Educational resources

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http://www.educa.fmf.uni-lj.si/izodel/dela/Colos.04/FreeEdu.pdf

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Free Educational Resources

To support the *informatization* of education teachers and students should be provided with:

- teaching/learning *materials* (programs, lectures, tests, . . .);
- friendly, easy to use *tools/environments* to produce their own materials or to adapt the existing ones;
- *resources* (libraries of algorithms, texts, pictures, sounds, videos, data, . . .) needed to produce these materials.

Since the educational budgets are usually scarce we would like that most of these tools and resources would be:

- *freely available* for educational use in the school and at home;
- *open* (can be inspected inside) and can be *modified*. 
Example: Teaching With Documents

D-Day Message from General Eisenhower to General Marshall

*TOP SECRET*

SHAPE

STAFF MESSAGE CONTROL

INCOMING MESSAGE

FROM: SHAEF OCM OCM
TO: AGFR TO CONTROL ENSN FOR EME SRE OCM SHAPE FOR INFORMATION

REF 50: AGFR 6 JUNE 1944

Local time is now 8 in the evening.

I have as yet no information concerning the actual landings nor of our progress through beach obstacles. Commitments will not be issued until we have word that invading ground troops are actually ashore.

All preliminary reports are satisfactory. Invasion forces apparently landed in good order with losses not of appreciably 1,000 airplanes participating about 90. Preliminary landings by air were off at scheduled. Early reports covering some areas, but as far as known channels are clear and operation proceeding as planned. In early morning some reaction from shore batteries was sufficiently light that some of the naval spotting planes have returned floating fuel.

The weather yesterday which was original date selected was impossible along the target coast. Today conditions are vastly improved both by sea and air and we have the prospect of at least reasonably favorable weather for the next several days.

Yesterday I visited British troops about to embark and last night met a great portion of United States invasion division just prior to its taking off. The excitement, brightness and obvious fitness of every single man were high and the sight of smiles was in their eyes.

I will keep you informed.

RECEIVED

1. STEVENS, HENRY
2. CHIEF OF STAFF
3. DCS
4. GEN STRONG (CC)
5. GEN D/D 19/1

DECLASSIFIED

DCR DR 3331; 1 JUN 1945

BC R JUN E 25 27

1944444

COPY NO: 1

…Free Educational Resources

Free for the users. There can be different ways to ’pay’ the authors for their work.

Learning from the masters by inspecting the inside.

Modifying objects to adapt them for our own needs (localization – translation, changing or adding functionalities, . . .).

Developing by building with blocks.

*everything by ourselves – everything from beginning – never finished*

Establishing libraries/collections/repositories of educational resources. They should contain ’friendly resources’ – no malicious code (virus, spyware, . . .) and non offending (race, sex, gender, . . .).
Collections/Repositories

First established already in pre-WWW times based on FTP.
Internet sites as a common place for exchange of resources.

- Simtel, C|Net, WinSite, Tucows, Stroud’s CWSApps.
- NASA, Free pictures index, Heraldry.
- Explorer, Utah Education Network, Digital classroom.
- MIT, Rice, berklee, Public Library of Science, BioMed Central.
- Project Gutenberg,
  Zbirka slovenskih leposlovnih besedil, Beseda.
- Data and Story Library / StatLib, The CIA World Factbook.
Virtual Software Library

The father of Virtual Software Library (now C|net) is Žiga Turk:

Other resources for searching

If you're looking for freeware or shareware (and they're not the same -- you're supposed to pay for shareware), try the Virtual Software Library, which allows searching and retrieval of more than 130,000 files. The library was started by Professor Ziga Turk at the University of Ljubljana, Slovenia, but has recently moved to a new site at a company that calls itself c|net: the computer network (http://vsl.cnet.com). [02 Mar 1997: now called Shareware.Com, http://www.shareware.com.]

from EEI Communications, November 1995
### Math-related Programs

**Flash Math 1.03**
- Released: Nov 08, 2003
- OS: Handheld
- License: Shareware
- Price: $2
- User Rating: N/A

Children in years past have always practiced their basic mathematics by using flash cards. This learning methodology is highly effective in sharpening children's computational capacity but lacks dynamic feedback. Flash Math duplicates the positive aspect of flash cards and provides dynamic feedback. Also, Flash Math scales problems according to children’s proficiency so that they are not frustrated by difficult problems or unchallenged by less intricate equations. The problems presented are for children in grades first through third in a standard US school curriculum.

