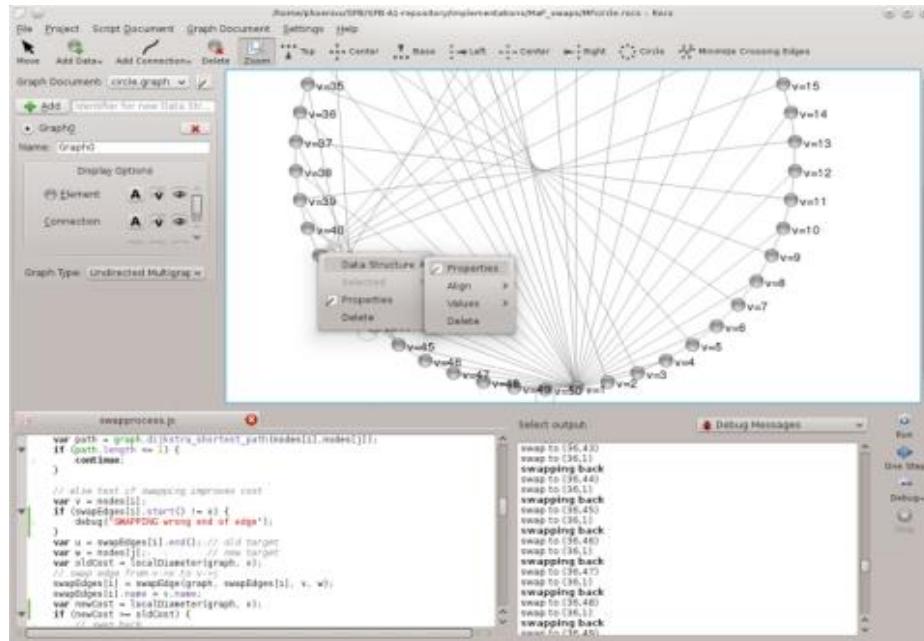
KmPlot - Mathematical Function Plotter

It is a program to draw graphs, their integrals or derivatives. It supports different systems of coordinates like the Cartesian or the polar coordinate system. The graphs can be colorized and the view is scalable, so that you are able to zoom to the level you need.
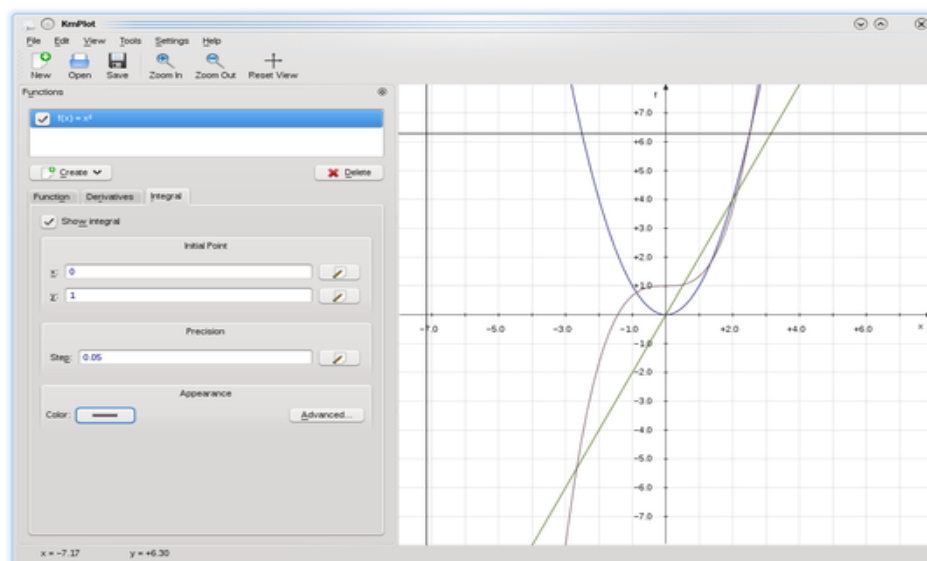
Make wonders in Chemistry

Kalzium

All living beings born in the beautiful world have their own life styles. We have studied about elements, protons etc... In our chemistry texts. How many of them seen or touched elements?

There are many elements that we see mostly in the science laboratory, photographs or other information available in internet. There are several software applications that help us understand elements.

Make wonders through 'Kalzium'. 'Kalzium' is free software which is available on GNU/Linux platform. It shows periodic tables, pictorial representation of the elements and its symbols draw elements with its properties, numerous chemical reactions, the study of these reactions can be made easier by classifying using the software. The software is shown in Pictures

https://edu.kde.org/kalzium/
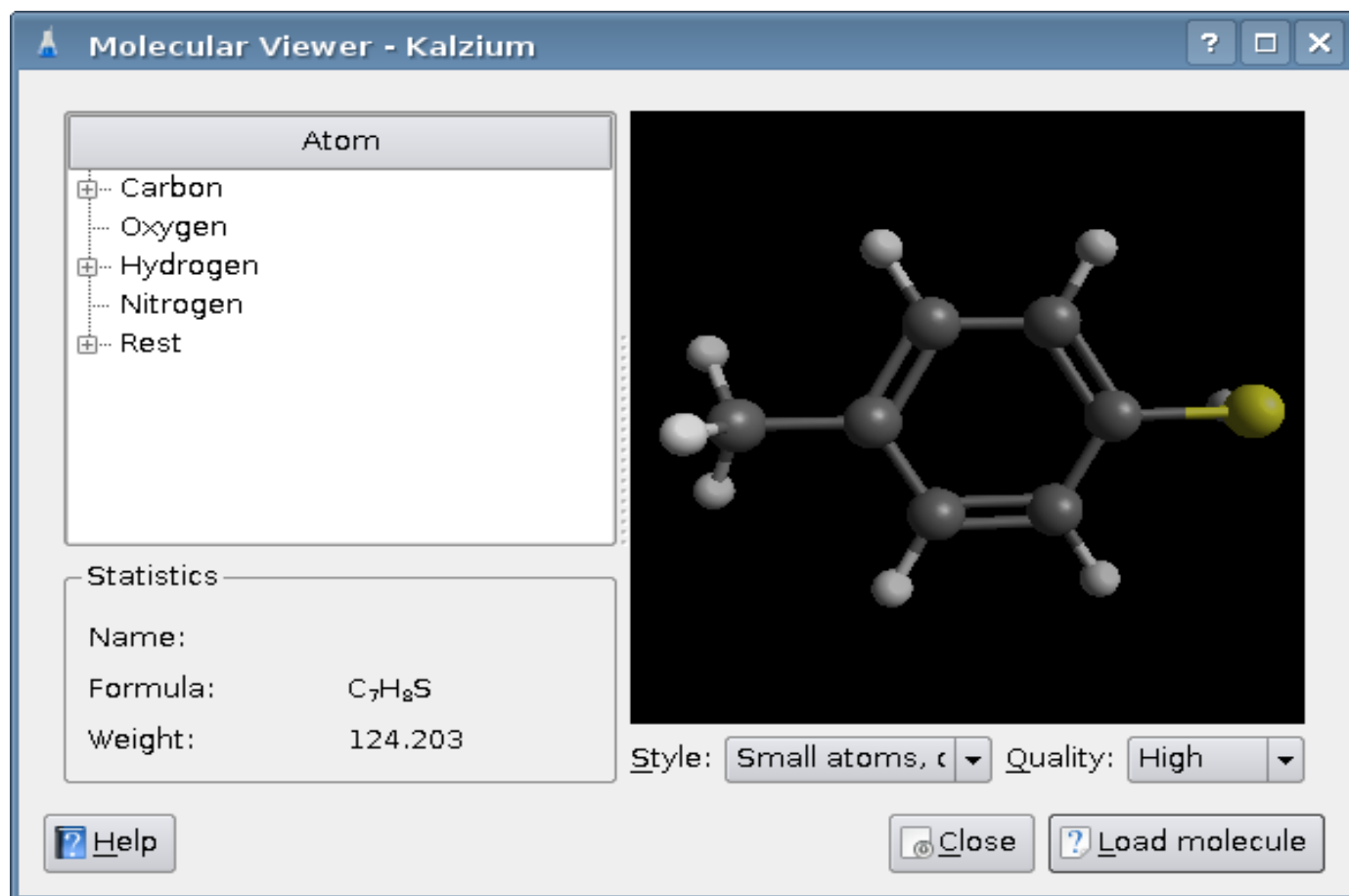
Chemtool:

Chemtool is also used for chemical experiments such as molecule structure can be creating in three dimensional view, elements and its properties, chemical equivalents etc..

Can you image how the molecules of these substances would look like? Have you ever been able to see them?

We know that molecules are formed by atoms. But the structures of such molecules are too small to see. Therefore we make models of molecular structures to enhance our understanding. How will you make such models?

The below pictures shows the molecular structures developed using software.

http://directory.fsf.org/wiki/Chemtool
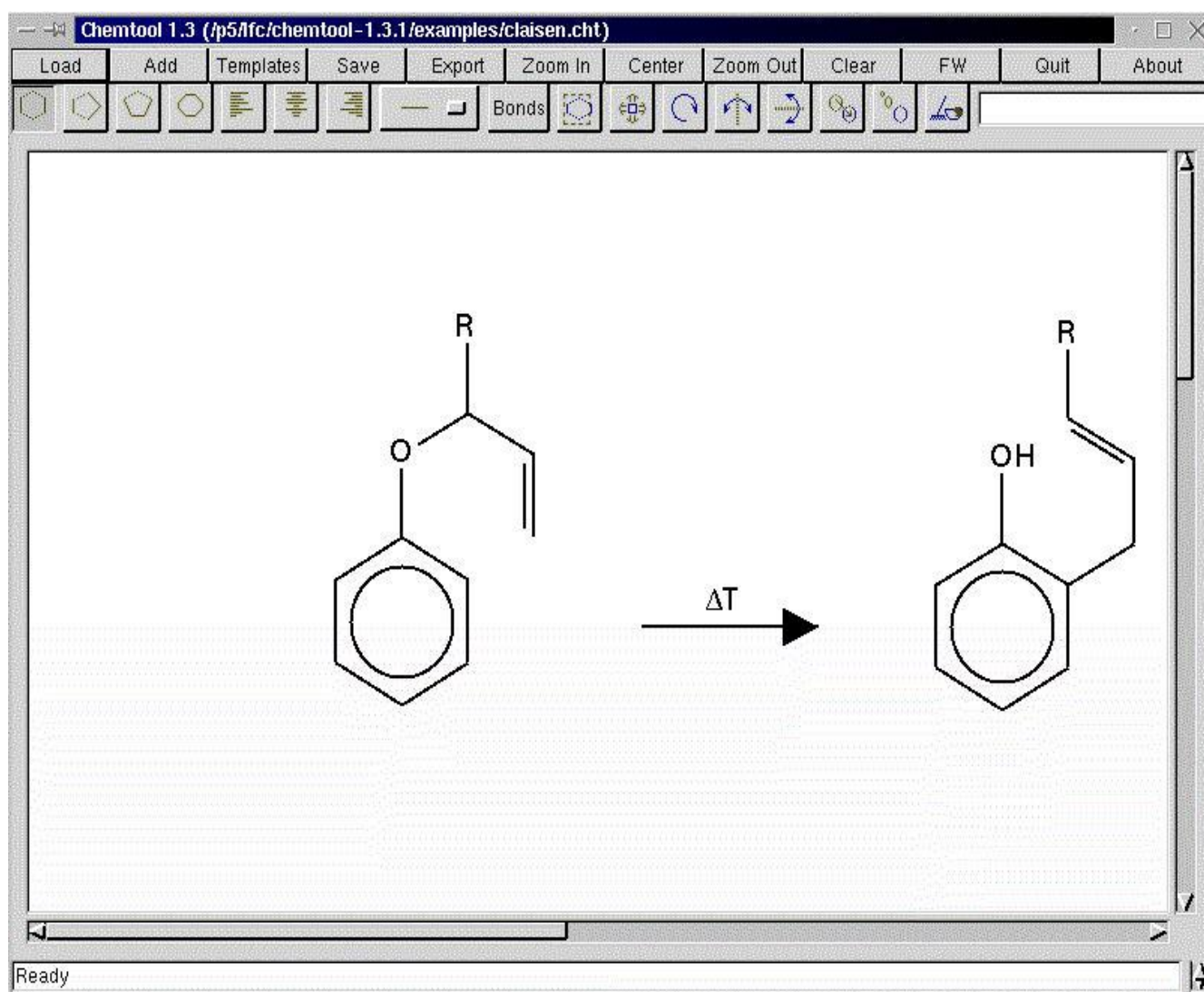
RasMol:

RasMol is a computer program written for molecular graphics visualization intended and used primarily for the depiction and exploration of biological macromolecule structures.
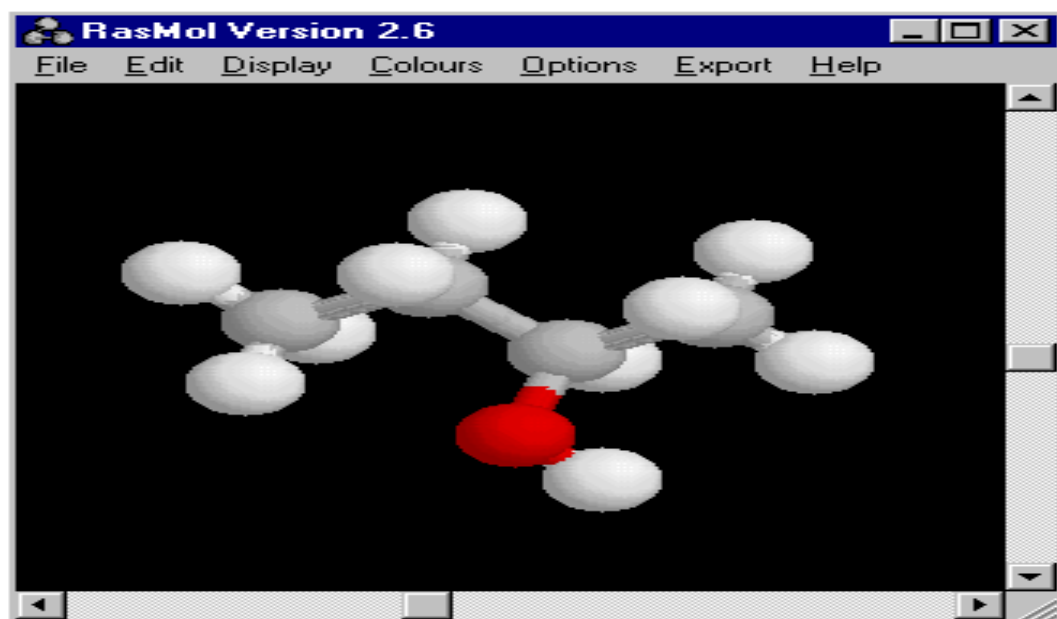
Gchempaint

It is a 2D chemical structures editor for the Gnome-2 desktop.It is not anymore developed as an independent project but is integrated into the Gnome Chemistry Utils.
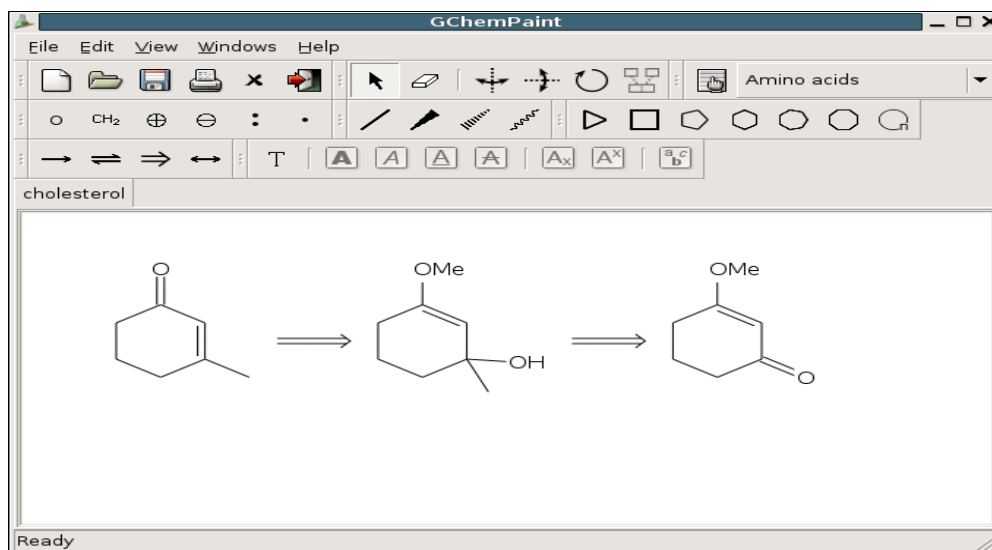
Note: There are many free software for chemistry such as G-Periodic, Rasmol etc..

Magic of Physics

Physics is the most basic science, which deals with the study of nature and natural phenomena. Therefore, It plays vital role in day to day life. Can you name some of your favorite scientist?

Yes, you are right. The first answer is Albert Einstein (Electric bulb), C.V.Raman (Raman Effect), Newton (gravity), Marie Curie (radioactivity), Subramanian Chandrasekhar (Chandrasekhar Limit) etc.. Most of the students interesting to learn physics through experiments. Do you know the principle of electric bulbs that provide us light in the night? How do we connect a bulb to an electric source using a circuit?

First, buying the circuits, bulbs, conductors and other required parts is not so easy. There are simple software applications that help us learn how to make circuits through simulations.

PhET Simulator

PhET is science simulations software developed by group of scientist. It is Circuit Construction Kit. In this window, menu bar is given on top and tools on the right. From the tools, drag bulb wire and battery to the window. Connect these using a wire as shown in the Pic. The bulb lights up and then observe the differences.

https://phet.colorado.edu/en/get-phet/full-install
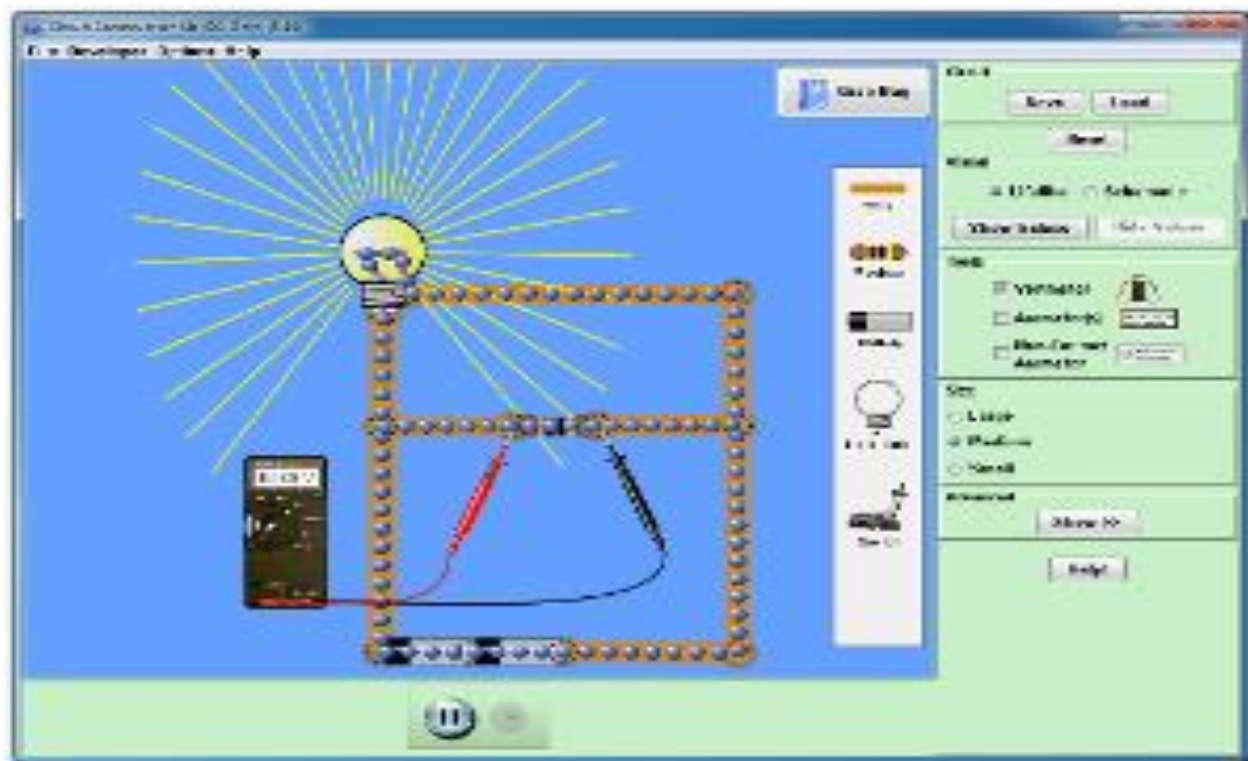
Ktech:

It is simulation software used for constructing electronic circuits and understanding them. This type of software electronic circuits and understanding them. This type of software helps us understand and improve electronic circuits without using real circuits. They also help in designing new circuits and testing them.

