

# **Software Libre en las netbooks del Programa Conectar Igualdad**

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## Introducción

El programa Conectar Igualdad fue creado en el año 2010 con lo objetivo de lograr la inclusión digital en nuestro país; con este fin se contempló la entrega de netbooks a alumnos y docentes de escuelas secundarias, de educación especial e institutos de formación docente de gestión estatal. Actualmente el programa lleva entregadas, aproximadamente, 3.800.000 netbooks en todo el territorio nacional.

A través de la utilización de la netbook como herramienta de estudio, incorporación de conocimientos y entretenimiento, tanto en la escuela como en el hogar, se busca unificar el acceso a la tecnología achicando de esta manera la brecha digital existente hoy en día.

Una característica especial en las netbooks es que tienen instalado un sistema de doble booteo o arranque que permite elegir entre dos sistemas operativos: Linux o Windows. Con el paso del tiempo las distribuciones de Linux han ido variando: inicialmente fue Pixart, luego Ubuntu, Mint y actualmente Huayra, que es una distribución desarrollada en Argentina por el equipo de Conectar Igualdad, de aquí en más todas las netbooks entregadas vendrán con este sistema operativo como la opción de booteo por defecto ya que, según lo manifestado por la directora ejecutiva del programa, Silvina Gvirtz *“El trabajo con sistemas operativos de software libre da mayores oportunidades para el aprendizaje”*<sup>1</sup>.

La situación planteada anteriormente implica un desafío para el personal técnico encargado de brindar soporte en cada una de las escuelas donde se lleva a cabo el programa, dado que la mayoría de los usuarios optan por Windows a la hora de utilizar la netbook; las razones que prevalecen en la elección obedecen a que es el sistema operativo que conocen y consideran que Linux es difícil de usar.

Por lo tanto es necesario realizar una transición desde un sistema operativo privativo a uno libre de la forma más amena y sencilla posible para el usuario y uno de los puntos a favor para lograr esta transición es que la mayor parte de las aplicaciones instaladas en ambos sistemas operativos pertenecen al software libre.

A fin de conocer un poco más estas aplicaciones se realizará una breve descripción de algunas de ellas.

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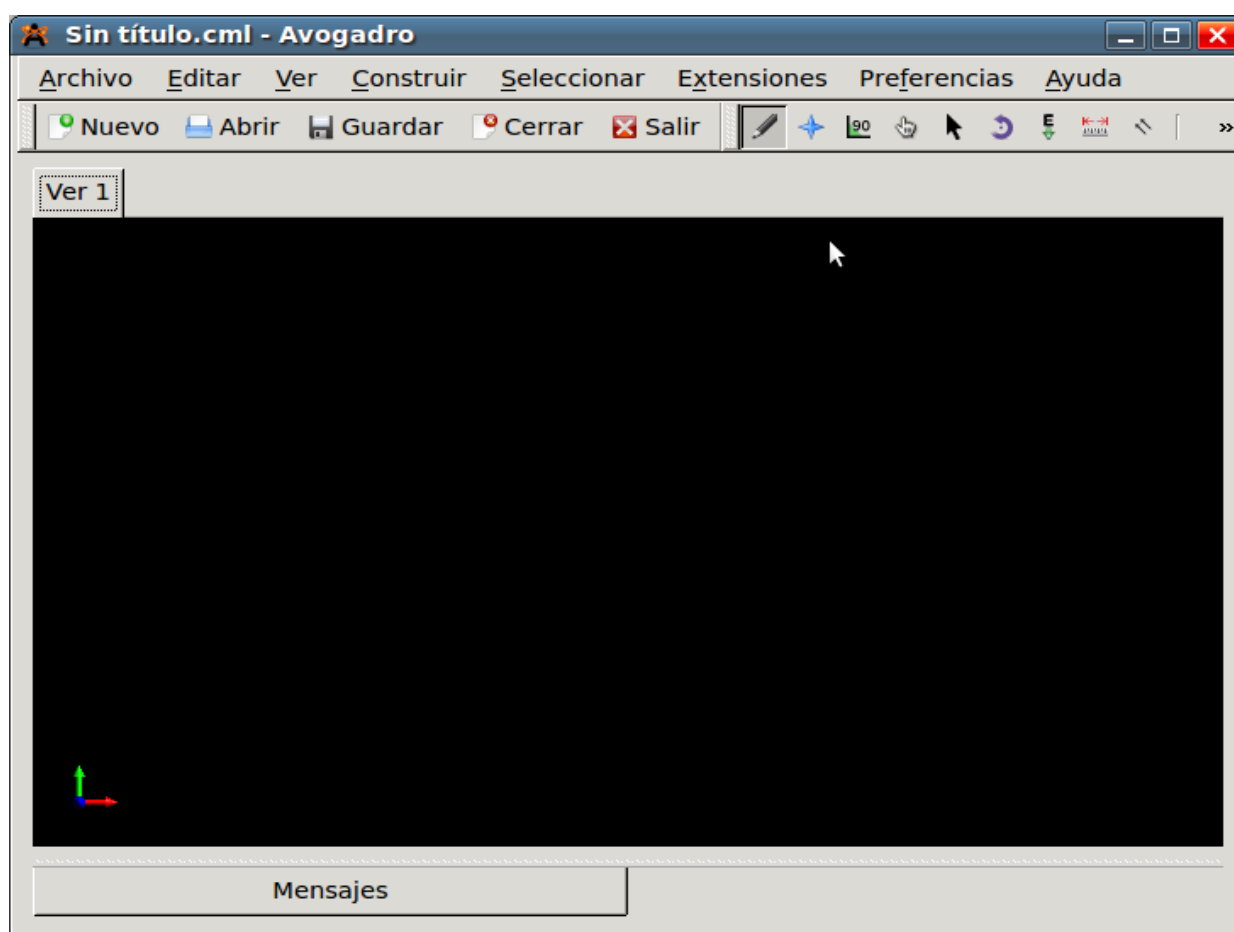
1 <http://lic.cultura.gov.ar/publicaciones-periodicas/punto-panoramico/doble-booteo-para-conectar-igualdad>



