OPEN SOURCE TOOLS FOR PROGRAMMING

* Git - Version Control System
* Eclipse - C/C++/Java/PHP IDE
* IntelliJ - Platform Developer Tools
* NetBeans - C/C++/Java/HTML5 IDE
* .NET Core - A Free Cross Platform
* Ruby on Rails - For Web Applications
* Node.js® - JavaScript Runtime
* Bootstrap - Toolkit for HTML, CSS & JS
* TensorFlow - Machine Learning Lib
* Ansible - Automation for Everyone

OPEN SOURCE TOOLS FOR SECURITY

* Nmap - Free Security Scanner
* OpenVAS - Vulnerability Scanner
* Metasploit - Penetration Testing
* Wireshark Network Protocol Analyser
* Snort - Network Intrusion Detection
* OSSEC - Intrusion Detection System
* Kali - Advanced Penetration Testing
* Nikto2 - Web Server Scanner
* Nessus - Vulnerability Assessment
* John the Ripper Password Cracker

OPEN SOURCE TOOLS FOR EMBEDDED SYSTEMS

* Yocto Project - Make Embedded Linux
* FreeRTOS™ - X Platform RTOS Kernel
* GNU Embedded Toolchain for ARM
* uClibc - C library for Embedded Linux

* BusyBox - For use in Embedded Linux

* Buildroot - Embedded Linux Easy now

* STM32CubeIDE - Multi-OS Dev Tool

* PSoC® Creator™ - PSoC Design IDE

* OpenEmbedded - Frmwork for e-Linux

* ARM Mbed OS for Internet of Things

OPEN SOURCE DATABASES

* MySQL Relational Database

* PostgreSQL Relational Database

* MariaDB Relational Database

* SQLite Embedded Database

* Apache Cassandra Database

* Timescale Database for IoT

* Neo4J - Leader in Graph Databases

* MongoDB Non-Relational Database

* CouchDB - from Big Data to Mobile

* RethinkDB for the Realtime Web

* CockroachDB - Ultra-resilient SQL

OPEN SOURCE TOOLS FOR MODELLING (1)

* StarUML3 - Agile & Concise Modelling

* ArgoUML - UML Modelling Tool

* BOUML - Free UML 2 Toolbox

* Eclipse UML Generators

* Dia - Draw Structured Diagrams

* GenMyModel - Online Modeling

* Umbrello - The UML Modeller

* Papyrus - Modeling Environment

* NClass - Create UML for C# and Java

* UMLet for Fast UML Diagrams

* PlantUML - Beautiful UML Diagrams

* Open ModelSphere - Modeling Tools

* gModeler - Online UML Diagramming

* RISE - Simply a better way

* Violet - Easy to use UML Editor

* yEd for High Quality Diagrams

* Visual Paradigm for UML Diagrams

* Modelio - Extensible Modeling

* Gliffy - Visual is in our DNA

* yUML - Create UML Diagrams Online

OPEN SOURCE IDE TOOLS

* Anjuta - Software Devel Studio

* Code::Blocks - IDE for C, C++, Fortran

* CodeLite - IDE for C, C++, PHP, JS

* Dev C++ - IDE for C, C++ using GCC

* Eclipse - IDE for C, C++, Java & more

* KDevelop - IDE for C, C++, Python

* Mono - Open Source .NET Framework

* NetBeans - IDE for C, C++, Java, PHP

* Ultimate++ - C++ RAD Framework

* Glade - A User Interface Designer

* Qt - Cross Platform UI Designer

POPULAR PROGRAMMING LANGUAGES

* Python

* Java

* Javascript
* C#
* PHP
* C / C++
* R
* Objective-C
* Swift
* Matlab
* Ruby
* TypeScript
* VBA
* Scala
* Visual Basic
* Kotlin
* Go
* Perl
* Lua
* Rust
TOOLS FOR VIRTUALIZATION AND CLOUD COMPUTING
* QEmu - The FAST! Processor Emulator
* VirtualBox Powerful x86 Virtualization
* XEN Project - Power of Virtualization
* oVirt - The Open Source Virtualization
* OpenNebula - Build Private Clouds
* OpenStack - Future of Open Infra
* Eucalyptus - AWS Compatible Clouds
* CloudStack for Cloud Computing

