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# Even Internet Computers Want to be Free: Using Linux and Open Source Software on Library Public Workstations

Matthew Nielsen

*North Bend Public Library*

Sean Park

*Coos County Library Service District*

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# Even internet computers want to be free

## Using Linux and open source software on library public workstations



**Matthew “Buzzy” Nielsen**

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**Sean Park**

Network Administrator, Coos County Library Service District

**02/05/2010**

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# What patrons usually see



**Microsoft Windows**  
Operating system



**Microsoft Internet Explorer**  
Web browsing



**Microsoft Word**  
Word processor

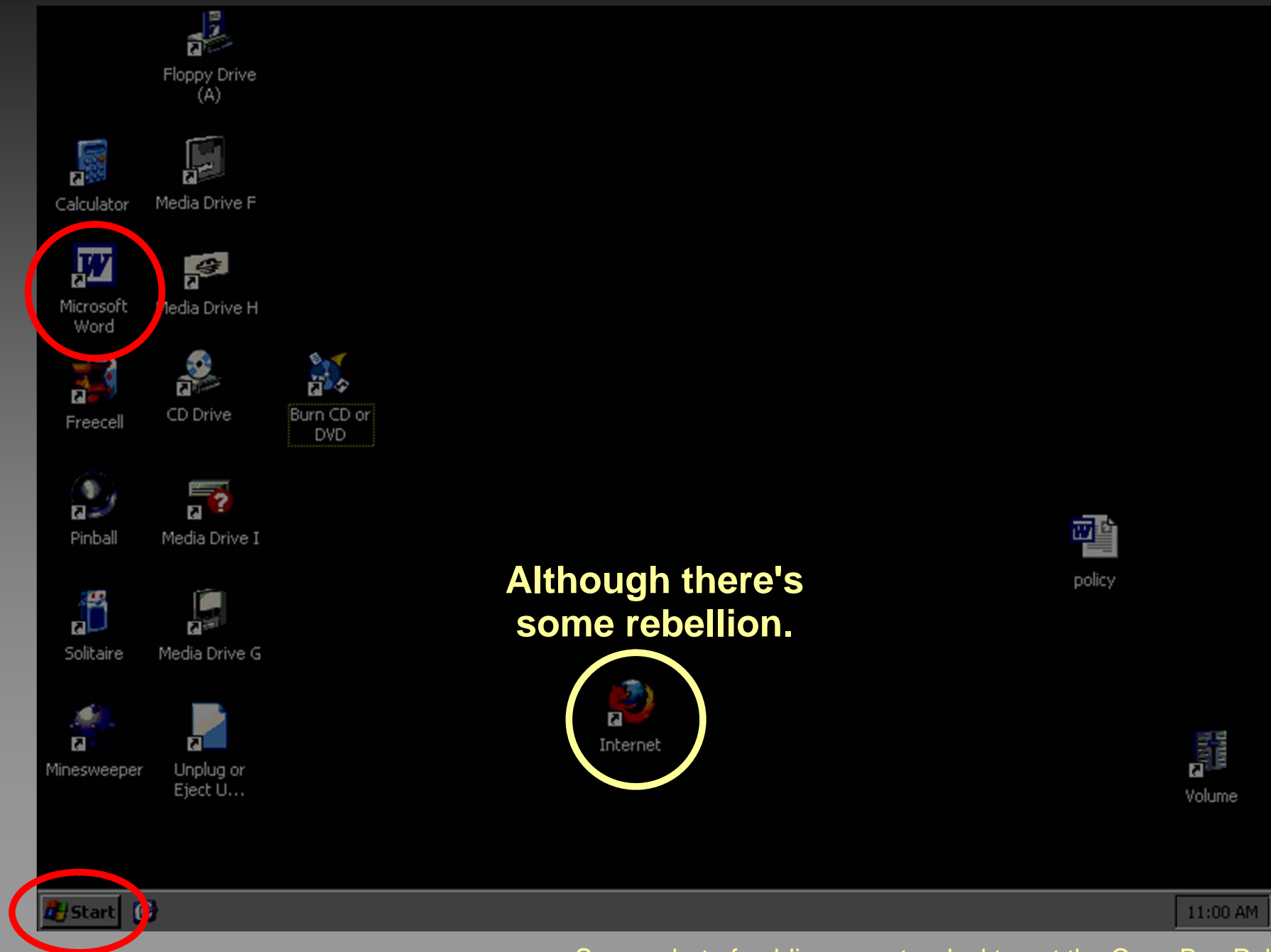


**Microsoft Excel**  
Spreadsheets



**Microsoft PowerPoint**  
Presentations

# Even in some Coos County libraries



Screenshot of public computer desktop at the Coos Bay Public Library

# Dependencies



**Microsoft Windows**  
Operating system



**Microsoft Internet Explorer**  
Web browsing



**Microsoft Word**  
Word processor



**Microsoft Excel**  
Spreadsheets



**Microsoft PowerPoint**  
Presentations

# What Coos County patrons see



**Ubuntu Linux**  
Operating system



**Mozilla Firefox**  
Web browsing



**OpenOffice Writer**  
Word processor

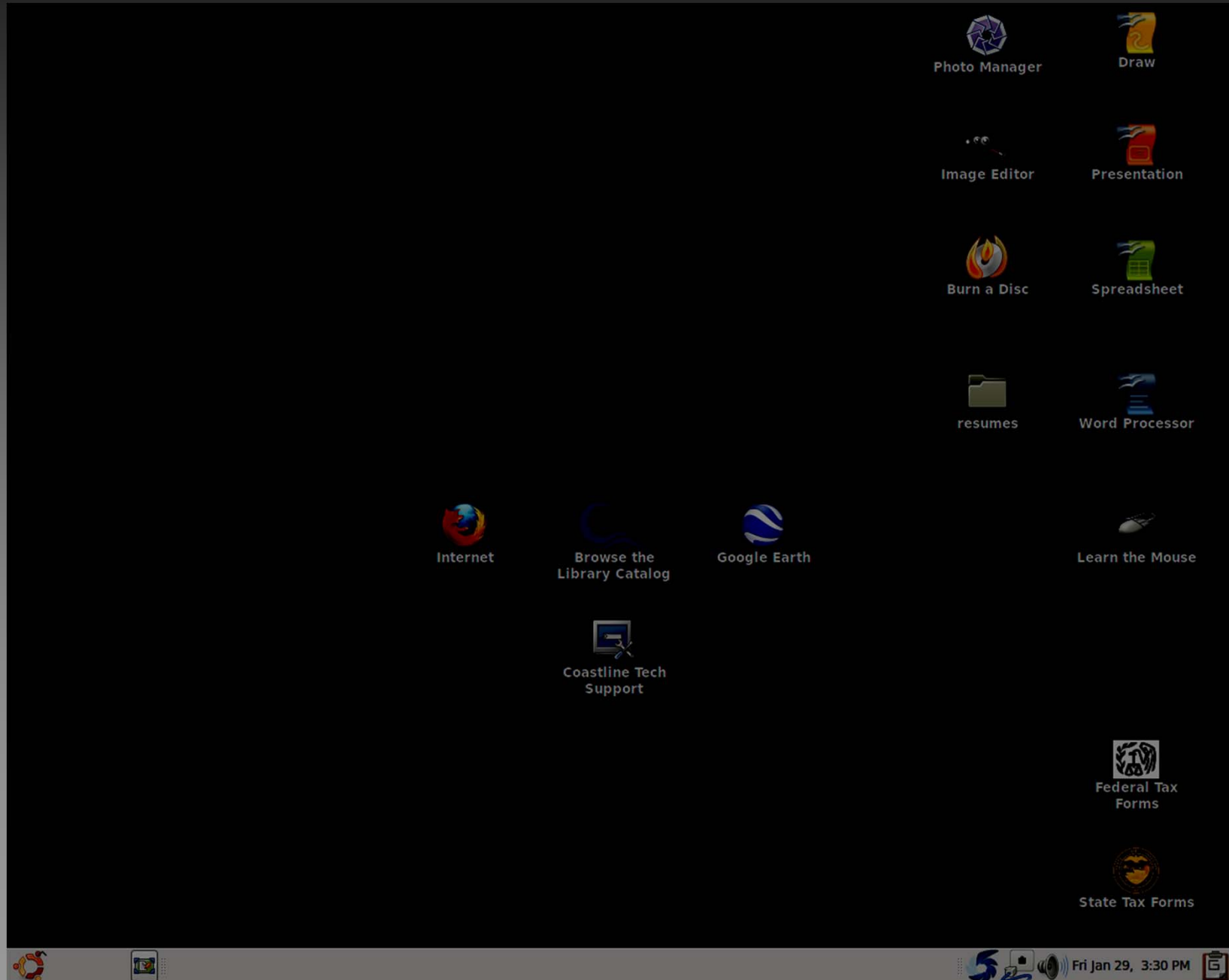


**Openoffice Calc**  
Spreadsheets



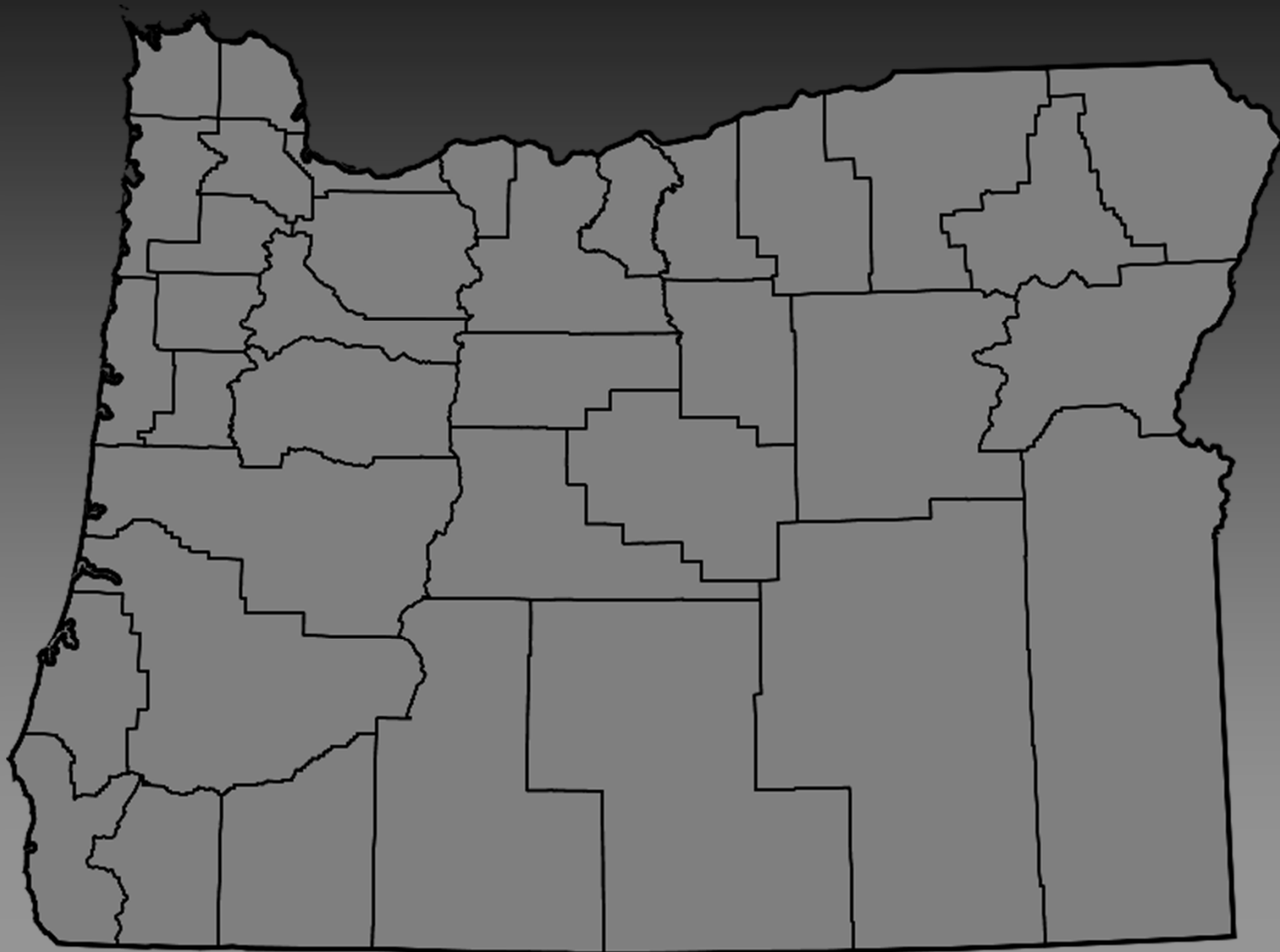
**OpenOffice Impress**  
Presentations

# What Coos County patrons see



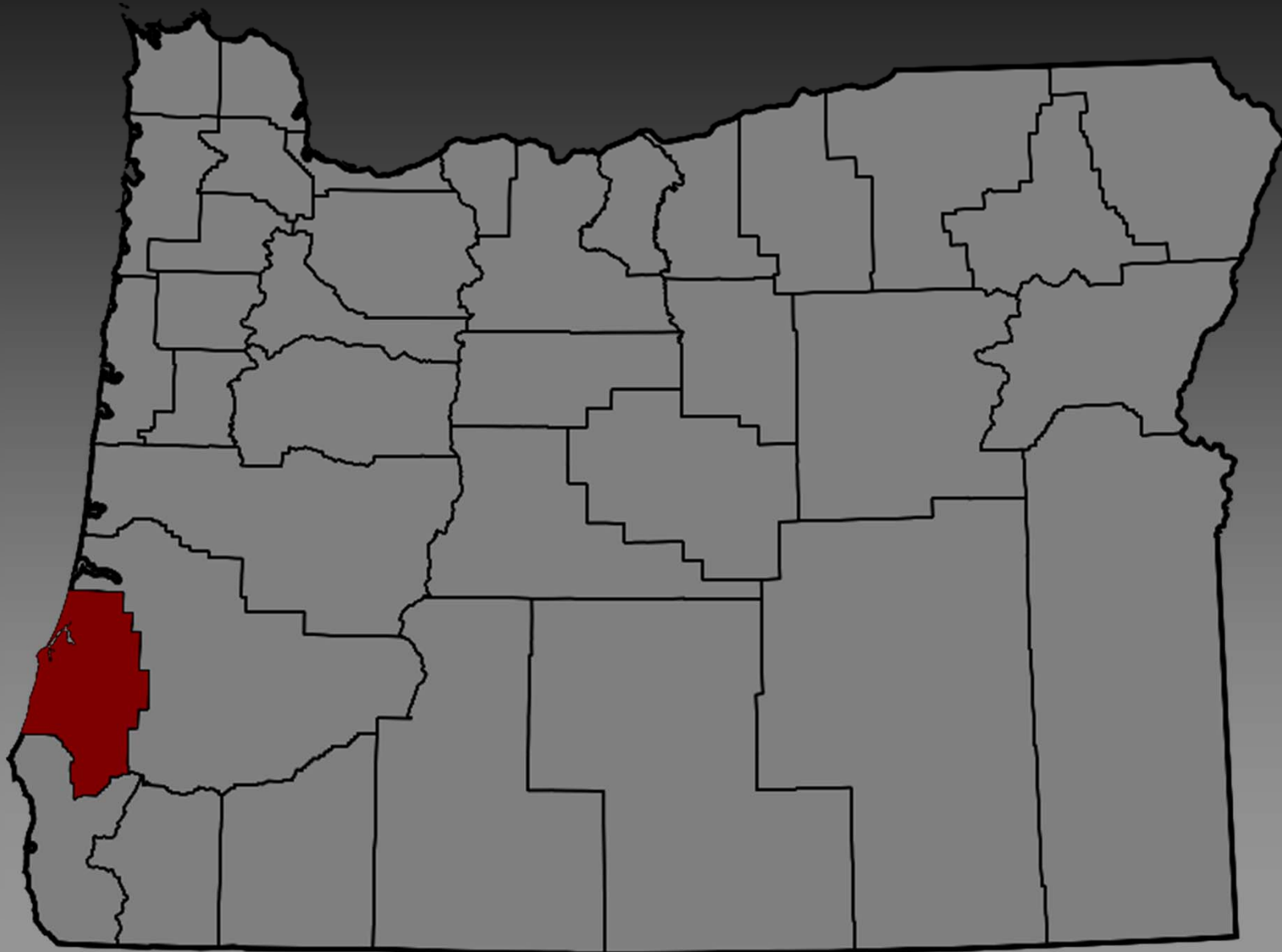
Screenshot of public computer desktop at the North Bend Public Library