- Downloads: 50
- File Size: 148.44 KB
- Company: Phan Network
- Web Site: http://www.PhanNetwork.com

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**LabStat 3.10.15**
- Released: Oct 14, 2003
- OS: Windows 95/98/ME/XP
- License: Freeware
- Price: -
- User Rating: 83.33%

LabStat was written for research professionals who often compile sample data from raw data files. In manual mode, LabStat is also ideal for student work in lab courses. From data entry to analysis, LabStat demands fewer and less complicated steps than Excel and other Windows software. - Build 3.10.15 fixes bugs with correlation operations. - Users running 3.8.1 or later need only download the updated EXE file from the LabStat website.

- Downloads: 601
- File Size: 1.38 MB
- Company: S. A. DeCaro, Ph.D.
- Web Site: http://software.sdcnet.com/labstat
WinSite / Education / Mathematics

### InfoCard@WinSite

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<th>Mathomatic</th>
<th>Download Now</th>
<th>Get this on CD</th>
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<td>User Rating</td>
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Mathomatic is a small, portable symbolic math program that can automatically solve, simplify, differentiate, combine, and compare algebraic equations, perform polynomial and complex arithmetic, etc.
Categories of software by Chao-Kuei.
Licences

- *Public / Center for the Public Domain*
- *Free / GNU, The FreeBSD Copyright*
- *Open / Open Source Initiative, Open Content, Open Access*
- *Share / Association of Shareware Professionals, Trialware Professional Association*
- *Commercial / U.S. Copyright Office*

The *public domain* is a space where intellectual property protection does not apply. When copyrights and patents expire, innovations and creative works fall into the public domain. They may then be used by anyone without permission and without the payment of a licensing fee.
GNU

GNU Operating System - Free Software Foundation

Free as in Freedom

Welcome to the GNU Project web server, www.gnu.org. The GNU Project was launched in 1984 to develop a complete UNIX style operating system which is free software: the GNU system. (GNU is a recursive acronym for "GNU's Not UNIX"; it is pronounced "guh-noo.") Variants of the GNU operating system, which use the kernel Linux, are now widely used; though these systems are often referred to as "Linux," they are more accurately called GNU/Linux systems.

This is also the web site of the Free Software Foundation (FSF). FSF is the principal organizational sponsor of the GNU Project. FSF receives very little funding from corporations or grant-making foundations. We rely on support from individuals like you who support FSF's mission to preserve, protect and promote the freedom to use, study, copy, modify, and redistribute computer software, and to defend the rights of Free Software users.
Open source

"The basic idea behind open source is very simple: When programmers can read, redistribute, and modify the source code for a piece of software, the software evolves. People improve it, people adapt it, people fix bugs. And this can happen at a speed that, if one is used to the slow pace of conventional software development, seems astonishing.

We in the open source community have learned that this rapid evolutionary process produces better software than the traditional closed model, in which only a very few programmers can see the source and everybody else must blindly use an opaque block of bits.”
Our experiences with free materials

- we got the Wirth’s pascal compiler in RRC Ljubljana in 1974;
- in mid eighties we started to use \TeX, and later also Ghostscript/Gsview;
  Support (project Ro) of distribution of TUG’s edition of \TeX CDs;
- around 1990 LogoS – an interpreter for the slovenian dialect of logo was developed for PC/DOS. From 1994 on each new version of MSWlogo’s GUI is translated in Slovenian;
- Lokar’s collection of mathematical educational programs;
- SIO catalogs;
- Panel INFOS 2000, …
Creative Commons

free as the air to common use

From the CC legal concepts:
”Creativity and innovation rely on a rich heritage of prior intellectual endeavor. We stand on the shoulders of giants by revisiting, reusing, and transforming the ideas and works of our peers and predecessors. Digital communications promise a new explosion of this kind of collaborative creative activity. But at the same time, expanding intellectual property protection leaves fewer and fewer creative works in the ’public domain’”

”Following legislative changes in 1976 and 1988, creative works are now automatically copyrighted (also in U.S.). We believe that many people would not choose this ”copyright by default” if they had an easy mechanism for turning their work over to the public or exercising some but not all of their legal rights. It is Creative Commons’ goal to help create such a mechanism.”
...Creative Commons

When you create a work, it’s automatically protected by full copyright — whether you file for protection or not, whether you display the copyright symbol (©) or not. This is fine for people who want control over every last use of their work, but what about those people who want to share their work on certain terms?

