



**EgyptFOSS**  
منصة مصر للبرمجيات  
الحرّة مفتوحة المصدر

# GUIDE TO USE FREE AND OPEN SOURCE SOFTWARE IN THE EGYPTIAN SCHOOLS

ADVANTAGES & SOFTWARE LIST

1<sup>st</sup> Edition, October 2018

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# 1. Introduction

## 1.1 This Document

This document is one of “**EgyptFOSS platform**” detailed materials to help Egyptian entities to know the advantages of free and open source software and the best practises to use free and open source software.

The main purpose of this document is to introduce the Schools’ managers and decision makers to the topic of using the free and open source software (FOSS) and to offer some guidance for the use of free and open source software in Schools.

## 1.2 The Publisher

### EgyptFOSS Platform

The Egyptian platform for Free and Open Source software (**EgyptFOSS.org**) launched at CairoICT 2016 exhibition. The platform is one of the first moves of the Egyptian national strategy for promoting the free and open source.

## 1.3 Egyptian FOSS strategy & Egypt 2030 Vision

The Egyptian FOSS strategy has been released at 2014, to achieve many goals like ensure access to knowledge to all citizens, improve efficiency and transparency of the Public Sector, harness the development of the ICT Sector and Foster a Competitive Environment. Also, to ensure efficient budgeting and reduce unjustified spending on IT solutions, achieve technology independence, build a sustainable FOSS community encompassing FOSS users and developers, encourage and support small and medium enterprises (SMEs) in ICT utilization. Beside, raising public awareness about open source solutions, and promoting an open culture concept to different sectors in the society.

The strategy is a powerful tool to achieve Egypt 2030 Vision, as many of IT experts on the Egyptian ICT market believe that adopting FOSS is one of the most effective ways to align with Egypt 2030 Vision and to assure Egypt’s digital transformation.

Egypt 2030 Vision, where The new Egypt will possess a competitive, balanced and diversified economy, dependent on innovation and knowledge, based on justice, social integrity and participation, characterized by a balanced and diversified ecological collaboration system, investing the ingenuity of place and humans to achieve sustainable development and to improve Egyptians' life quality.

## 2. Advantages of Using FOSS

### 2.1 How is Open Source Different from Proprietary Software?

The term Free and Open source software “FOSS” refers to software applications that are made available in source code form under a license agreement that imposes very few restrictions, most likely with no restrictions, on the use, modification and redistribution of the source code. Which is a big different of the proprietary software, as traditional proprietary software involves a variety of restrictions imposed through a license agreement. The aims of these restrictions are to protect the property rights of the author.

The open source software community takes an approach that emphasizes the rights of the user. As Free and Open source software is licensed to users with the following freedoms:

- The software may be used for any purpose.
- The source code may be studied and modified.
- The software may be redistributed without royalty payments or other restrictions.

It is these kinds of freedoms that are foundational to open source software. They provide the transparency needed for community peer review, which improves quality and robustness.

Secondly, open source is developed primarily by volunteers. Development is hosted on the Internet, which means that volunteers can collaborate from anywhere on the planet. The volunteers themselves vary in ability from hobbyists and amateurs to dedicated professionals and subject matter experts. Their motives range from communitarianism to enlightened self-interest.

Thirdly, the development process itself is highly transparent. When issues emerge about the viability or direction of a project they are usually highly visible. This is good because not all open source software projects are robust. And no one wants to deploy a system only to discover later that the system has a doubtful future.

## 2.2 Why is a Clear Definition for Free and Open Source Software Important?

In the marketplace, software is distributed under many types of licenses: shared source, community source, shareware, freeware and others.

The proliferation of license types leads to misunderstandings and incorrect assumptions about open source software. This situation is further compounded by the difficulty the average person has understanding license agreements.

There is an easy way to simplify this problem. The Open Source Initiative (OSI) is an organization established to promote open source software. The OSI publishes an Open source definition that is widely accepted. Furthermore, the OSI has a process for reviewing and approving licenses. They publish a list of licenses (currently around 70) that conform to the OSI definition.