# An interlude: About CCLSD

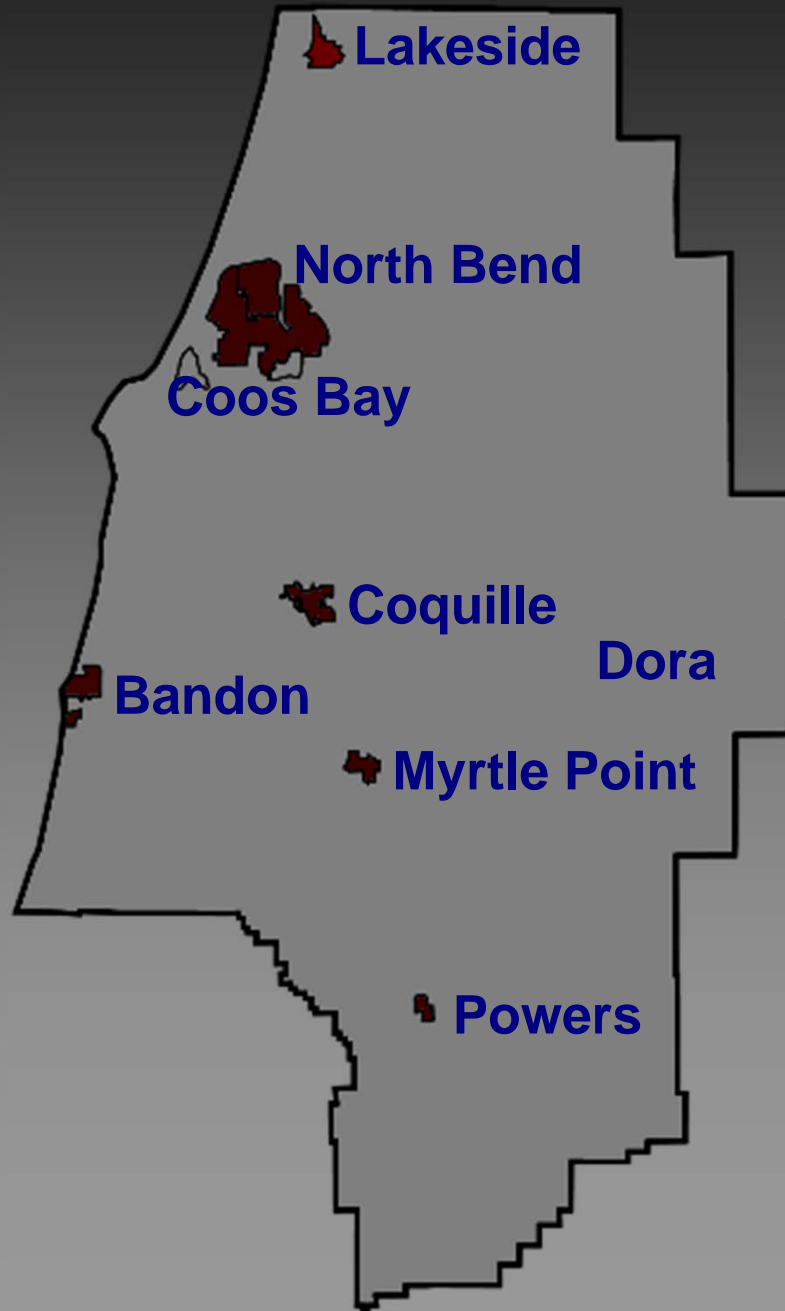




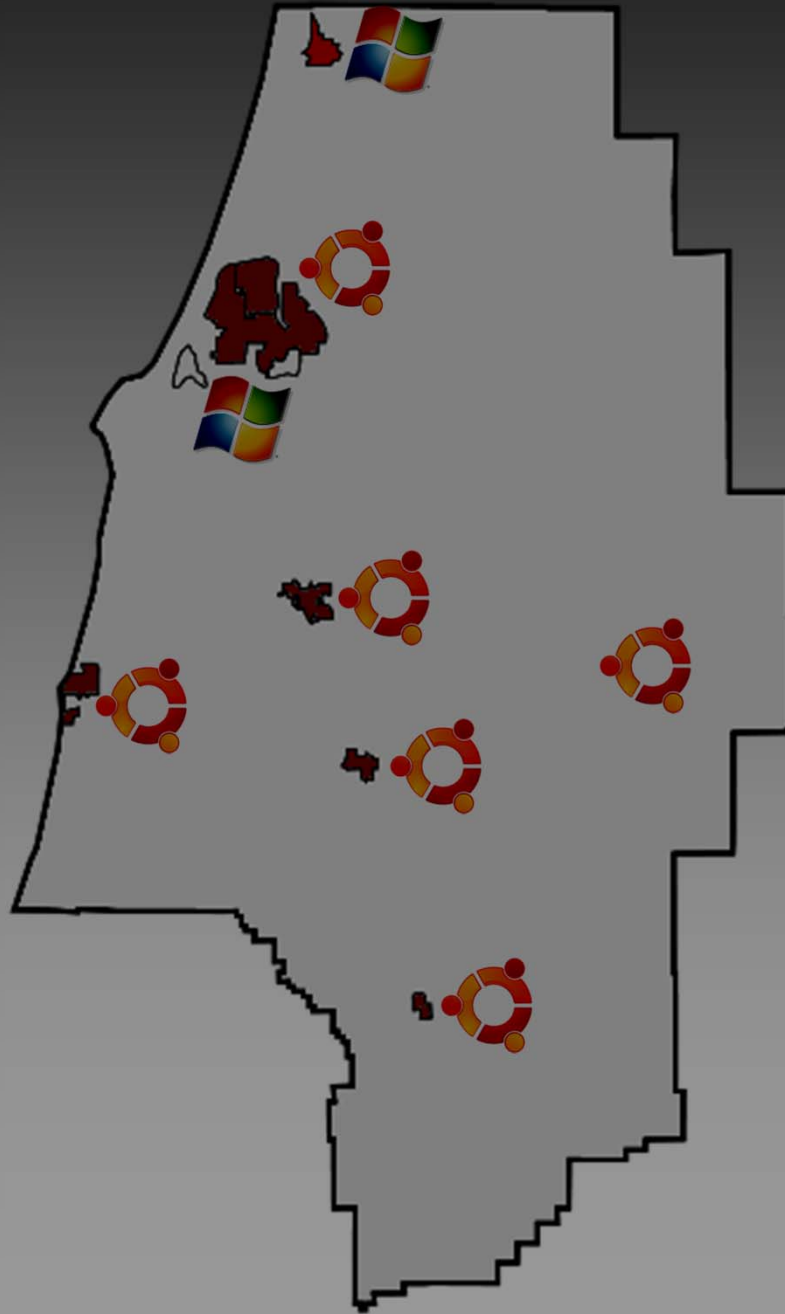
# An interlude: About CCLSD



# 8 communities



# Different strategies



# Why'd we switch?

(In no particular order)

**Reason #1**

Cost

# The Windows tax

**Microsoft**  
Microsoft Windows 7 Professional 64-bit 1-Pack for System Builders - OEM

**\$139.99**  
Free Shipping\*

ADD TO CART  
ADD TO WISH LIST  
EMAIL THIS PAGE  
PRINT THIS PAGE  
PRICE ALERT

Image Viewer (View All)

**Microsoft**  
Microsoft Office Professional 2007 - Retail

Original Price: \$499.95  
You Save: \$80.00  
**\$419.95**  
Free Shipping\*

ADD TO CART  
ADD TO WISH LIST  
EMAIL THIS PAGE  
PRINT THIS PAGE  
PRICE ALERT

Image Viewer

Even buying through OETC will set you back \$100 per license.

(Don't get smug, Apple fans – There's a Mac tax, too.)

# The power of free

## Ubuntu 9.10 is here

Free operating system for your desktop or laptop

- **Faster, smoother, more beautiful...**  
New features, fixes and applications designed around you
- **Developing at speed...**  
Fun tools make it easy to write and deploy apps for Ubuntu
- **...and introducing your personal cloud**  
Store and share files and contacts in a couple of clicks with Ubuntu One

[Download Ubuntu](#)

[Take the tour](#)



(With apologies to Chris Anderson.)

# Why'd we switch?

## Reason #2

Security & continuity

# Sad but true





# Need more stuff on security

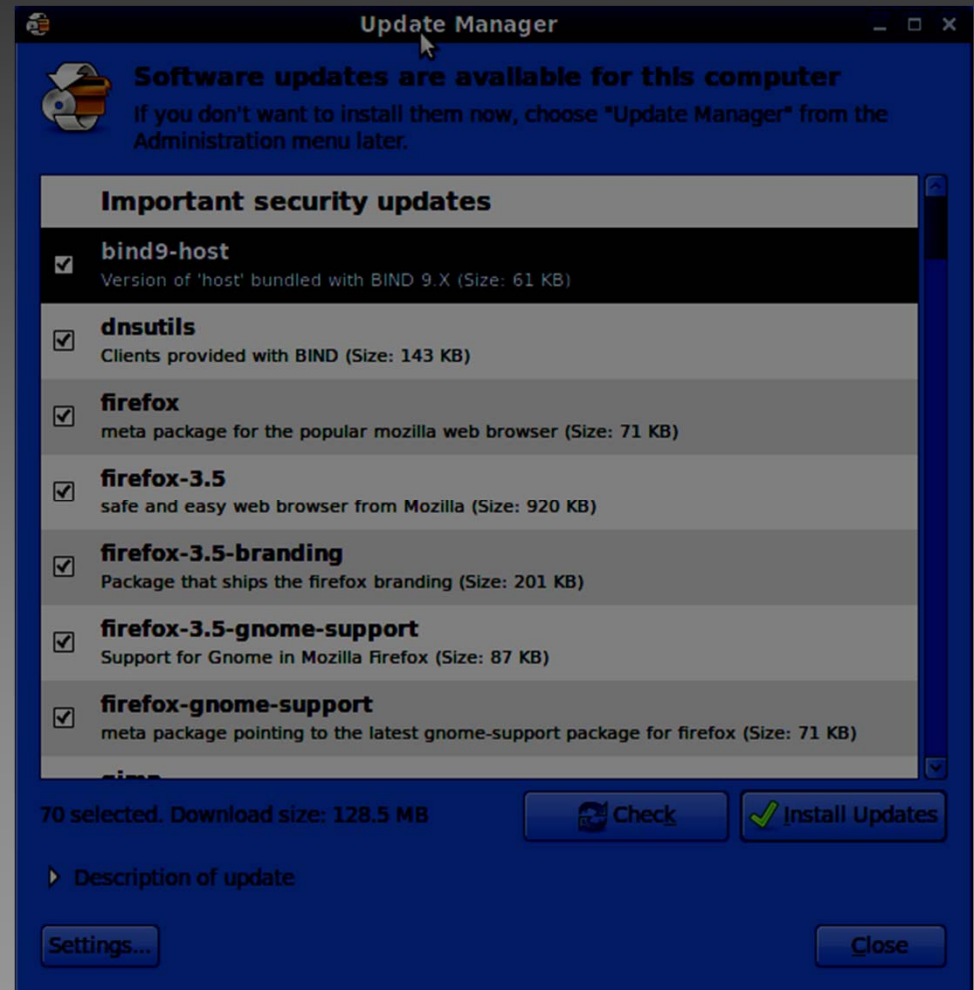
User's settings are easier to maintain.

Settings are easier to change.

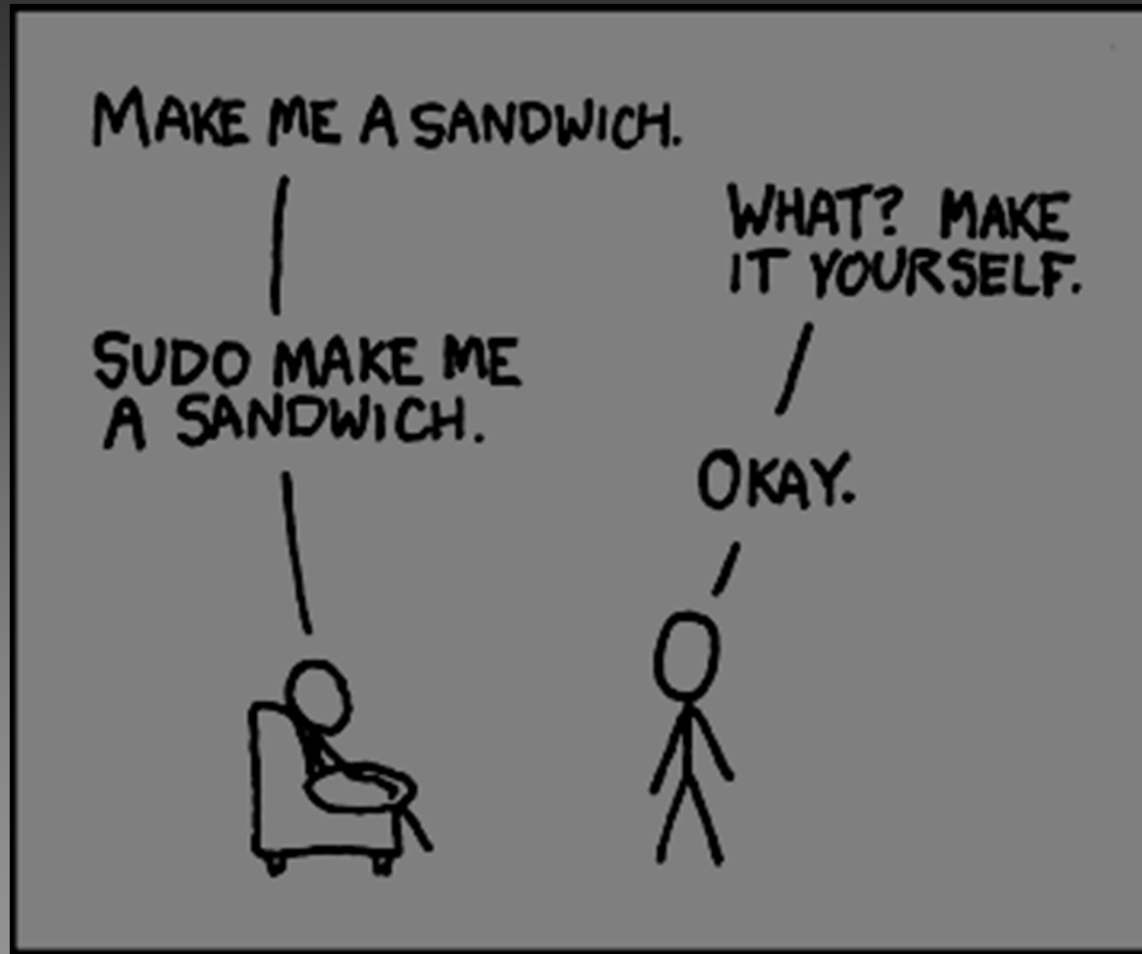
No 3<sup>rd</sup> party anti-virus is required.

Fewer administrative privileges given to users by default.

Security updates are made and pushed out quickly.



