Introduction to Open Source

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OS Definition

Why is it called Open
Source?

Open: collaboration is
open to all

Source: source code is
freely shared

Ideals of Open Source

What are the ideals of Open Source?

Share the goal: a broad group of contributors recognize the same need and agree on how to meet

Share the work: projects are broken into smaller tasks, and a review process screens the best contributions
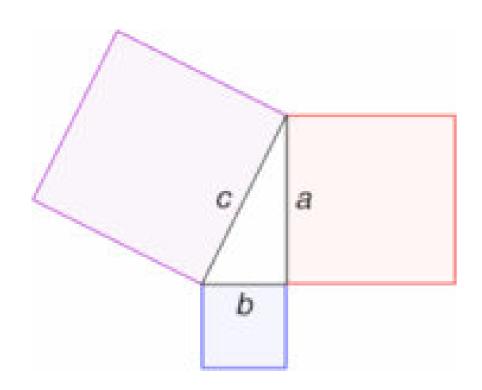
Share the result: code should be available to all and improvements should be shared to all

Open Source and Science

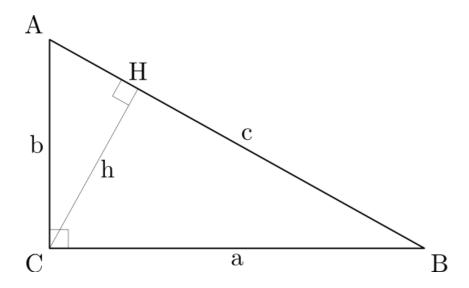The scientific method rests on a process of **discovery** and a process of **justification**

For scientific results to be justified, they must be **replicable**

Replication is not possible unless the source is **shared**

Open Source and Science

Pythagoras' theorem

$$a^2+b^2=c^2$$

Open Source and Science

$$\frac{AC}{AB} = \frac{AH}{AC} \text{ and } \frac{CB}{AB} = \frac{HB}{CB}.$$

$$AC \times AC + CB \times CB = AB \times AH + AB \times HB = AB \times (AH + HB) = AB \times AB.$$

$$AC^2 + BC^2 = AB^2.$$

Open Source and Science

Where scientists talk of **discovering**, Open Source programmers talk of **creating**

Where scientists talk of **replication**, Open Source programmers talk of **debugging**
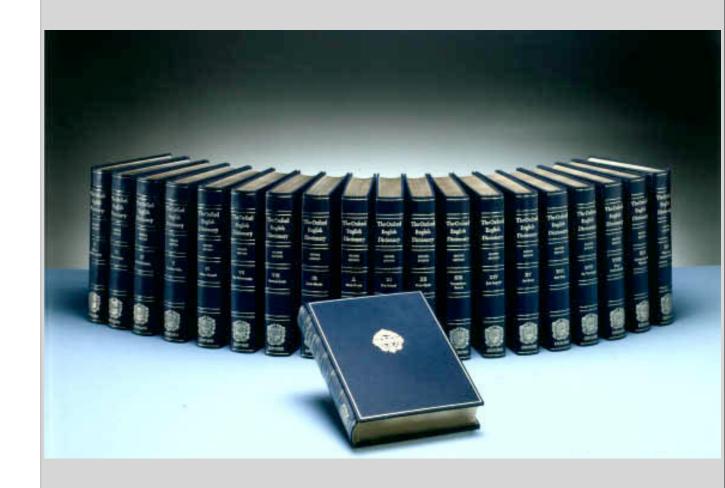
The Open Source movement is an extension of the scientific method

Open Source in history

The Oxford English Dictionary, 1857

301,100 main entries

... a large number of volunteer readers, who would read books, copy out passages illustrating various actual uses of words onto quotation slips, and mail them to the editor
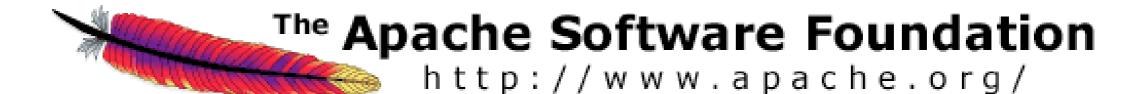
OS software