* OpenShift - Container App Platform
* Globus Toolkit for Grid Computing
POPULAR LINUX DISTROs (OS)
* LinuxMint - Classic Desktop Xperience
* Debian - The Universal Operating Sys
* Ubuntu for PCs, Servers, IoT Devices
* Fedora - Welcome to Freedom
* OpenSuSE for Sysadmins, Developers
* ZorinOS - Your Computer. Better
* CentOS - An Enterprise Grade OS
* LUbuntu - Your Daily Operating Sys
* Kali - Advanced Penetration Testing
* Xubuntu - Elegance and Easy of Use
* FreeBSD for Emb Networking, Storage
OPEN SOURCE TOOLS FOR CIVIL ENGINEERING
* FreeCAD - 3D Parametric Modeler
* LibreCAD - Open Source 2D-CAD
* PythonCAD - Cross Platform CAD
* SWAN - Simulating WAVes Nearshore
* OpenSCAD for Solid 3D CAD objects
* QCAD - CAD System for Everyone
* SolveSpace - Parametric 2D/3D CAD
* MaxFEM - Electromagnetic Simulation
* solTrack - Compute position of Sun
* finFoil - Happy fin building !
* SweetHome3D for Interior Design
* EPANET - Modeling Drinking Water

* HEC-HMS - Hydrologic Modeling Sys
* HEC-RAS - River Analysis System
* OpenSee for Earthquake Engineering
* SAGA GIS - Geoscientific Analysis
* GRASS GIS - Geographic Info System
* OSGeo - The Geospatial Foundation
* FEAP - Finite Element Analysis Prog
* Sysquake - Numerical Computing Env
OPEN SOURCE TOOLS FOR ELECTRICAL ENGG
* Circuit Simulation and Schematics
* Icarus Verilog for Verilog Simulation
* PCB - Printed Circuit Board Editor
* KiCad Electronic Design Automation
* Quite Universal Circuit Simulator
* Logisim 2.0 for Digital Logic Circuits
* Fritzing - Electronics Made Easy
* LibrePCB is a Free EDA Software
* gEDA Electronic Design Automation
* Horizon is a Free EDA Package
* MATPOWER - Power Sys Simulation
* MATACDC - Power Flow Analysis
* GridLAB-D - Design the Smart Grid
* OpenDSS - Electric Power DSS
* PandaPower - Power Sys Modeling
* Minpower - Power Systems Tools
* TinyCAD - Free Circuit Diagrams
* XCircuit - PCB Layout Editing

*** Eagle PCB Design Software**
*** Oregano - An Electrical Engg Tool**
*** FreePCB - Free PCB Editor**
*** Calculate Your Voltage Drop**
*** gresistor - To Calculate Resistivity**
*** Free Online Calculator for Engineers**
*** PartSim - Circuit Simul Made Easy**
*** MatDyn - Dynamic Analysis of EPS**
*** PSAT - Power Sys Analysis Toolbox**
*** DC Optimal Power Flow Problems**
*** PowerEsim - SMPS Design Software**
*** PyPower - Optimal Power Flow Solver**
OPEN SOURCE TOOLS FOR ELECTRONICS ENGG
*** Fritzing - Electronics Made Easy**
*** Quite Universal Circuit Simulator**
*** Scilab for Numerical Computation**
*** Alliance - A Free VLSI/CAD System**
*** KTechLab - IDE for Microcontrollers**
*** KiCAD Electronic Design Automation**
*** SDCC - Small Device C Compiler**
*** Magic VLSI Layout Tool**
*** NS-2 Network Simulator**
*** NS-3 Network Simulator**
*** GNUSim8085 - An 8085 Simulator**
*** GSim85 - An 8085 Simulator**
*** gSim51 - An 8051 Simulator**
*** NASA Open Source Software**

*** MCU 8051 IDE - for 8051 µ-controller**
*** Piklab - IDE for PIC Microcontrollers**
*** NASM - The Netwide Assembler**
*** Openmoko™ - Open. Mobile. Free.**
*** Wammu - Manage Data in Cell Phone**
*** Gammu - Control Your Phone**
*** QETech - Create Electric Diagrams**
*** Electric - VLSI Design System**
*** DLD - Simulating Digital Circuits**
*** TOPED - IC Layout Editor**
*** Logisim - For Digital Logic Circuits**
*** NGSPICE - Mixed Lvl Circuit Simulator**
*** Gnucap - Circuit Analysis Package**
*** CPU Sim - Java-based CPU Simulator**
*** Oregano - Simulate Electrical Circuits**
*** KTechLab - IDE for Circuit Design**
*** GNS3 - GUI Network Simulator-3**
*** Gerbv - Open Source Gerber Viewer**
*** GTKWave - Wave Viewer for UNIX**
*** gedasymbols - Repository for Symbols**
*** Octtools CAD System for µ-electronics**
*** SimulAVR - Simulator for Atmel AVR**
*** TCLSpice - Version of Berkley Spice**
*** GSpaceUI - GNU Spice GUI**
*** Easyspice - Frontend for Spice**
*** LTSpice - Spice Simulation Software**
*** FFTW - Fastest Fourier Transform**