## 2.3 A Comparison of most common FOSS and Related Licenses

Property	License:					
	GPL	LGPL	BSD & MIT	Apache	Public Domain	Microsoft MIT <sup>4</sup> EULA
a. Can be stored on disk with other license types	✓	✓	✓	✓	✓	(bans FOSS) <sup>5</sup>
b. Can be executed in parallel with other license types	✓	✓	✓	✓	✓	(bans FOSS) <sup>5</sup>
c. Can be executed on top of other license types	✓	✓	✓	✓	✓	(bans FOSS) <sup>5</sup>
d. Can be executed underneath other license types	✓ <sup>1</sup>	✓	✓	✓	✓	(bans FOSS) <sup>5</sup>
e. Source can be integrated with other license types		✓	✓	✓	✓	(bans FOSS) <sup>5</sup>
f. User decides if and when to publish derived code	✓ <sup>2</sup>	✓	✓	✓	✓	✓
g. Software can be sold for a profit	✓	✓	✓	✓	✓	✓
h. Binary code can be replicated by users as desired	✓	✓	✓	✓	✓	
i. Binary code can be redistributed as desired	✓ <sup>3</sup>	✓	✓	✓	✓	
j. Binary code can be used as desired by users	✓	✓	✓	✓	✓	
k. New users always receive source code of derived works	✓	✓ <sup>6</sup>				
l. New users receive full source modification rights for derived works	✓	✓ <sup>6</sup>				
m. New users receive full redistribution rights for derived works	✓	✓ <sup>6</sup>				
n. Binary code can be released without source code			✓	✓	✓	✓
o. Derived code can have a different type of license		<sup>7</sup>			✓	
p. Original source can be incorporated into closed source products					✓	

<sup>1</sup> Provided that both programs are fully and independently usable in other unrelated contexts.

<sup>2</sup> Provided that the binary code has not been previously released to the public.

<sup>3</sup> Provided that source code is always redistributed along with the binary code.

<sup>4</sup> The proprietary Microsoft MIT EULA is not related to the similarly named MIT (X/MIT) license.

<sup>5</sup> Specifically bans use of: GPL, LGPL, Artistic, Perl, Mozilla, Netscape, Sun Community, and Sun Industry Standards.

<sup>6</sup> The rights granted by LGPL do not necessarily extend to the applications linked into an LGPL library.

<sup>7</sup> The LGPL does permit re-licensing under GPL as a special case, but not re-licensing under any other license type.

### License Acronyms:

GPL – GNU General Public License

LGPL – GNU Lesser General Public License

BSD – Berkeley Software Distribution

MPL – Mozilla Public License

(Microsoft) MIT – Mobile Internet Toolkit

(X/MIT) MIT – Massachusetts Institute of Technology

EULA – End-User License Agreement

FOSS – Free and Open-Source Software

## 2.4 General advantages of using Open Source Software on Organizations

### 1- Less process

Open source software rarely involves an up-front purchase cost. Therefore, acquiring open source software can involve fewer approvals, fewer meetings, less process and delay resulting from the financial approvals process inside the government entities and schools. When facing deadlines less process is welcome.

### 2- Flexibility

Licensing open source software does not involve negotiating a contractual agreement for the software. No contract means less commitment, which in turn means the Province has more flexibility if plans need to change.

### 3- Better sustainability

Market forces can undermine the sustainability of a software product. A software system can become redundant through the consolidation of an overcrowded market or through strategic mergers and acquisitions. Adopting an open source solution can be a strategy to help insulate IT investments from external market forces.

### 4- Freedom

In the open source model of development, third-party vendors compete to offer software support. Having “open source” rights to the application code ensures vendor lock-in is not a concern.

### 5- Self-determination

Open source systems are developed in an open, collaborative manner. Users have direct input into improvements and setting priorities.