The Ktech window is shown in Pic.

http://sourceforge.net/projects/ktechlab/
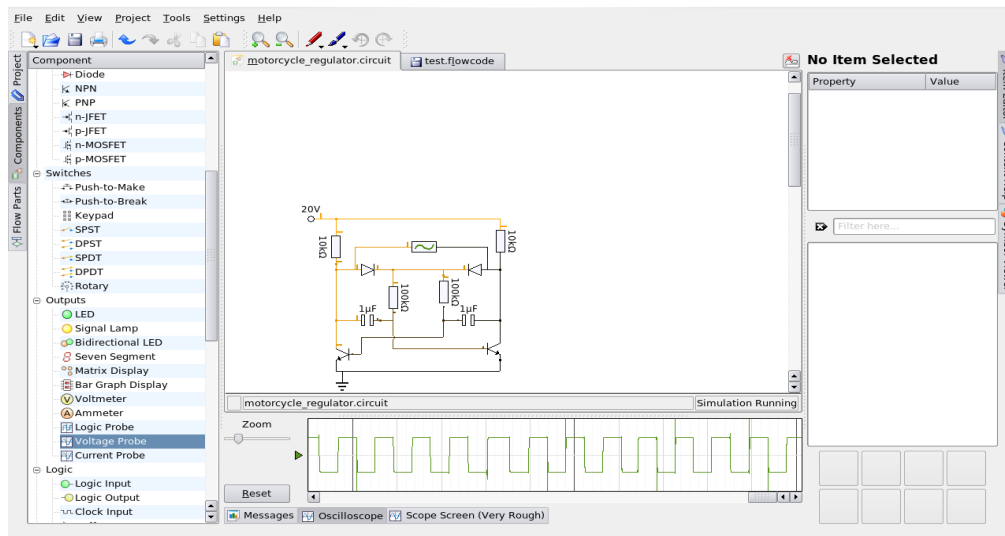
Step

It is an open source two-dimensional physics simulation engine that is included in the KDE SC as a part of KDE Education Project.

https://edu.kde.org/step/
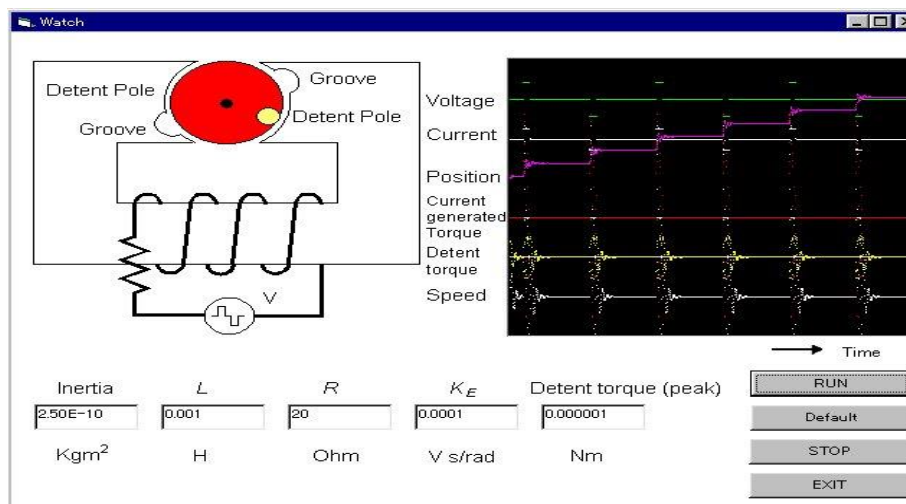
Note: There are many free software for electronic circuit simulations such as FET Circuit Construction Kit

Apart from the Earth

Stellarium:

Stellarium is free open source planetarium of your computer. It shows a realistic sky in 3D like what you see with the naked eye, binoculars or telescope. It is been used in planetarium projectors.

http://www.stellarium.org/

Celestia:

Celestia is free open source space simulation tool. Celestia doesn't confine you to the surface of the Earth. You can travel throughout the solar system, to any of over 100,000 stars, or even beyond the galaxy.

http://www.shatters.net/celestia/
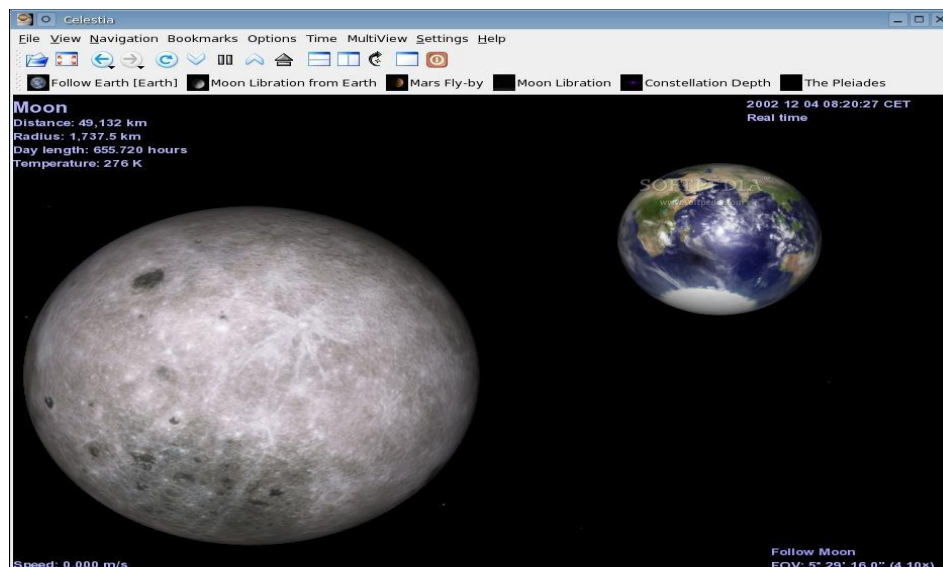
Kstars:

Apart from the wall we have to see the miraculous things in sky. You must have observed several changes happening in the sky. Watching the sky with hundreds of stars, planets, moon and the sun, asteroids, comets etc..

Kstars is software application and set our place using 'Settings' geography such as location, time, latitude and longitude. For example, in order to include the place name Puducherry, India, 11 24, 10 40, 4.40. The Kstars Picture is shown below.
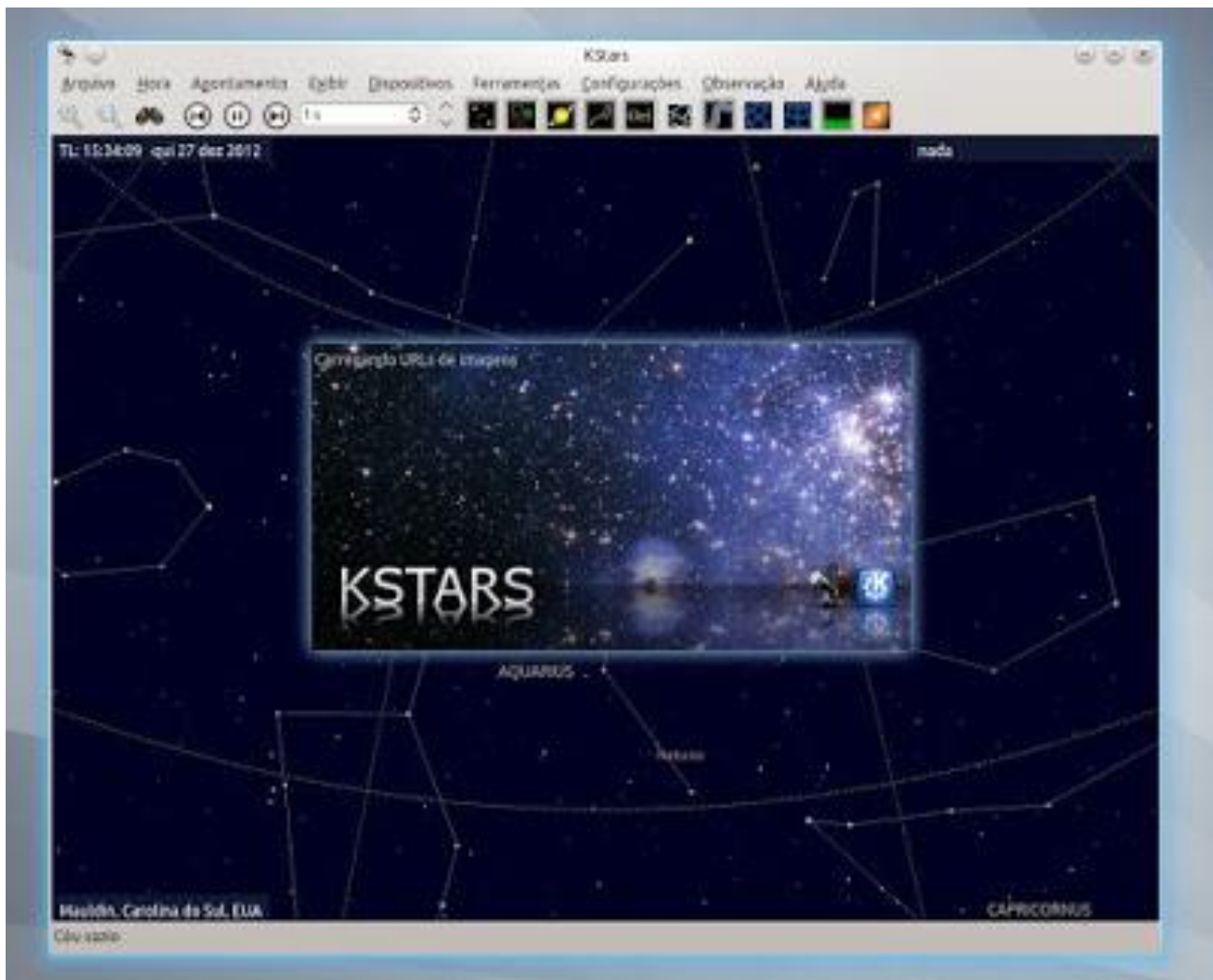
o   Complete astrophotography workflow
o   A host of tools that predict conjunctions, plot time variation of positions of planets, perform calculations etc.
o   Powerful observation planner to plan your observations.

https://edu.kde.org/kstars/

Map Reading

Marble:

Marble is simple software to find the location in the map. It is basically a desktop globe. Maps are essentially repositories of geographic information. They may also contain information on various matters such as roads, buildings, administrative boundaries etc. Digital maps are capable of containing much more information than the ordinary maps used in class rooms.

Let's now install the marble software in your system and run the 'Marble' window in legend mode for accessing information. The Marble picture is shown in
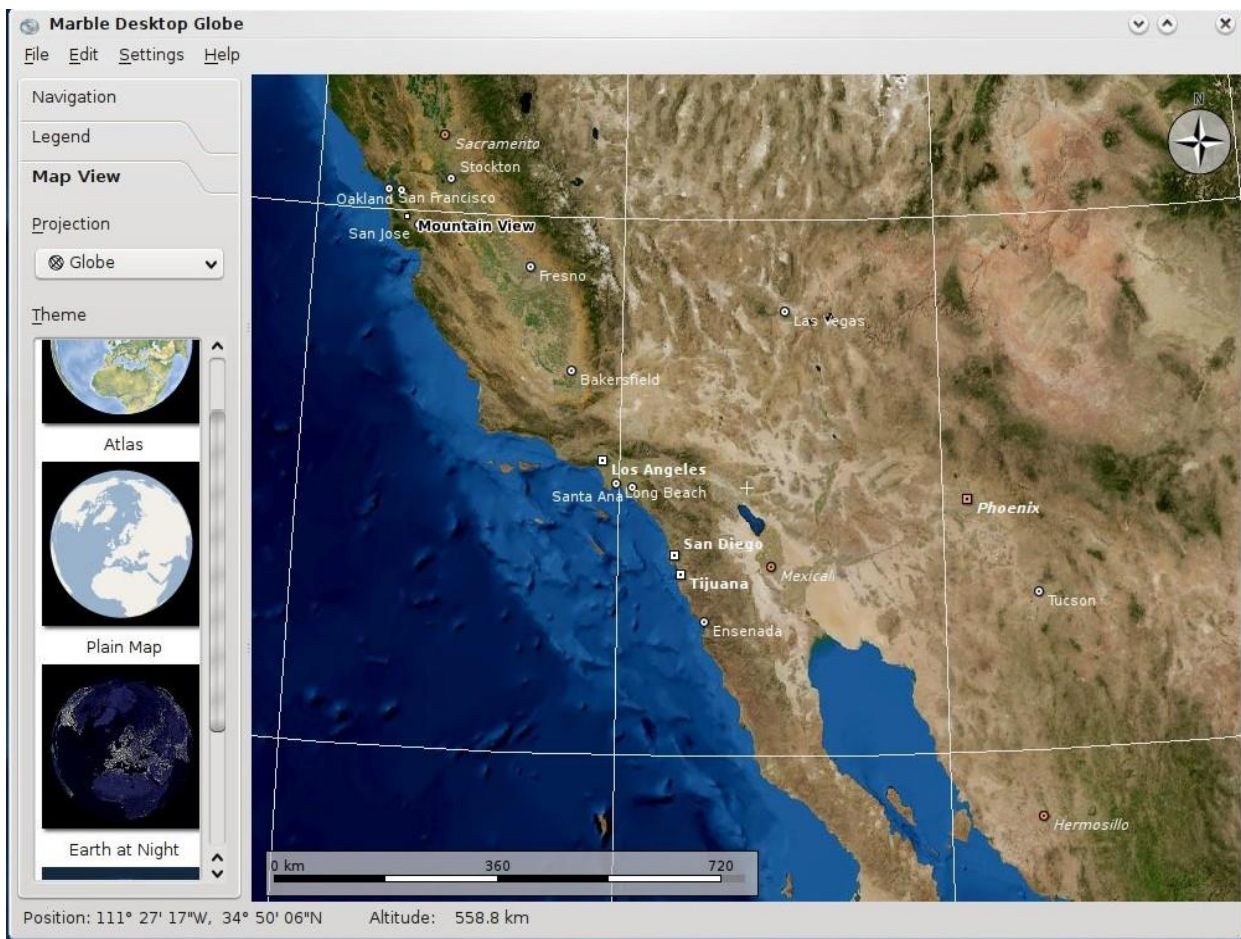
Watching the globe

Measuring Distance

Content of Maps

https://marble.kde.org/

Xrmap:

Xrmap is geographical software is used to find the cities, water bodies, Ice and glaciers, Relief, coordinates, Historical places. We know that maps are prepared in different scales. Open 'xrmap ' and see a map in a small scale or larger scale. Click on the red marks on the map and see the features available in the tool bar. Find out the use of these features by pressing 'Z' key. Mark your favorite places on online maps.

http://freecode.com/projects/xrmap/
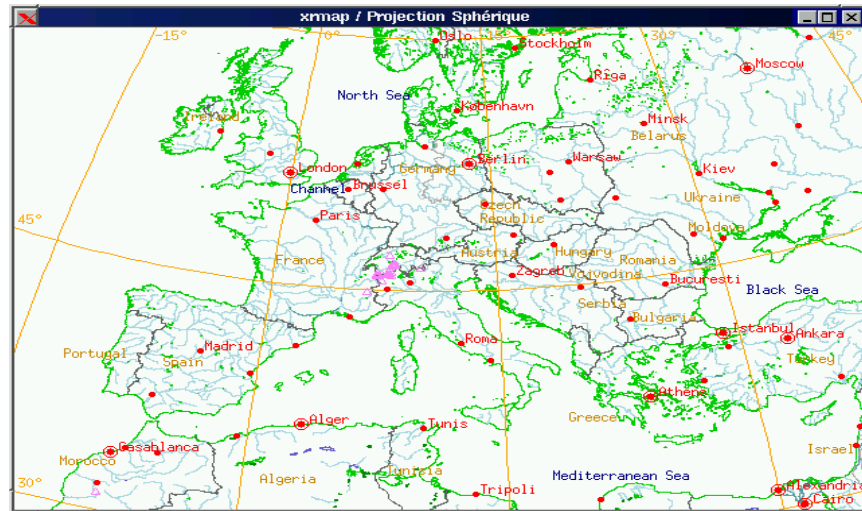
Kgeography:

KGeography is a free open source geography learning tool, which allows you to learn about the political divisions of some countries. (Divisions, capitals of those divisions of their associated flags)

https://edu.kde.org/kgeography/
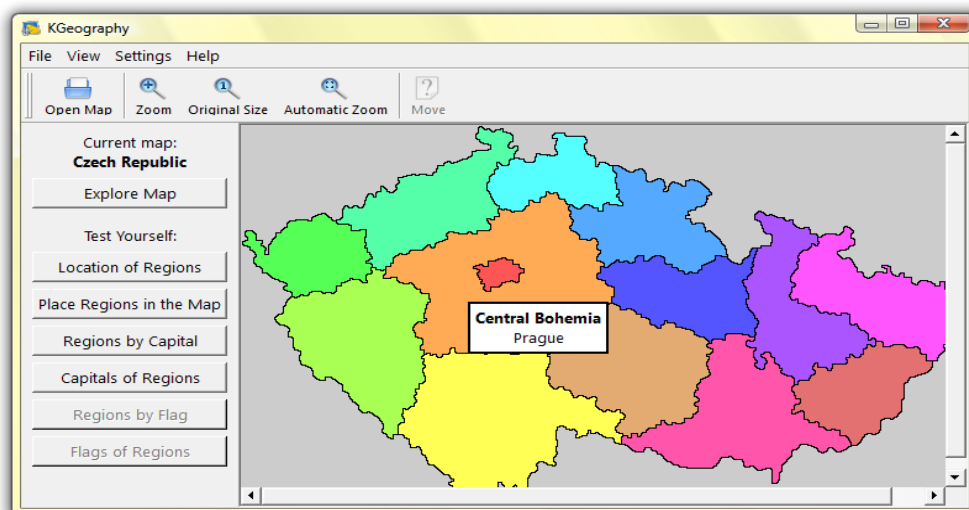
QGIS

Quantum GIS is free open source software application that helps us construct maps by arranging spatial themes in different layers. It is used to create, edit, visualize, analyze and publish geospatial information on Windows, Mac, Linux. BSD etc..

http://www.qgis.org
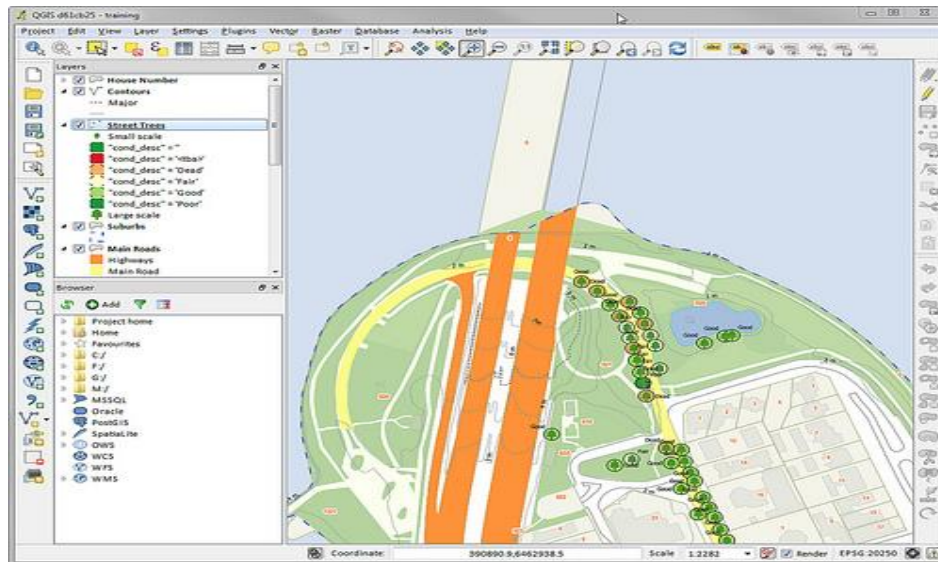
gvSIG

It is a geographic Information system (GIS), i.e a desktop application designed for capturing, storing, handling, analyzing and deploying any kind of referenced geographic information in order to solve complex management and planning problems.

http://www.gvsig.com/en
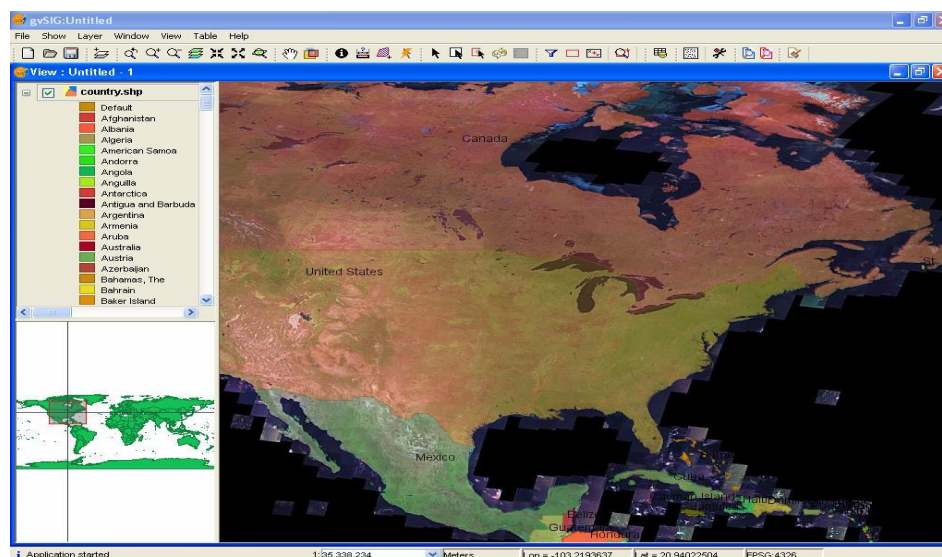
Create Your Colorful world

When we hear the word colour our minds think about picture. It may be drawn by hands or taken snaps through camera. These pictures are stored in picture formats such as .jpeg, .bmp, etc. There are two ways of recording pictures in a computer – either as Raster File or as Vector file.

