

Drexel University

Office of Information
Resources and Technology
presents:

INSTITUTE on INNOVATION in TRAINING and TEACHING



Free and Open Source Software for Teaching and Learning

Jeffrey Berman
Chad Kealey

September 10th, 2009



Objectives

- What is Open Source
- Advantages/Disadvantages
- Notable Examples
- Office Applications
- Image Manipulation
- Web Design
- Audio Editing
- Wrap-up

Pre-Knowledge

- Do you know what open source software is?

Pre-Knowledge

- Do you knowingly use any open source software?

Pre-Knowledge

- Do you like free stuff?

What is Open Source Software?

- Proprietary Software
 - Licensed
 - Company Developed
 - No Source Code
- Open Source Software
 - Licensed
 - Source Code Available
 - No software cost

What is Open Source Software?

- Free software is a matter of liberty, not price
 - Free as in speech, not as in beer
- Four kinds of Freedom
 - Run
 - Study
 - Redistribute
 - Improve

What is Open Source Software?

- Open Source vs Free Software
- Copyleft
- Commercial
- Cost

Myths

- Support?
- Sellable?
 - Investment isn't company backed
- Secure?
 - **“Given enough eyeballs, all bugs are shallow”**

Advantages & Disadvantages

- Proprietary
 - Backed by a company
 - Strongly funded
 - Single development team
- Open Source
 - Distributed development team
 - Volunteers?
 - Community Supported
 - Security
 - Cost
 - More choices
 - Too many choices?

Worth Mentioning?

- This entire course is being taught exclusively with Open Source Software
 - Linux
 - OpenOffice Impress
 - Every tool demonstrated

Notable Examples

- Linux
 - Open Source OS
 - All of the source code can be viewed, modified, and redistributed
 - Predominately used on servers
 - But also desktops, embedded devices, and phones
 - Becoming popular because of distributions like Ubuntu and on netbook platforms



Notable Examples



- Firefox
 - Open Source Web Browser
 - Descended from Mozilla Application Suite
 - Which in turn was based on Netscape Communicator
 - August 2009: ~23% usage share
 - Wide selection of add-ons

Notable Examples

- Apache
 - Web server
 - March 2009: 46% of all websites
 - 66% of the million busiest sites
 - LAMP
 - Stack of Open Source software to run servers
 - Linux
 - Apache
 - MySQL (Database)
 - Scripting language (Perl, PHP, Python, Ruby)

Notable Examples

- MediaWiki
 - Open Source Web-based Wiki Software
 - Written in PHP
 - MySQL or PostgreSQL Database
 - Originally developed for Wikipedia

Office Applications

- Generally contain
 - Word Processor
 - Spreadsheet
 - Presentations
- Can contain
 - Database Tools
 - Graphics Suite
 - Communication/Email
 - PIM
- Applications in Teaching and Learning

Office Applications

- Open Office
 - <http://openoffice.org>
 - Primarily sponsored by Sun Microsystems
 - Some Applications Include:
 - Word Processing / Write
 - Spreadsheets / Calc
 - Presentations / Impress
 - Graphics / Draw
 - Databases / Base
 - Can be compared to Microsoft Office

Open Office

- Some Key Features
 - Built in export to pdf
 - Can read and write other software formats
 - Can recover corrupted files from other software

Open Office

- Open Document Format
 - XML based
 - Separation of concerns (Content, Style, Metadata, App Settings)
 - Common extensions include
 - Word Processing (odt)
 - Spreadsheets (ods)
 - Presentations (odp)
 - Reduces file size
 - Similar to .docx, xlsx (MS Office formats)

Open Office

- Open Document Format
 - Supported by other major applications
 - Google Docs
 - Abiword
 - Lotus Symphony
 - MS Office
 - Government Adoption as Standard
 - 19 Nations
 - Internationally: NATO
 - Locally: Massachusetts

Open Office

- Cost Savings
 - MS Office Standard 2007: \$399
 - Upgrade: \$239
 - MS Office Professional 2007: \$499
 - Upgrade: \$329