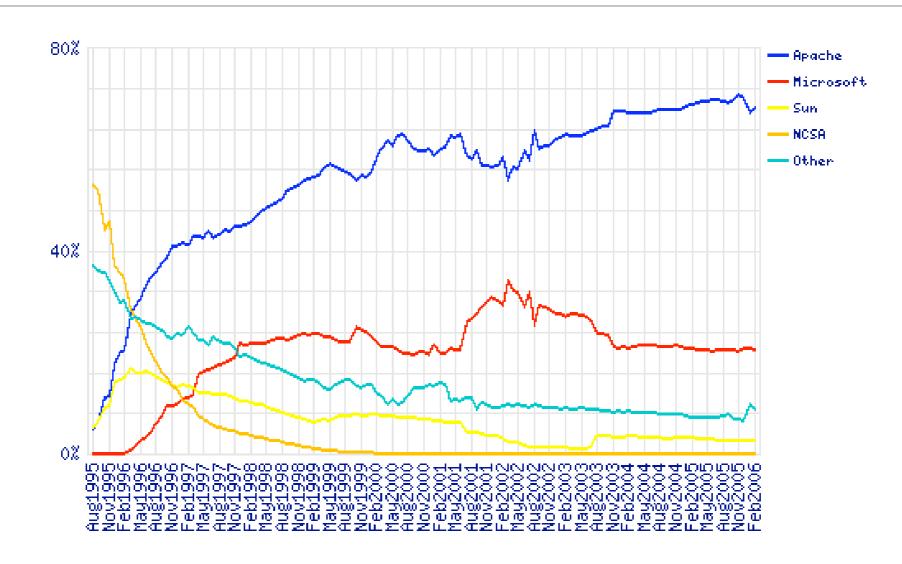**Linux**, 18 million users

Google uses Linux
(1000 queries per second!)

We will use Ubuntu Linux

OS software

Apache, OS webserver

Used in 69% of webservers, 15 million servers!

OS software

Developer	January 2006	Percent	February 2006	Percent	Change
Apache	50502840	67.11	51810676	68.01	0.90
Microsoft	15510953	20.61	15666702	20.56	-0.05
Sun	1879856	2.50	1880313	2.47	-0.03
Zeus	561524	0.75	579198	0.76	0.01

OS software

Open Office, a complete office suite of programs, compatible with Microsoft's Office, available in 21 different languages
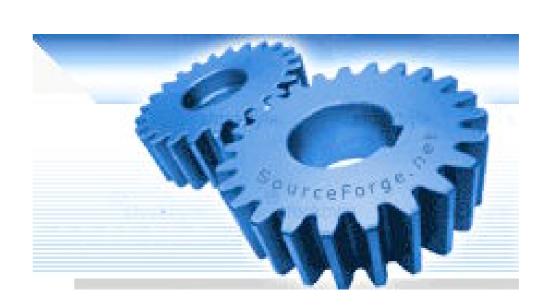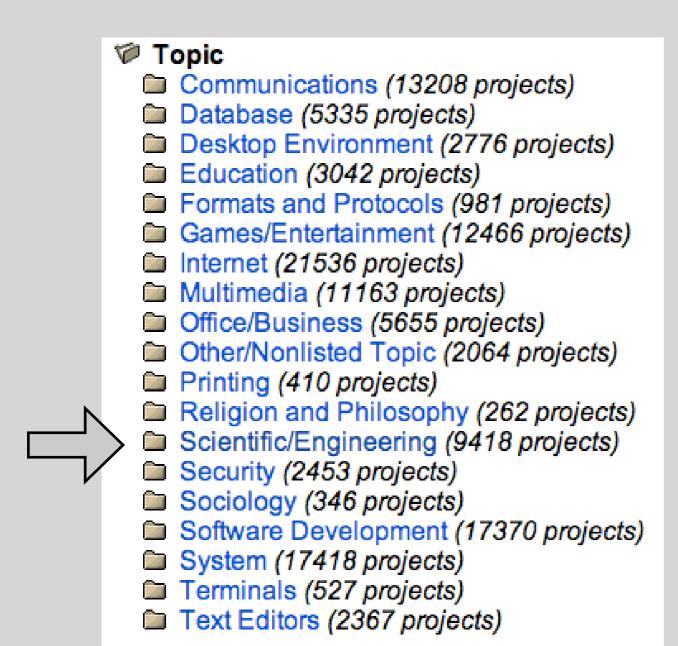
http://www.openoffice.org