## 2.5 Open Source Software advantages for Schools

- 1- As the software and code freely available costs are lower, this affects positively to lower the Total Cost of Ownership.
- 2- Open Source solutions are scalable in both directions, upwards and downwards, with a reduction in the risk of longer-term financial implications.
- 3- Ability to re-use open source code, reduces the time of development and required resources.
- 4- Provides a licensing model that enables rapid provisioning of both known and unanticipated users and in new use cases. So, using OSS will reduce the licensing liabilities, there is no possibility of piracy problems when you use open source.
- 5- More stable and provides better security. Also, Upgrades are free and open source software generally has a very long life spans and is rarely ever made obsolete. This helps ensure your data and experience with the software stays meaningful for much longer,
- 6- Can be operated and maintained by the school IT team themselves, also it can encourage students to collaborate on the developing process.
- 7- No need to big upgrades on hardware. Usually, Open Source Software does not require a high-end hardware specification. This means that even by using older devices it is possible to work without loss of performance. Also, Schools can use OSS on the current Operating systems they use or use a new free and open source OS to install.
- 8- Students will have better access to software, as there is no need to purchase a licence of a proprietary software.
- 9- Students can choose their own tools, rather than being restricted by what the teacher provides.



## 2.6 Best Ways to use Free and Open Source Software on Schools

Schools can use open source software in a number of ways. Many open source applications can run on various operating system platforms, such as Windows, Mac OS and Linux.

However, there are many more open source applications which run on open source platforms, primarily Linux distributions. Schools therefore have several paths towards using open source software. They can:

1. Use software which will work with existing Windows (or/and sometimes Mac) workstations.
2. Use software which will work with an installation on a Linux operating system partition, as part of a dual-boot PC (which can also continue to run the existing Windows platform.)
3. Use software which will work on a Linux-only server and be accessible from Windows or Mac OS via a web browser.

### 2.6.1 Using Your Current OS

Maybe the easiest option for many teachers and schools when starting to use open source software, is the first approach, namely to install and use software which runs on the operating system you are currently using.

Schools are able to download and install this software, directly from the websites nominated in this document.

### 2.6.2 Using Linux distributions (or dual boot Linux/Windows)

While there are hundreds of open source programs which are available for Windows and Mac computers, there are far more which run on top of the Linux operating system.

Schools are able to use these programs by installing Linux on some of your PCs, or perhaps making your existing Windows or Macintosh dual-boot, so they can be made to run with Linux (and therefore Linux software) as well. This will not affect the current operating system and software you may already have installed on that computer.

Installing Linux distributions is no more complex than Windows, and looks much like the modern Windows and Mac user interfaces.







### 3.1.2 Servers Operating Systems

#### 1- CentOS:

- Developer: The CentOS Project (Affiliated with Red Hat)
- Proprietary features: No
- Website: <https://www.centos.org/>
- Documentation: <https://www.centos.org/docs/>

#### 2- Ubuntu Server:

- Developer: Canonical Ltd., Ubuntu community
- Proprietary features: No
- Website: <https://www.ubuntu.com/server>
- Documentation: <https://help.ubuntu.com/lts/serverguide/>



### 3.1.4 Student Information Systems

#### 1- Kuali Student:

- Description: Software handles administrative processes for pre- and post-award tasks.
- Developer: Kuali Foundation
- License: AGPLv3
- Proprietary features: No
- Arabic interface: No
- Website: <https://kuali.org/portfolio/student/>
- Documentation: <https://www.kuali.co/products/student/>
- Source Code: <https://github.com/kuali-student>
- Notable Adopters: Colorado State University and University of Toronto

#### 2- OpenEMIS:

- Description: Education Management Information System for the education sector. Its main purpose is to collect, analyse, and report data related to the management of educational activities.
- Developer: UNESCO
- License: GNU GPLv3
- Proprietary features: No
- Arabic Support: Yes
- Website: <https://www.openemis.org/>
- Documentation: <https://www.openemis.org/>
- Notable Adopters: Jordanian Ministry of Education