Raster File:

Raster Files, the color of every point on the picture is recorded. The picture can be split-ed in the form of pixels. The quality of the printed picture will depend on the number of pixels within a given area. Usually, the size of the pictures is represented as dot per inch(dpi).By increasing the dpi we can enhance the clarity and beauty of the picture .For better print quality. We need pictures of higher dpi.

Vector File:

Vector file, It is only the color of lines and the coordinates of the end points that are recorded in the computer. When the picture appears the computer will interpret the coordinates of end points and interpolate to mark all the points that fall between. When the picture stored as vector file is enlarged new points get marked in the enlarged surface. As more points are added along with enlargement, the clarity of the picture remains. Vector files store pictures as geometric shapes such as lines, squares, circles and arcs.

GIMP:

GIMP is the acronym for GNU Image Manipulation Programme. It is a free software used for drawing, image editing, preparation of logos are stored in raster images composed of pixels. In order to open the software, go to 'Applications' menu, select 'Graphics', and click on the tab 'GIMP Image Editor'. It is an high end image editing software, and as as image format converter. It can be works on Windows and mac in addition to Linux operating system. The main window in GIMP appears with tools in it (Picture)

See the main window of GIMP software. Several tools that help us in drawing and painting are given there. The name of each tool can be displayed by bringing the mouse pointer over the tool. Try using the numbered tools in Picture.
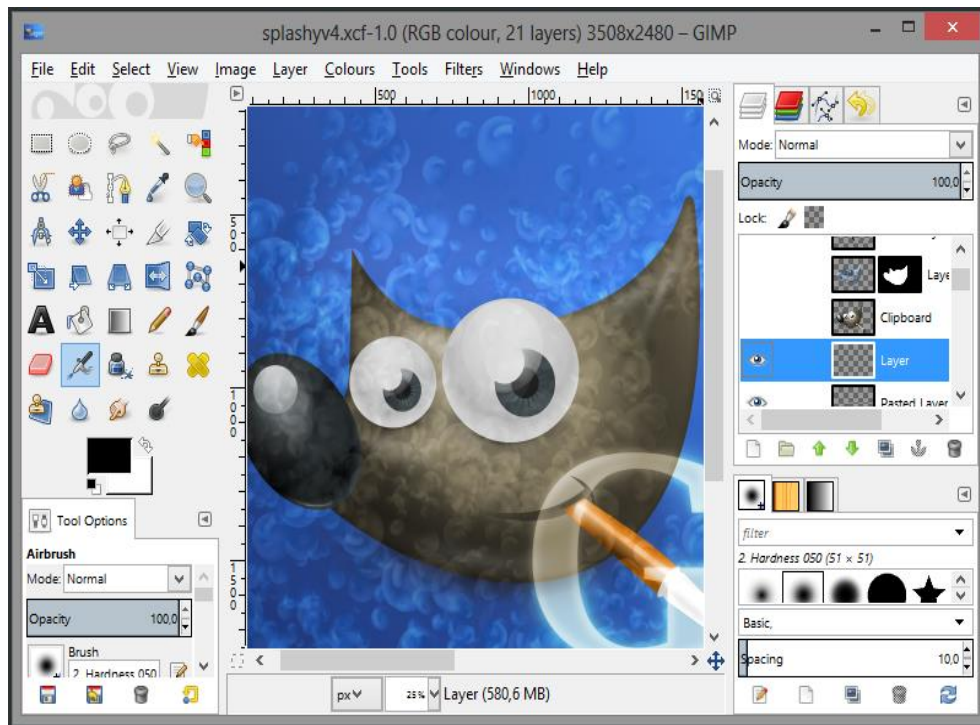
Ink scape:

Ink scape is a software application that is used for create ,edit the banner, posters, business cards etc. It is used to create the logo. The pictures are stored in vector file format.
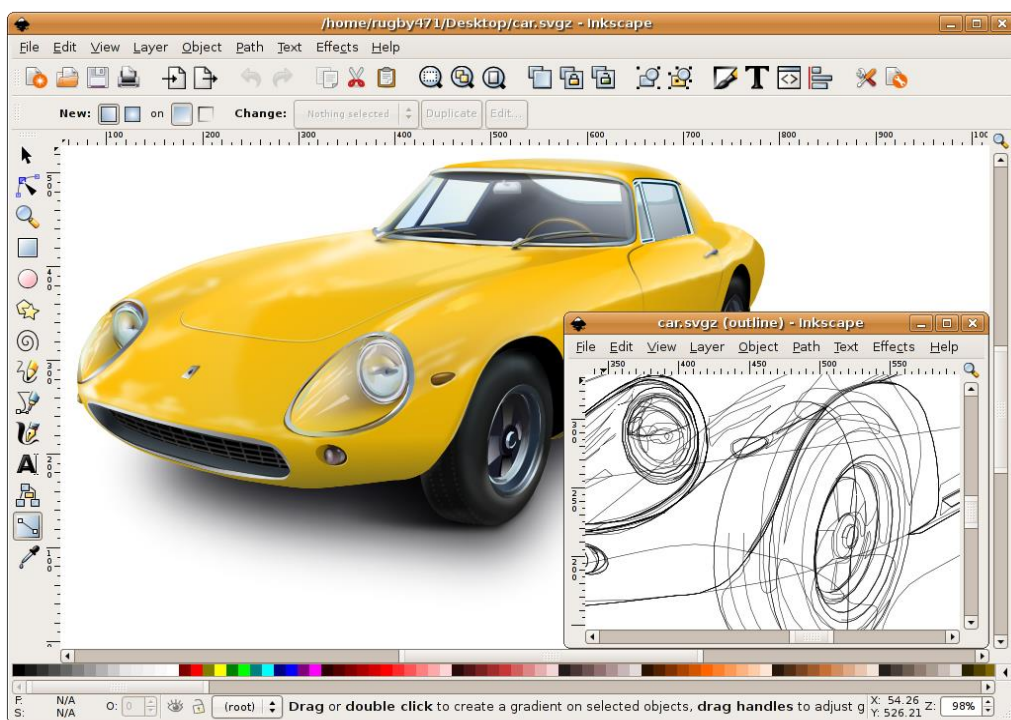
Open Office Draw:

      Open Office Draw is a software application is used to create the vector pictures. It is like Corel Draw, Adobe Illustrator. Using this software create posters and banner with interactive 3D text, font color and diagram. In Open office draw stores the pictures in vector format.
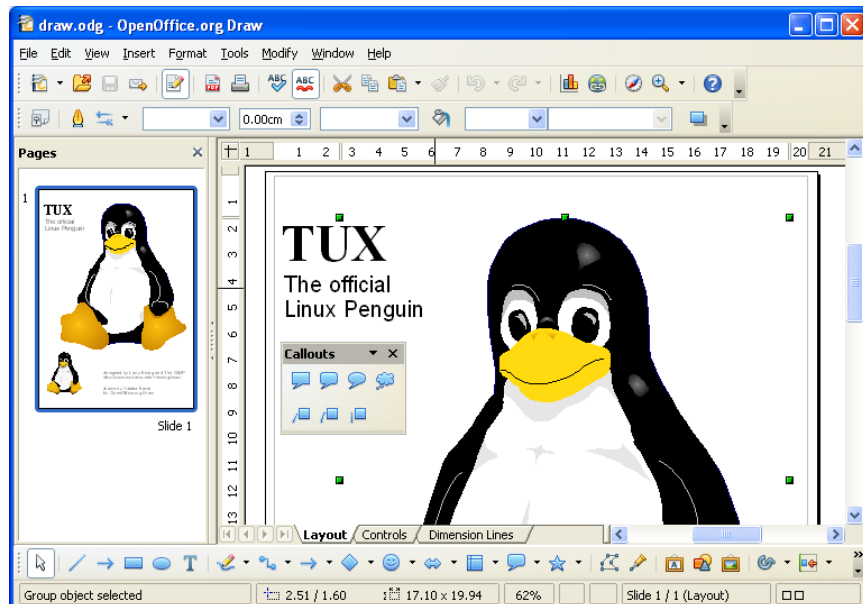
Krita

      Krita is free software and distributed under GNU General Public License. It is photo editing, digital painting and illustration software based on the KDE Platform. It explicitly supports are concept art, creation of comics and textures for rendering.

https://krita.org/

Sound Recording

Audacity:

Audacity is free software used for recording and editing sound in digital media. In addition to GNU/Linux version. Audacity is also available in versions that are compatible with BSD, Mac and Windows.

http://sourceforge.net/projects/audacity/

Rhythm Box

Rhythm box is music playing application of GNOME. It is designed to work well under GNOME. It helps to organize digital music.

https://wiki.gnome.org/Apps/Rhythmbox
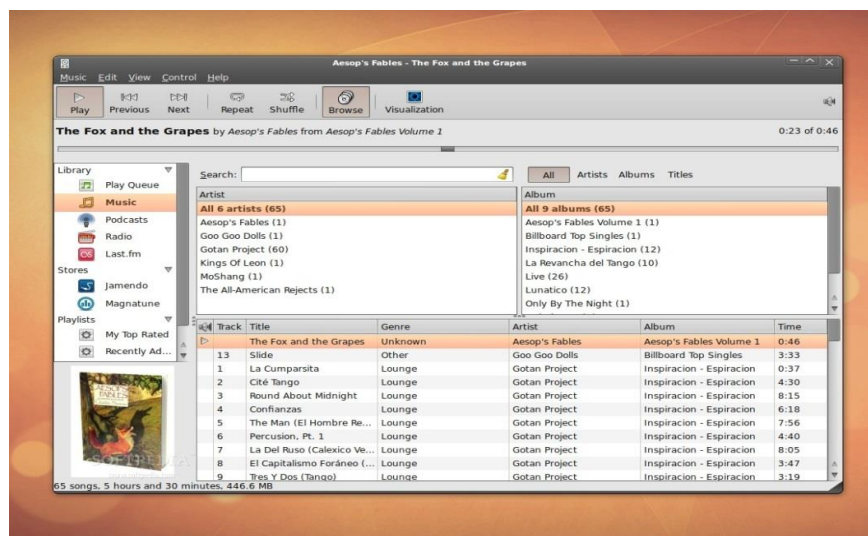
VLC Media Player

VLC Media Player is free open source cross-platform multimedia player and framework that plays most multimedia files as well as DVD, Audio CD, VCD and various streaming protocols.

http://vlc-media-player.en.softonic.com/

Xine:

Xine is media player. It plays backs CDs, DVDs, and VCDs. It also decodes multimedia files like AVI, MOV, WMV, and MP3 from local disk drives and displays multimedia streamed over the internet.

https://www.xine-project.org/home

Lights on, Camera, Action

Video editing is the process by which we arrange the motion pictures shot by a video camera into meaningful narratives by placing the sequences in the required order and removing unnecessary shots. There are video editing software that help us in this. This software help us to include dialogues, background scores, music titles etc., and convert the video sequences into complete films.

Open Shot Video Editor:

Open Shot Video Editor is free software has been developed using Python language. The specialty of editor is that it supports several video formats.

http://www.openshot.org/

Kdenlive

Kdenlive is an intuitive and powerful multi-track video editor, including most recent video technologies. Using Kdenlive is investing in a community driven project, which aims to establish relationships between people in order to build the best video tools.

https://kdenlive.org/
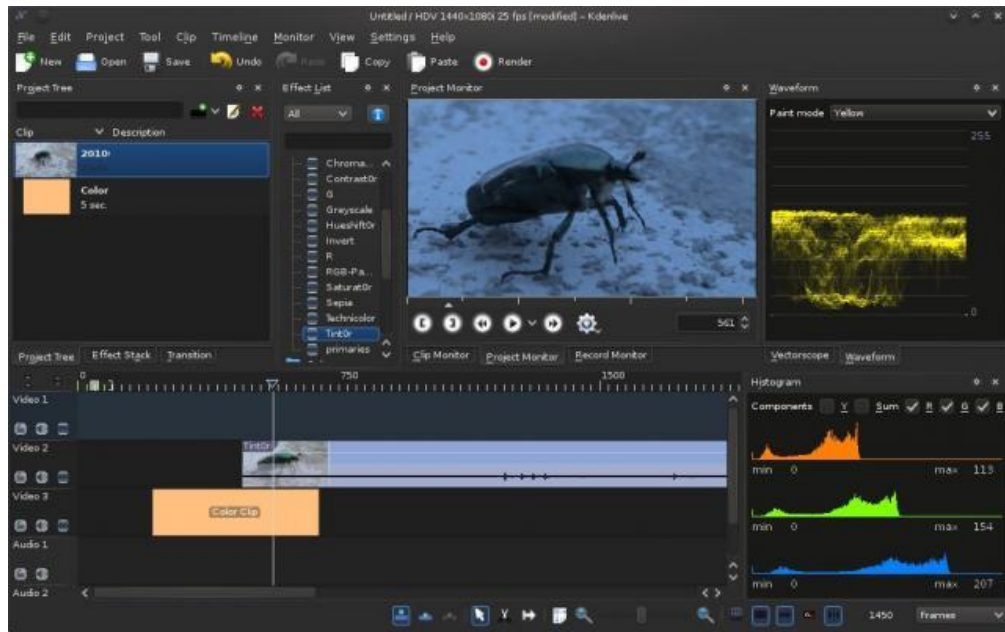
Pitivi Video:

Pitivi Video is a free and open source video editor for Linux

http://www.pitivi.org/
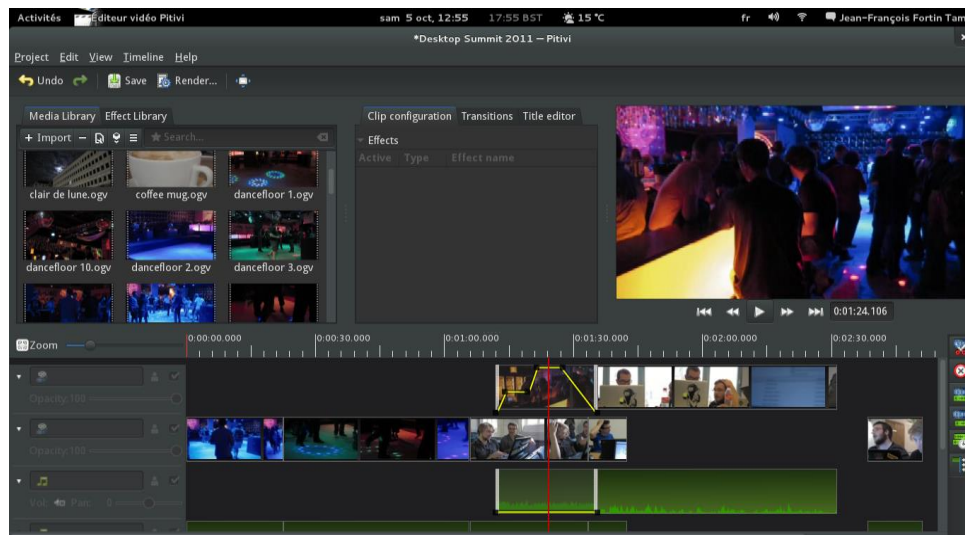
WinFF

     WinFF is software that helps us change the formats of sound and movie files quickly. This software, which can convert more than one file simultaneously, also supports a wide range of sound and movie formats.
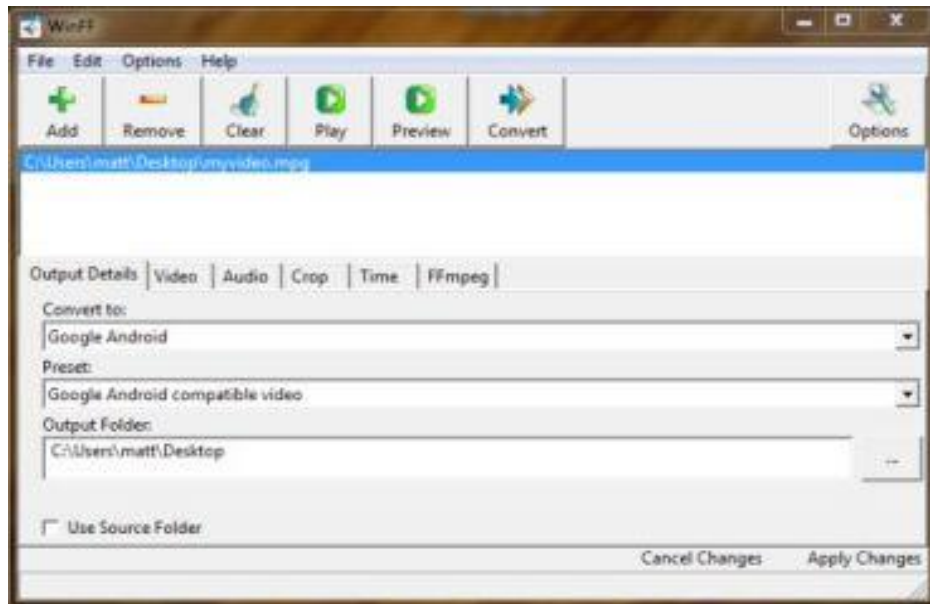
Avidemux

It is a free and open source video editing program designed for video editing and video processing.
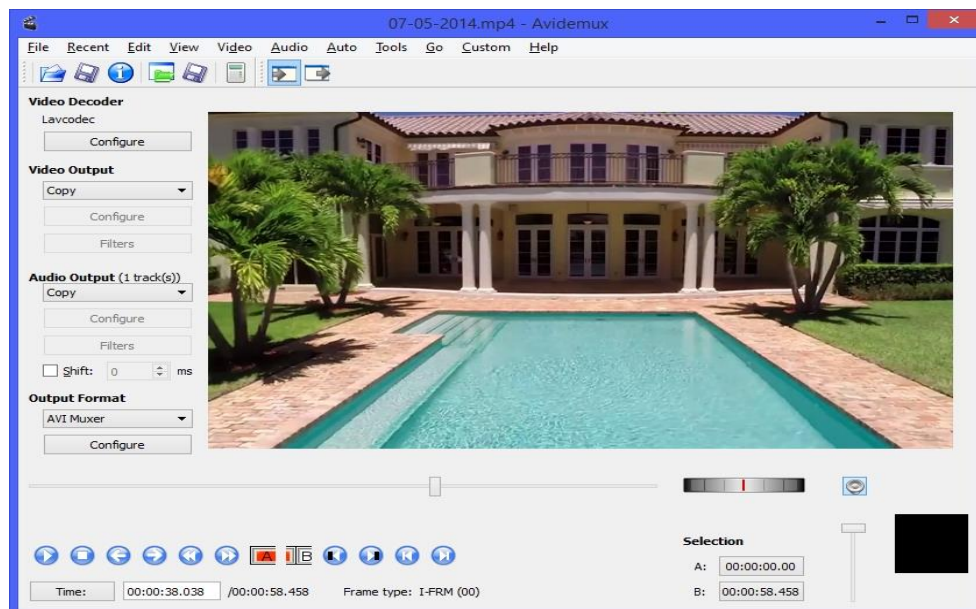
Code for Real World Problems

Alice

It provides a 3D object oriented programming environment designed by Programming Systems Lab. It is used to create an animation for telling a story, playing interactive game, or a video to share on the web.

http://www.alice.org/

Scartch

It is a new programming language used to create your own interactive stories, games, music, art and share your creations on the web. It helps young people learn to think creatively reason systematically and work collaboratively.

https://scratch.mit.edu
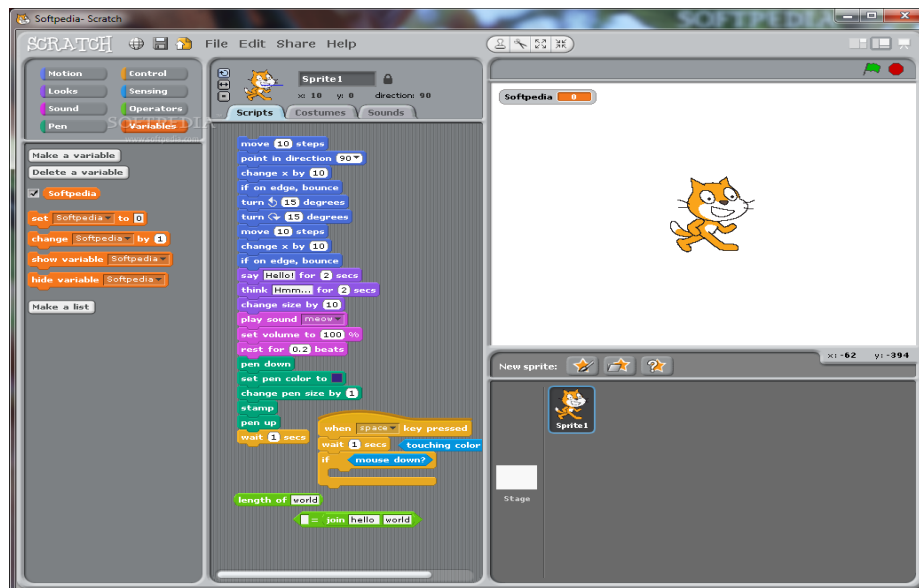
StarLogo TNG

It is a client based modeling & simulation software designed in MIT Media Lab. It facilities to creation & understanding of simulations of complex systems.