Open Office

- Demonstration

Office Applications

- Other Open Source Tools Include:
 - KOffice
 - <http://koffice.org>
 - AbiWord
 - <http://abisource.com>
 - Gnumeric
 - <http://projects.gnome.org/gnumeric>

Image Manipulation

- Used for
 - Photographs
 - Scanned Documents
 - Created images
- Applications in Teaching and Learning

Image Manipulation

- GIMP
 - GNU Image Manipulation Program
 - <http://gimp.org>
 - Developed by “The GIMP Development Team”
 - Used for
 - Photo Retouching
 - Image Composition
 - Image Authoring
 - Can be compared to Adobe Photoshop

GIMP

- Some Key Features
 - Customizable Interface
 - GIMPshop
 - <http://gimpshop.com>
 - Painting and Advanced Manipulation
 - Scripting and plugins
 - Freely available
 - Free tutorials

GIMP

- Cost Savings
 - Adobe Photoshop CS4: \$699
 - Upgrade: \$199

GIMP

- Demonstration

Image Manipulation

- Other Open Source Tools Include:
 - Inkscape
 - Vector Graphics Editor
 - <http://inkscape.org>
 - Compares to Adobe Illustrator (\$599/\$199)
 - Blender
 - 3D modeling software
 - <http://blender.org>
 - Compares to Maya (\$3495)
 - Compares to 3ds Max (\$3495)

While On The Topic:Blender

- Open Movie Project
 - Small team of artists and developers use Blender to create a short movie and develop tool for use in Blender
 - Every frame of the movies can be downloaded and manipulated
- <http://bigbuckbunny.org>
- Sample Image

Web Design

- Creation of content
 - Generally viewed through a web browser
- Applications in Teaching and Learning
 - Building a site for materials
 - With or without an LMS
 - Having students display their work
 - Create public resources

Web Design

- KompoZer
- <http://kompozer.net>
- WYSIWYG Web Editor
 - Community-driven fork of Nvu
 - Based on Mozilla's Composer
- Can be compared to Adobe Dreamweaver

KompoZer

- Some Key Features
 - Built in HTML Validator
 - Compliant with W3C Standards
 - Based on Gecko
 - Layout engine used by Firefox
 - Tabbed Editing
 - Independent Undo Histories
 - Support for forms, tables, and templates

KompoZer

- Cost Savings
 - Adobe Dreamweaver CS4: \$399
 - Upgrade: \$199

KompoZer

- Demonstration

Web Design

- Other Open Source Tools Include:
 - Amaya
 - <http://w3.org/amaya>
 - Firebug
 - Firefox Extension
 - Web Developer
 - Firefox Extension

Audio Editing

- Can be used for
 - Conversion to digital format
 - Cutting/Splicing audio tracks
 - Providing content in multiple formats
 - Dragondrop has a text-to-voice feature
- Applications in Teaching and Learning
 - Sound files
 - Podcasts
 - Lecture Recordings

Audio Editing

- Audacity
 - <http://audacity.sourceforge.net>
 - Developed by the Audacity Team
 - Dominic Mazzoni (now with Google)
 - Compares to Adobe Soundbooth or Sony Sound Forge

Audacity

- Some Key Features
 - Multiple formats: mp3, wav, ogg
 - Multiple Tracks
 - Noise Removal
 - Convert from physical mediums
 - Post-processing
 - Normalization, Trimming, Fades

Audacity

- Cost Savings
 - Adobe Soundbooth CS4: \$199
 - Upgrade: \$79
 - Sony Sound Forge: \$55

Audacity

- Demonstration

Objectives Revisited

- What is Open Source
- Advantages/Disadvantages
- Notable Examples
- Office Applications
- Image Manipulation
- Web Design
- Audio Editing
- Wrap-up

Wrap Up

- Q&A

Thank You!

Jeffrey Berman
Senior Applications
Administrator
jtb77@drexel.edu

Chad Kealey
Coordinator of
Online Learning
ck76@drexel.edu

Online Learning Team
Drexel University
olt@drexel.edu
215-895-1224