## Avogadro

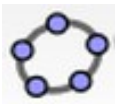
Se utiliza para la enseñanza de química y permite crear estructuras moleculares. Una característica interesante acerca de Avogadro es que permite rotar las estructuras creadas posibilitando una visión 3D de las mismas. Además cuenta con una herramienta de optimización automática que mejora la estructura creada.

El nombre del software es un homenaje a Amedeo Avogadro, un físico y químico italiano del siglo XIX. Está desarrollado por una gran comunidad de programadores de distintos lugares del mundo utilizando C++ y scripts de Python. También cuenta con un gran equipo de traductores lo que ha permitido que esté disponible en varios lenguajes.



### Ficha Técnica

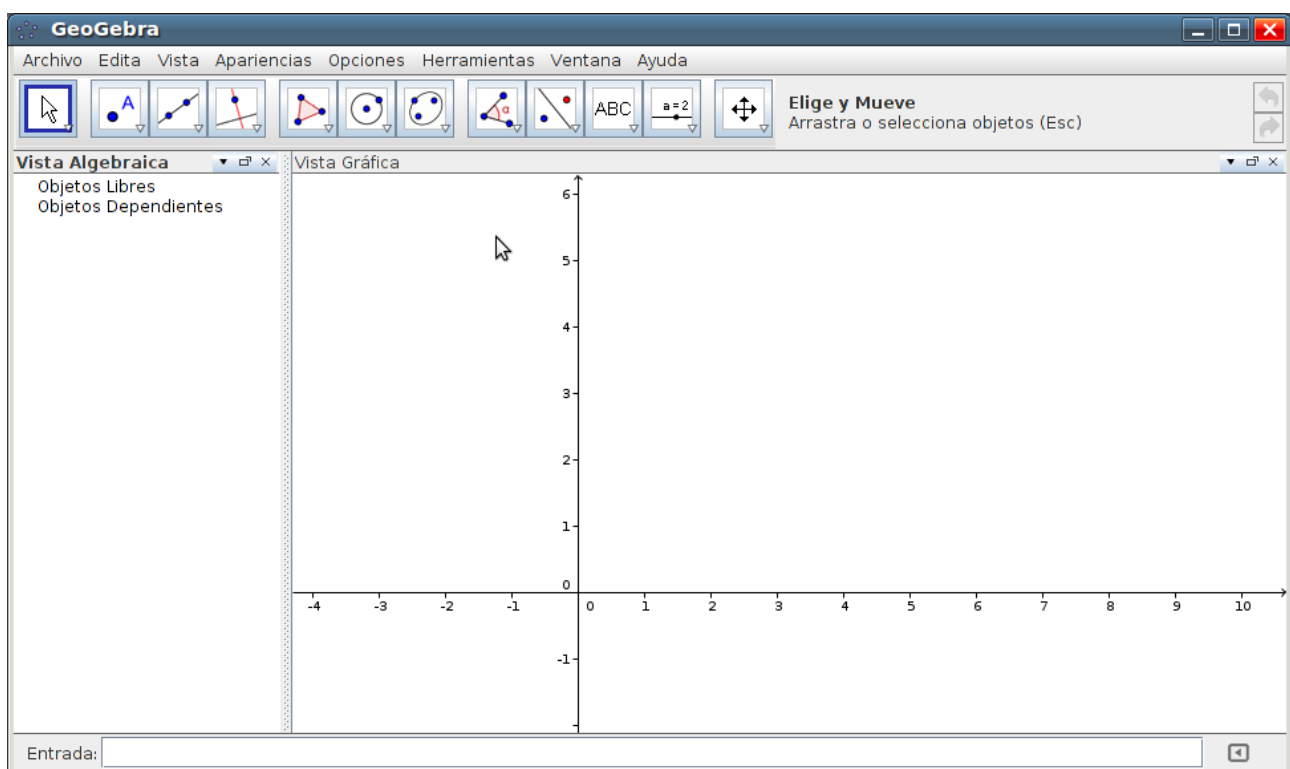
- ✓ Inicio del proyecto: 2007
- ✓ Licencia: GNU GPL
- ✓ Plataformas: Linux; Windows, Mac OS X.
- ✓ Lenguajes: Español, inglés, alemán y otros.
- ✓ Última versión: 20.7.0 – 02/12/2013
- ✓ Página oficial: [http://avogadro.openmolecules.net/wiki/Main\\_Page](http://avogadro.openmolecules.net/wiki/Main_Page)



## GeoGebra

Se utiliza para la enseñanza de matemática en todos los niveles educativos. Considera todas las ramas de la matemática como geometría, cálculo y álgebra. Entre sus atributos más relevantes se encuentran la gran capacidad de interacción entre las distintas ramas como también un repositorio online de recursos y material libre sobre el software (<http://www.geogebra.org/>). Además la documentación y manuales están disponibles en distintos idiomas.

El equipo de trabajo está conformado por muchas personas alrededor del mundo cumpliendo con las distintas funciones que abarcan el desarrollo, soporte, traducción. Está desarrollado en Java.