# And because we love xkcd so much



# Why'd we switch?

**Reason #3**  
Efficiency

# Breathe life into old hardware



## The specs:

Processor: 800 Mhz Pentium III

RAM: 512 MB

HDD: 20 GB

Circa: 2000

**At their death, they ran Ubuntu 9.04**

# Or make new hardware wickedly fast

## The specs:

Processor: 2.6 Ghz quad core  
AMD

Phenom

RAM: 8 GB

HDD: 80 GB

Circa: 2009



# Why'd we switch?

**Reason #4**  
**Philosophy**

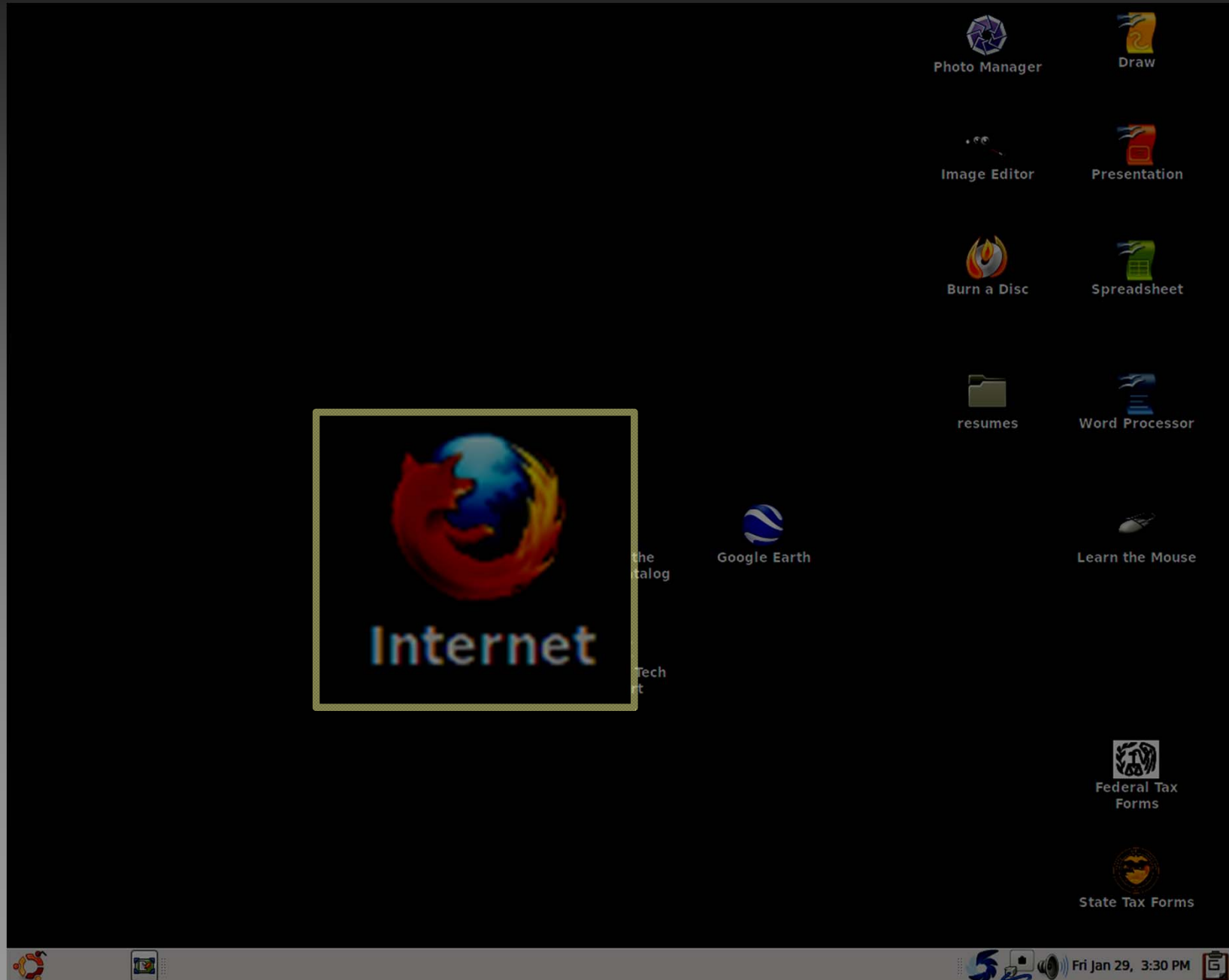
**“ Free software is a matter of liberty, not price. To understand the concept, you should think of 'free' as in 'free speech,' not as in 'free beer.' ”**

# Why'd we switch?

**Reason #5**  
Features



# So what can they do?



# Everything IE can do . . .

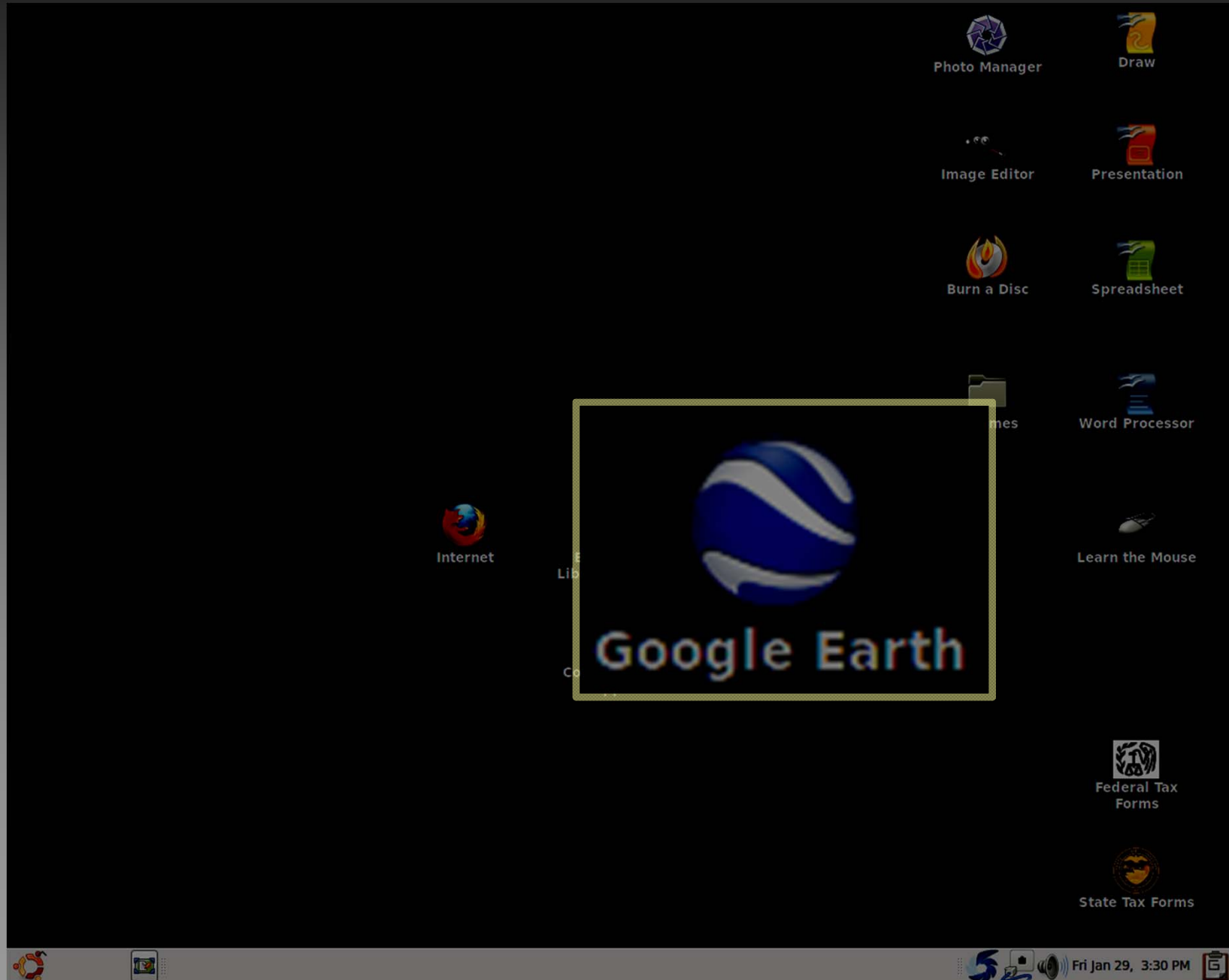
The screenshot shows the Mozilla Firefox browser window displaying the Coos County Library Service District website. The browser's address bar shows the URL <http://www.cooslibraries.org/>. The website features a navigation menu with links for Libraries, Services, Hours, Search, Electronic Resources, Help, Calendar, and Submit. The main content area is divided into several sections:

- Library2Go:** Promotes downloadable audiobooks and videos, with a "Library2Go" logo and a "home users only" note.
- Browse Media:** Lists various media formats including Books on CD, Books in MP3, Books on tape, Music CDs, DVD Videos, and VHS Videos.
- NYT Bestsellers:** Features two book covers: "The Help" by Kathryn Stockett and "GAME CHANGE" by Obama, McCain, and Palin.
- Electronic Book Readers Have Arrived!** Announces a new collection of e-book readers available for checkout at North Bend Library.
- Catch the Title Wave!** Promotes a reading event for "Fugitive" by Phillip Margolin in April 2010.
- Catalog Quick Search:** Includes a search box with a "choose an index" dropdown, a "Go" button, and a link to "advanced" search.
- News and Events:** Lists several events, including preschool story hours and book sales (e.g., "Feb 2nd, 10:30am COQ preschool Story hour", "Feb 6th, 10:00am CBPL - Used Book Sale").
- Take a Poll!** A poll titled "I use library computers mostly for..." with radio button options: email, games, IM, research, socializing, other, and all of the above. A "vote" button is present.
- Review of the Day:** Features a "Review-a-Day for Fri, Jan 29: A Common Pomography Signed Edition".
- Free Audiobooks:** Lists audiobooks such as "From the Foundation of the City Vol. 01 by Livius Titus (Livy)", "Short Story Collection Vol. 041", and "Allan and the Holy".

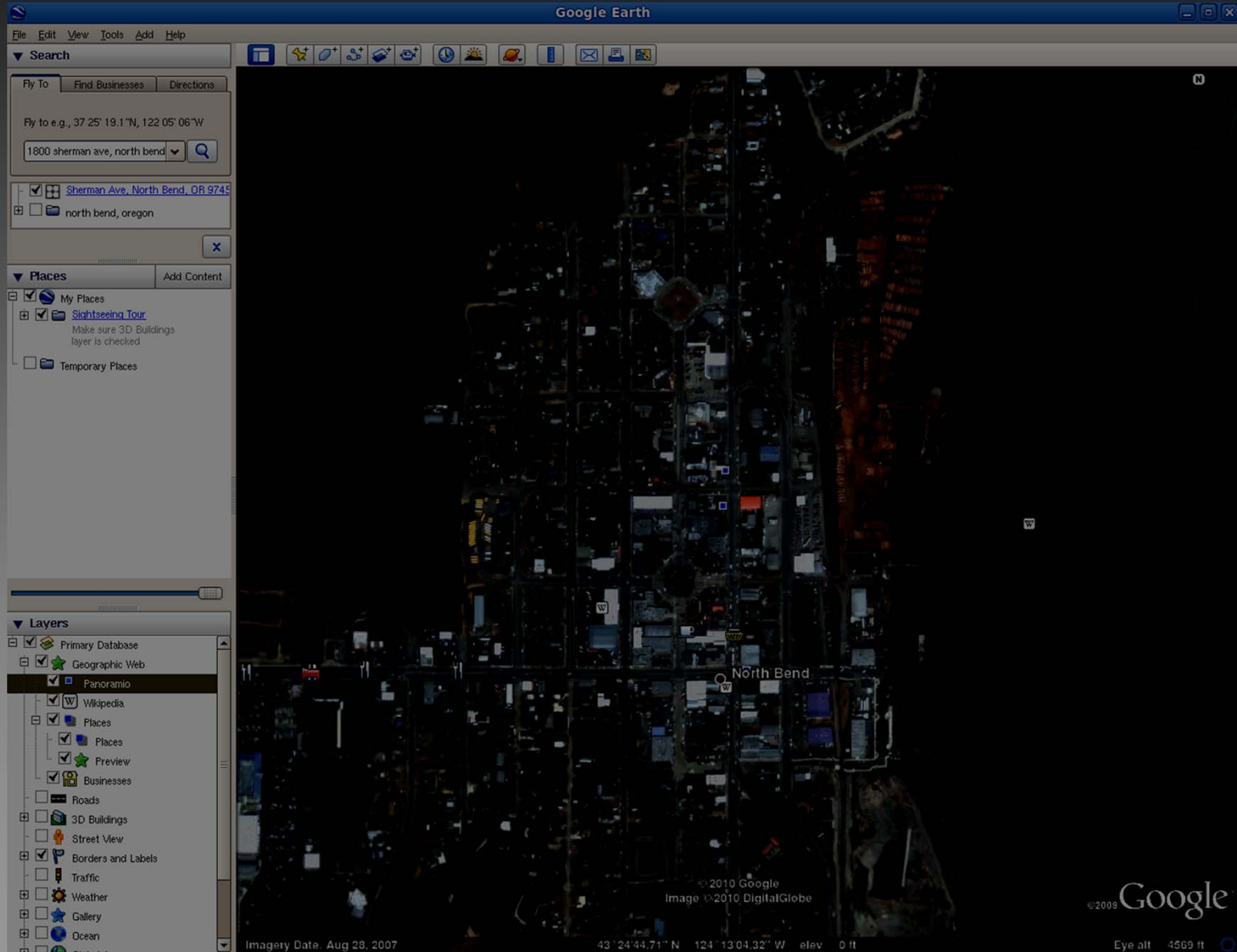
The browser's status bar at the bottom left shows "Done".



# So what can they do?



# Hey, I can see my house!



# And my library

The screenshot shows the Google Earth interface. The main window displays a night-time satellite view of a residential area in North Bend, Oregon. A Panoramio photo is overlaid on the view, showing a curved window reflecting the night sky and trees. The photo is titled "Curved Window Reflections - Public Library - North Bend, Oregon (suz)" and is attributed to Suzi Trousdale. The interface includes a search bar, a places list, and a layers panel. The layers panel shows various map layers, including Primary Database, Geographic Web, Panoramio, Wikipedia, Places, Preview, Businesses, Roads, 3D Buildings, Street View, Borders and Labels, Traffic, Weather, Gallery, and Ocean. The status bar at the bottom indicates the imagery date as August 28, 2007, and provides coordinates (43° 24' 32.17" N, 124° 13' 26.12" W) and an elevation of 44 ft.

Google Earth

File Edit View Tools Add Help

Search

Fly To Find Businesses Directions

Fly to e.g., 37 25' 19.1" N, 122 05' 06" W

1800 sherman ave, north bend

Sherman Ave, North Bend, OR 97459

north bend, oregon

Places Add Content

My Places

Sightseeing Tour

Make sure 3D Buildings layer is checked

Temporary Places

Layers

Primary Database

Geographic Web

Panoramio

Wikipedia

Places

Places

Preview

Businesses

Roads

3D Buildings

Street View

Borders and Labels

Traffic

Weather

Gallery

Ocean

Curved Window Reflections - Public Library - North Bend, Oregon (suz)

By Suzi Trousdale

Misplaced?

Inappropriate

Comment it

Panoramio

Upload your photos >

© 2010 Google  
Image © 2010 DigitalGlobe

© 2008 Google

Imagery Date: Aug 28, 2007

43° 24' 32.17" N 124° 13' 26.12" W elev 44 ft

Eye alt 4569 ft



# So what can they do?



# Give us your cameras, your SD cards

**Canon Digital Camera**

**You have just inserted a medium with digital photos. Choose what application to launch.**

Select how to open "Canon Digital Camera" and whether to perform this action in the future for other media of type "digital photos".