http://education.mit.edu/starlogo-tng/
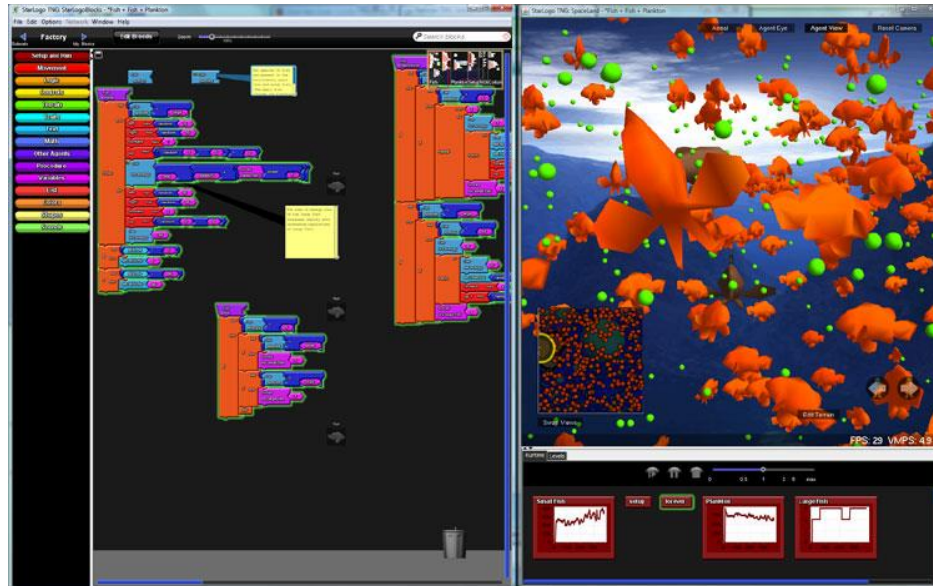
DrPython

DrPython is highly customizable editor /environment for python. It is an in interactive , integrated & graphical environment to learn python. Drscheme is inspiration to develop the DrPython.

http://drpython.sourceforge.net/
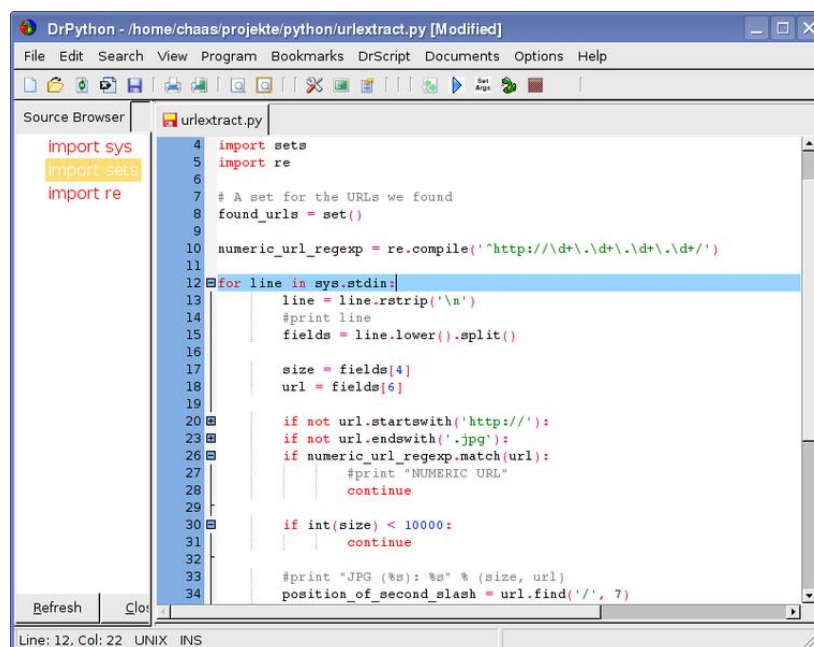
Squeak

It is an open source small talk -80 based Object Oriented programming language. It provides fast execution in all major platforms. It uses Self's graphical direct manipulation interface framework.

http://squeak.org/
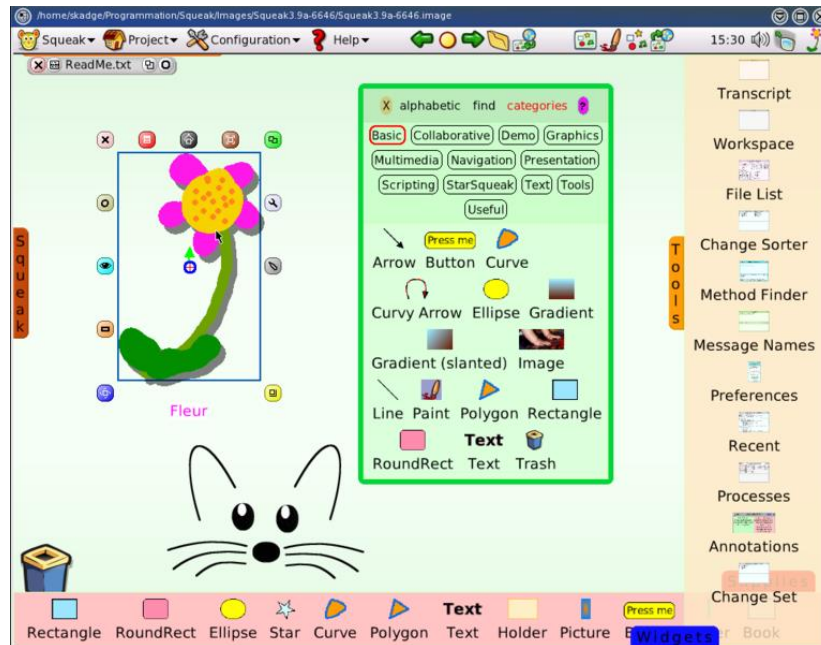
Net Beans

Netbeans is software development platform fully written in java. It provide Integrated Development environment(IDE) for both graphical and web applications.

https://netbeans.org/
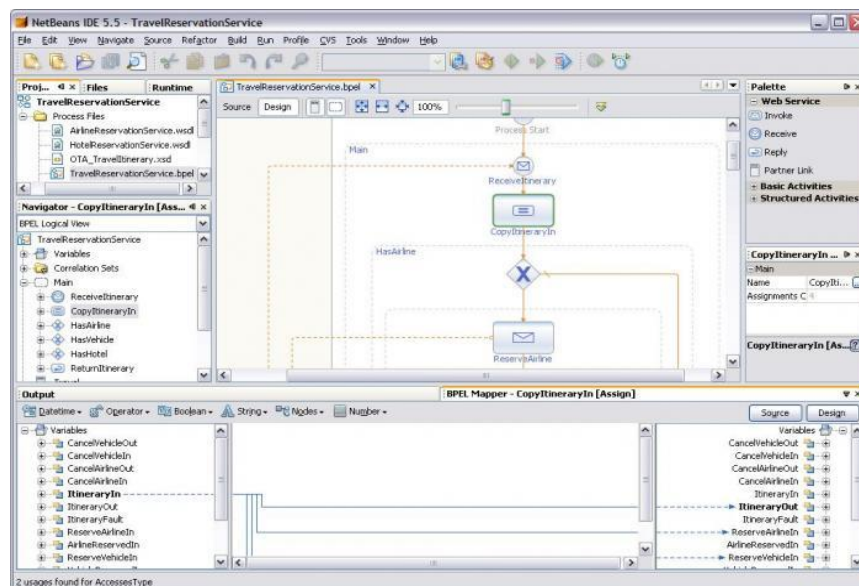
phpMyAdmin

It is a tool written in PHP intended to handle the administration of MYSQL, over the web. It supports wide range of operations on MYSQL, MariaDB and Drizzle. Frequently used operations (managing databases, tables, columns, relations, indexes, users, permissions, etc) can be performed via the user interface.

https://www.phpmyadmin.net/
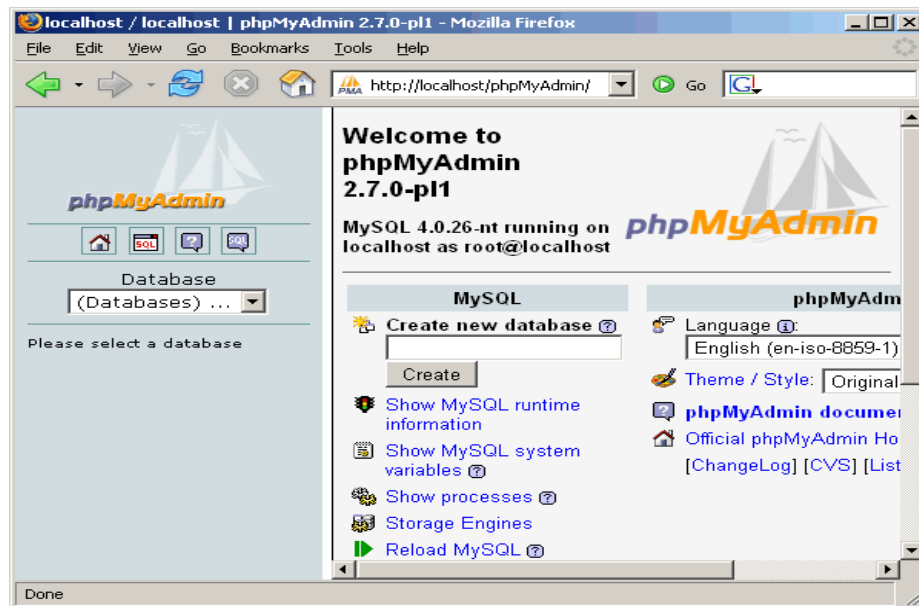
Code Lite

  It is a free and open source cross platform for IDE specialized in C,C++,PHP JavaScript programming languages which runs best on all major Platforms (OSX, Windows and Linux).
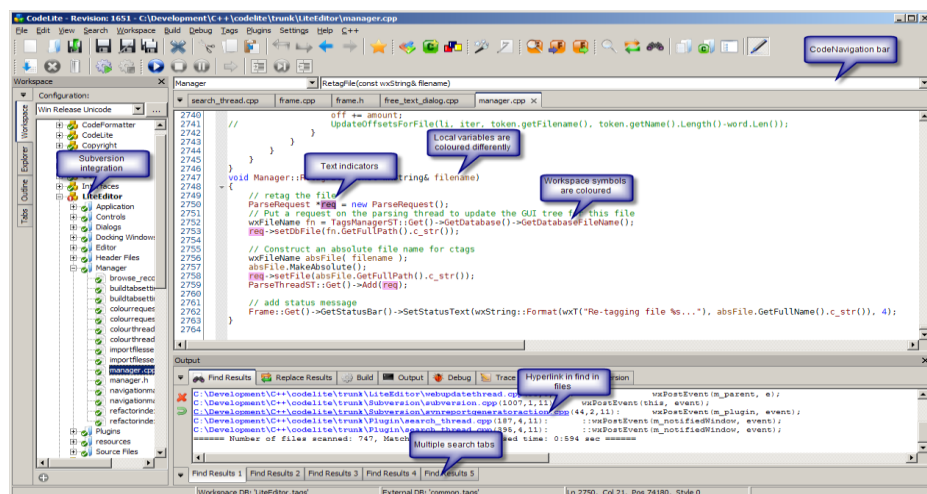
www.codelite.org

Educational Games

Freeciv – Competitive Resource Planning Games

It is a multiuser reimplementation Civilization. Multiuser gameplay is real-time: in each turn, all human players move concurrently. The game is designed to remain fairly playable even on poor network connections.

https://play.freeciv.org/

GL-117 – 3D Fighter Simulation

GL-117 is an action flight simulator for Linux/Unix and MSWindows. Enter the Eagle Squadron and succeed in several challanging missions leading though different landscapes.

http://www.heptargon.de/gl-117/gl-117.html

Foodforce – Resource Management

Food Force II is an open source educative game whose objective is to teach children that how they can manage resources in their villages. It educates children and teachers in a village on how to achieve self-sustenance in a fun and non-intrusive way.

https://code.google.com/p/foodforce/

Flightgear – High Quality Open Flight Simulator
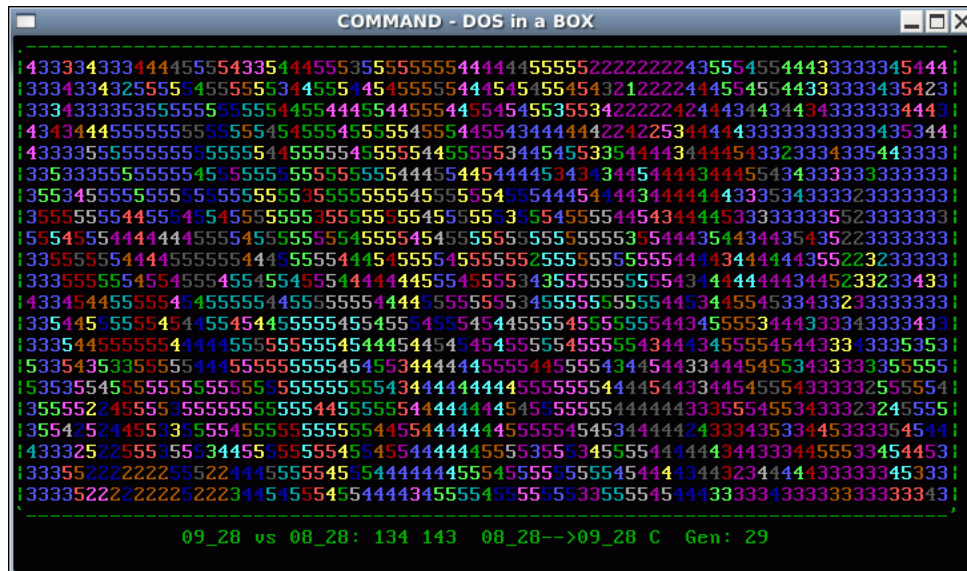
It is a a free, open source, multi- platform, cooperative flight sim development project. It is working to create a sophisticated flight simulator framework for the development and pursuit of interesting flight simulator ideas.

http://www.flightgear.org/

Core Wars -Machine Code Warriors

Core Wars is a *programming game* in which two or more programs run in a simulated computer with the goal of terminating every other program and surviving as long as possible. Known as *Warriors*, these programs are are written in an assembly language called *Redcode*.

RealTimeBattle – Fun Software Development

RealTimeBattle is a programming game, in which robots controlled by programs are fighting each other. The goal is to destroy the enemies, using the radar to examine the environment and the cannon to shoot.

Computer Infrastructure

Snort

It is lightweight intrusion detection & prevention system utilizing a rule driven language, which combines the benefits of signature, protocol and anomaly based inspection methods.

https://www.snort.org/

ModSecurity

It is an intrusion detection & prevention engine for web applications. It supplies an array of request filtering and other security features to the Apache HTTP Server, IIS and NGINX.


https://www.modsecurity.org/
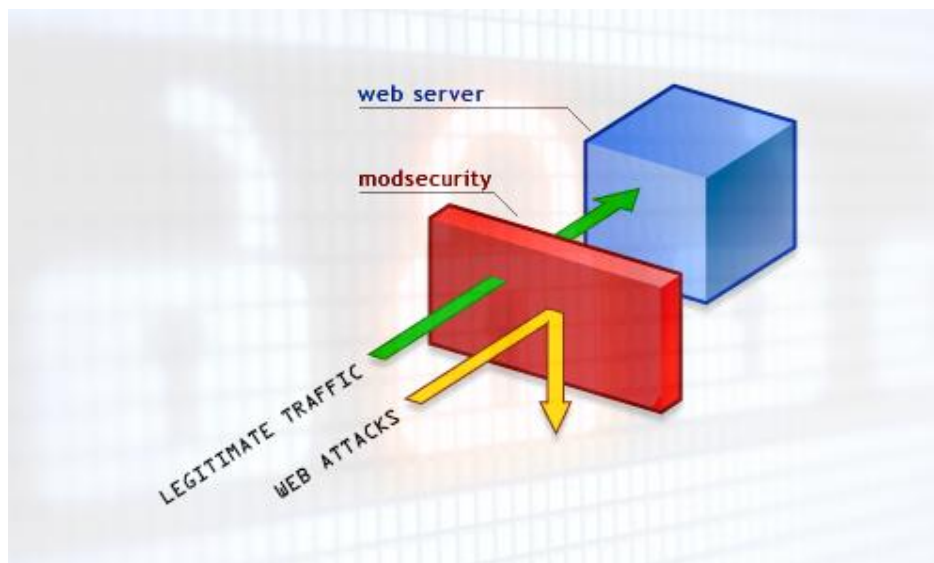
PyKota

It is Free Print Quota Software, meaning that in addition to print accounting , you can enforce restrictions on print usage. The software is distributed by Free Software Foundation.

http://www.pykota.com/
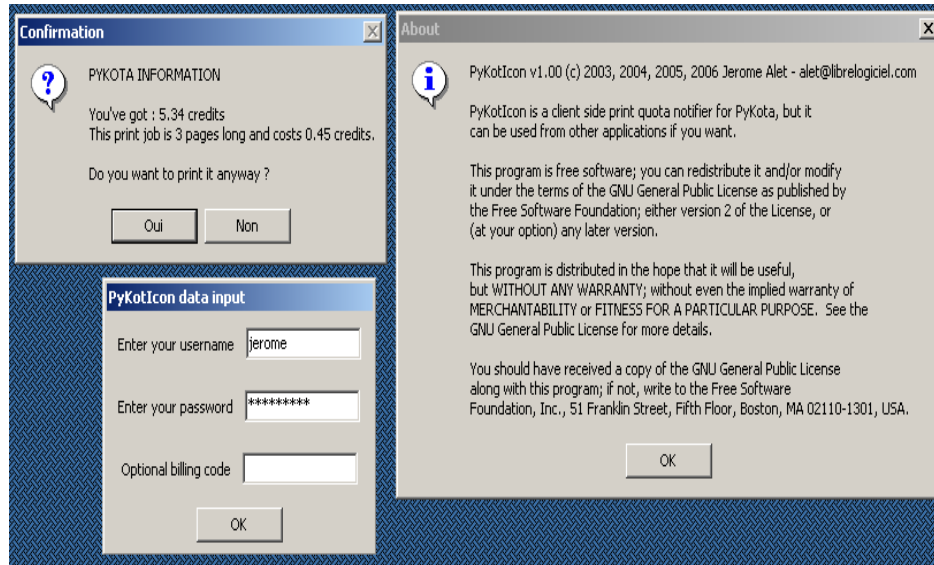
Smoothwall

It is a internet security software package(based on LINUX) offering automated modem/advanced ISDN autoprobing, ethernet ADSL/cable, USB ADSL, and multiple ethernet card support within 5 minutes of install.


http://www.smoothwall.org/
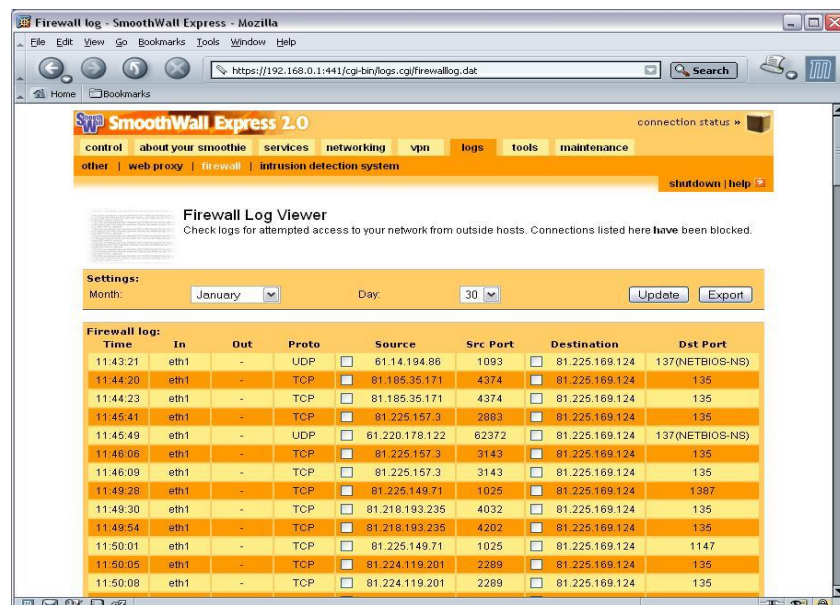
Open Hardware Tools

Open Source Hardware (OSH) consists of physical artifacts (schema) of technology and offered by the open design movement. Hardware design (i.e. mechanical drawings, schematics, bills of materials, PCB layout data etc..), in addition to the software that drives the hardware, are all released under free/libre terms. Here some of electronics and robotics classroom toolkits to beginners.