* Logisim - Logic Circuit Simulator
* GATESim - Logic Gate Simulator
* Cedar LS - Digital Logic Simulator
* XOScope - Digital Oscilloscope
* RFDump - RFID ISO-Reader
* GPSim - Simulator for PIC µC
* TKGate - Event Driven Simulator
* gDSPSim - DSP Simulator for Linux
* EMU8051 - 8051/8052 Emulator
* AS31 - 8051 Assembler
* Z88DK - z80 Development Kit
* GWave - A Waveform Viewer
* Arduino - Electronic Prototyping
* VeriWell - Full Verilog Simulator
* GHDL - Simulator for the VHDL
* FreeHDL - Free VHDL Simulator
* Minicom - Serial Comm Program
* vIDE - VHDL, Verilog, SystemVerilog
* Verilator - Free Verilog HDL Simulator
OPEN SOURCE TOOLS FOR MECHANICAL ENGG
* Libre Mechanics for Engineering
* FreeCAD - 3D Parametric Modeler
* LibreCAD - Open Source 2D-CAD
* SALOME CAD for Numeric Simulation
* BRL-CAD - Solid Modeling System
* OpenSCAD for Solid 3D CAD objects
* CAMotics - Computer Aided Machining

*** SolveSpace - Parametric 2D/3D CAD**
*** PyCAM - for 3-Axis CNC Machining**
*** FlatCAM - Open Source PCB CAM**
*** MakeHuman - Making 3D Characters**
*** Dust3D - 3D Modeling Software**
*** open3DProject - 3D Human Models**
*** Libre Mechanics for Engineering**
*** FreeCAD - 3D Parametric Modeler**
*** LibreCAD - Open Source 2D-CAD**
*** BRL-CAD - Solid Modeling System**
*** OpenSCAD for Solid 3D CAD objects**
*** PyCAM - for 3-Axis CNC Machining**
*** FlatCAM - Open Source PCB CAM**
*** OpenModelica - Modeling, Simulation**
*** RattleCAD - Bicycle FrameBuilding**
*** OpenCascade - SDK for 3D CAD Data**
*** OpenFOAM - Free CFD Software**
*** gCAD3D - 3D CAD/CAM Software**
*** NetGen - Multiphysics FE Software**
*** Paraview - Data Visualization**
*** Code Saturne for CFD Applications**
*** Code Aster - Thermomechanics**
*** Engrid - Mesh Generation Software**
*** Palabos - Open Source CFD Solver**
*** Agros2D based on Hermes Library**
*** Elmer - Multiphysical Simulation**
*** OOFem - OO Finite Element Solver**

*** Fenics Project for Solving PDEs**
*** FreeFem++ - Multiphysics FE S/w**
*** GMSH - Free 3D FE Mesh Generator**
*** FeatFlow - High Performance FE**
*** Calculix - 3D Structural FE Program**
*** GetFem++ - Finite Element C++ Lib**
*** Acousto - Acoustic Simulation Tool**
*** OpenPhase - Phase Field Simulations**
*** OpenLB - Lib for Lattice Boltzmaan**
*** LAMMPS - Molecular Dynamics Sim**
*** Discretizer - Open Source CAE**
*** ASL - Multiphysics Simul Platform**
*** Gerris - Solution of the PDE**
*** SU2 - Multiphysics Simul Software**
*** Chrono - Multiphysics Simul Engine**
*** MBDyn - Multibody Dynamics Analysis**
*** GCodeTools - CAM Extn for Inkscape**
*** G-Simple for 3 Axis Machining Centers**
*** CADPy for isolation Milling and Drilling**
*** ImpactFEM - Finite Element Program**
*** Hermes2D - C++ Library for hp-FEM**
*** Ascend for Mathematical Models**
*** ImageJ - Scientific Image Analysis**
*** Cura - Advanced 3D Printer Software**
*** MAFFT - Multiple Alignment Program**
*** Visolate Calculat Machining Toolpaths**
OPEN SOURCE TOOLS FOR CAD/CAM

* Libre Mechanics for Engineering
* FreeCAD - 3D Parametric Modeler
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* SALOME CAD for Numeric Simulation
* BRL-CAD - Solid Modeling System
* OpenSCAD for Solid 3D CAD objects
* CAMotics - Computer Aided Machining
* SolveSpace - Parametric 2D/3D CAD
* PyCAM - for 3-Axis CNC Machining
* FlatCAM - Open Source PCB CAM
OPEN SOURCE TOOLS FOR MATHEMATICS
* Scilab for Numerical Computation
* SciPy for Numerical integration
* Maxima - a Computer Algebra System
* Octave - Scientific Programming Lang
* Gnuplot - Cmd line Graphing Utility
* PARI/GP - Computer Algebra System
* Xcas - Swiss Knife for Mathematics
* GAP - Computational Discrete Algebra
* Cadabra - Computer Algebra
* CoCoA System - Commutative Algebra
* WXMaxima - Frontend for Maxima
* Geogebra - Graphing, Geometry, 3D
* YACAS - Computer Algebra System
* RKWard - Frontend for R Language
* KNIME - Open Source Data Analytics
* Matplotlib - Python 2D Ploting Library