Open F-Spot

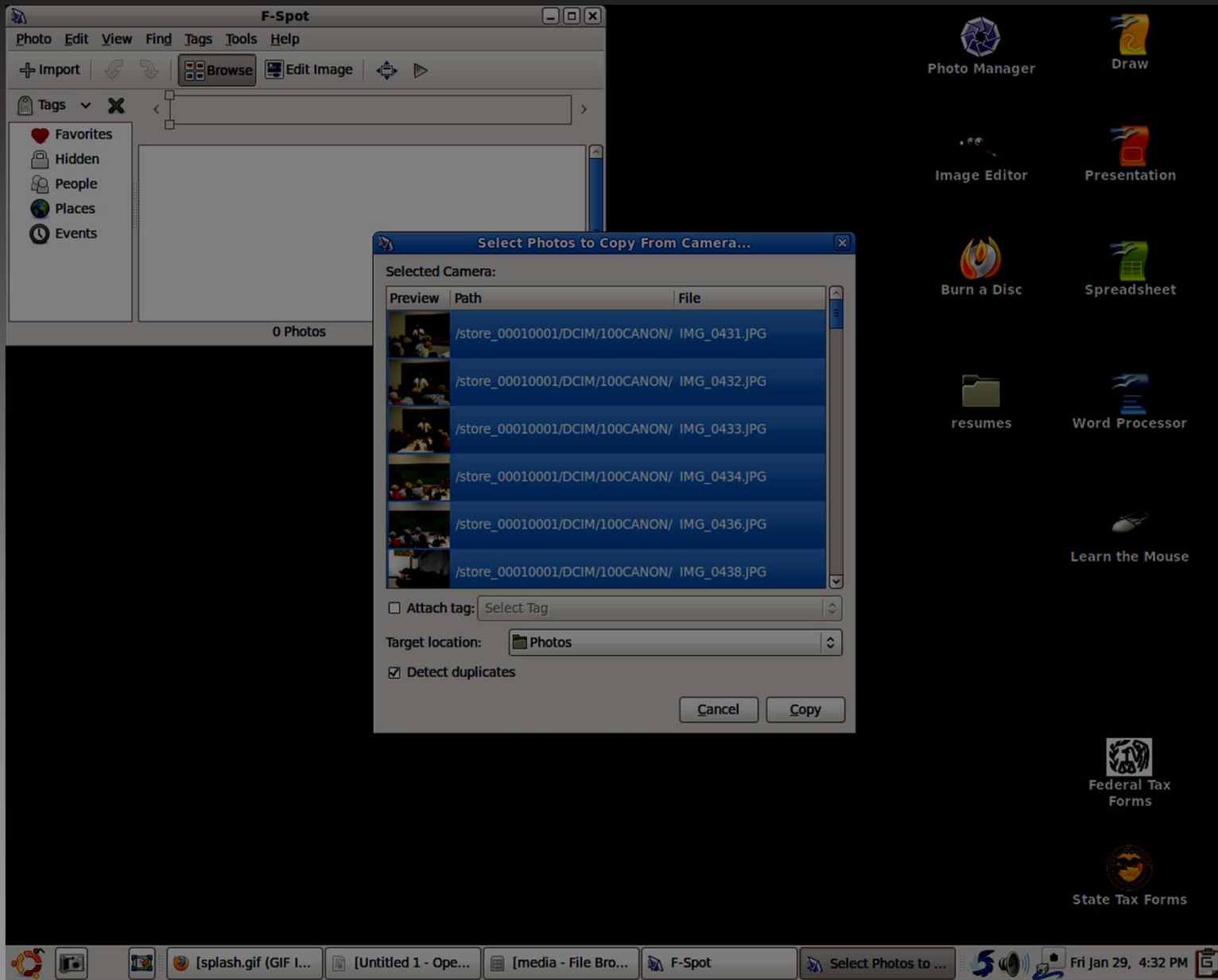
Always perform this action

Unmount Cancel OK

4:32 PM

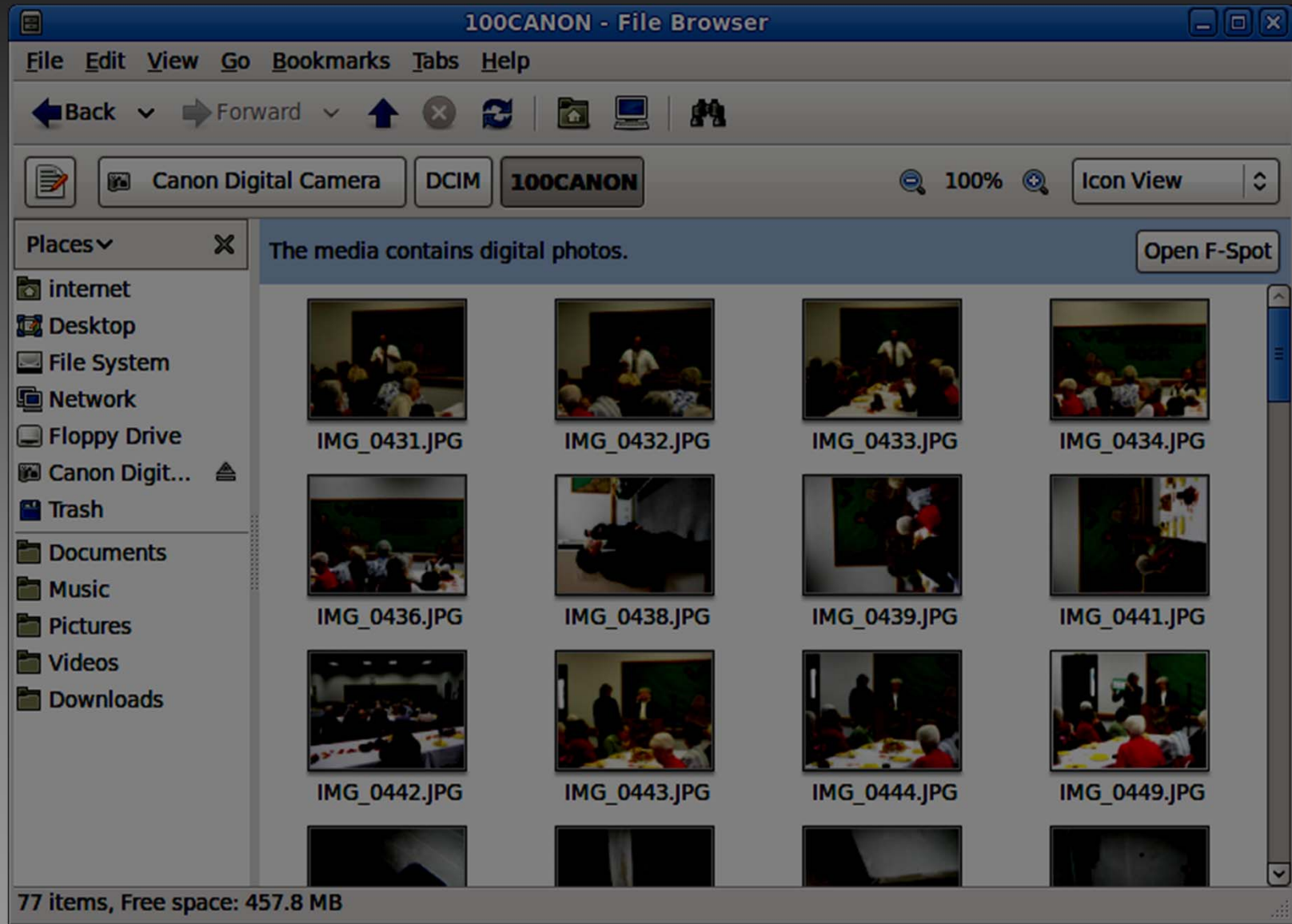


# Manage your photos with F-Spot

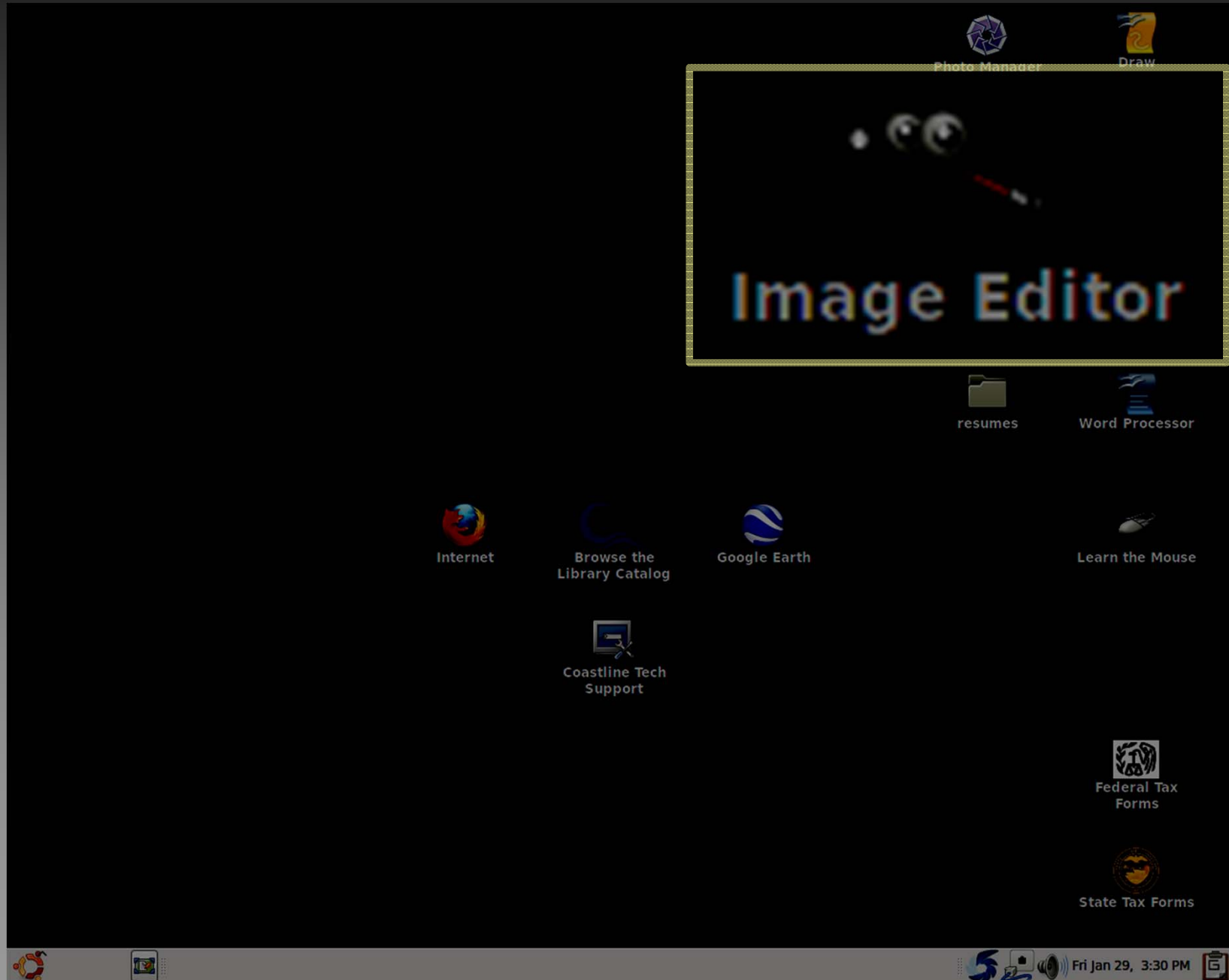




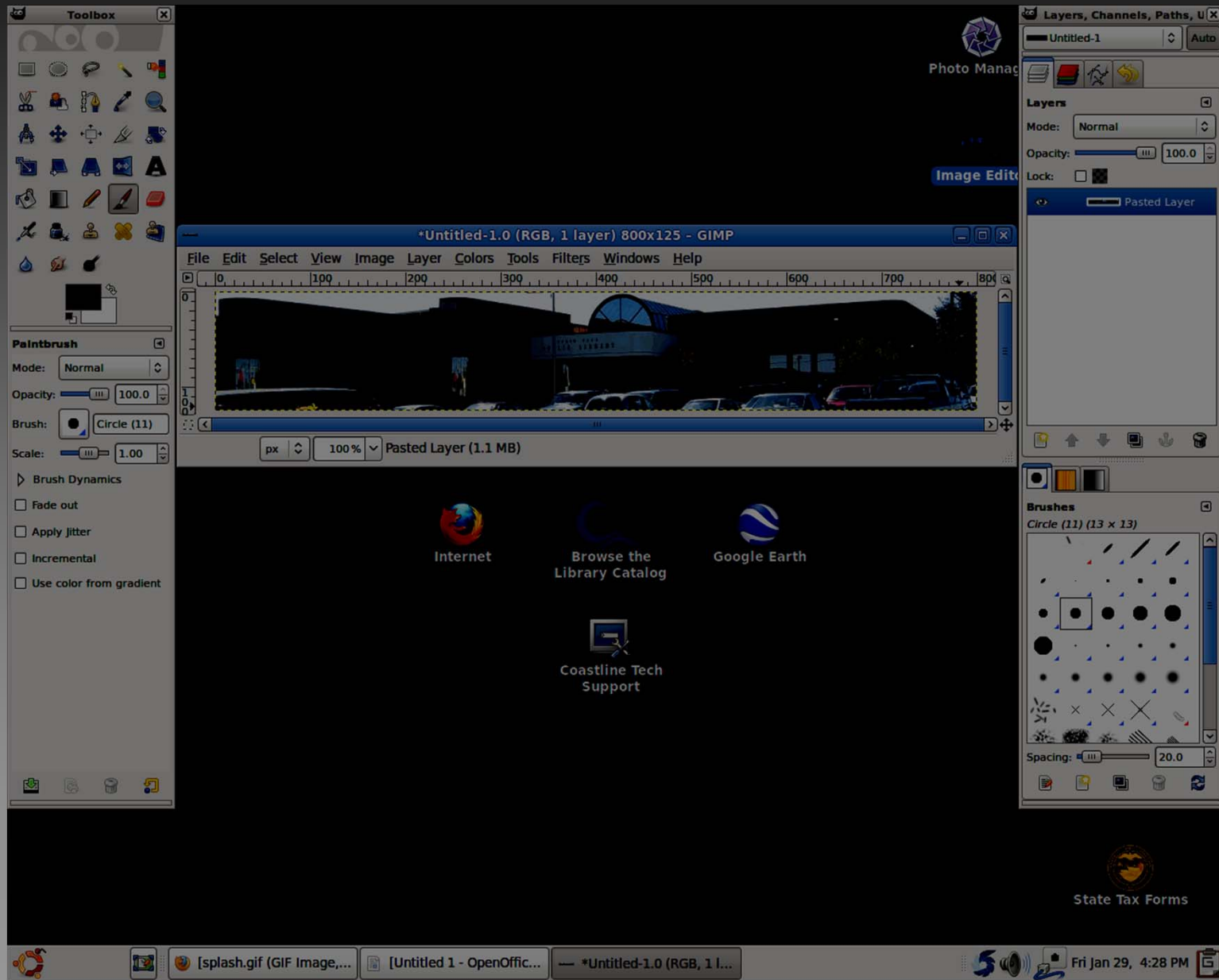
# Or just browse them



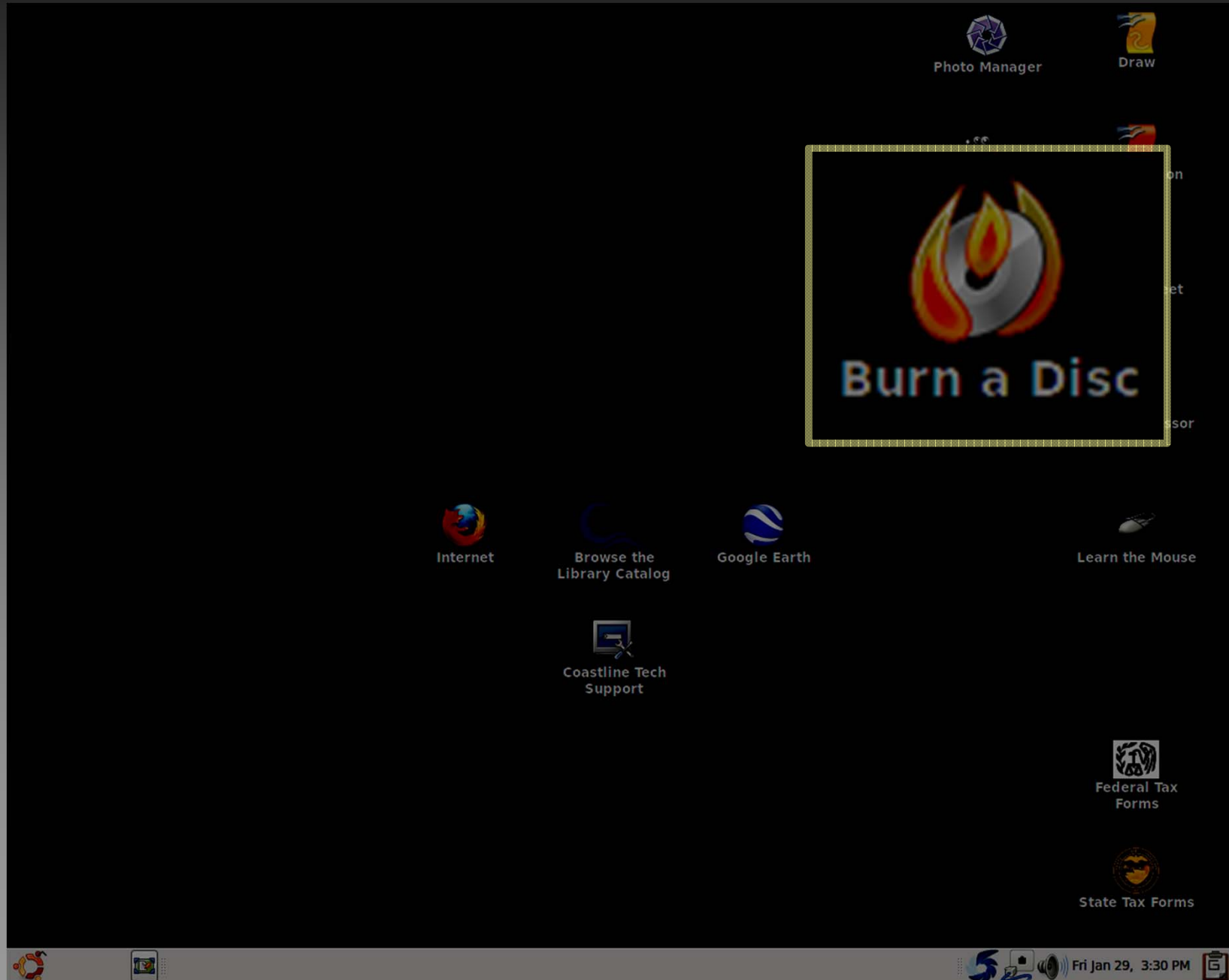
# So what can they do?