### 3.1.5 Document Management System (DMS)

#### 1- Alfresco:

- Description: Enterprise content management for documents, web, records, images, videos, rich media, and collaborative content development.
- Developer: Alfresco Software, Inc.
- License: LGPLv3
- Proprietary features: Yes (<https://www.alfresco.com/products/enterprisecontent-management>)
- Website: <https://www.alfresco.com/solutions/document-management>
- Documentation: <http://docs.alfresco.com/>
- Source code: <https://svn.alfresco.com/repos/alfresco-open-mirror/alfresco/>  
Mirror: <https://github.com/Alfresco/community-edition>
- Arabic Support: Yes [Alfresco-Arabic-language-pack](#)

#### 2- OpenKM

- Description: Electronic document management system and record management system EDRMS
- Developer: Open Document Management System S.L., Spain
- License: GNU GPLv2
- Proprietary features: Yes (<https://www.openkm.com/en/comparison-ofversions.html>)
- Website: <https://www.openkm.com/>
- Documentation: <https://docs.openkm.com/kcenter/>
- Source code: <https://sourceforge.net/p/openkm/code/>
- Arabic Support: Yes [Language Pack](#)

### 3.1.6 Library management systems

#### 1- Koha

- Description: Integrated Library System, used world-wide by public, schools, universities and special libraries.
  - Developer: Koha Community
  - License: GPL v3
  - Proprietary features: No
  - Arabic Support: Yes
  - Website: <http://www.koha.org>
  - Documentation: <http://www.koha.org/document>
- 

### 3.1.7 Survey and Data Collection

#### 1- Limesurvey:

- Description: on-line statistical survey web app
  - Developer: Carsten Schmitz
  - License: GNU GPLv2 or later
  - Proprietary features: No
  - Arabic Support: Yes
  - Website: <http://www.limesurvey.org/>
  - Documentation: <https://manual.limesurvey.org/>
  - Source code: <https://www.limesurvey.org/downloads/>
- 

### 3.1.8 School management system

#### 1- OpenSIS - Community version

- Description: Student information system & School management system
  - Developer: OS4ed
  - License: GPL v2
  - Arabic Support: Yes
  - Proprietary features: Yes. [opensis.com/opensis-pro](https://opensis.com/opensis-pro)
  - Website: [opensis.com/community](https://opensis.com/community)
  - Documentation: [opensis.com/community-videos](https://opensis.com/community-videos)
  - Source Code: <https://sourceforge.net/p/opensis-ce/code/HEAD/tree/>
-



### 3.1.9 School Administration system

#### 1- project Fedena

- Description: School administration management software to efficiently manage students, teachers, employees, courses & all the system & process related to your institution.
  - Developer: University of Louisiana at Monroe & Community
  - License: GPL v3                      ○ Arabic interface: No
  - Proprietary features: No
  - Website: [projectfedena.org](http://projectfedena.org)                      ○ Documentation: [projectfedena.org/install](http://projectfedena.org/install)
  - Source Code: <https://github.com/projectfedena/fedena>
  - Notable Adopters: All public Schools of Government of Kerala, India
- 

### 3.1.10 Classrooms systems

#### 1- Veyon

- Description: Software for computer monitoring and classroom management supporting Linux and Windows.
- Developer: Tobias Junghans                      ○ License: GPL
- Proprietary features: No                      ○ Arabic interface: No
- Website: [veyon.io](http://veyon.io)                      ○ Documentation: [docs.veyon.io](http://docs.veyon.io)
- Source Code: <https://github.com/veyon/veyon>

#### 2- BigBlueButton

- Description: Virtual classrooms and video conferencing with whiteboard, chat and desktop sharing capabilities.
- Developer: BigBlueButton Inc                      ○ License: LGPL
- Proprietary features: No                      ○ Arabic interface: No
- Website: [bigbluebutton.org](http://bigbluebutton.org)                      ○ Documentation: [docs.bigbluebutton.org](http://docs.bigbluebutton.org)
- Source Code: <https://github.com/bigbluebutton/bigbluebutton>