Hummingbird Duo

  It is electronic classroom toolkit for ages 10 to 100. It is used make and program robots, animatronics, and more than with Hummingbird Duo. Duo grows with your abilities, the sky is limit. It works in Linux, Windows and Mac Os with wide range of different programming environments and languages .
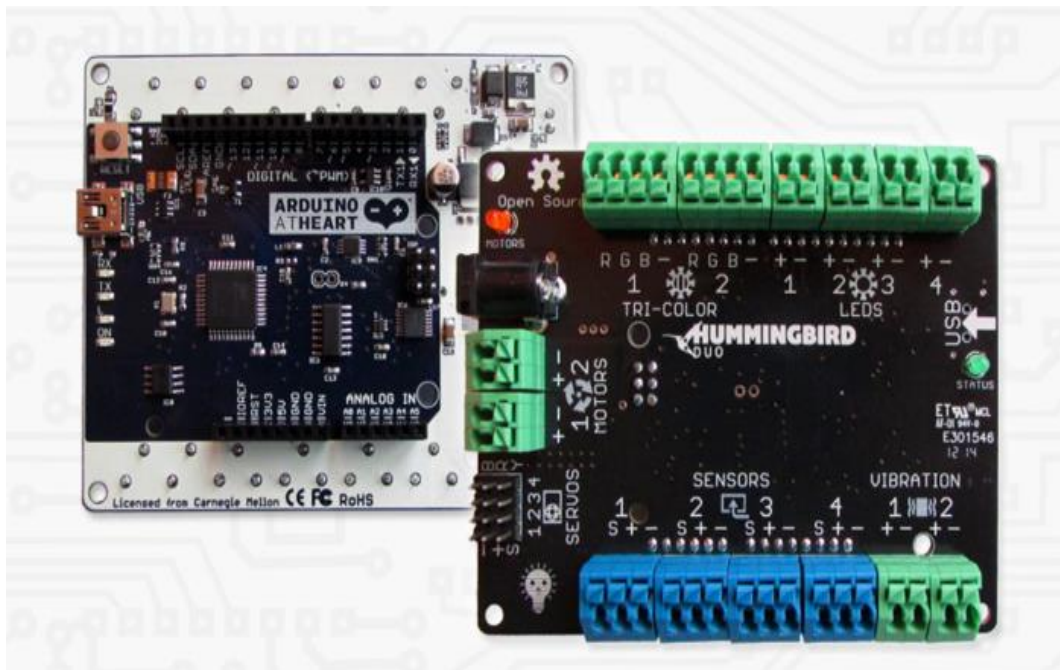

CREATE Lab

 It is programming environment provides you to make visual programming . It uses a story-board approach to programming that is quick and easy to learn. The interface allows you to rapidly create expressions by selecting outputs and setting them on or off. Once several expressions have been built, you can create a **sequence** that uses these expressions to make a program.

Ardublock

It is a block based graphical programming environment to make programming physical computing with Arduino as easy as drag and drop it. Those who have experience using Scratch 2.0 or Snap! With Hummingbird will find may of Ardublock's Programming structures familiar.
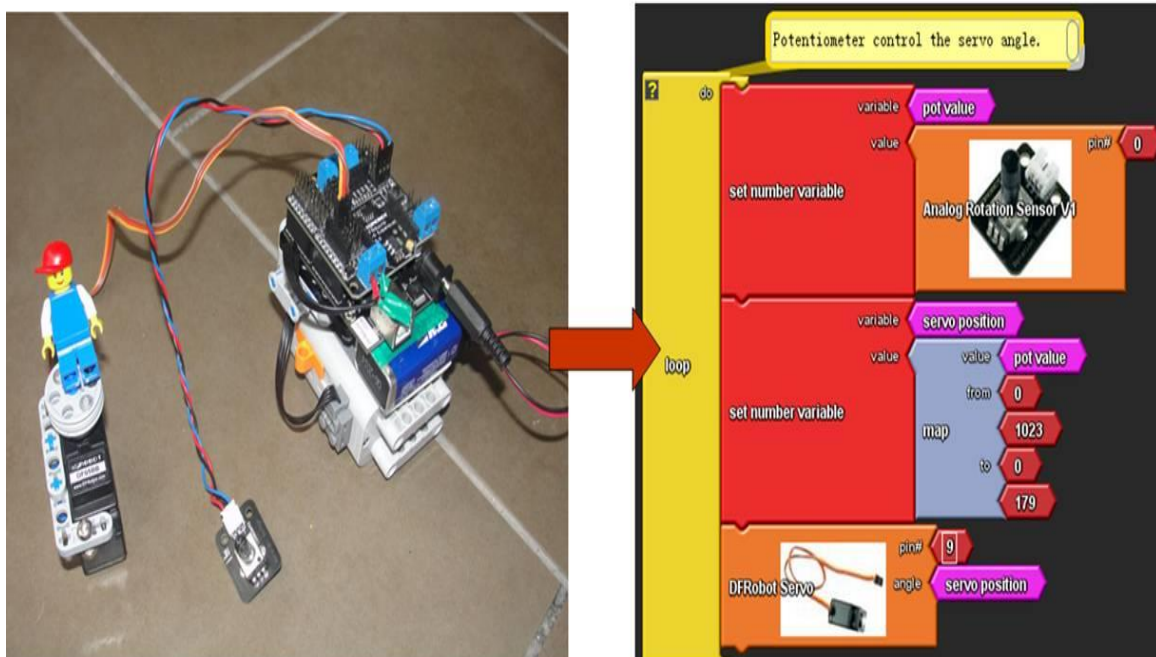
Snap!

It is a free browser based drag-and-drop programming language. It is an extended reimplementation of Scratch . It also features first class lists, first class procedures, and continuations. These added capabilities make it suitable for a serious introduction to computer science for high school or college students.


http://snap.berkeley.edu/
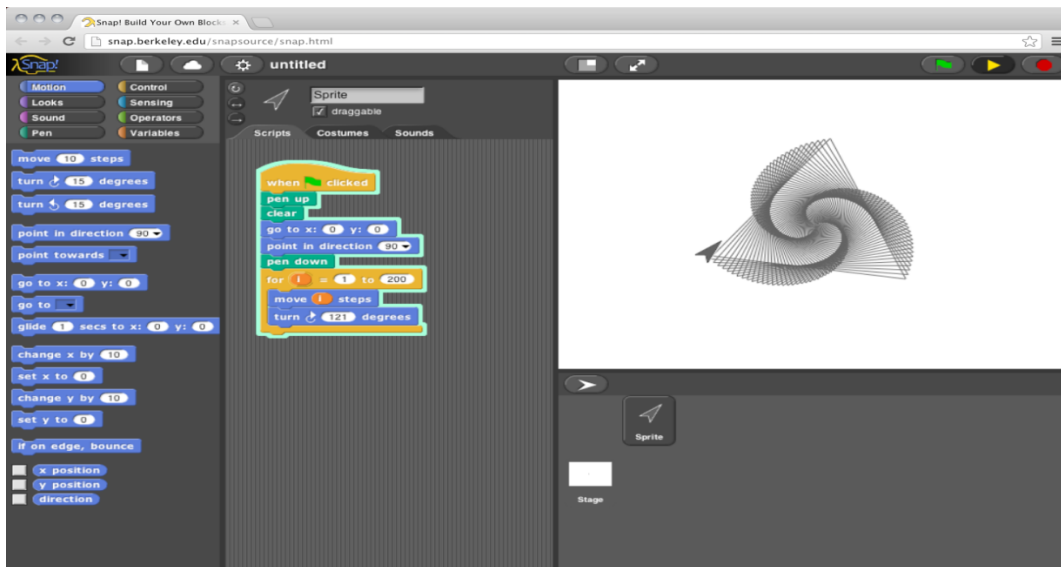
Littlebits

 It is easy to use electronic building blocks that empower students to understand the world around them and create inventions that transform it. It puts the power of electronics in the hands of everyone. Make your own electronic creations with no soldering, wiring or programming required.

http://littlebits.cc/
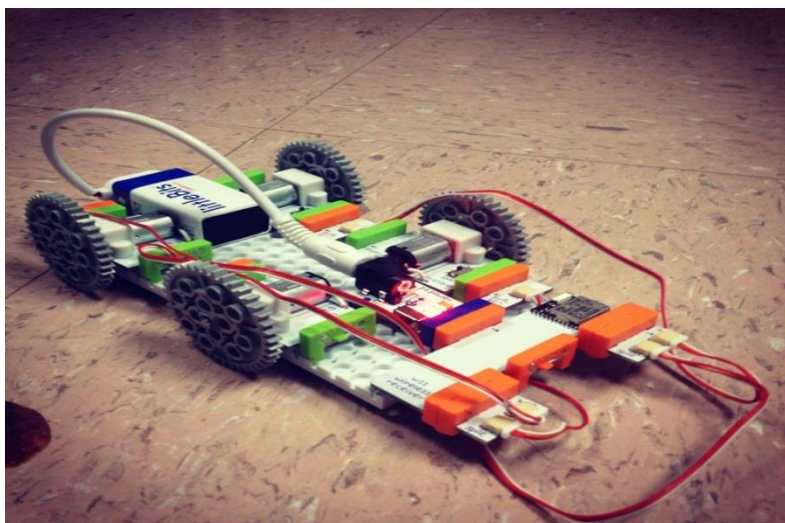
Arduino

It is an electronic board for building digital devices and interactive objects that can sense and control the physical world. It aims to provide an inexpensive and easy way for novices and professional to create devices that interact with their environment using sensors and actuators. Common examples of such devices intended for beginner hobbyist include simple robots, thermostats and motion detectors

https://blog.arduino.cc/
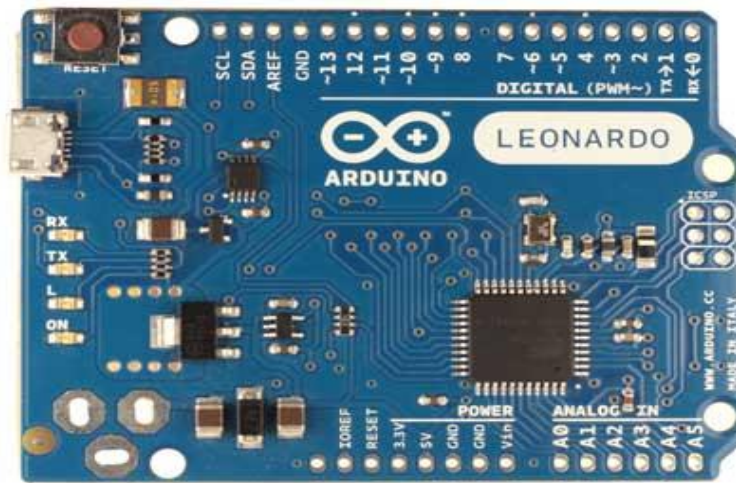
BeagleBone Board

It is a low cost ,credit card sized development board from BeagleBoard.org . It is used for students who wants to do something interesting in real time problems. It is open hardware and software development platform allows everyone from electronic artists to engineers to access a ready –to-use.


http://beagleboard.org/

Make Your 3D Movie

Animation is the process of creating the impression of a motion picture by continuous and speedy exhibition of two or three dimensional pictures. Once we finish watching a picture, its impression remains in our visual fields for one-sixteenth of a second. Animation technology is based on this phenomenon called Persistence of Vision.

Blender:

Blender is open source 3D animation software. It helps us make 3D animation film.   Big Buck Bunny, Spider man 2, The Secret of Kells, Elephant's Dream, Sintel, Friday or Another Day are important animation films made using blender. These films, which gained global recognition is testimony to the unlimited potential of free and open software.

https://www.blender.org/
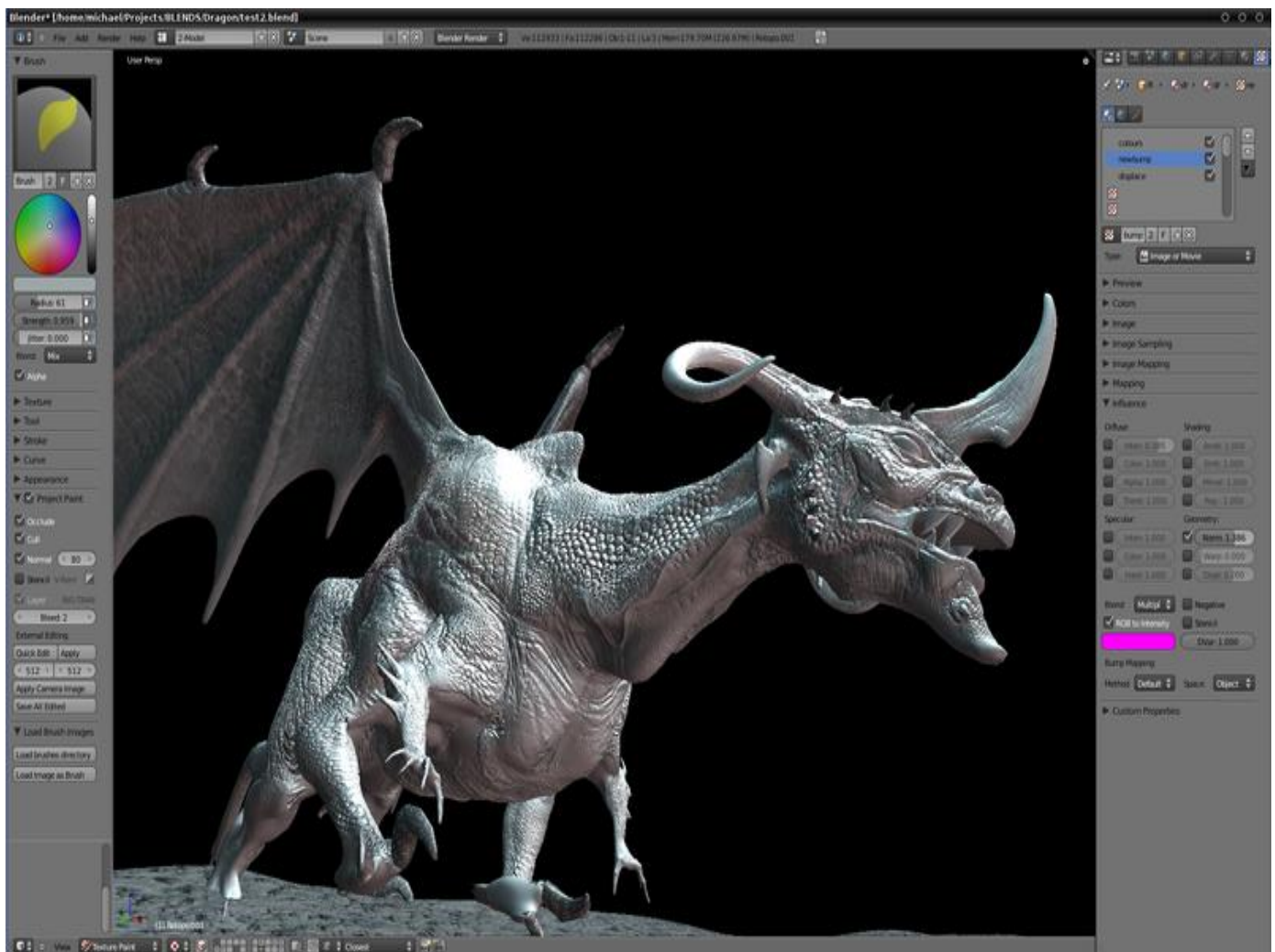
Draw SWF:

Draw SWF is an animation tool meant to facilitate small movements. This is a simple drawing application written in java. It generates animated SWF Files, which redraws everything you have drawn with the mouse in the editor.
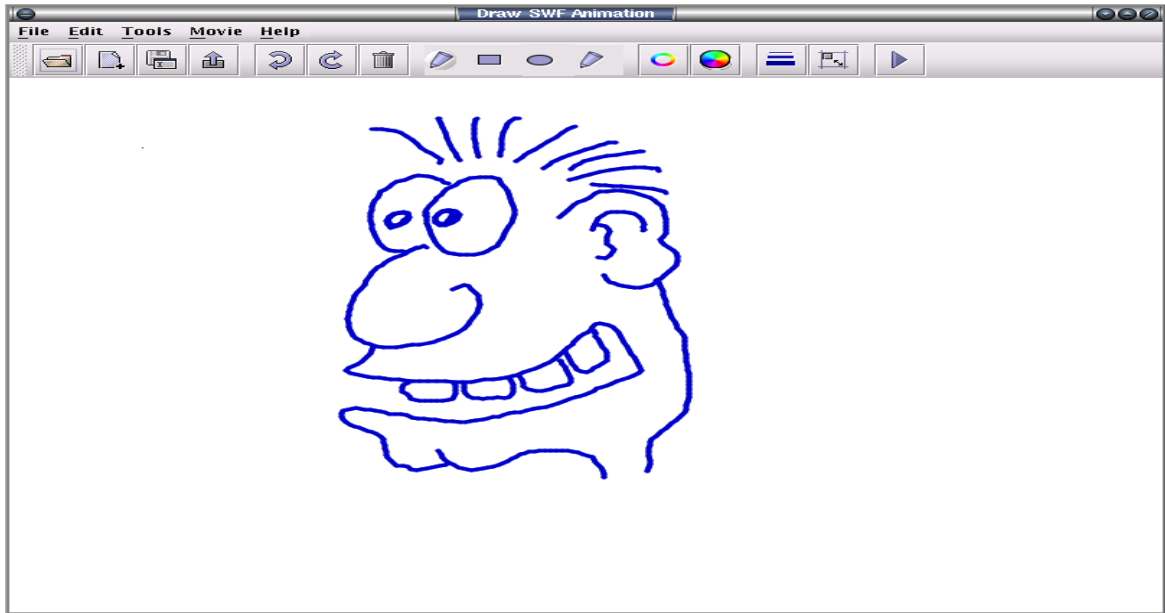
www.drawswf.sourceforge.net

Luciole

Luciole is stop motion software for animation movie realization. It can make live capture of figures from external devices as webcam or DVD cam. It is distributed under GPL license.
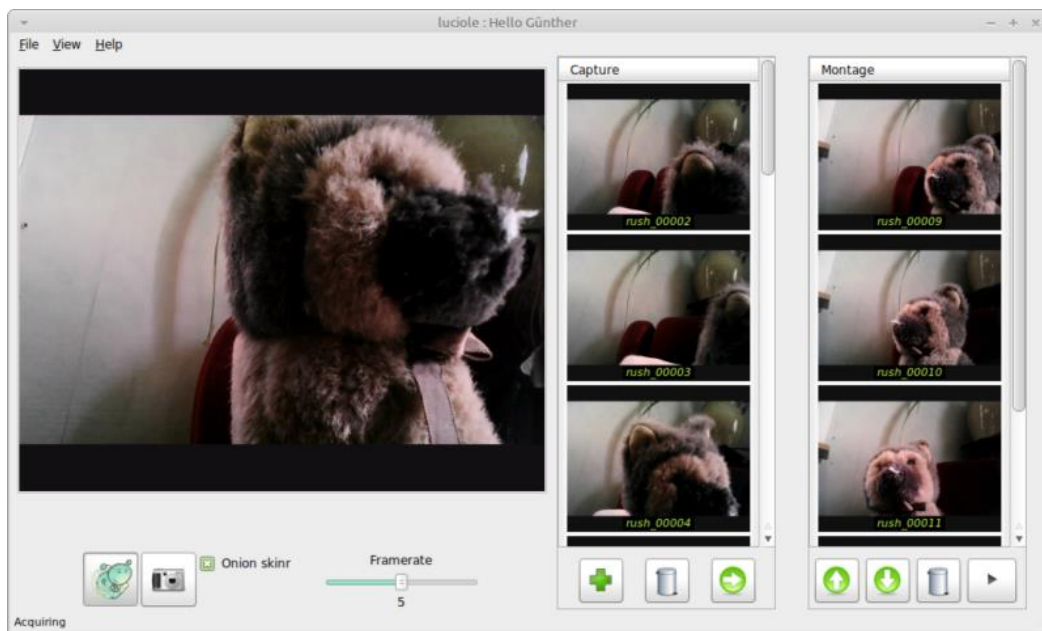
Pencil

Pencil is animation/drawing software. It is used to create traditional hand drawn animation (cartoon) using bitmap and vector graphics.
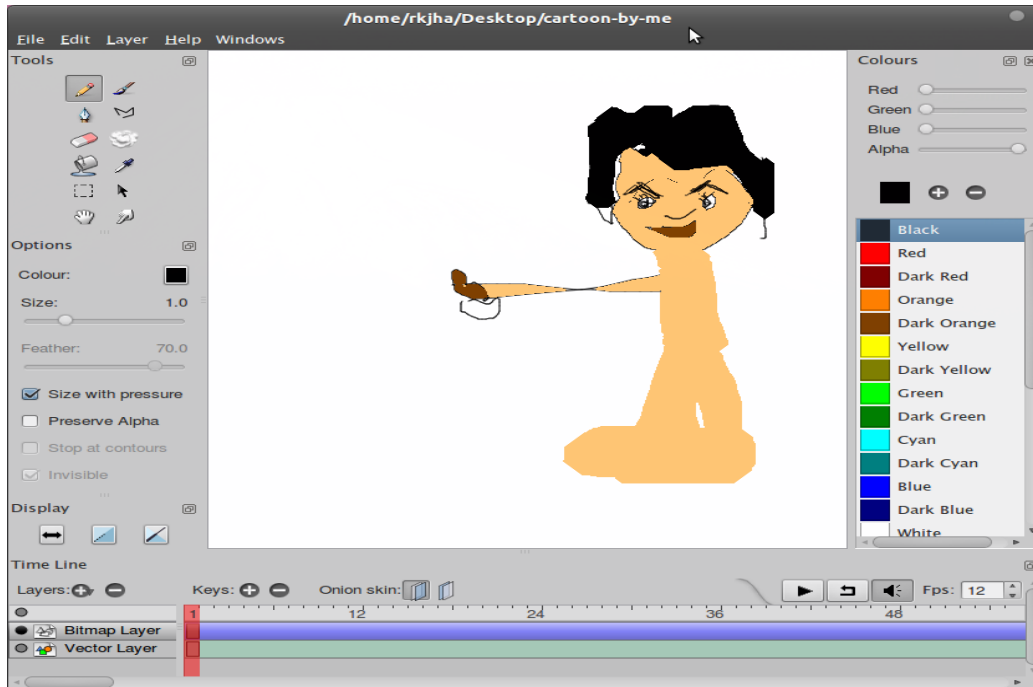
Tupi