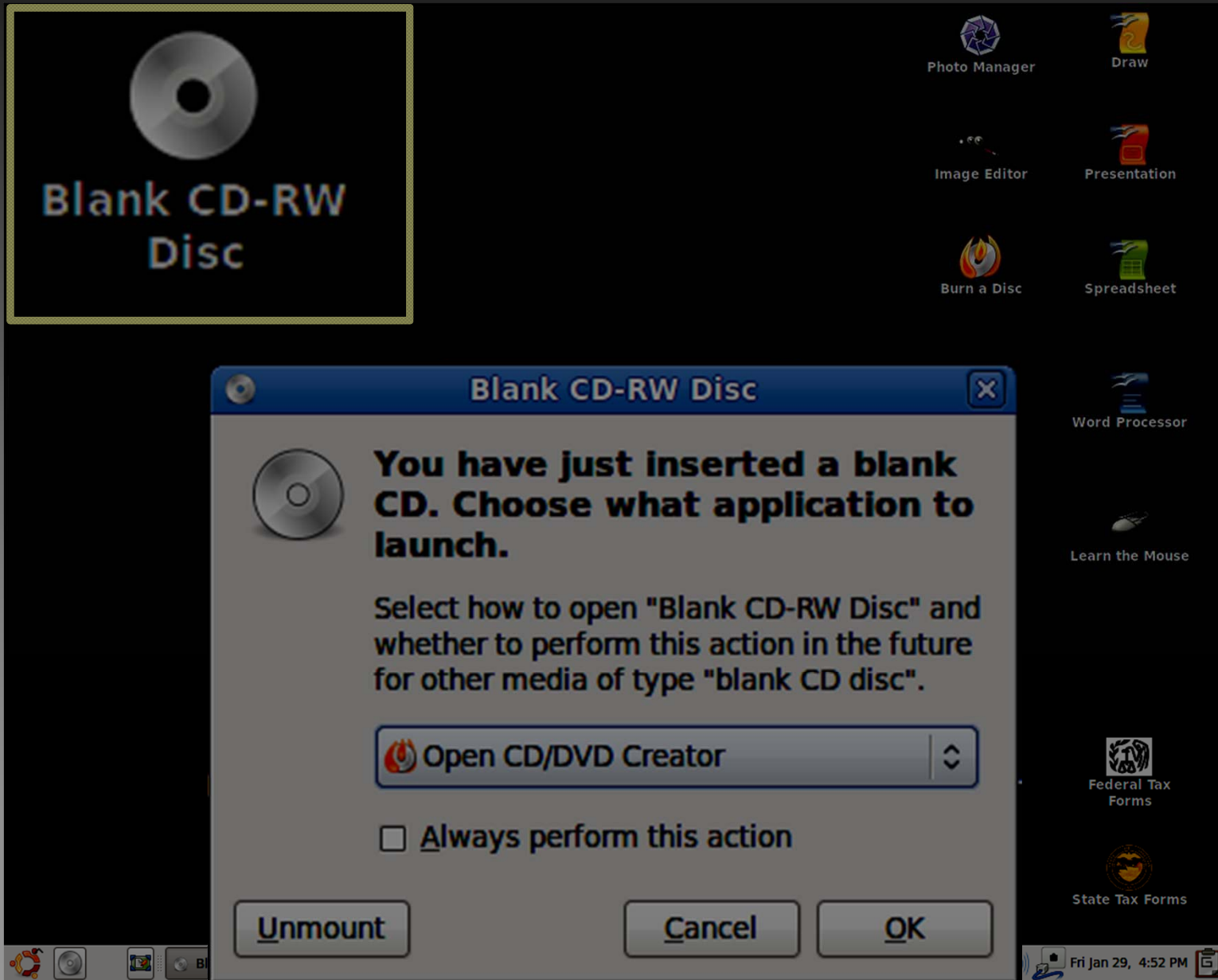
# Like Photoshop, but better!



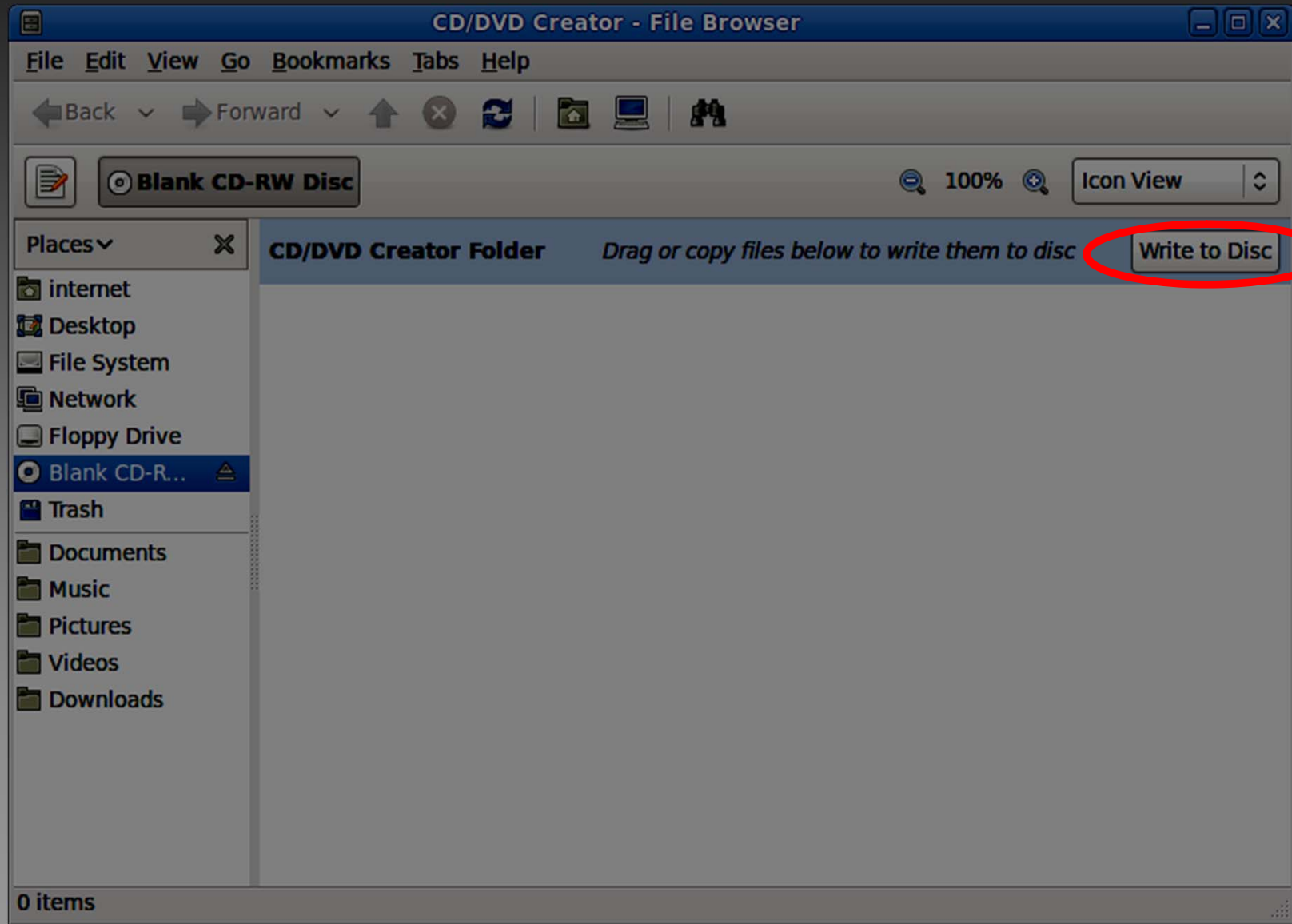
# So what can they do?