Our licenses are designed for those folks — those who understand that innovation and new ideas come from building off existing ones.

Every Creative Commons license allows the world to distribute, display, copy, and webcast your work — provided they abide by certain conditions of your choice.

There are four conditions you can apply with a Creative Commons license. The first is an attribution requirement. Let’s say that I’m a budding photographer and want to get my name and work out on the web. The attribution option lets people freely redistribute my photos as long as they give me credit.

By: Attribution

Noncommercial

No Derivative Works

Share Alike
Creative Commons Educators’ and Scholars’ Corner

Do you want people to redistribute your research and writings widely, as long as they give you credit?

Do you mind if people copy your materials, so long as they don't make money off them? Provided that they share the materials built from yours with the world on the same terms?

Do you like the idea of other people making new works based on yours – provided they offer those derivations back to the public on the same terms?

Do you want to help create and have access to a pool of royalty-free educational material?

If you publish your educational materials online…

Creative Commons provides an interface so that the world knows how they can distribute or re-use your educational materials. We can also help you find material to share and build upon.
...licences

Existing licensing schemes support the coexistence of commercial and free resources.

The *same price everywhere* principle used by most vendors of resources is also one reason for wide spread of unauthorized copying (pirates). In the last years some vendors are adapting to the markets by different pricing of localized versions.

A big issue in our field are the software patents.

League for Programming Freedom
Scripting, Platform independence, Standards

Using scripting languages (Perl, Python, ...) blocks for partial tasks can be combined together into more complex solutions.

Unfortunately most users are not programmers. For them systems with implicit programming (Record, Play) can be the answer.

Platform independent resources can be used on different platforms – types of computers. This is an old idea – Fortran, \texttt{TEX}; fundamental for web resources.

Platform independence is supported by standardization.

In last years several standards are expressed as XML based markup languages.
Resource standards


AICC - Aviation Industry CBT (Computer-Based Training) Committee, docs.

Adobe, XMP, dl.

CC Metadata

```xml
<rdf:RDF xmlns="http://web.resource.org/cc/"
  xmlns:dc="http://purl.org/dc/elements/1.1/"
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#">  
  <Work rdf:about="http://example.org/gnomophone.mp3">  
    <dc:title>Compilers in the Key of C</dc:title>  
    <dc:description>A lovely classical work on compiling code.</dc:description>  
    <dc:creator><Agent>  
      <dc:title>Yo-Yo Dyne</dc:title>  
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    <dc:source rdf:resource="http://example.net/gnomovision.mov" />  
    <license rdf:resource="http://creativecommons.org/licenses/by-nc-nd/2.0/" />  
    <license rdf:resource="http://www.eff.org/IP/Open_licenses/eff_oal.html" />  
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    <prohibits rdf:resource="http://web.resource.org/cc/CommercialUse" />  
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```
What to do?

- collection of (information about) educational resources on the web (SIO);
- localization of selected resources (Project OKO);
- active support of production of critical resources (language, history, geography, ...) by initiating projects;
- user education for efficient use of resources and materials;
- local copyright legislation about ’fair use’ should be ’education-friendly’;
- results of publicly financed projects and other activities should be in public domain;
- support of standards.
Examples

**IrfanView:** Universal viewer. [Home page](#).

**Rasmol:** Molecular viewer. [Home page](#), program, [RasWin](#); Data: MathMol, 1400+ molecular models, the Molecule of the Month.

**geom SVG:** SVG based dynamic geometry system. [Pilat](#); Support: Adobe SVG Viewer / ASV 6 beta, Corel SVG Viewer, JVM, List SIO: SVG.

**Netlogo:** Simulation environment in Java. [Netlogo MIRK 2003](#).

**R-project:** Statistical environment. [CRAN](#).