### Ficha Técnica

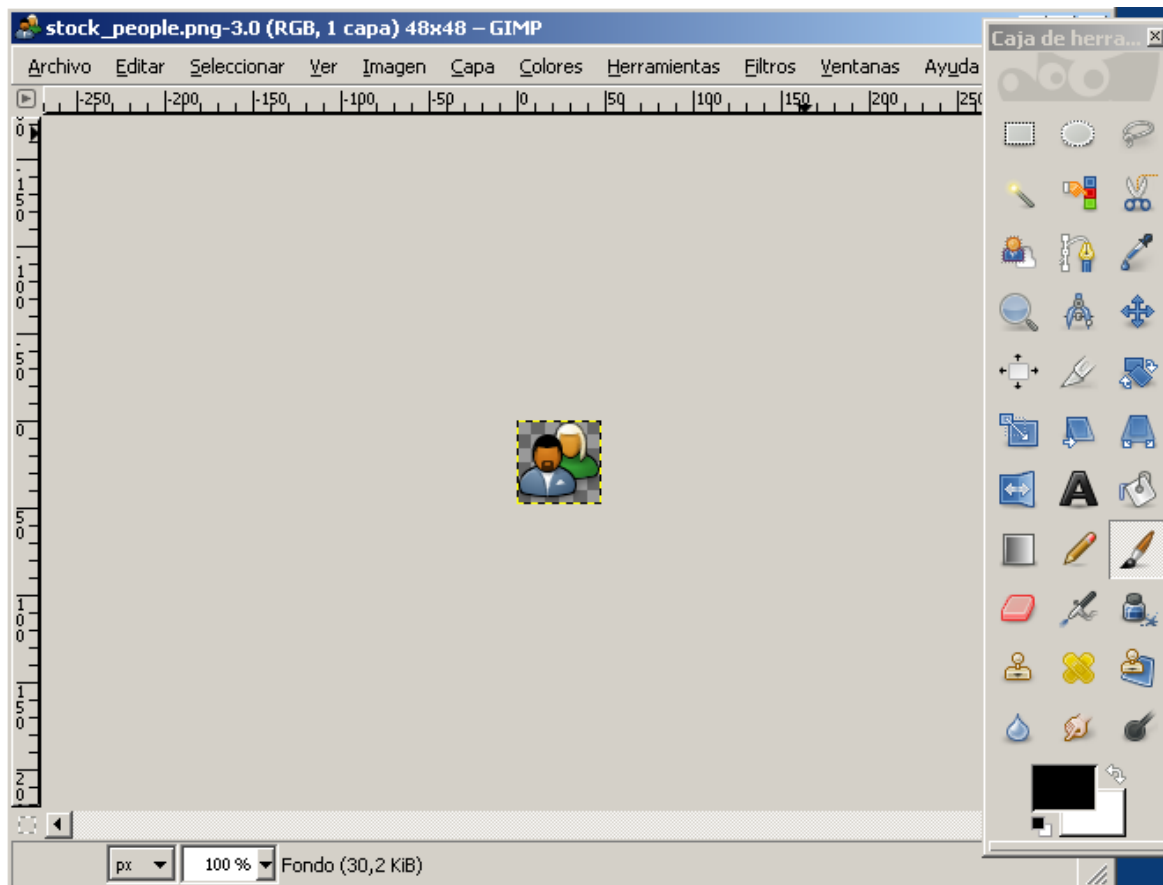
- ✓ Inicio del proyecto: 2001
- ✓ Licencia: GNU GPL.
- ✓ Plataformas: Linux, Windows, Mac OS X.
- ✓ Lenguajes: Español, inglés, alemán y otros.
- ✓ Última versión: 4.4 - 01/12/2013
- ✓ Página oficial: <http://www.geogebra.org/cms/es/>



## GIMP (GNU Manipulation Image Program)

Como su nombre lo indica este software permite la manipulación y creación de imágenes. Brinda la posibilidad de trabajar con capas y admite diversos formatos como gif, jpg, png, tiff y bmp. GIMP es una excelente alternativa libre para sustituir software privativo como Photoshop o Corel Photopaint. Además, a través del sitio <http://www.gimp.org.es>, pone a disposición una gran cantidad de material y tutoriales en español que serán