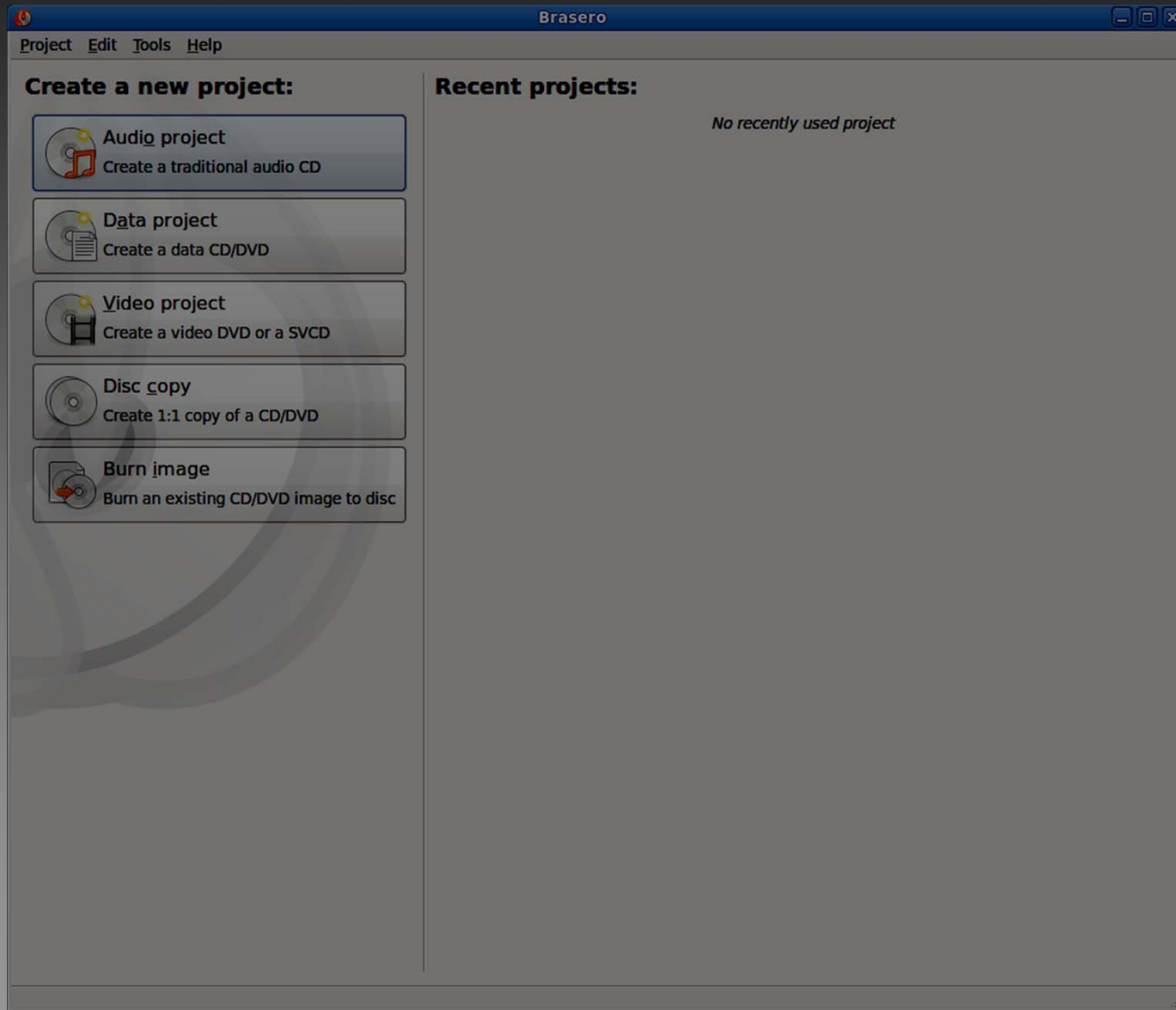
# Like Clippy, except it's useful



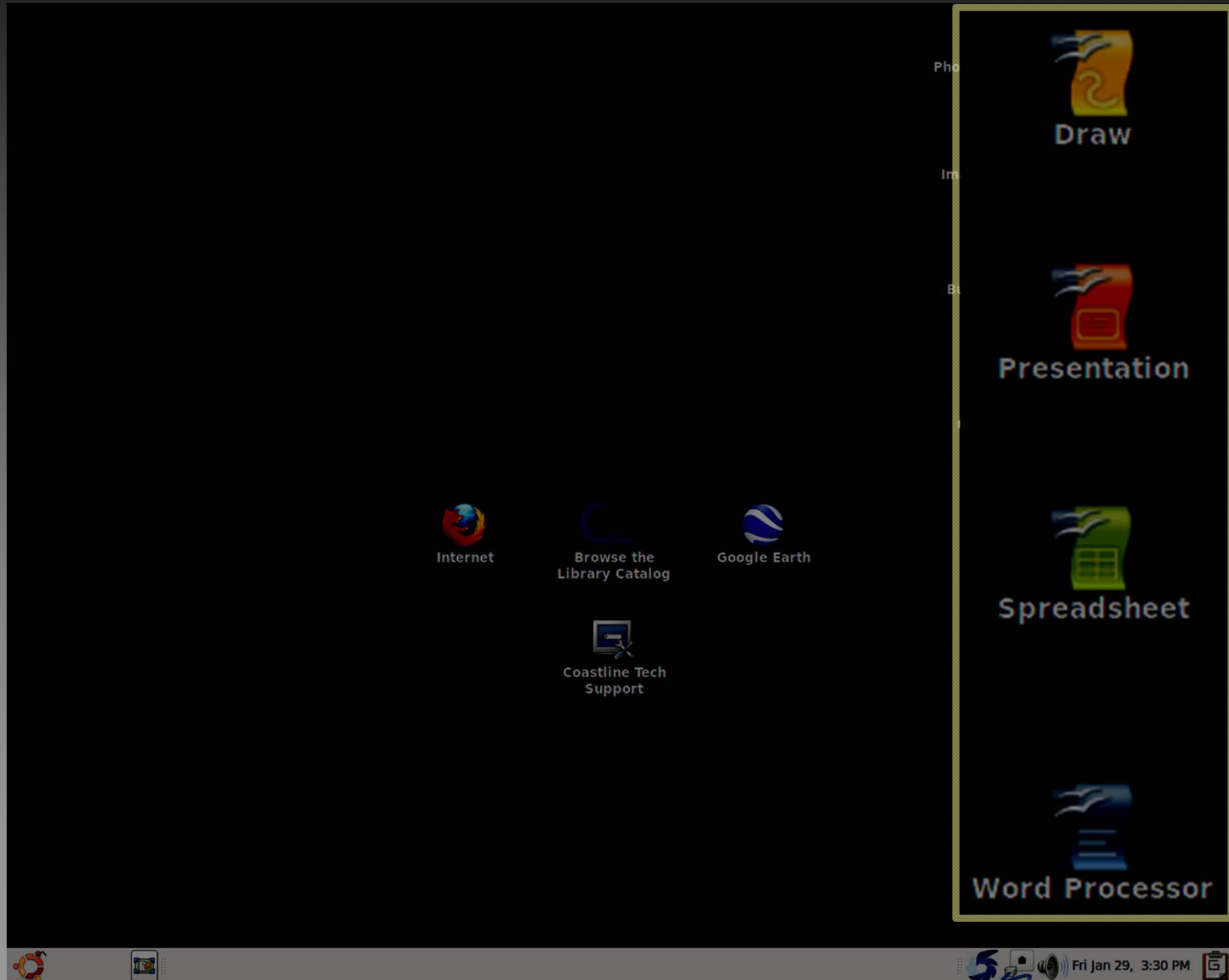
# Drag, drop, write



# Or make music or video discs

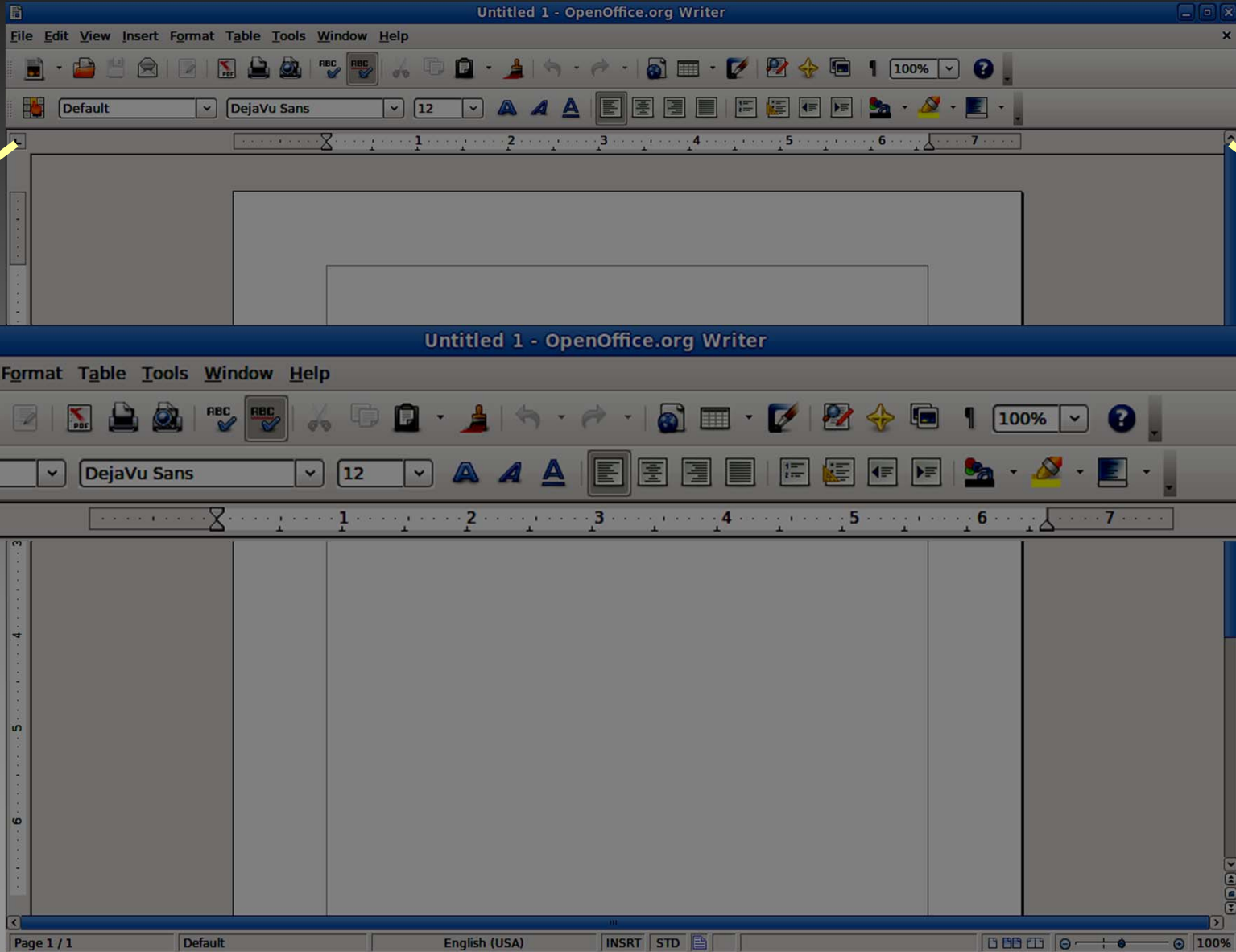


# So what can they do?

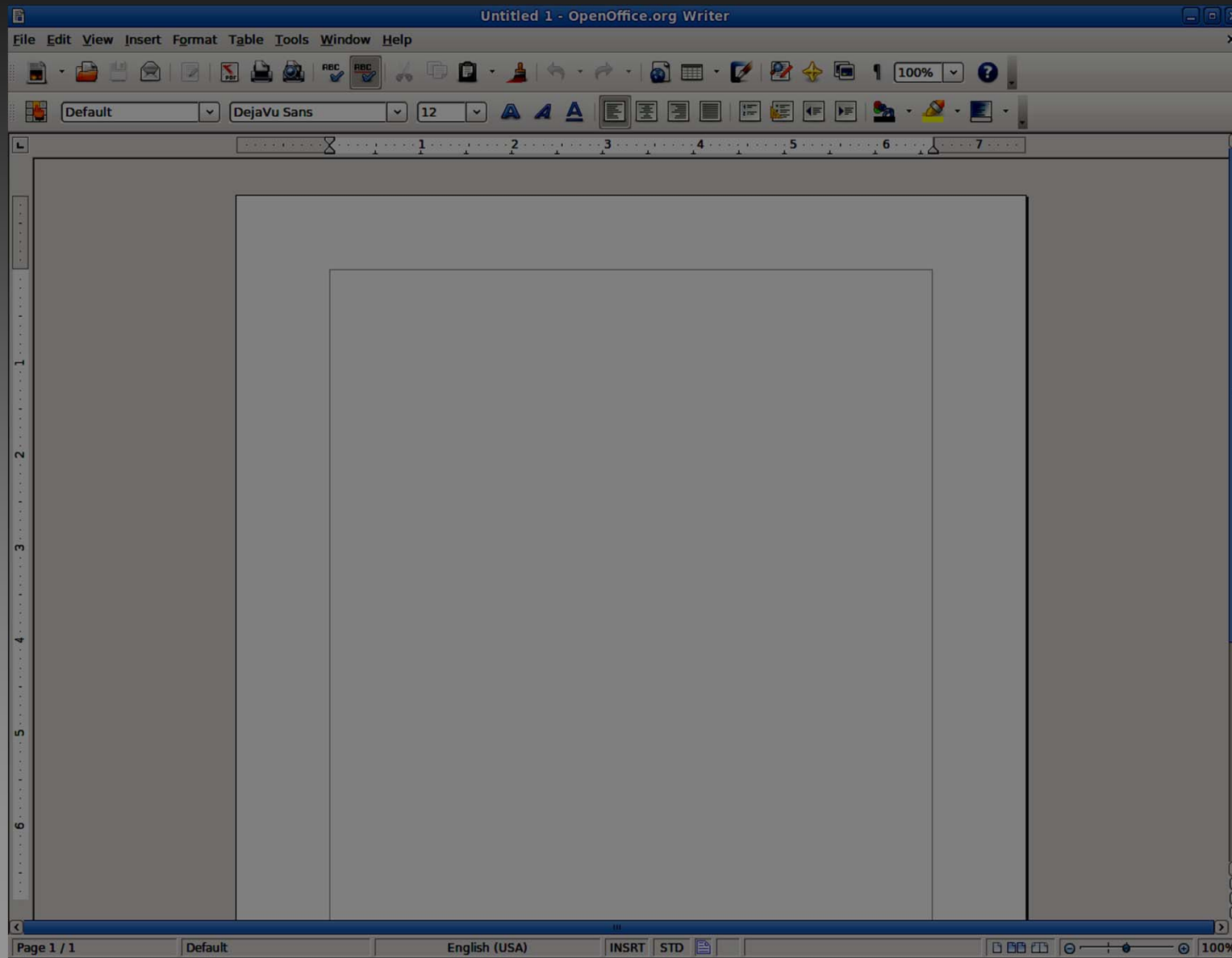




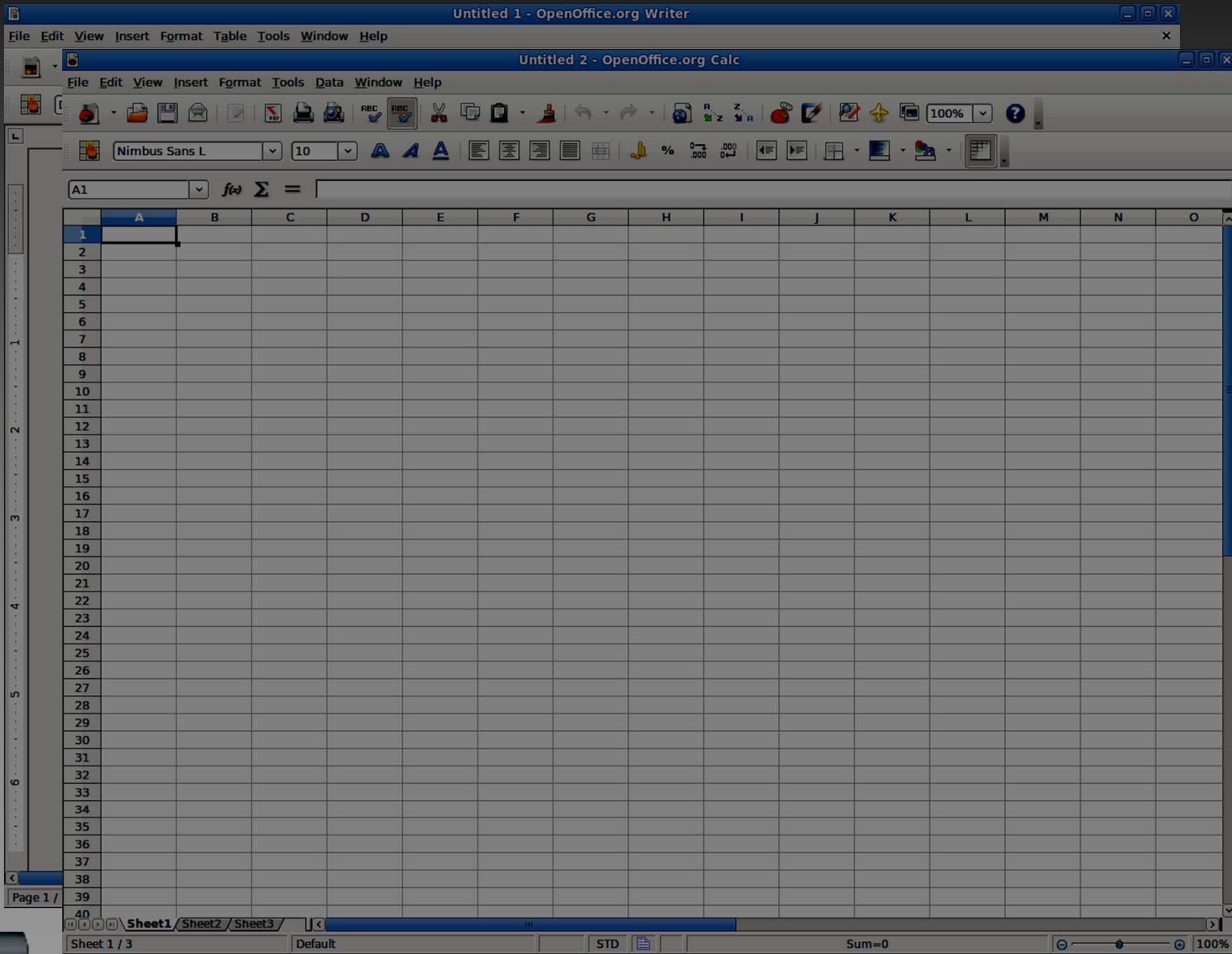
# If you can use Word . . .