Tupi formely (KToon) designing and authoring tool for digital artists interested in 2D Animation, offering an interface experience focused on 8-100 years old kids.
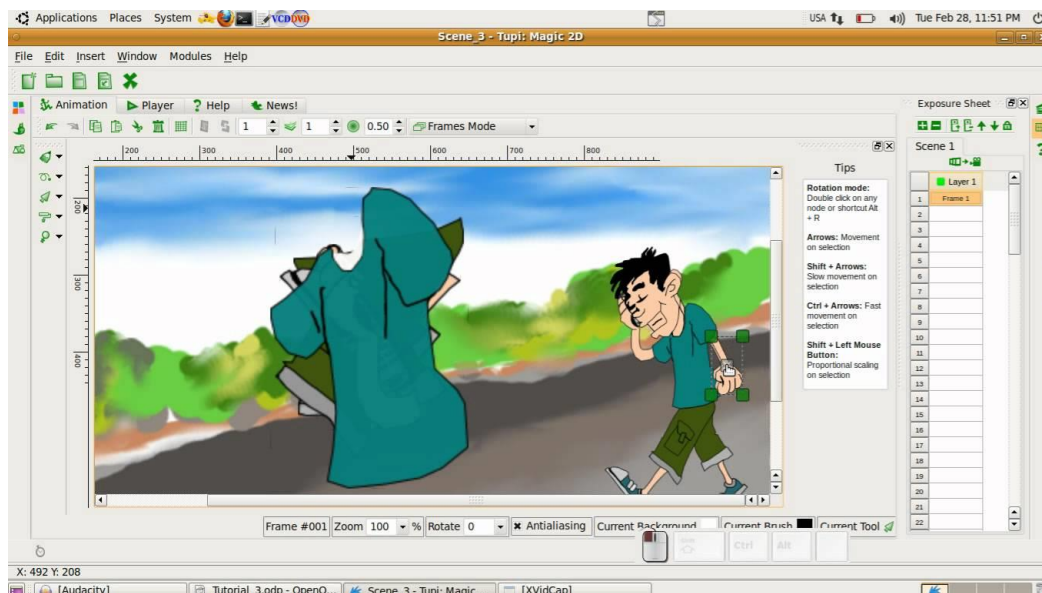
Dia

It is a free & open source diagram editor or CASE tool scripted using python language . It is used to draw flow charts, network diagrams and database models. It can read and write a number of raster and vector image formats. It supports cross platform.
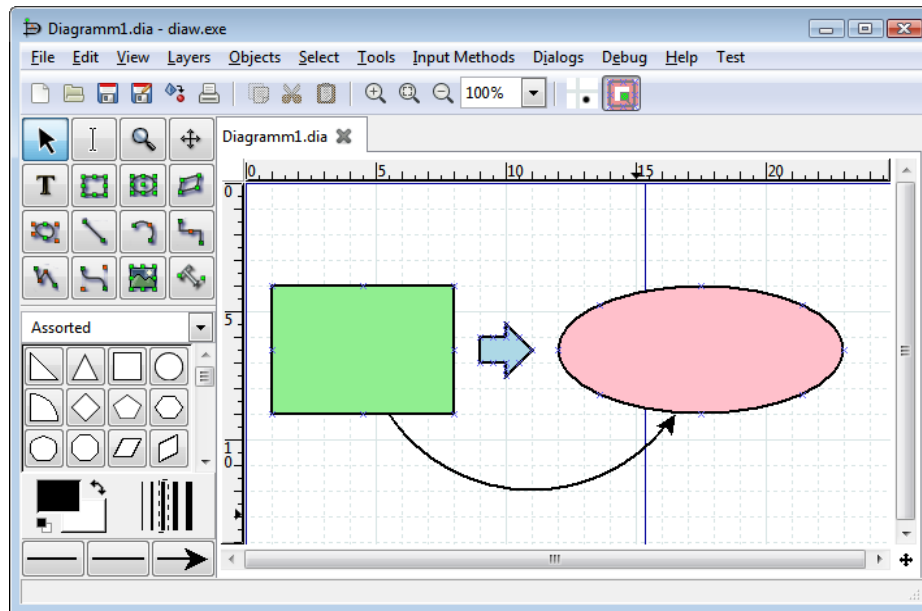
Synfig

Synfig Studio (also known as **Synfig**) is a free and open-source 2D animation software, designed as powerful industrial- strength solution for creating film –quality animation using a vector and bitmap artwork.

\http://www.synfig.org/
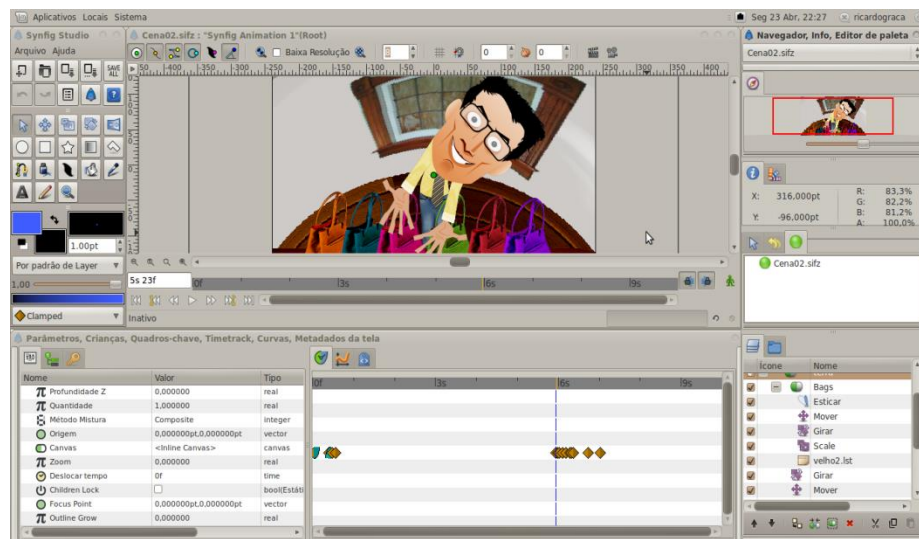
Computer Network

Network:

A Network is collection of interconnected devices.

Do you think single computer is connected with the network? Yes, single computer is also connected with the network.

How it is possible?

Let's see your computer devices such as Monitor, Keyboard, Mouse, Printer is connected with CPU is connected with UPS (Universal Power supply). It is also Network.

CPU gets instructions through keyboard, mouse or joystick. The Processor performing the task and finally give the output to the user through monitor,printer…. It is group of devices processing particular job via network.

Network Architecture

In communications, Data is transferred either in parallel or serial.

Parallel

Parallel communication is faster but requires more wires.

Serial

Serial communication is slower but requires fewer wires. Serial is more practical for communications with remote sites, and the existing telephone networks use serial communication link to various locations by the use of modems.

Types of Network

Network can be classified into different types such as Local Area Network(LAN), Wide Area Network (WAN), Metropolitan Area Network(MAN), Virtual Private Network (VPN)etc..

Local Area Network

Networks used to interconnect computers in a single room, rooms within buildings are normally called Local Area Network. LANs normally transmit data in a digital form with typical transmission

speeds of up to several megabytes per second. The computer network in your school lab is an example of LAN.

Wide Area Network

WAN are networks that connect computers over a very large area. The computer networks that connect computers over a very large area. The computer networks used by banks to connect their branches and ATM's and the all India tickets reservation system of the Indian Railways are examples of WAN.

Metropolitan Area Network

Metropolitan Area Network has wider geographical reaches than LAN. While MAN usually spans over a city, the reach of a WAN extends over one or more countries and possibly the whole world.

Virtual Private Network

A VPN is a private network that uses a public network (usually the Internet) to connect remote sites or users together. The VPN uses "virtual" connections routed through the Internet from the business's private network to the remote site or employee. By using a VPN, businesses ensure security -- anyone intercepting the encrypted data can't read it.

Internet:

Internet = Inter + Network

A collection of interconnected global network. Internet is used to share the information from one to another.

For example your class teacher assign project. Then, you're doing the projects in computer at school. Whenever you want you can open them, use them, and modify them if needed. It would be convenient if your friends can see your documents and pictures on their computers and help you in editing or improving them. Being able to share information across computer would be a major advantage while working on common assignment.

Ethernet:

Ethernet is to connect to two or more LAN for sharing data, program and equipment resources. It has higher data transmission rate of million bits per second.

Extranet:

An extranet is a computer network that allows controlled access from outside of an organization's intranet.

Intranet:

Intranet - Intra+ Network

Intranet is network connected within the private organization or company. This is used share the resources, programs and other confident information via these network

Web Client/Browser:

Browser is interface between user and the Internet. It is used to send the request to the server. eg. http://www.mozilla.org in the address bar.

Eg. Mozilla Firefox

Google chrome

Isewessel

Tor Browser

The user sends the request http://www.mozilla.org to the server.

Web Server:

The Web server response to the browser based on the request (http://www.mozilla.org) and retrieve the information from the database server.

Database Server:

Database server is otherwise called as back-end server. The database server
Receive the request,
Process the query
Retrieve the information.

Then, retrieved information send it back to the web server. Eg. (Open office Base, MySQL etc..)

An Internet – Medium of Expression

E-mail:

An **Electronic** mail is the most widely used tool to send messages using both computer and communication technology.

Search Engine:

Search Engine helps you to find information even if you do no know the exact address of the web sites. It is collection of websites. Some of the important search engines are

www.google.com

www.duckduckgo.com

www.baidu.com

www.altavista.com

www.wikipedia.org

Web sites:

It is collection of web pages.

eg. – Website contains information about particular organization or company. It contains several web pages such as home, about, contact etc..(eg. Www.fsf.org)

Web pages:

Web pages contain information related to that websites. Each Page can be created using HTML and other scripting languages.

Difference between search engine and websites.

Search engine – collection of websites (eg. www.duckduckgo.com is search engine. It shows several websites based on user request)

Websites – collection of web pages (eg. www.fsmi.org is called websites. It shows only particular information about the site.

Domain Name

It provides physical location on which several Virtual Domains can be hosted. Domain name is given by Internet Assigned Names & Authority (IANA) under the control of US Department of Defence.

Virtual Domains

It can be identified by a name (eg. www.google.com)

Physical Domains

The virtual domain name and its equivalent IP address is referred as physical domain. It is gateway to other computer to access the Internet.

IP Address

IP (Internet Protocol) is unique numbers for the particular domain name.   IP address is specified in the four hexa decimal values within periods. IP comes under two version IPV4 and IPV6.

eg. 124. 0. 0. 1

Each numbers ranges from 0 to 255 bytes in IPV4. Based on the version the range will be increased.

Chat :

Chat is also information sharing through Internet. But, In chatting both sender and receiver available in the Internet.

E-commerce

It provides facilities to sale or buy products through Internet.

E-governance

It is the application of Information and communication technology for delivering government services exchange of information communication transactions through standalone systems and services between government-to-customer (G2C), government-to-business (G2B), government-to-government (G2G) as well as back office processes and interactions within the entire government framework

Mozilla Firefox

It is a free & open source web browser provided Mozilla Corporation. It requires less memory and offers far more customization . It uses the Geckolayout engine to render web pages, which implements current and anticipated web standards.

https://www.mozilla.org/en-US/firefox/new/

Tor Browser

It is web browser provides best anonymity to users. The name is an acronym derived from the original software project name The Onion Router. It helps you defend against traffic analysis, a form of network surveillance that threatens personal freedom and privacy, confidential business activities and relationships, and state security.

https://www.torproject.org/projects/torbrowser.html.en
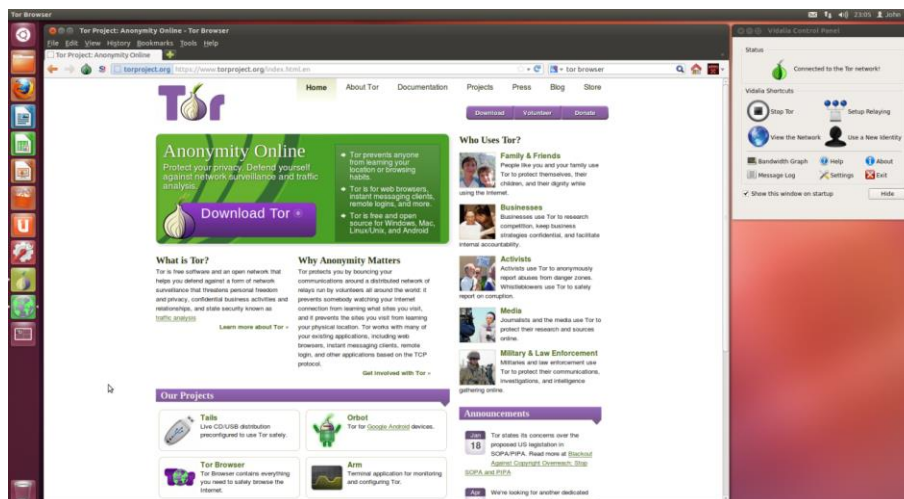
Thunder bird Mail

It is free email, newsgroup, news feed and chat application(IRC,Twitter) Client. It incorporates a Bayesian spam filter, a whitelist based on the included address book , and can also understand classifications by server-based filters such as Spam Assassin.
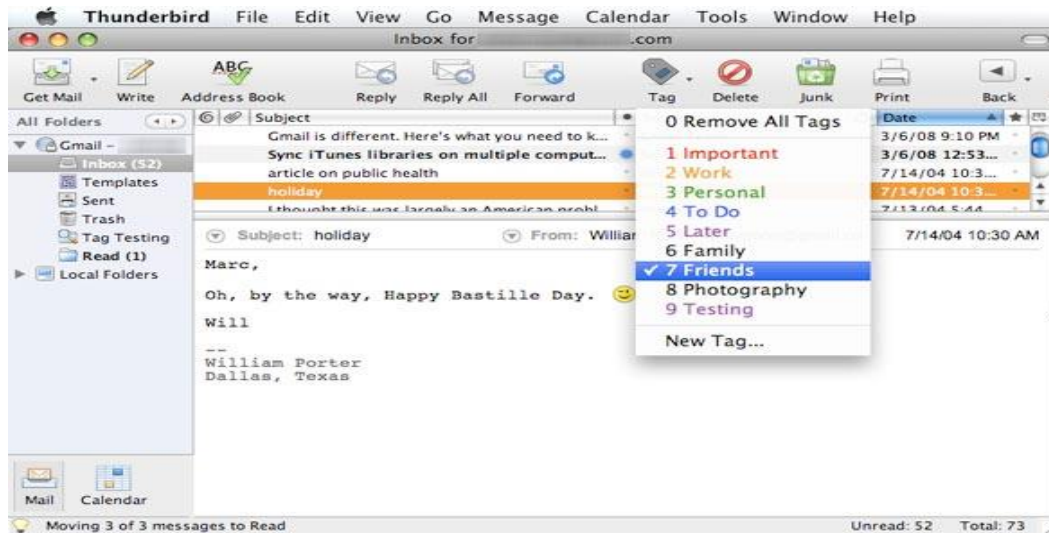
Pidgin Internet Messenger:

It is a chat program which lets you log in to accounts on multiple chat networks simultaneously. It means that you can be chatting with friends on MSN,talking to friend on Google Talk, and sitting in a yahoo chat room all at the same time.
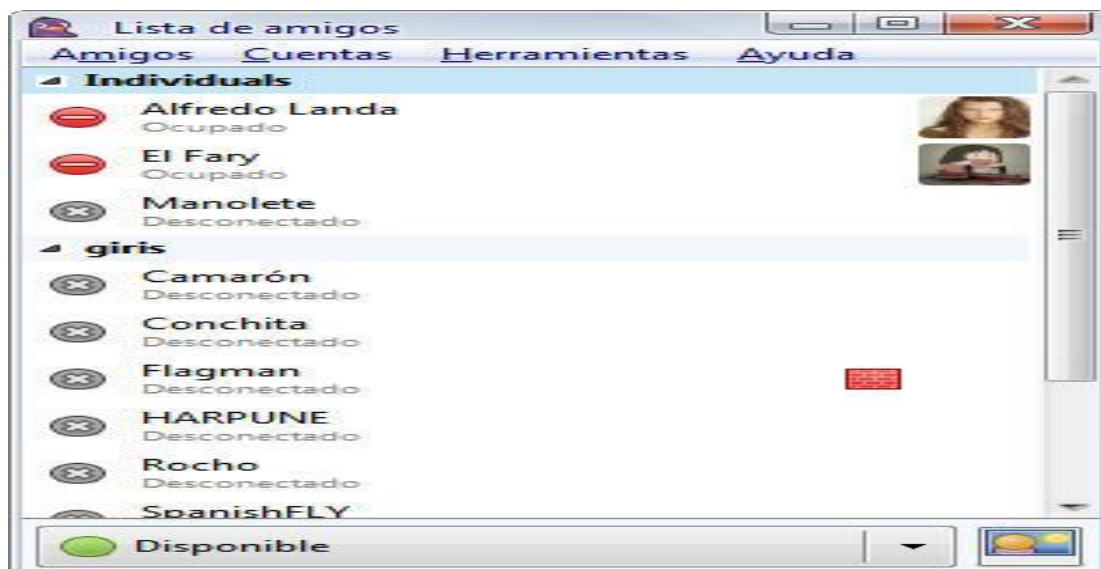
Duckdukgo

It is an internet search engine to exact information instantly . It provides real privacy and does not record users information..


<https://duckduckgo.com/>
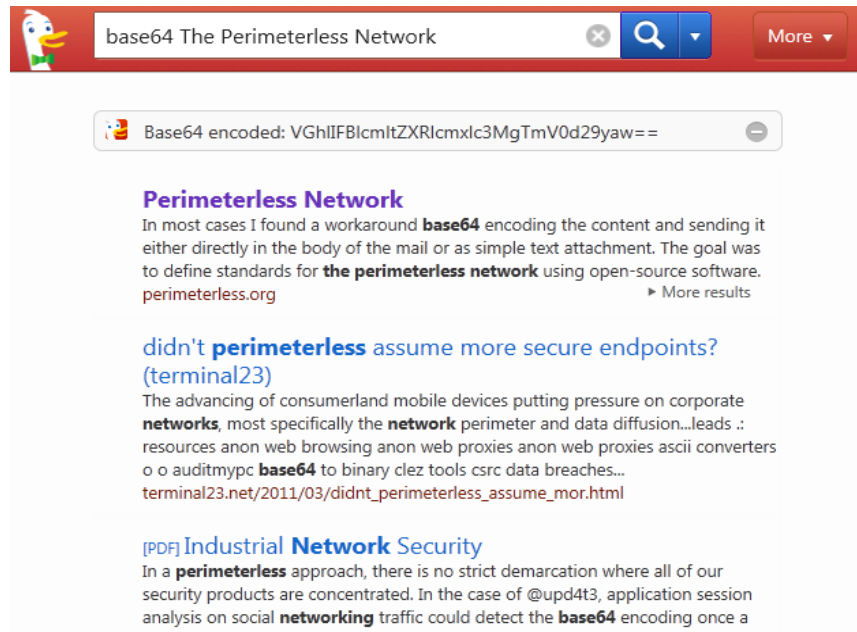
Open street maps:

It is a collaborative project to create a free editable map of the world. Two major driving forces behind the establishment and growth of OSM have been restrictions on use or availability of map information across much of the world and the advent of inexpensive portable satellite navigation devices.

Wikipedia:

Wikipedia is online encyclopedia . It is collaborative project any one can create and modify the content. It contains 130 lakh articles in 266 languages.
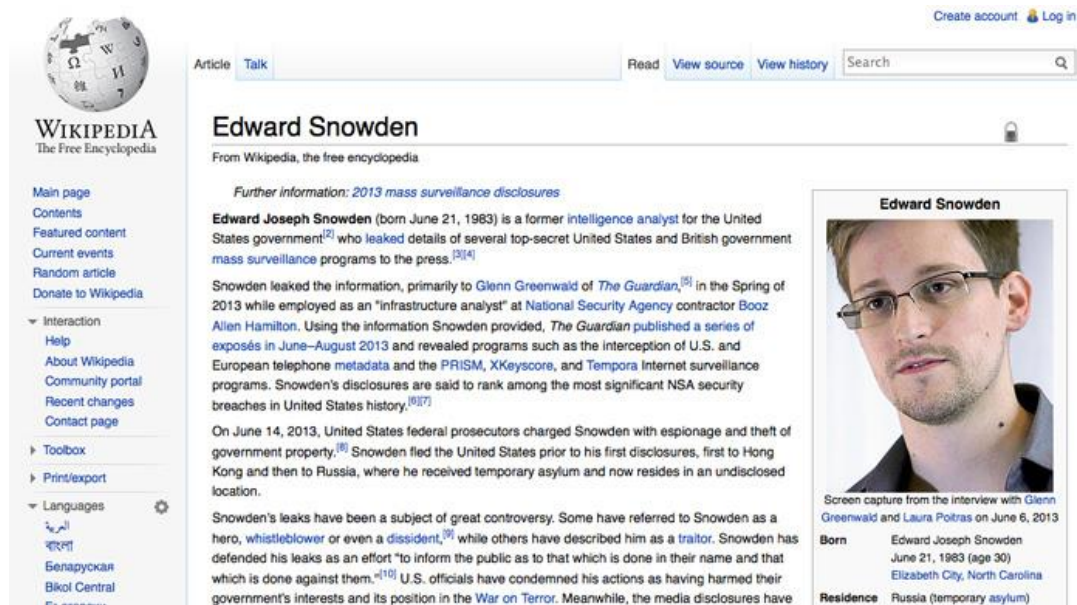
Wiki Dictionary:

It is free on line multi-language dictionary.