muy útiles a la hora de aprender a usar el software. GIMP forma parte del proyecto GNU, que es el encargado de desarrollar un sistema operativo libre además de otras aplicaciones que forman parte de GNU/Linux.

Los creadores de GIMP son Spencer Kimball y Peter Mattis y actualmente, como en la mayoría de los proyectos de este tipo, es llevado adelante por una gran comunidad de desarrolladores y colaboradores. Los lenguajes de programación utilizados para el desarrollo son C y GTK.



### Ficha Técnica

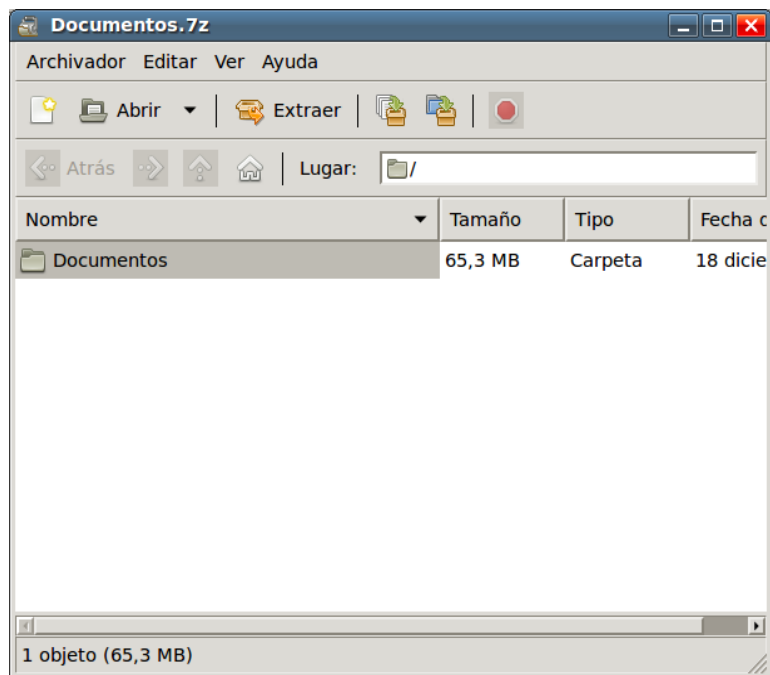
- ✓ Inicio del proyecto: 1995
- ✓ Licencia: GPL, LGPL.
- ✓ Plataformas: Linux, Windows, Mac OS X.
- ✓ Lenguajes: Español, inglés, alemán y otros.
- ✓ Última versión: 2.8 – Mayo de 2012
- ✓ Página oficial: <http://www.gimp.org.es>