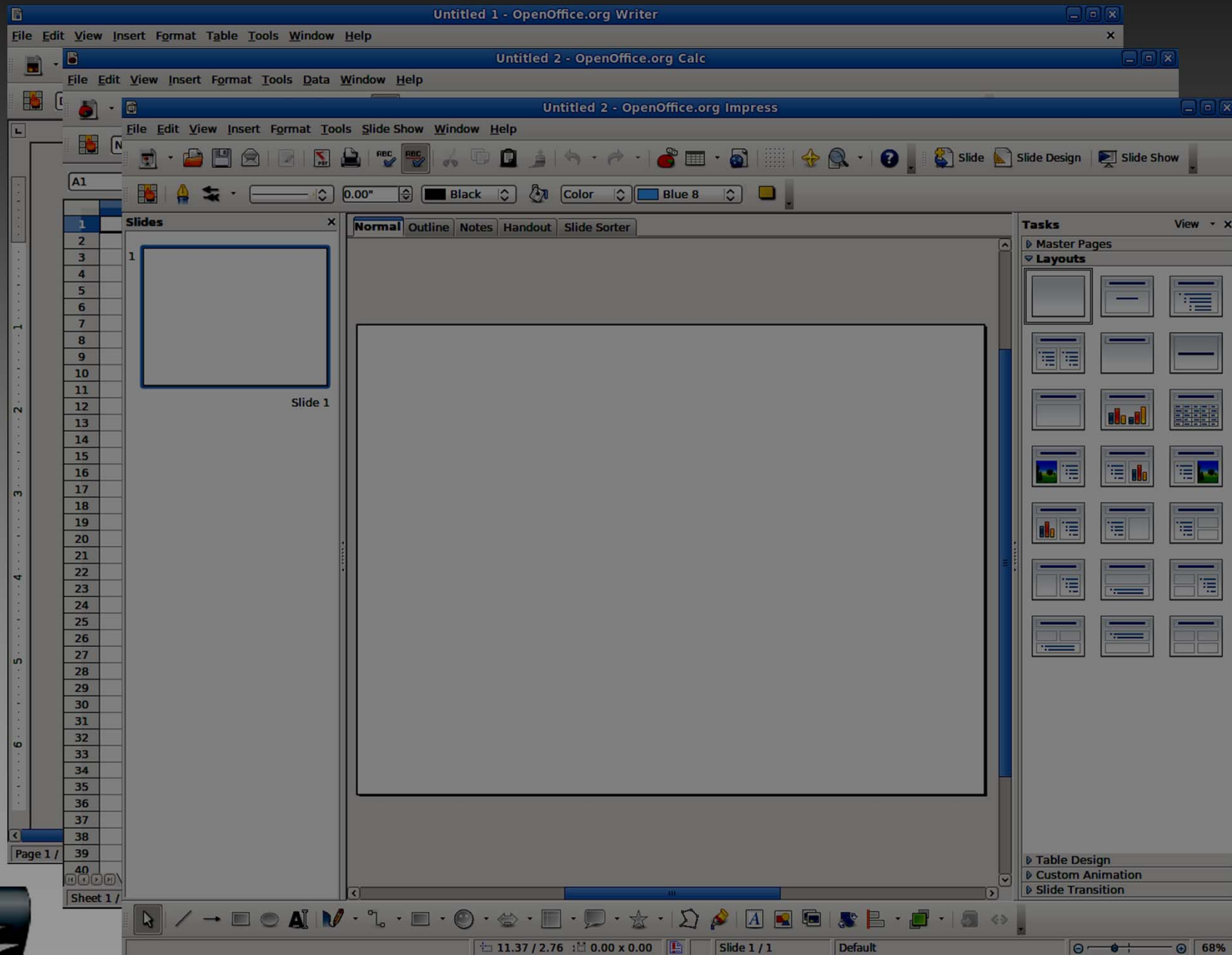
# Writer



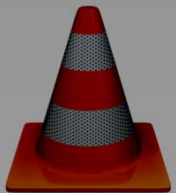
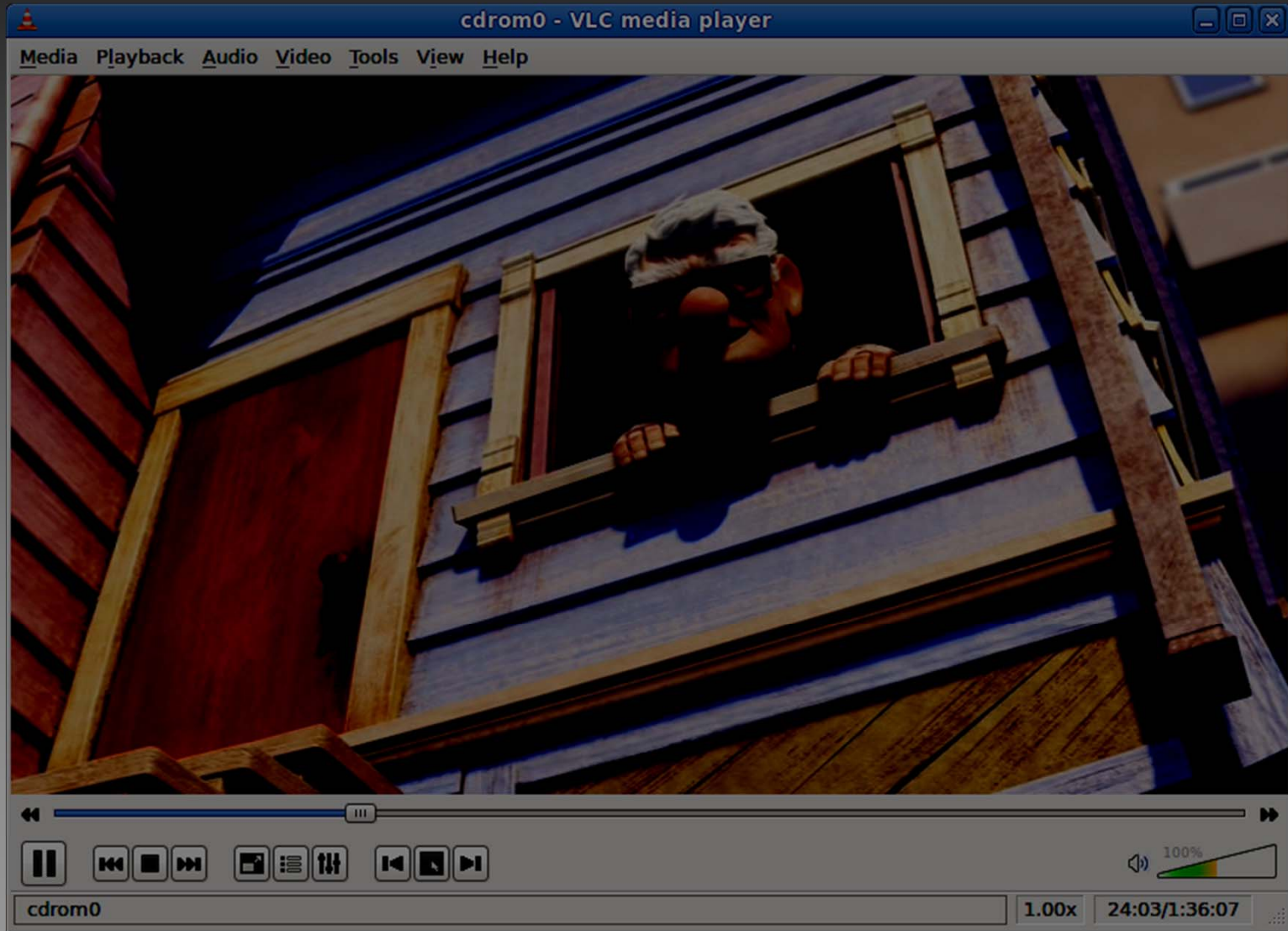
# Calc



# Impress



# We can even do multimedia



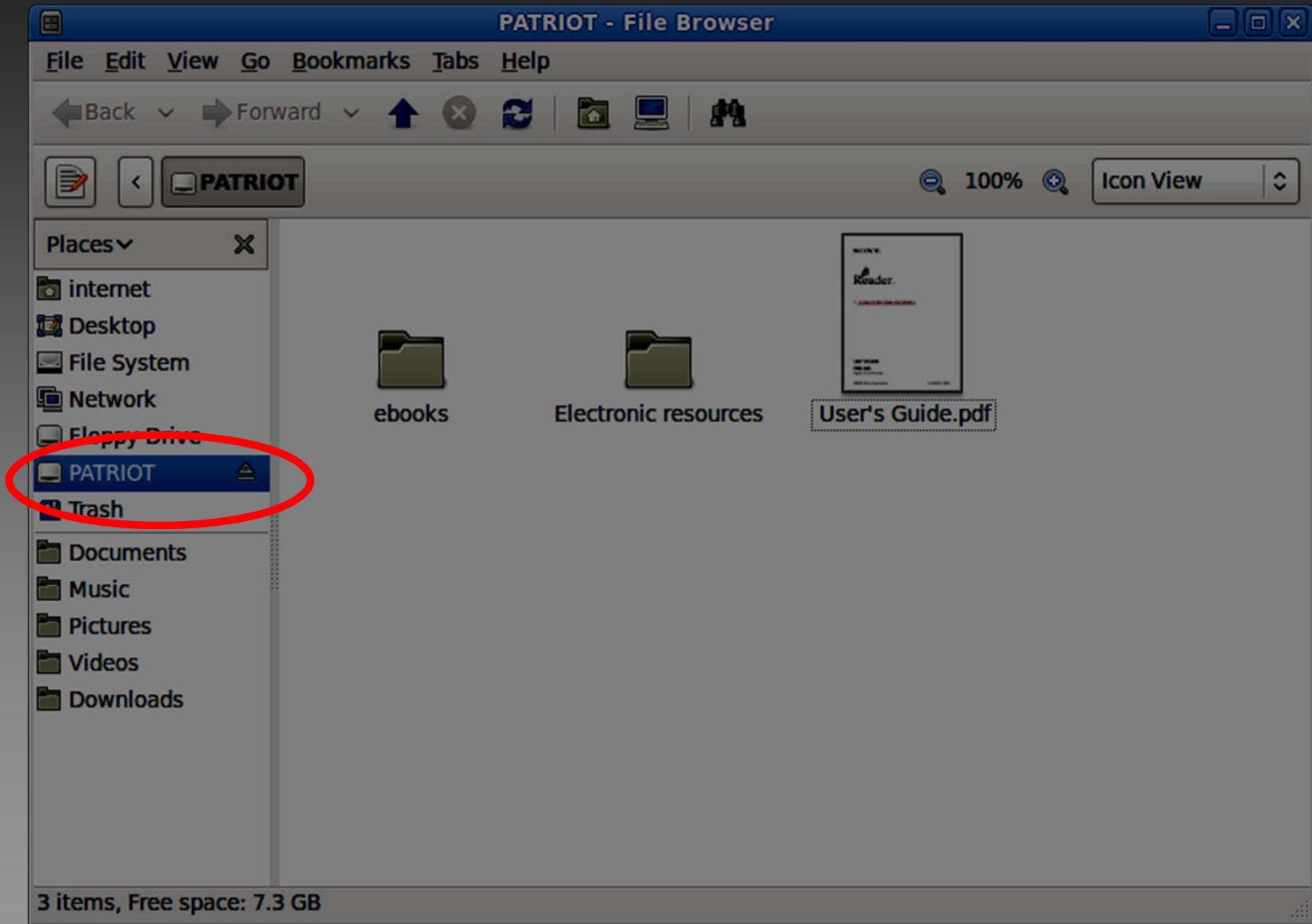
# Of the removeable kind, too

The image shows a Linux desktop environment with a dark theme. A context menu is open over a USB drive icon labeled "PATRIOT". The menu options are:

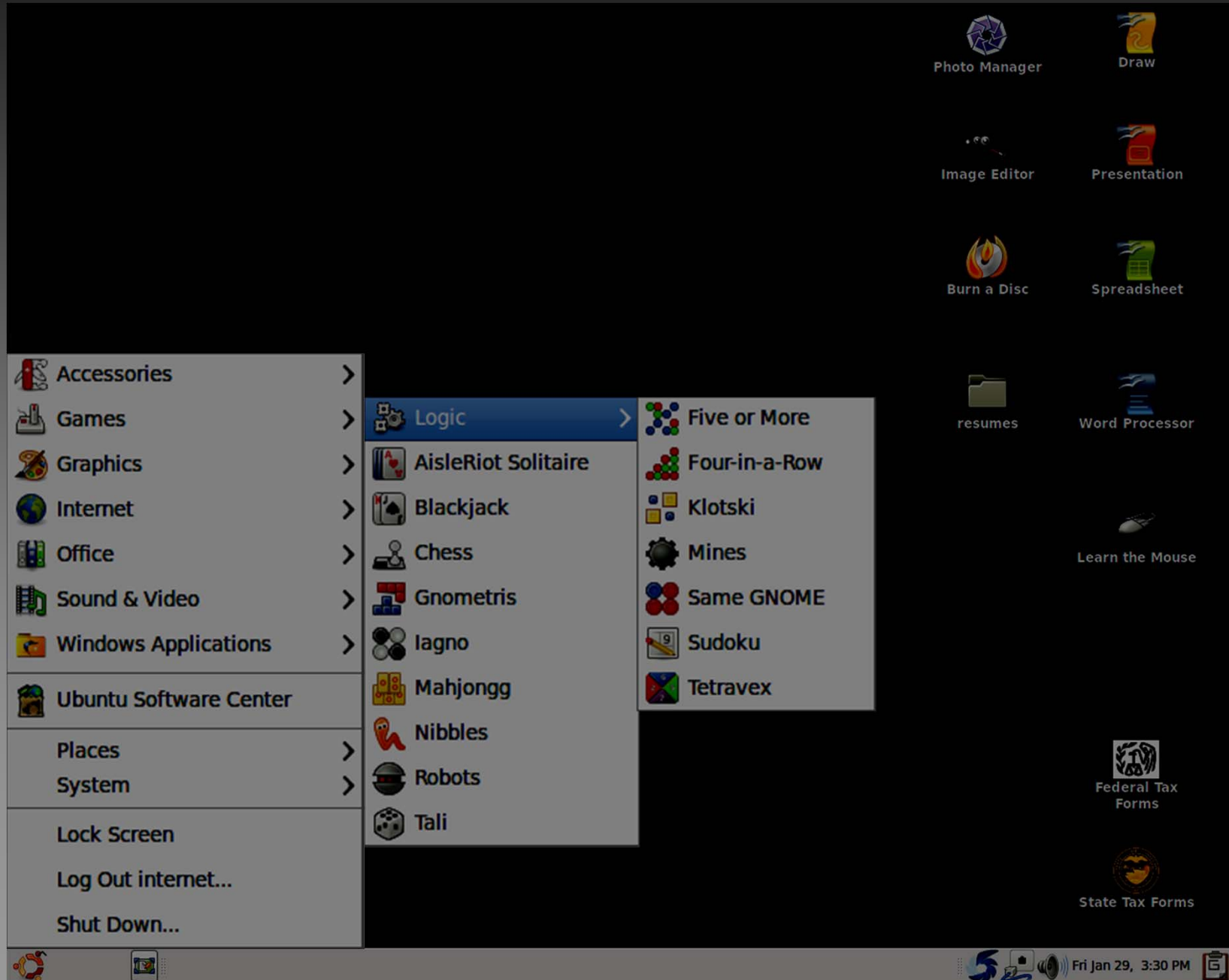
- Open
- Browse Folder
- Cut
- Copy
- Paste Into Folder
- Make Link
- Rename...
- Move to Trash
- Stretch Icon...
- Restore Icon's Original Size
- Compress...
- Format...
- Unmount
- Eject** (highlighted)
- Safely Remove Drive
- Properties

At the bottom of the menu, there is a "Support" link. The desktop background features several application icons: Photo Manager, Draw, Image Editor, Presentation, Burn a Disc, Spreadsheet, resumes, Word Processor, Google Earth, Learn the Mouse, Federal Tax Forms, and State Tax Forms. The taskbar at the bottom shows the following windows: [splash.gif (GIF Image,...), [Untitled 1 - OpenOffic..., [PATRIOT - File Browser]. System icons on the right include volume, network, and a clock showing "Fri Jan 29, 4:29 PM".

# Browse files easily

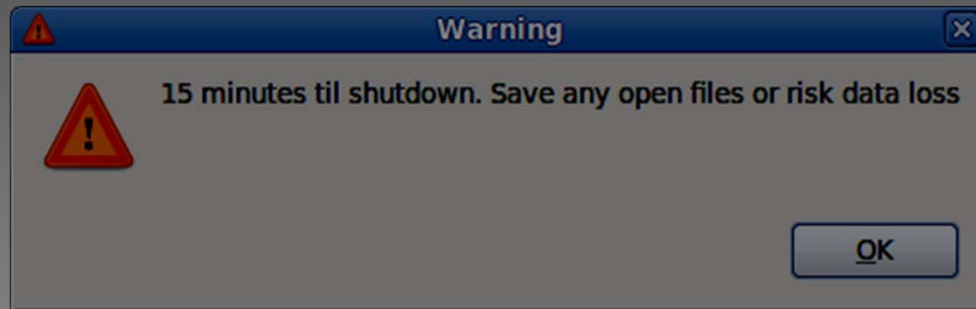


# And a few more things





# The staff's favorite part?



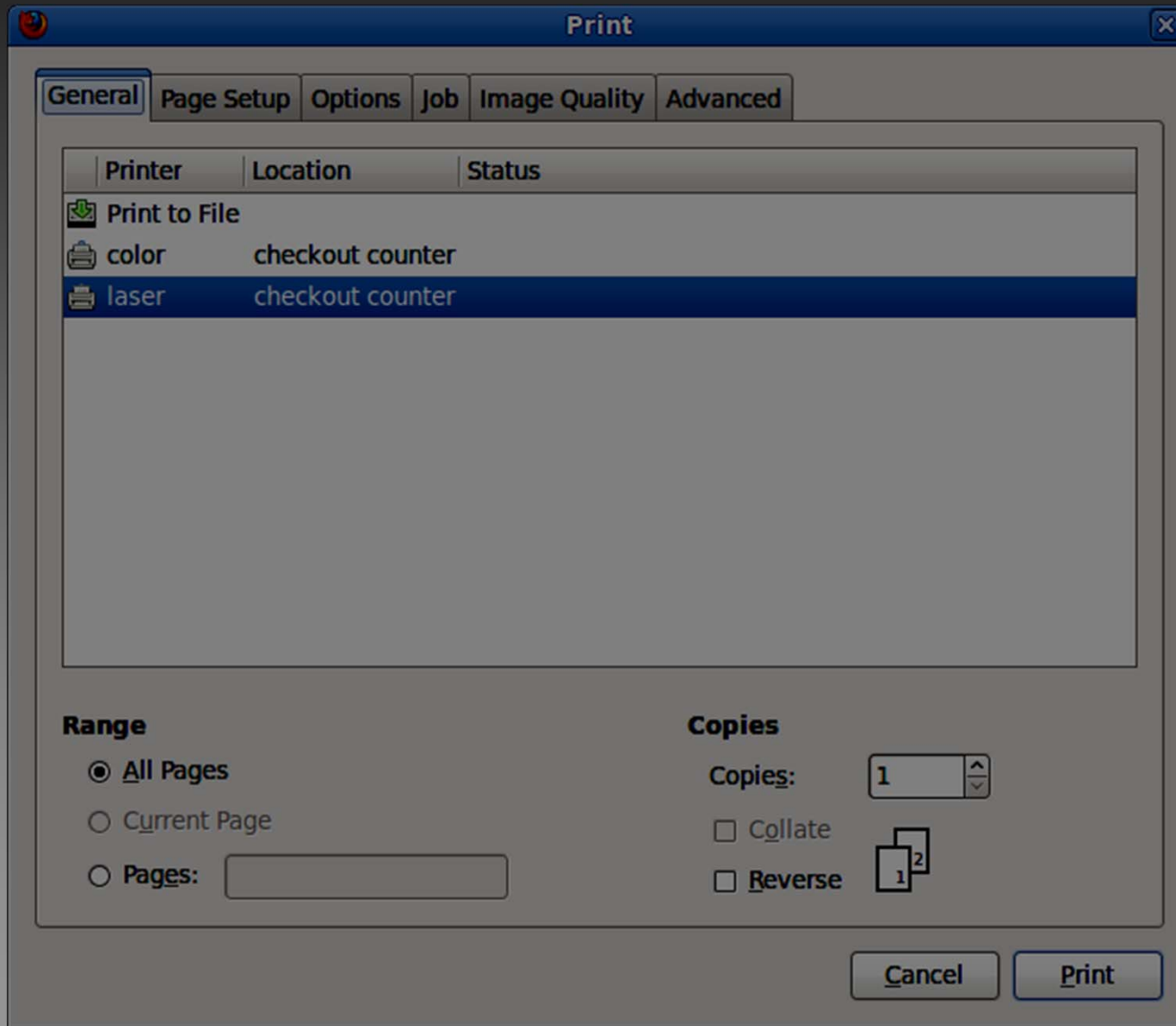
**Automatic shutdown!**

**But it wasn't all simple and rosy.**

# Obstacles we faced

**Obstacle #1**  
Printing

# Simple on the patron end . . .



**. . . but hardware can get in the way**



**Say hello to the hellspawn printer.**

**Main issue:**

Print jobs taking extremely long to print, sometimes get dropped.