Wiki Books

It contains collections of books on various subjects.

Wiki Quotes

A collection of proverbs, puzzles, movies, texts, themes, idioms and axioms, legal dictionary, quotes, folklore etc.

Wiki Species:

Database on flora and fauna

Wiki News

A free news center.

Meta Wiki

A forum for coordination of wiki Initiatives.
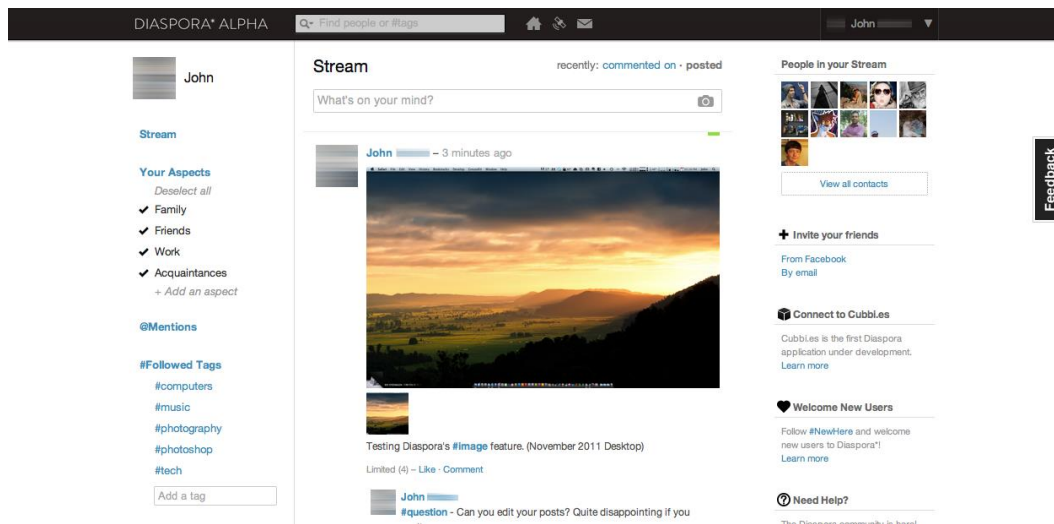
Wiki Commons

A common pool resource of wiki files.

Wiki University

The wiki center of learning

Diaspora

It is a social networking site. It is based on three key philosophies such as decentralization, freedom and privacy to make internet a better place.

https://joindiaspora.com/

Text Secure

It is a messaging app that allows you to take back your privacy while easily communicating with friends. It is used to you to communicate instantly while avoiding SMS fees, create groups so that you can chat in real time with all your friends at once, and share media or attachments all with complete privacy.

https://play.google.com/store/apps/details?id=org.thoughtcrime.securesms
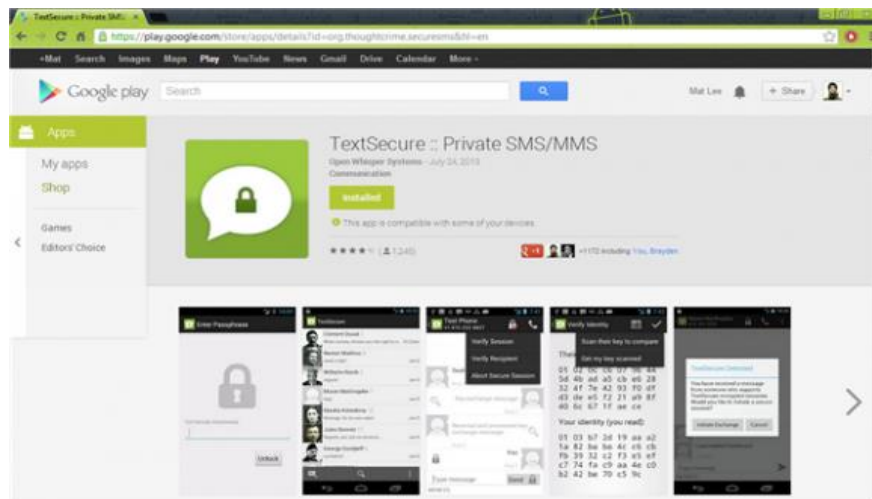
Make your own Websites

The worldwide growth of Internet is influencing the ability of persons in remote corners of the globe to access huge volumes of documents stored and linked in a variety of ways. The World Wide Web(WWW) and the browsers make this possible. Browsers display the Hypertext Markup Language documents on all brands of computers running different operating systems.

HTML -Hypertext Markup Language is the content of a document that includes text, pictures and links to other related documents. HTML is a language that is used to instruct the browser on how to display the hypertext, add pictures to the document and create links to other documents on the WWW. There are also several software packages available in the market that help you create HTML documents.

KompoZer:

KompoZer is free software to create webpages without html tags. KompoZer is a HTML Editor. It is used to create a webpage using drag and drop controls. The user need not write the html code in editor. The software contain all the controls such as frame, table, image, video, audio, link, text etc.. This software provides Dynamic Hypertext Markup Language (DHTML). It contains css(cascading style sheet), JavaScript.

http://www.kompozer.net/
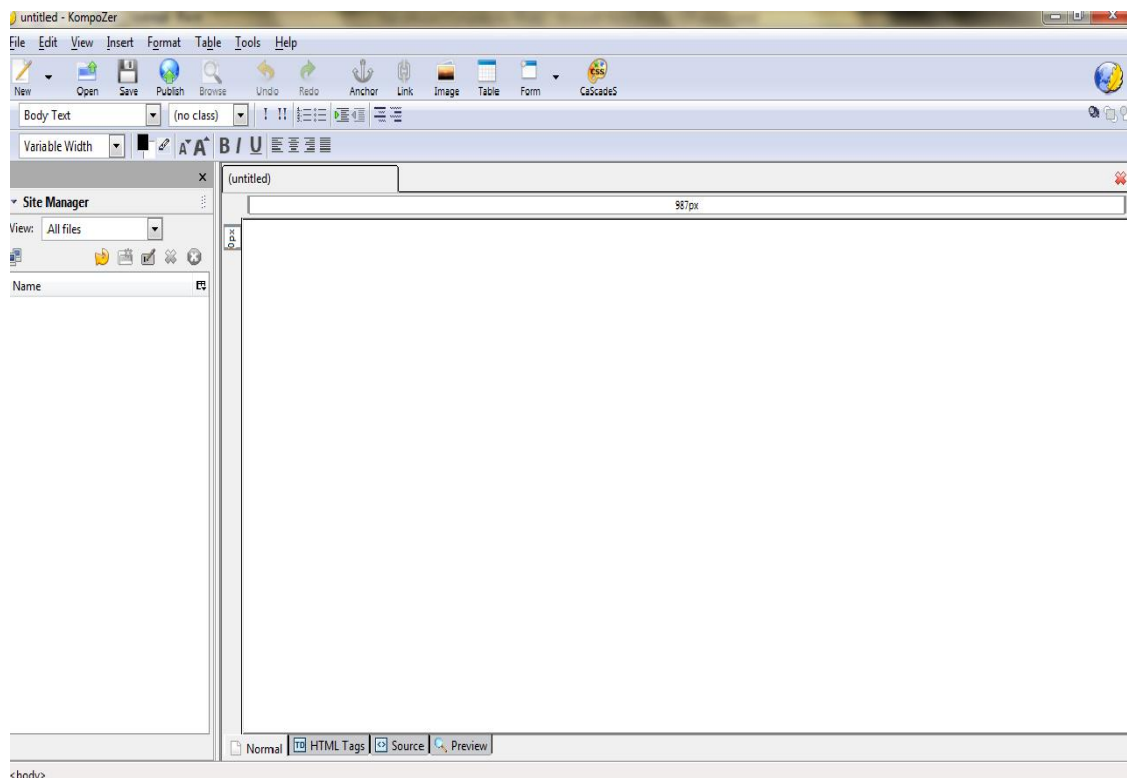
Quanta Plus:

      Quanta Plus, originally called **Quanta**, is a web Integrated development environment (IDE) for HTML, XHTML, CSS,XML, PHP and any other XML-based languages or scripting languages. Quanta is capable of both WYSIWYG design and hardcoding



http://kde-apps.org/content/show.php?content=10135
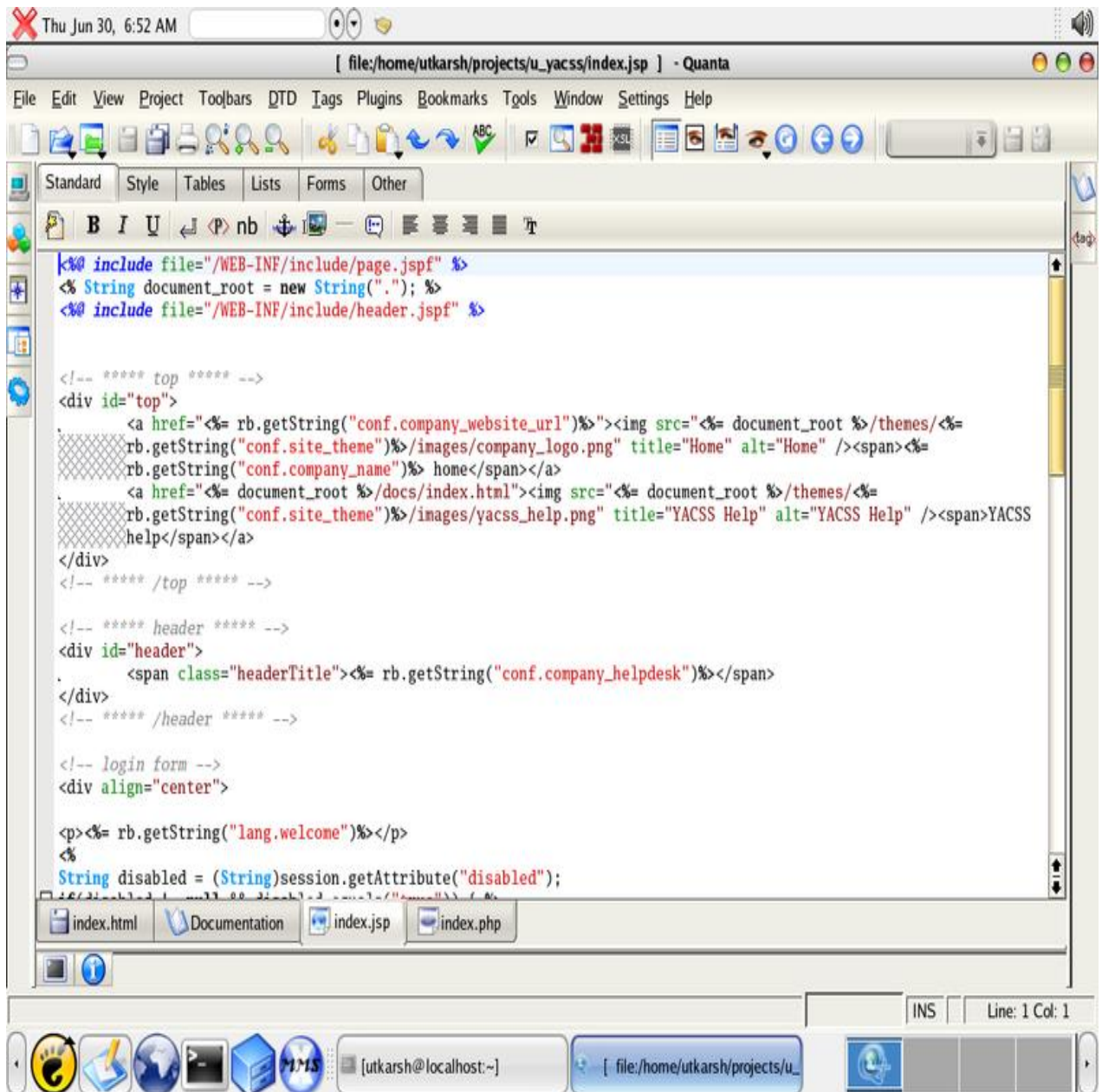
Quanta plus is more productive, powerful, efficient web development environment in the world. It is very useful for best architectural foundations, design for efficient and natural use and enable maximal user extensibility.

Notepad++

Notepad++ is a source code editor and notepad replacement that supports several languages . It is distributed under GPL License.

https://notepad-plus-plus.org/
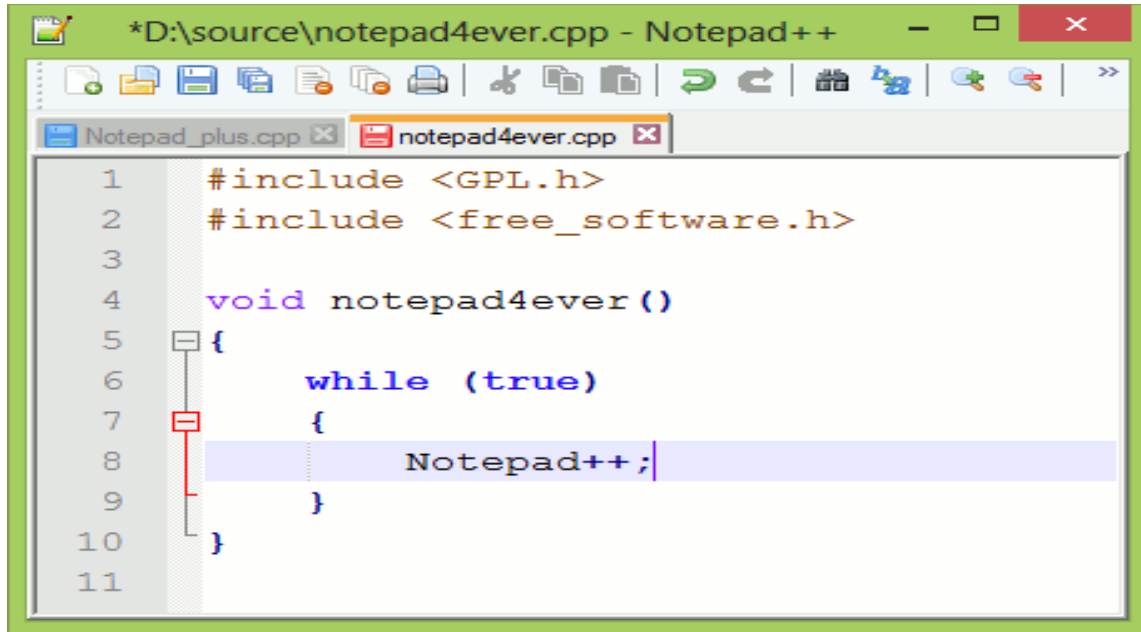
FileZilla

It is a free software, cross-platform FTP application, consisting of FileZilla Client and FileZilla Server The client supports FTP,SFTP and FTPS.

https://filezilla-project.org
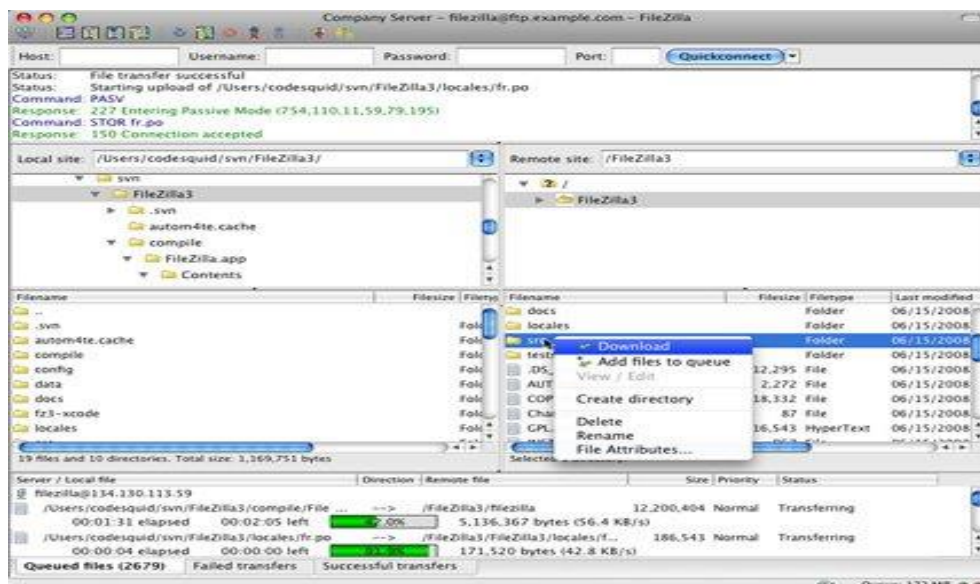
Keep Your Post in Internet

Every Website is collections of webpages in the internet. You are created a website using web editors such as KompoZer, Quanta plus software. Now, you have to post your website in Internet Server Provides. It provides space to post your website in the internet. Some of free services also available in the internet such as wordpress, blogger etc.

If you don't know how to create webpages more interactive. It requires technical skills in building websites (compiling of web pages, designing). Let us improve the web site that we have built to overcome its limitations and make it available on the internet. There are several software applications that help you to create a interactive websites. They are called content Management system software.

Web Content Management Systems (WCMS)

Web content Management Systems are software applications that help us in building websites, sharing information, making observations, and effecting controls in the web systems. WCMSs are Word press, Joomla, Drupal, LightCMS etc. The CMS software is installed in our computers (Servers). Therefore we get the freedom to build websites on our computers (Server).

Wordpress:

Word press is a free and open web content management system software based on PHP and MYSQL which runs on a web hosting service.


https://wordpress.com/website/
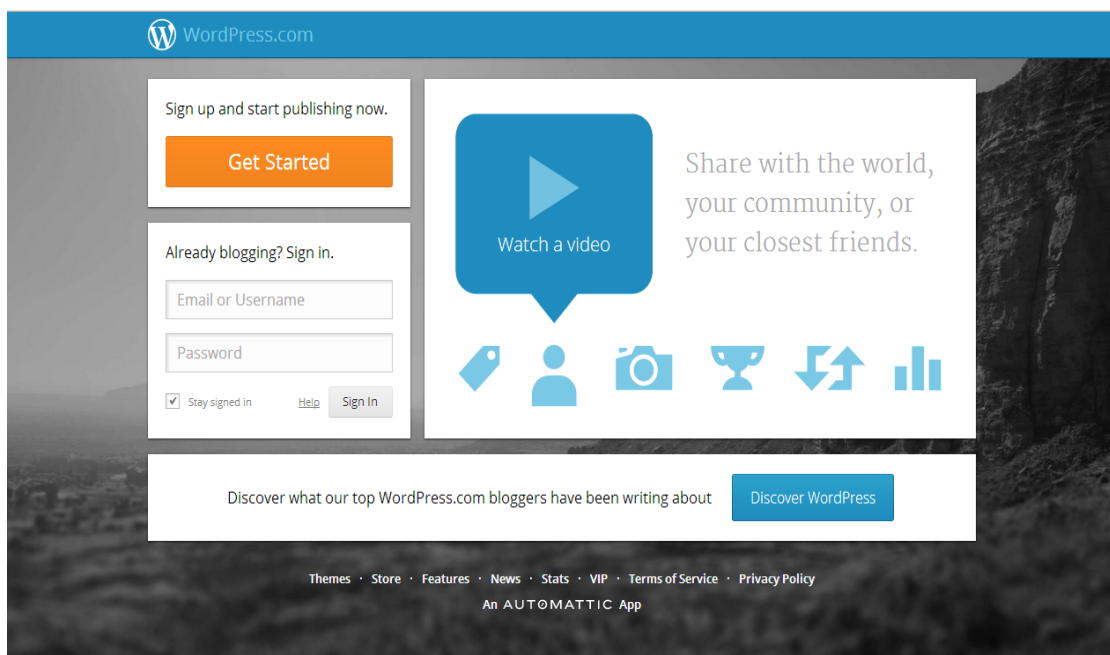
Drupal

Drupal is free and open web content management system software. This GNU General Public License software is the one that drives numerous websites in the world. All the features of commonly available content management systems (CMS) software are available in Drupal as well. For more information refer www.drupalgardens.com

https://www.drupal.org/

LightCMS

LightCMS anyone can build an incredible website with amazing design, fantastic features, and even an online store.
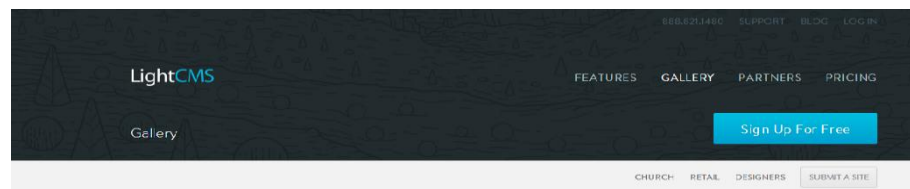
https://www.lightcms.com/

Joomla

Joomla is an award- winning, open-source CMS (Content management system) with over 35 million downloads worldwide and still counting. Joomla is very versatile, user-friendly and mobile-ready, making it a very sought –after CMS for corporate websites.

http://www.joomla.org/

SilverStripe

It is an open source Content Management System and Framework for creating and maintaining websites and web applications. It provides What You See What You Get (**WYSIWYG**) website editor.