## 7ZIP 7-Zip

Compresor de archivos. Para compresión y descompresión trabaja con los formatos: 7z, zip, gzip, bzip2, tar. Sólo para descompresión: rar, cab, deb, entre otros. Utiliza potentes algoritmos de compresión, obteniendo resultados que superan a cualquier otro programa de su tipo.

En Ubuntu, por ejemplo, la interfaz de usuario de 7zip es su manejador de archivos File-Roller o Nautilus, mientras que en Windows tiene su propia interfaz.

Este software fue desarrollado por Igor Pavlov utilizando el lenguaje C++ y fue el mismo Pavlov quien desarrolló el algoritmo de compresión LZMA (Lempel-Ziv-Markov) que luego fue usado por 7-Zip.



### Ficha Técnica

- ✓ Inicio del proyecto: 1999
- ✓ Licencia: GNU LGPL + restricciones unRAR
- ✓ Plataformas: Linux, Windows.
- ✓ Lenguajes: Español, inglés, alemán y otros.
- ✓ Última versión: 9.20.1
- ✓ Página oficial: <http://www.7-zip.org/>

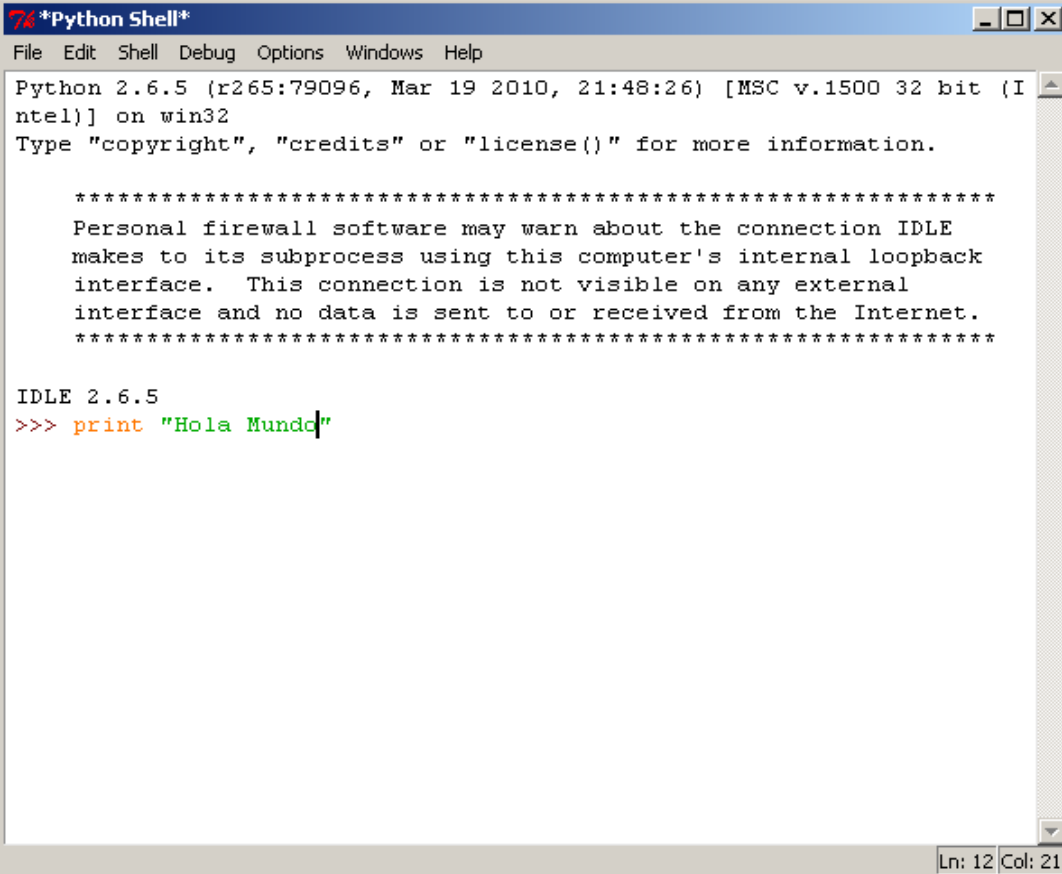




## Python

Lenguaje de programación de script, corre bajo distintas plataformas (Linux, Unix, Mac OS X, Windows y otras). Permite trabajar con distintos paradigmas de programación como la orientada a objetos o estructurada. Dentro de las herramientas para desarrollar con Python se encuentran distintos IDEs o entornos de desarrollo integrado: Eclipse (con plugin pydev), Netbeans (con extensión nbpython), entre otros. Con la distribución de Python está incluido el IDLE, cuya captura de pantalla se ve debajo con el clásico "Hola Mundo".

Python fue creado por Guido van Rossum a finales de los ochenta y luego de un largo camino recorrido se crea la Python Software Foundation, que será el organismo a cargo del desarrollo y promoción de Python. En 2001 dicho organismo crea la Python Software Foundation License para solucionar la incompatibilidad con la licencia GPL, dado que la licencia que usaba anteriormente no era compatible por ciertas cuestiones legales.



```
*Python Shell*
File Edit Shell Debug Options Windows Help
Python 2.6.5 (r265:79096, Mar 19 2010, 21:48:26) [MSC v.1500 32 bit (I
ntel)] on win32
Type "copyright", "credits" or "license()" for more information.

*****
Personal firewall software may warn about the connection IDLE
makes to its subprocess using this computer's internal loopback
interface. This connection is not visible on any external
interface and no data is sent to or received from the Internet.
*****

IDLE 2.6.5
>>> print "Hola Mundo"
```