### 3.1.14 Photo editing Software

#### 1- GIMP:

Teamgraphics editor used for image retouching and editing,

- Developer: GIMP Development team
- Website: <https://www.gimp.org/>
- Documentation: <https://www.gimp.org/docs/>
- Source code: <https://www.gimp.org/source/>
- License: GNU GPLv3 or later
- Proprietary features: No
- Arabic Support: Yes
- Arabic interface: No
- Notable Adopters: Prince Sattam University

#### 2- Krita:

- Developer: KDE
  - License: GNU GPLv2
  - Proprietary features: No
  - Arabic interface: No
  - Website: <https://krita.org/en/>
  - Documentation: [docs.krita.org/Main Page](https://docs.krita.org/Main_Page)
  - Source code: <https://github.com/KDE/krita>
  - Notable Adopters: Paris 8 University
- 

### 3.1.15 Vector graphics

#### 1- Inkscape:

- Developer: Community
- License: GNU GPLv2
- Proprietary features: No
- Arabic Support: Yes
- Website: <https://inkscape.org/en/>
- Documentation: <http://wiki.inkscape.org/wiki/index.php/Inkscape>
- Source code: <https://github.com/inkscape/inkscape>

### 3.1.16 Computer Aided Design (CAD)

#### 1- BRL-CAD:

- Description: Software includes an interactive geometry editor, ray tracing support for graphics rendering and geometric analysis, computer network distributed framebuffer support, scripting, image-processing and signal-processing tools.
- Developer: BRL-CAD
- License: LGPLv2.1
- Proprietary features: No                      ○ Arabic interface: No
- Website: [brlcad.org/](http://brlcad.org/)                      ○ Documentation: [brlcad.org/wiki/Documentation](http://brlcad.org/wiki/Documentation)
- Source code: <https://github.com/kanzure/brlcad>

#### 2- LibreCAD

- Description: Computer-aided design application for 2D design. It works on Linux, macOS, Unix and Windows operating systems.
- Developer: LibreCAD community                      ○ License: GNU GPLv2
- Proprietary features: No                      ○ Arabic interface: No
- Website: <http://librecad.org/cms/home.html>
- Documentation: [http://wiki.librecad.org/index.php/Main\\_Page](http://wiki.librecad.org/index.php/Main_Page)
- Source code: <https://github.com/LibreCAD/LibreCAD>

#### 3- FreeCAD:

- Description: General-purpose parametric 3D CAD modeler and a building information modeling software with finite-element-method support
- Developer: Jürgen Riegel, Werner Mayer, Yorik van Havre
- License: LGPLv2.1
- Proprietary features: No                      ○ Arabic interface: No
- Website: <http://www.freecadweb.org/>
- Documentation: <http://www.freecadweb.org/wiki/>
- Source code: <https://github.com/FreeCAD/FreeCAD>

### 3.1.17 3D Modelling

#### 1- Blender:

- Description: 3D computer graphics software toolset used for creating animated films, visual effects, art, 3D printed models, interactive 3D applications and video games.
  - Developer: Blender Foundation
  - License: GNU GPLv2 or later
  - Proprietary features: No                      ○ Arabic support: Yes
  - Website: <http://www.blender.org/>
  - Documentation: <https://www.blender.org/documentation/>
  - Source code: <http://download.blender.org/source/blender-2.78.tar.gz>
- 

### 3.1.18 Multimedia players

#### 1- VLC media player:

- Description: Cross-platform media player and streaming media server.
- Developer: VideoLAN
- License: LGPL
- Proprietary features: No                      ○ Arabic interface: Yes
- Website: <https://www.videolan.org/vlc/>
- Documentation: <https://wiki.videolan.org/>