OS software
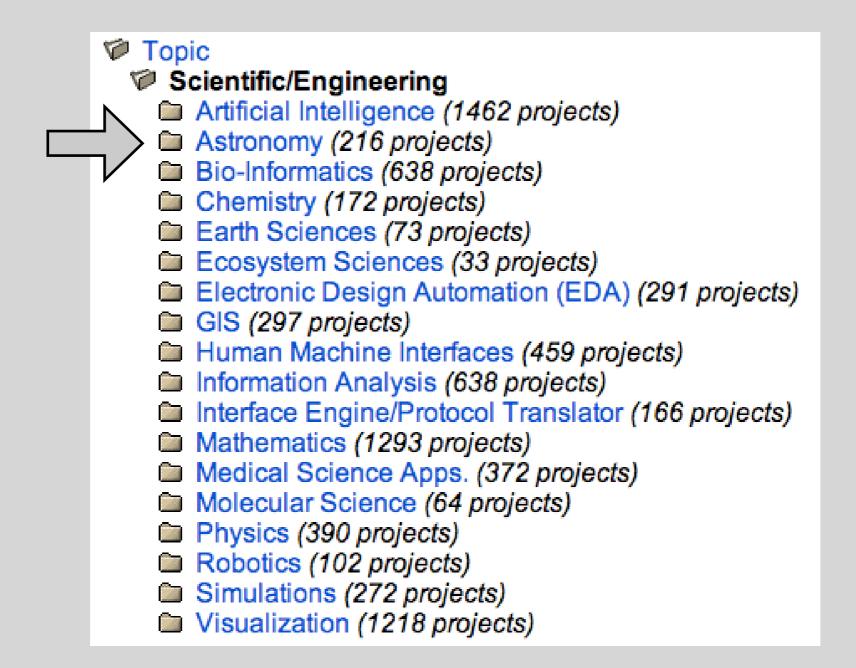
http://www.sourceforge.net

95000 collaborative software projects

1000000 registered users!

Topic
- Communications *(13208 projects)*
- Database *(5335 projects)*
- Desktop Environment *(2776 projects)*
- Education *(3042 projects)*
- Formats and Protocols *(981 projects)*
- Games/Entertainment *(12466 projects)*
- Internet *(21536 projects)*
- Multimedia *(11163 projects)*
- Office/Business *(5655 projects)*
- Other/Nonlisted Topic *(2064 projects)*
- Printing *(410 projects)*
- Religion and Philosophy *(262 projects)*
- Scientific/Engineering *(9418 projects)*
- Security *(2453 projects)*
- Sociology *(346 projects)*
- Software Development *(17370 projects)*
- System *(17418 projects)*
- Terminals *(527 projects)*
- Text Editors *(2367 projects)*

Browse by:
- Database Environment
- Development Status
- Intended Audience
- License
- Operating System
- Programming Language
- **Topic**
- Translations
- User Interface

OS software

OS software

5. **Celestia** - Celestia is real-time 3D space simulation which lets you travel through our solar system and to over 100,000 stars in our neighborhood.
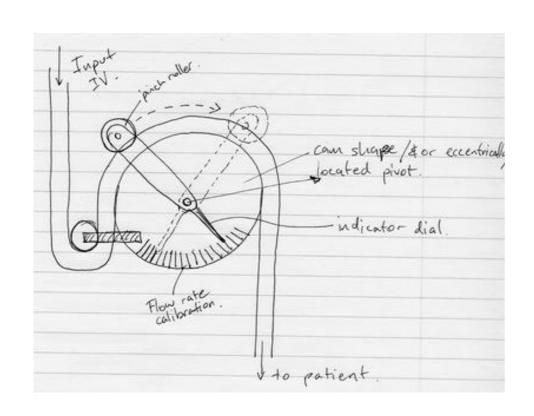
- Development Status: 4 - Beta ✓ 🗑 (18401)
- Intended Audience: End Users/Desktop ✓ 🗑 (33588), Education ✓ 🗑 (5388), Science/Research ✓ 🗑 (5374)
- License: GNU General Public License (GPL) ✓ 🗑 (50021)
- Operating System: 32-bit MS Windows (95/98) ✓ 🗑 (6456), All 32-bit MS Windows (95/98/NT/2000/XP) ✓ 🗑 (21155), All POSIX (Linux/BSD/UNIX-like OSes) ✓ 🗑 (30047), Linux ✓ 🗑 (23846), OS X ✓ 🗑 (3612)
- Programming Language: C++ ✓ 🗑 (17458)
- Topic: Education ✓ 🗑 (1988), Games/Entertainment ✓ 🗑 (2892), 3D Rendering ✓ 🗑 (1002), **Astronomy** ✓ 🗑 (216)
- Translations: English ✓ 🗑 (55055)
- User Interface: Cocoa (MacOS X) ✓ 🗑 (2041), Gnome ✓ 🗑 (2390), KDE ✓ 🗑 (1936), Win32 (MS Windows) ✓ 🗑 (16614)