http://www.silverstripe.org/
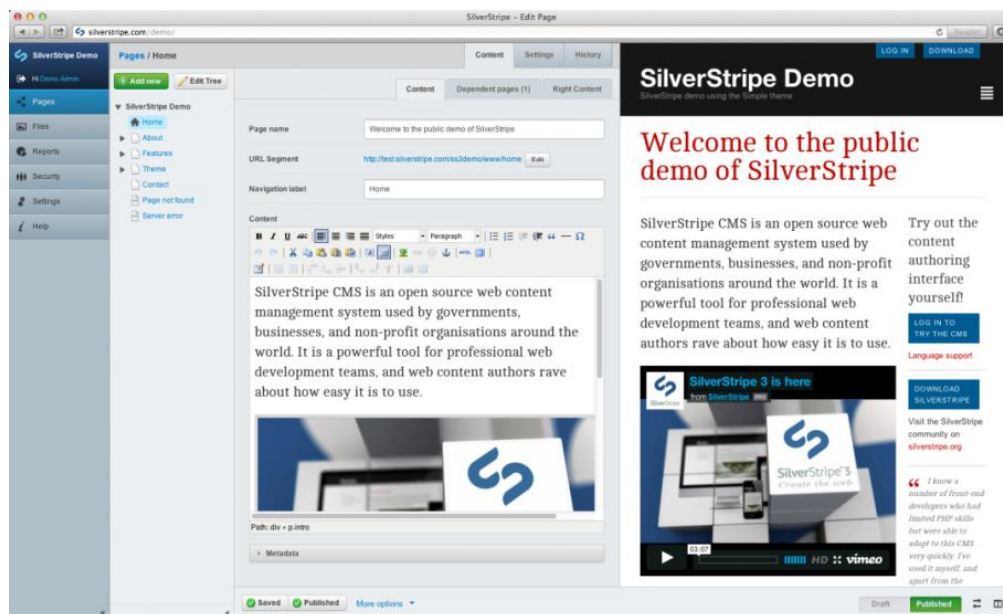
Integrated Library Management Software

Openbiblio

It is an open source Integrated Library System. The software is popular with small and rural libraries worldwide due to its simplicity, extensive language support, and good documentation

http://obiblio.sourceforge.net/
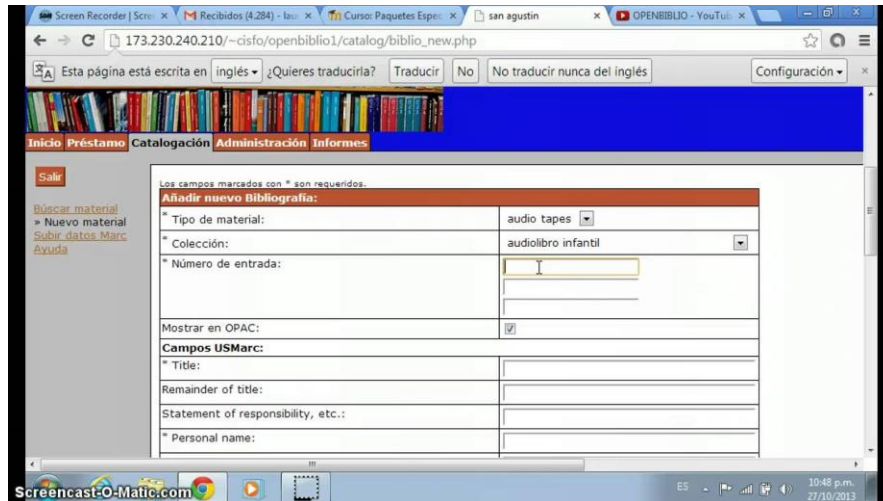
Koha

It is an open source Integrated Library System (ILS), used world-wide by public, school and special libraries. Development is sponsored by libraries of varying types and sizes, volunteers, and support companies from around the world.

http://koha-community.org/
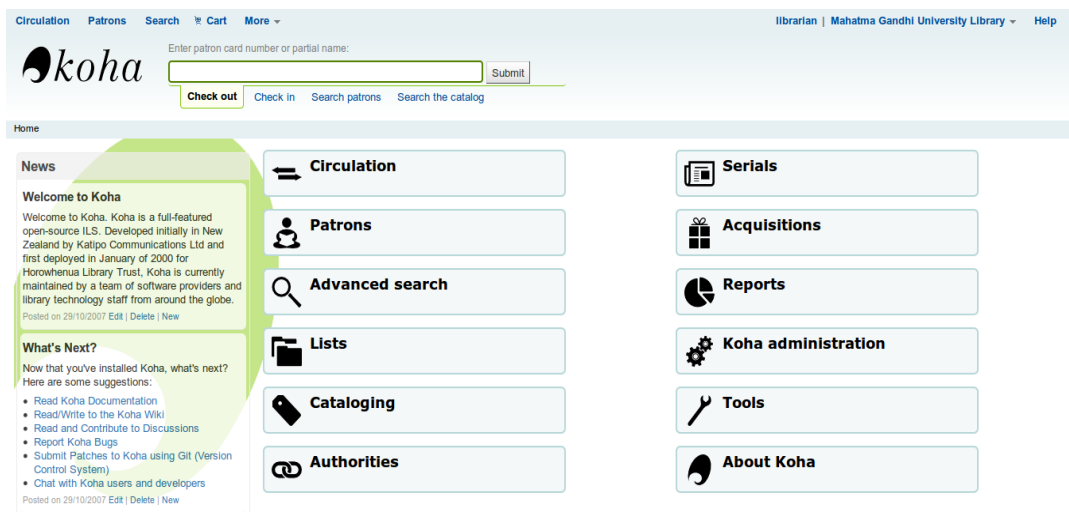
Athenaeum Light

It is a simple yet powerful library management tool for schools, small and medium sized businesses, church groups and other organizations. It works with FileMaker Pro 12 or FileMaker or FileMaker Pro 13 and can be networked with FileMaker Server 12 or 13.

http://www.librarysoftware.co.nz/
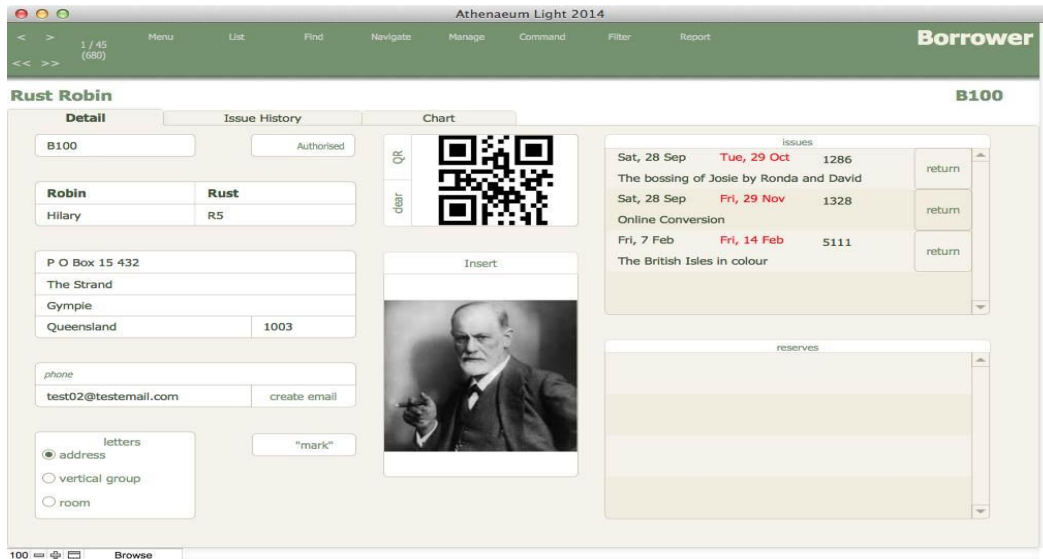
Evergreen

It is an open source Integrated Library System (ILS) tools . It provide their public catalog interface as well as to manage back –of-house operations such as circulation (Checkout and Checkins),acquisition of library materials, and sharing resources among group of libraries.

http://evergreen-ils.org/
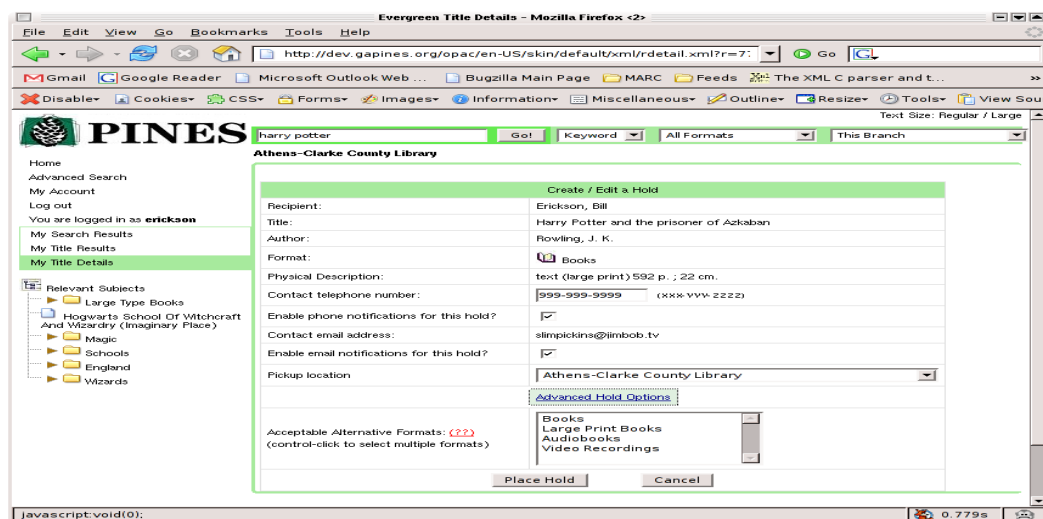
School Administrative Software's

TS School

It is open source time software for schools. It is a classic powerful tool that offers the basics for schools of all sizes. It offers student management system, reports a powerful organizational calendar and an exam module for teachers.

http://www.ts-school.com/
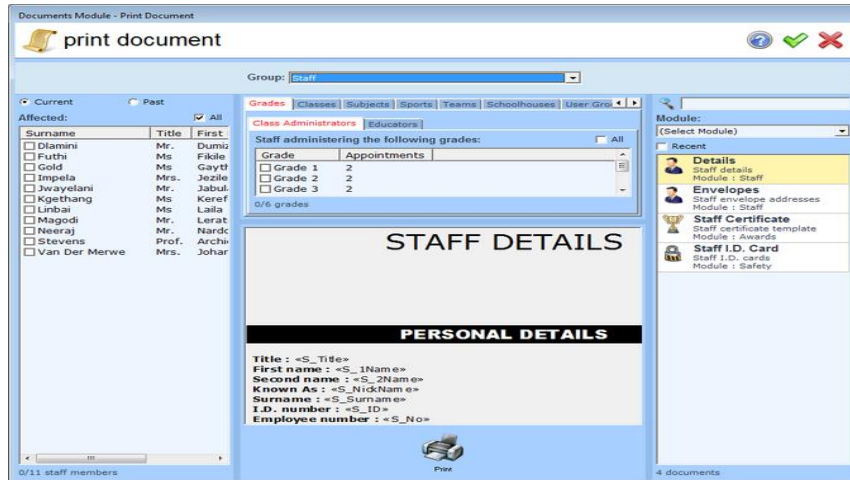
Fedena

It is an open source school administration software that largely focuses on handling records. It provides unlimited administration and student logins to use their system, along with unlimited courses and batches. The system was developed using Ruby on Rails, so schools can easily customize the code to their school needs.

http://www.fedena.com
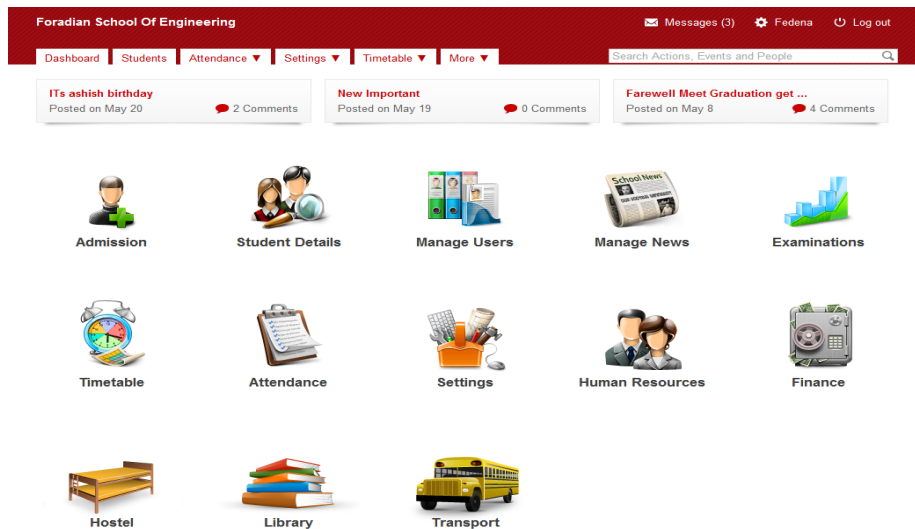
SchoolTool

It is a cloud based open source school student information system designed for schools in the developing countries. It provides educators with what they need to run their classrooms,strong organization features and a great report card generator. The System was made with Python, is largely secure and is run on Linux.

http://www.schooltool.org/
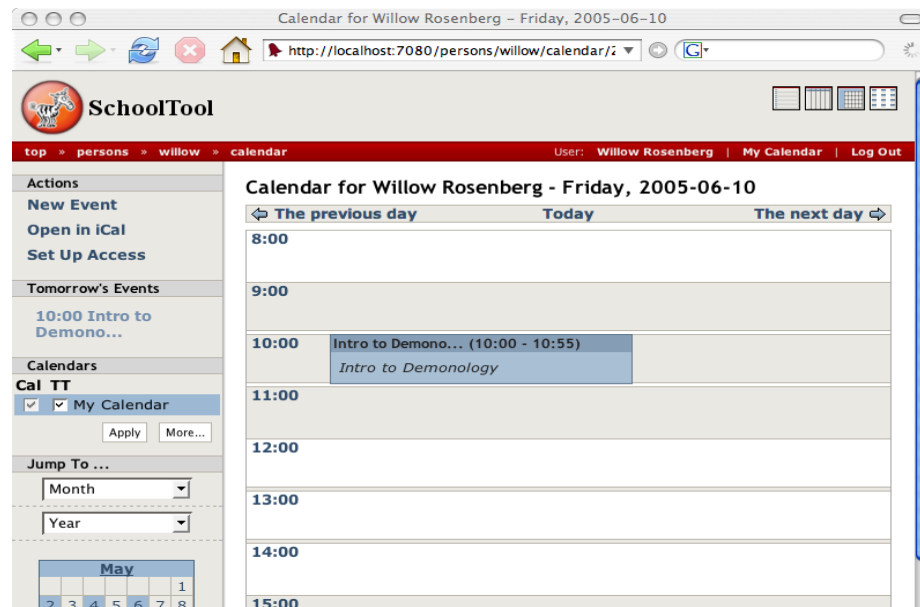
OpenSIS

It is free, open source platform designed for K-12, regardless of if they are charter, private or state board schools. It is best suited for small and medium schools . It can use this software to maintain transcripts, health records, attendance, demographic information, scheduling, gradebooks and custom reports.

http://sourceforge.net/projects/opensis-ce/reviews/
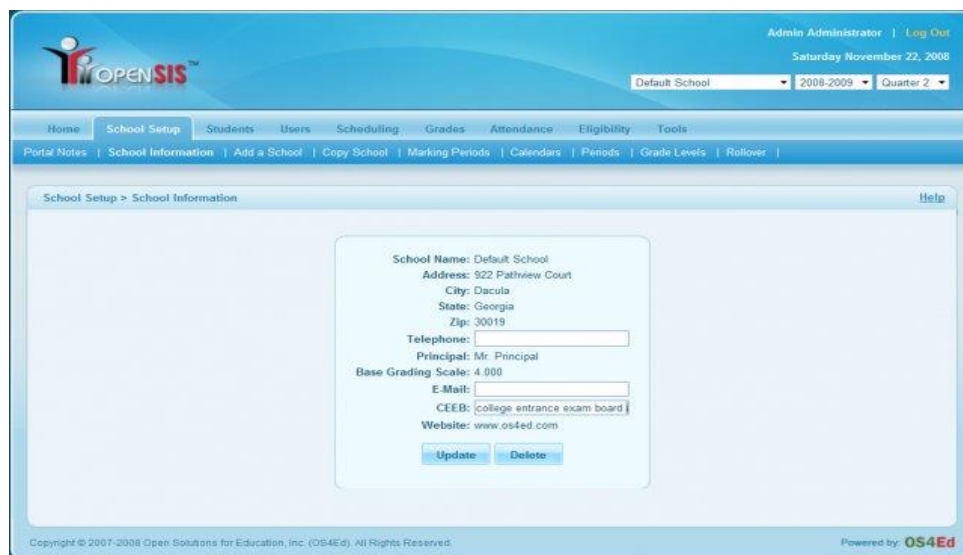
Introduction to the Linux Command Shell For Beginners

Command Shell

A Program that interprets commands. It allows a user to execute commands by typing them manually at a terminal or automatically in programs called *Shell* Scripts. A Shell is not an operating system. It is a way to interface with the operating system and run commands.

Commands for Navigating the Linux System

The first thing you usually want to do when learning about the linux file system is take some time to look around and see what's there! The following commands describes the basic operations

Newbie Commands

Command Name	Description
cd	Changes the current working directory in the command line console.
exit	Exits out of the current program, terminates the current command line terminal, or logs you
kill	Terminates the specified running process. The Linux version of Windows' "End Process" in the task manager.
ls	List all of the contents of a specified directory. If no directory is specified, it will use the current directory.
man	There's a running gag in the Linux community that *man* is the only command you need to know. It stands for *manual*, and it will give you detailed information on commands and aspects of Linux.
pwd	Displays the current working directory for the command line terminal. Good for when you've lost track of where you are in your system.
reboot	Immediately stops all running processes, shuts down the system, then reboots.
shutdown	Stops all running processes and shuts down the system. Parameters can be specified to issue a delayed shutdown or a shutdown at a particular time.
sudo	Runs commands as *root*, which means no limitations due to permissions.

System Information

Command Name	Description
date	Prints out the current system date and time. Specified parameters can change the format of the output
df	Reports the disk space usage for the file system.
hostname	Displays the name of the current host system.
ps	Displays information about all of the processes currently running on the system.
top	Displays all of the top processes in the system, by default sorted by CPU usage.
uptime	Reports how long the system has been running since last boot. Extremely useful for servers.

File Management

Command Name	Description
bzip2	Compresses specified contents into a .bz2 archive or extracts from a .bz2 archive depending on parameters
cp	Copies files to a new location with a new name depending on the parameters. Can copy directories too, whether recursively (includes all subdirectories) or not.
find/locate	Searches the system starting at a specific directory and matching all files within that location to a set of conditions laid out by the command parameters. Very useful for quickly finding certain files.
grep	Searches through all of the files in a specified location trying to find files that contain lines that match a given string. Returns a list of all the files that scored a match.
install	Used in conjunction with Makefiles to copy files from one location to the system. Not to be confused with installing packages from a software repository.
mkdir/rmdir	Creates a directory (*mkdir*) or deletes a specified directory (*rmdir*). Directories can only be created and deleted within directories that you have permission in.
mv	Moves files and directories to another location.
open	Opens a specified file using the default system application for files of its type.

rm	Remove and remove directory. Used to delete files and directories from the system, whether one at a time or in batch.
tar	Creates a .tar archive or extracts from a .tar archive depending on specified parameters.
zip/unzip	Creates a .zip archive or extracts from a .zip archive depending on specified parameters.

Other important Commands

Command Name	Description
apt-get	Advanced Packaging Tool. Use this command to install, remove, and configure software packages on your system. For a menu-based version, use*aptitude* command
ftp / sftp	Connects to a remote FTP server in order to download multiple files.
wget	Downloads files from the Internet at the specified URL to your system.
emacs	One of the most well-known text editors on Unix-like systems.
nano	A newbie-friendly command-line text editor that uses keyboard shortcuts to simulate menus.
vim	Vim is the successor to Vi, both of which are command line text editors for Unix-like systems. Though Vim is popular, it doesn't use menus or icons for its interface so it has a reputation for being newbie-friendly.

Alice
Avidemux
Audacity
Arduino
Athenaeum Light
Ardublock
Blender
BeagleBone Board
Child's Play
CREATE Lab
CodeLite
Corewars
Celestial
Car Metal
Cantor
Canorous
Chemtool
Dia
Drupal
Dr.Geo
Drpython
Drawpile
Evince
Emacs
Evergreen
Freeciv
Foodforce
Flightgear
FileZilla
FlowPaint
Fedena
GL-117-3D Flight
Gchempaint
GIMP
gvSIG
Gcompris
Gedit

Hummingbird Duo
Inkscape
Joomla
Kompozer
Kstars
Kgeography
Kritha
Kdenlive
Ktouch
KHangman
Kalzium
Kmplot
Koha
KolourPaint
Ktech
Littlebits
Luciole
LightCMS
Labplot
Modesecurity
Mozilla Firefox
Marble
Mypaint
mtpaint
Notepad++
NetBeans
Openoffice
Openbilblio
Openoffice Draw
OpenShotVideo
OpenSIS
Pykota
Pencil
Pidgin
Pitivi video
Pinta
Quanta Plus
QGIS

Realtime Battle
Rhythm Box
Rasmol
Rassom Paint
Rocs
Snort
Smoothwall
Snap
Synfig Studio
Silverstripe
Stellarium
Scartch
Starlogo TNG
Squeak
Sunclock
Step
SchoolTool
Tuxpaint
Text Secure
Thunderbird Mail
Tor Browser
Tupi
TSSchool
VLC Media Player
WinFF
Xine
Xrmap