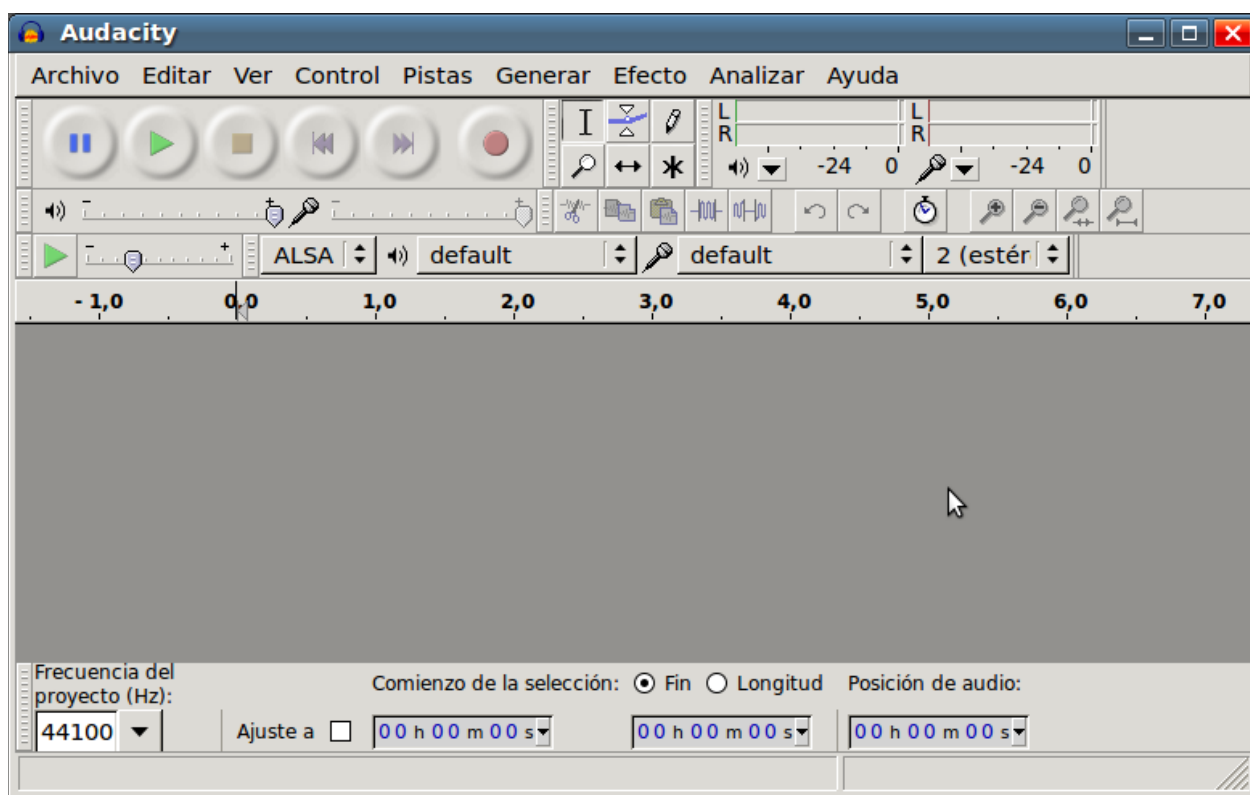
### Ficha Técnica

- ✓ Inicio del proyecto: finales de los '80
- ✓ Licencia: PSFL, compatible con GPL
- ✓ Plataformas: Linux, Windows, Unix y otras
- ✓ Última versión: 3.3
- ✓ Página oficial: <http://www.python.org/>



## Audacity

Es un programa de grabación y edición de audio, además permite la digitalización de grabaciones hechas en cinta. Soporta distintos formatos como mp3, wav, wma, entre otros, permitiendo su importación, edición y exportación. Se puede trabajar con varias pistas a la vez, además el mecanismo de edición a través de las herramientas “Cortar”, “Copiar” y “Pegar” permite editar y mezclar las pistas de forma sencilla. Otra característica interesante es que se pueden agregar efectos a los tracks. Este software está desarrollado en los lenguajes C y C++, se encuentra disponible para varias plataformas y ha sido traducido a diversos idiomas. Fue creado en 1999 por Dominic Mazzoni y Roger Dannenberg y al año siguiente fue lanzado como software libre. Actualmente cuenta con un numeroso equipo de desarrolladores y colaboradores.



### Ficha Técnica

- ✓ Inicio del proyecto: 1999
- ✓ Licencia: GPL
- ✓ Plataformas: Linux, Windows y otras
- ✓ Lenguajes: Español, inglés, alemán y otros.
- ✓ Última versión: 2.0.5
- ✓ Página oficial: <http://audacity.sourceforge.net/?lang=es>