Activity Percentile:
99.36
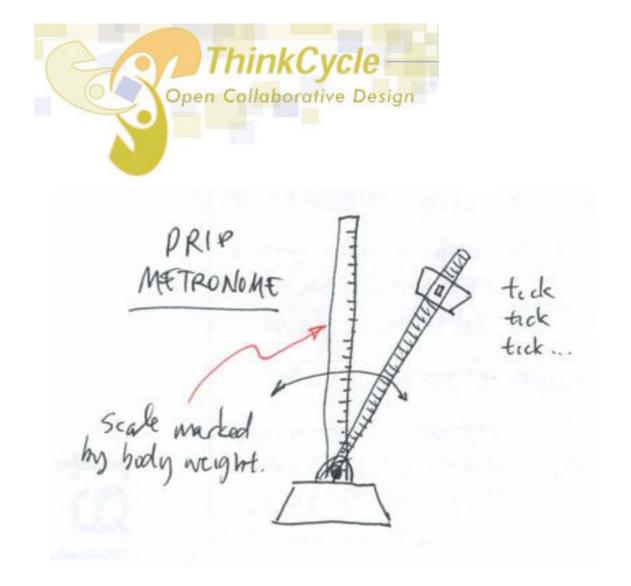
Activity Ranking:
974

Registration Date:
2001-02-23 16:52

OS software

Open Source Projects

Biology: cholera

Open Source Projects

Publishing: Prentice Hall

http://www.informit.com/promotion/1041

Linux Development Platform, The

List Price: $49.99
Your Price: $44.99 (Save 10%)

Add to Cart

The Linux Development Platform shows how to choose the best open source and GNU development tools for your specific needs, and integrate them into a complete development environment that maximizes your effectiveness in any project.

Download The Linux Development Platform in PDF
Download the source document
Download the figures

Open Source Projects

Publishing: Project Gutenberg

http://www.gutenberg.org

6000 books for free

"Distributed proofreading"

Languages with more than 50 books: Chinese Dutch English Finnish French German Spanish

Languages with up to 50 books: Afrikaans Aleut Bulgarian Catalan Czech Danish Esperanto Friulano Gamilaraay Gascon Greek Hebrew Icelandic Iloko Interlingua Irish Iroquoian Italian Japanese Khasi Korean Latin Lithuanian Mayan Languages Middle English Nahuatl North American Indian Norwegian Old English Polish Portuguese Romanian Russian Sanskrit Serbian Slovak Swedish Tagalog Welsh Yiddish

Categories: Audio Book, computer-generated Audio Book, human-read Data Music, recorded Music, Sheet Other recordings Pictures, moving Pictures, still

Open Source Projects

Academia: **MIT Open Courseware**

http://ocw.mit.edu

more than 1000 MIT courses

translations in Spanish

and Portuguese

Lecture Notes

This section provides the lecture notes used in the course. The occasional pres in those slides during lecture.

LEC #	TOPICS
1	Data Networks (PDF)
2	The Data Link Layer: Framing and Error Detection (PDF)
3 & 4	The Data Link Layer: ARQ Protocols (PDF)
5 & 6	Introduction to Queueing Theory (PDF)

Open Source Projects

Publishing: **Wikipedia**

http://www.wikipedia.org

10000 active contributors

articles in 50 languages

954 000 articles in English

http://www.nature.com/news/2005/051212/full/438900a.html

Abdus Salam

Prof. Dr. Abdus Salam (January 29, 1926–November 21, 1996) received the Nobel Prize in Physics in 1979 for his work in electroweak theory, which is the mathematical and conceptual synthesis of the electromagnetic and weak interactions—the latest stage reached until now on the path towards the unification of the fundamental forces of nature. Salam, Sheldon Glashow, and Steven Weinberg arrived at the theory independently and shared the prize. The validity of the theory was ascertained in the following years through experiments carried out at the Super Proton Synchrotron facility at CERN in Geneva, particularly the discovery of the W and Z bosons.

Director of the International Centre for Theoretical Physics (ICTP), Trieste, Italy, from 1964 to December 1993, Salam died in Oxford in 1996, after a long illness. He was buried in Pakistan where he was born.

Although he belonged to the Ahmadiyya Muslim sect—considered heretical by many Muslims—Pakistanis are proud of their country's Nobel Laureate, some religious zealots notwithstanding.

In the early 1970s, Abdus Salam played a role in starting Pakistan's Atomic Energy Commission.

Open Source Projects

Open Source Projects

What have we learned so far?

Open Source is not new!

Open Source is not just software!

Open Source is based on sharing!

Introduction to OS

Thank you for your attention!

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