* GROMACS - for Molecular Dynamics

* Qalculate - Ultimat Desktop Calculator

* NumPy for Scientific Computing

* SimPy - Process based Sim in Python

OPEN SOURCE TOOLS FOR MATHEMATICS / STATISTICS

* SageMath - A Maths Software System

* R Project - for Statistical Computing

* R-Studio - GUI for R-Language

* Rattle - A GUI for Data Mining using R

* JASP - A Fresh Way to Do Statistics

* GNU PSPP for Statistical Analysis

* JDemetra+ for Seasonal Adjustment

* AXIOM - Computer Algebra System

* Modelica - The Modelica Language

* FreeMat - for Rapid Engineering

OPEN SOURCE SPACE

* NASA Open Source Software

* Celestia - 3D Visualization of Space

* Stellarium Astronomy Software

* Interactive Data Visualization

* OpenMCT - Mission Control Software

* Open Space Agency - Space Explorers

* Space Engine - Universe Simulator

* Free Online Model of Solar System

* Orbiter - Space Flight Simulator

* XFLR5 - Analysis Tool for Airfoils

* Qblade - Wind Turbine Design

* Mixed Reality Simulation Platform
* FlightGear Flight Simulator
* Paparazzi - The Free Autopilot
* JSBSIm - Flight Dynamics Model
* Mayavi - 3D Scientific Plotting
* WorldWide Telescope Web Client
* The barrowman Python Module
* JSBSim Manager Python Module
* JSBSim NASA Test Cases
* Aerobee 150- Sounding Rocket
* Lambda-4S - Orbital Rocket
* Devel of Rocket Design Software
* SaVi - Sat Constellation Visualizer
* SailAway - InterWorld Transport
* DSACSS - Distributed SACSS
* Celestial Mechanics, Astrometry
* Near Earth Objects Dynamic Site
* PREDIDCT Multi-user Sat Tracking
* Orbit Reconstruction, Simulation
* Orekit for Space Flight Dynamics
* Open-SESSAME Framework by SSSL
* JAT Solve Problems in Astrodynamics
CHEMICAL ENGINEERING SOFTWARE
* Chemtool Drawing Chem Structures
* DWSIM - Chemical Process Simulator
* DWSIM - Chemical Process Simulator
OPEN SOURCE OFFICE SUITE

*** LibreOffice Writer (Word Processor)**
*** LibreOffice Calc (Spreadsheet)**
*** LibreOffice Impress (Presentation)**
*** LibreOffice Draw (Diagrams)**
*** LibreOffice Base (Database)**
*** LibreOffice Math (Formula Editor)**
*** LibreOffice Charts (Powerful Charts)**
*** Apache OpenOffice Productivity Suite**
*** Calligra - Office and Graphics Suite**
*** AbiWord - Word Processing Program**
*** Gnumeric - Spreadsheet Program**
OPEN SOURCE TOOLS FOR MULTIMEDIA (AUDIO/VIDEO)
*** VLC - VideoLAN Multimedia Player**
*** MediaPortal - The Media Center**
*** Kodi - The Home Theater Software**
*** LibreELEC - Just Enough OS for Kodi**
*** Amarok - Rediscover Your Music !**
*** Rhythmbox - A Music Player**
*** Audacious - Open Source Audio Player**
*** Mixxx - Free DJ Mixing Software**
*** Banshee - Play your Music and Videos**
*** Xine - Free Multimedia Player**
OPEN SOURCE TOOLS FOR AUDIO/VIDEO EDITING
*** RoseGarden - for Music Composition**
*** Handbrake - Best Video Transcoder**
*** Kazam - Screen Recording Software**
*** OpenShot - Video Editing Software**

*** AVIDemux - Free Video Editor**
*** KDENLive - Libre Video Editor**
*** Cinelerra - Free Filmmaking Software**
*** FFMpeg - Audio,Video Procesing Tools**
*** LibAV - Audio, Video Processing Tools**
*** XMMS - Multimedia Player for Linux**
OPEN SOURCE TOOLS FOR ANIMATION AND GRAPHICS
*** K-3D - 3D Modeling and Animation**
*** Wings 3D - A Polygon Modeler**
*** Blender - Open Source 3D Creation**
*** ArtofIllusion - 3D Modeling, Rendering**
*** TinkerCAD - for 3D Design, Electronics**
*** Xara - Open Source Graphics Software**
*** GIMP - Open Source Image Editor**
*** Inkscape - Vector Graphics Editor**
*** Krita - Open Source Painting Program**
*** ImageMagick - Create, Edit, Convert**