## Conclusión

La elección del tema fue a raíz de que los integrantes del grupo desempeñamos funciones de referente técnico del programa Conectar Igualdad y, como ya se dijo en la introducción anteriormente, es necesario brindar soporte y generar recursos para el aprendizaje en la escuela y entendimos que el software libre ofrece grandes posibilidades en este sentido, permitiendo a alumnos, docentes y técnicos contar con una excelente alternativa a la hora de incorporar y compartir conocimientos.

En cuanto a las distintas aplicaciones presentadas en este trabajo, destacamos la facilidad de uso, ya que pudimos realizar pruebas básicas de funcionamiento sin tener un profundo conocimiento sobre las temáticas particulares que aborda cada una. Otro punto a destacar es la gran cantidad de material que se encuentra disponible en Internet y este es uno de los puntos fuertes del software libre: la comunidad, ya sean programadores, diseñadores, traductores y colaboradores en general, todos hacen su aporte en cada uno de los proyectos que presentamos aquí.

El presente trabajo nos ha permitido conocer un poco más acerca del software libre y su filosofía y, sobre todo, nos impulsa a seguir aprendiendo y a ahondar en el estudio de estas y otras herramientas que mejorarán el rendimiento en nuestra tarea y en consecuencia la de nuestra comunidad escolar.

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- <http://www.geogebra.org/cms/es/>
- <http://es.wikipedia.org/wiki/GeoGebra>
- <http://www.gimp.org.es>
- <http://es.wikipedia.org/wiki/GIMP>
- <http://www.7-zip.org/>
- <http://es.wikipedia.org/wiki/7-Zip>
- <http://www.python.org/>
- <http://es.wikipedia.org/wiki/Python>
- <http://audacity.sourceforge.net/?lang=es>
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