### 3- EnergyPlus:

- Description: Energy simulation program that engineers, architects, and researchers use to model both energy consumption—for heating, cooling, ventilation, lighting and plug and process loads, and water use in buildings.
- Developer: US National Renewable Energy Laboratory (NREL) and Academic institutions
- License: BSD
- Proprietary features: No                      ○ Arabic interface: No
- Website: <https://energyplus.net/>
- Documentation: <https://energyplus.net/documentation>
- Source code: <https://github.com/NREL/EnergyPlus>

### 4- Step

- Description: An interactive physics simulator.
- Developer: KDE Education Project      ○ License: GPL
- Proprietary features: No                      ○ Arabic interface: No
- Website: [edu.kde.org/step](http://edu.kde.org/step)                      ○ Source code: <https://github.com/KDE/step>
- Documentation: <https://docs.kde.org/trunk5/en/kdeedu/step/step.pdf>

### 4- Artikulate

- Description: That helps improving and perfecting a learner's pronunciation skills for a foreign language.
- Developer: Andreas Cord-Landwehr      ○ License: GPL
- Proprietary features: No                      ○ Arabic interface: No
- Website: [edu.kde.org/artikulate](http://edu.kde.org/artikulate)                      ○ Source code: [github.com/KDE/artikulate](https://github.com/KDE/artikulate)
- Documentation: <https://techbase.kde.org/Projects/Edu/Artikulate>

### 3.1.20 Web Browsers

#### 1- Firefox:

- Initial release: 2002
  - Developer: Mozilla Foundation and contributors
  - License: Mozilla Public License 2.0
  - Proprietary features: No                      ○ Arabic Support: Yes
  - Website: <https://www.mozilla.org/en-US/firefox/>
  - Documentation: <https://developer.mozilla.org/en-US/>
  - Source code:  
[https://developer.mozilla.org/enUS/docs/Mozilla/Developer\\_guide/Source\\_Code/Downloading\\_Source\\_Archives](https://developer.mozilla.org/enUS/docs/Mozilla/Developer_guide/Source_Code/Downloading_Source_Archives)
- 

### 3.1.21 Email Clients

#### 1- Mozilla Thunderbird:

- Initial release: 2003
- Developer: Mozilla Foundation
- License: Mozilla Public License 2.0                      ○ Arabic Support: Yes
- Proprietary features: No
- Website: <https://wiki.mozilla.org/Thunderbird/Docs>
- Documentation: <https://www.mozilla.org/en-US/thunderbird/>
- Source code: <https://github.com/mozilla/mozdownload>

### 3.1.22 Video Editing Software

#### 1- Pitivi:

- Developer: The Pitivi development team
- License: LGPLv2.1
- Proprietary features: No                      ○ Arabic interface: No
- Website: <http://www.pitivi.org/>
- Documentation: <http://www.pitivi.org/manual/>
- Source code: <https://github.com/GNOME/pitivi>

#### 2- OpenShot:

- Developer: Jonathan Thomas, Andy Finch, Helen McCall, Olivier Girard, Karlinux, and TJ
- License: GNU GPLv3 or later
- Proprietary features: No                      ○ Arabic interface: No
- Website: <http://www.openshot.org/>
- Documentation: <http://www.openshot.org/support/>
- Source code: <https://code.launchpad.net/openshot>

#### 3- Kdenlive:

- Developer: KDE
- License: GNU GPLv2 or later
- Proprietary features: No                      ○ Arabic interface: No
- Website: <https://kdenlive.org/>
- Documentation: <https://community.kde.org/Kdenlive>
- Source code: <https://github.com/KDE/kdenlive>

### 3.1.23 Audio Editing

#### 1- Audacity

- Description: Digital audio editor and recording application software
- Developer: The Audacity Team
- License: GPL v2
- Proprietary features: No                      ○ Arabic interface: Yes
- Website: <https://www.audacityteam.org/>
- Documentation: <https://manual.audacityteam.org/>

## Created 100% using Open Source Software

This is a list of OSS used to create this document...

Word processing: [OpenOffice Writer](#)

Web Browsing: [Firefox](#)

Font: [Sorts Mill Goudy](#)