# Obstacles we faced

**Obstacle #2**  
PDFs

# An unfortunate necessity



**Adobe Acrobat**

## **Main issue:**

Completing, saving and printing fillable forms.

# But no longer

2009 Form 1040

File Edit View Go Help

Previous Next 2 of 3 Fit Page Width

Form **1040** Department of the Treasury—Internal Revenue Service **2009** (99) IRS Use Only—Do not write or staple in this space.

**Label** (See instructions on page 14.) Use the IRS label. Otherwise, please print or type.

For the year Jan. 1–Dec. 31, 2009, or other tax year beginning	, 2009, ending	, 20	OMB No. 1545-0074
Your first name and initial <b>North Bend</b>	Last name <b>Public Library</b>	Your social security number	
If a joint return, spouse's first name and initial	Last name	Spouse's social security number	
Home address (number and street). If you have a P.O. box, see page 14.	Apt. no.	You must enter your SSN(s) above.	
City, town or post office, state, and ZIP code. If you have a foreign address, see page 14.		Checking a box below will not change your tax or refund.	
Presidential Election Campaign <input type="checkbox"/> Check here if you, or your spouse if filing jointly, want \$3 to go to this fund (see page 14)		<input type="checkbox"/> You <input type="checkbox"/> Spouse	
Filing Status <b>1</b> <input type="checkbox"/> Single <b>4</b> <input type="checkbox"/> Head of household (with qualifying person). (See page 15.) If the			

L A B E L  H E R E	For the year Jan. 1–Dec. 31, 2009, or other tax year beginning		, 2009, ending	, 20
	Your first name and initial <b>North Bend</b>	Last name <b>Public Library</b>		
	If a joint return, spouse's first name and initial	Last name		
	Home address (number and street). If you have a P.O. box, see page 14.			Apt. no.
	City, town or post office, state, and ZIP code. If you have a foreign address, see page 14.			

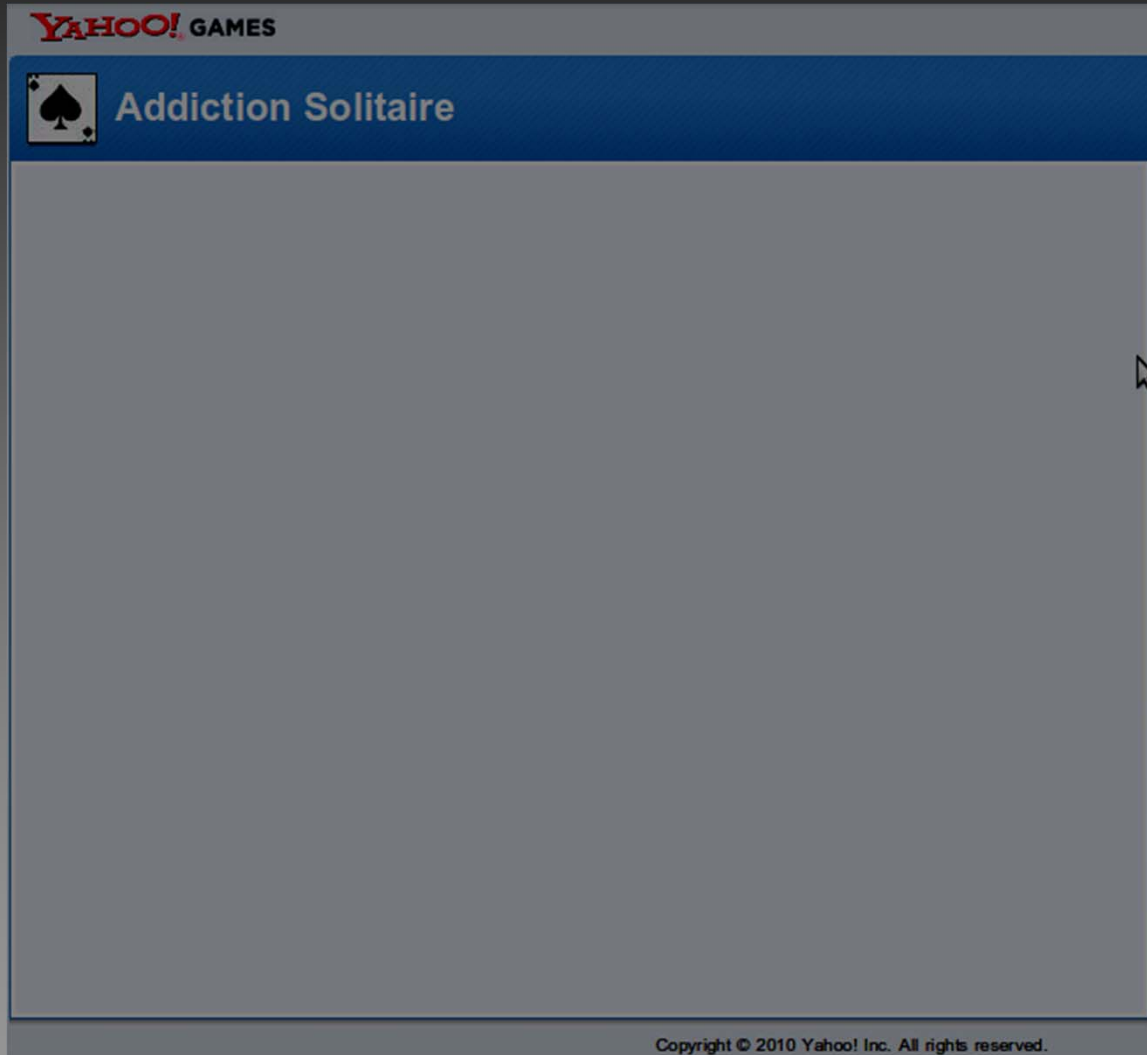
get a W-2, see page 22.	17 Other gains or losses, including from 17	15a IRA distributions 15a	b Taxable amount (see page 24) 15b
		16a Pensions and annuities 16a	b Taxable amount (see page 25) 16b
		17 Rental real estate, royalties, partnerships, S corporations, trusts, etc. Attach Schedule E 17	



# Obstacles we faced

**Obstacle #3**  
Flash plugin

# The bane of our existence



Adobe Flash

## Main issue:

Some Flash animations/applications unplayable.

Okay, admittedly this is a screenshot from Chromium, not Firefox.

# But we can handle most things

YouTube - Mr Bean - Library - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Back Forward Reload Stop Home New Tab Default User Agent <http://www.youtube.com/watch?v=RyDY0hiMZy8> RSS Google


Latest Headlines Federal Tax Forms State Tax Forms Oregon Jobs

YouTube - Mr Bean - Library

**You**Tube  Search [Create Account](#) or [Sign In](#)

Broadcast Yourself™ [Home](#) [Videos](#) [Channels](#) [Shows](#) [Subscriptions](#) [History](#) [Upload](#)

### Mr Bean - Library



3:25 / 9:13

★★★★★ 5,191 ratings **2,733,536** views

[Favorite](#) [Share](#) [Playlists](#) [Flag](#)

[Facebook](#) [Twitter](#) [MySpace](#) [\(more share options\)](#)

**Statistics & Data**

**Video Responses (0)** [Sign in to post a Video Response](#)


**Text Comments (1,517)** [Options](#) [Sign in to post a Comment](#)

**micscool39** (2 hours ago) [Reply](#) 0

very funny XD

**TheKarlgreat** (3 hours ago) [Reply](#) 0

LOLLLLLLLLLOLLLLLLLLL



**ledio1** December 28, 2006 [Subscribe](#)  
(more info)

Mr Bean at the Library.

URL <http://www.youtube.com/watch?v=RyDY0hi>

Embed `<object width="425" height="344"><param`

**More From: ledio1**

**Related Videos**

- "When In Rome"**  
542,951 views  
TouchstonePictures  
Promoted Video  
3:30
- Mr. Bean — shopping**  
1,317,662 views  
wenglok1989  
7:54
- Mr Bean - Judo**  
2,377,311 views  
elblogdeljudo  
3:47

[http://googleads.g.doubleclick.net/aclk?sa=l&ai=BqaR\\_VHljS8eJfQqTqjASd8PyfBtXqnpcBy8a29Q-FtADNDgAQAARgBIOP7kwM4AFDa4sfYBGDJlvalZK54GaAB4d3G7AOyAQ93d3cucW91dHVIZS5...](http://googleads.g.doubleclick.net/aclk?sa=l&ai=BqaR_VHljS8eJfQqTqjASd8PyfBtXqnpcBy8a29Q-FtADNDgAQAARgBIOP7kwM4AFDa4sfYBGDJlvalZK54GaAB4d3G7AOyAQ93d3cucW91dHVIZS5...)

# But we can handle most things

Hulu - Sesame Street: Grover in the Library - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Back Forward Reload Stop Home New Tab Default User Agent <http://www.hulu.com/watch/38830/sesame-street-grover-in-the-library> Google

Latest Headlines Federal Tax Forms State Tax Forms Oregon Jobs

Hulu - Sesame Street: Grover in...

**hulu**™ TV Movies Login Forgot Password? Sign Up

Channels Popular Episodes Recently Added Popular Shows Coming Soon Browse TV search

## Grover in the Library

Sesame Street

Video Clip (s.3 : ep.145) | 01:41 | ☆☆☆☆☆

[View Description](#)

next video ▶ | [show playlist](#)

Check your PBS local listings to see when Sesame Street airs in your area. Weekdays at 8:00/7:00c AM on Sprout | © TM/2008 Sesame Workshop

Main Reviews Discussions Tags Widgets rate this video: ☆☆☆☆☆ | [subscribe](#)

**Availability Notes:** Clips are available at this time. We'll continue to request complete episodes.

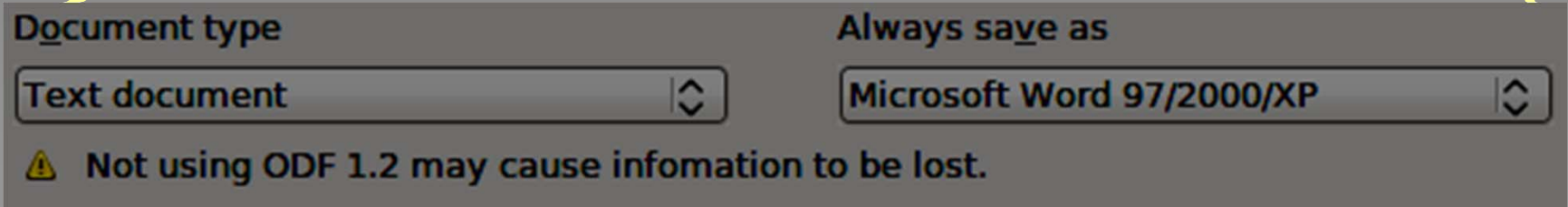
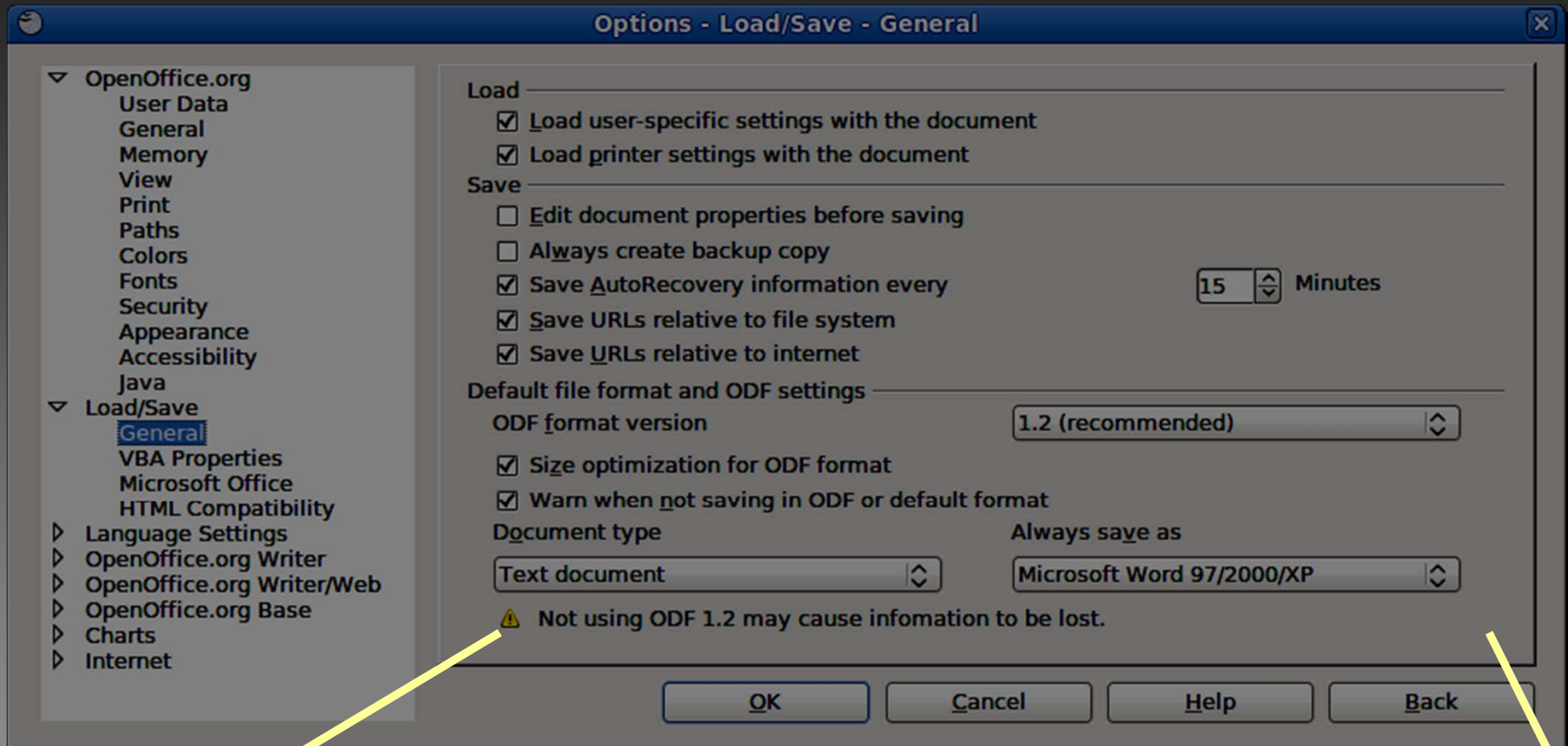
Share this video [copy embed code](#) [Facebook](#) [Twitter](#) [Digg](#) [MySpace](#) more ▶

Transferring data from secure-us.imrworldwide.com...

# Obstacles we faced

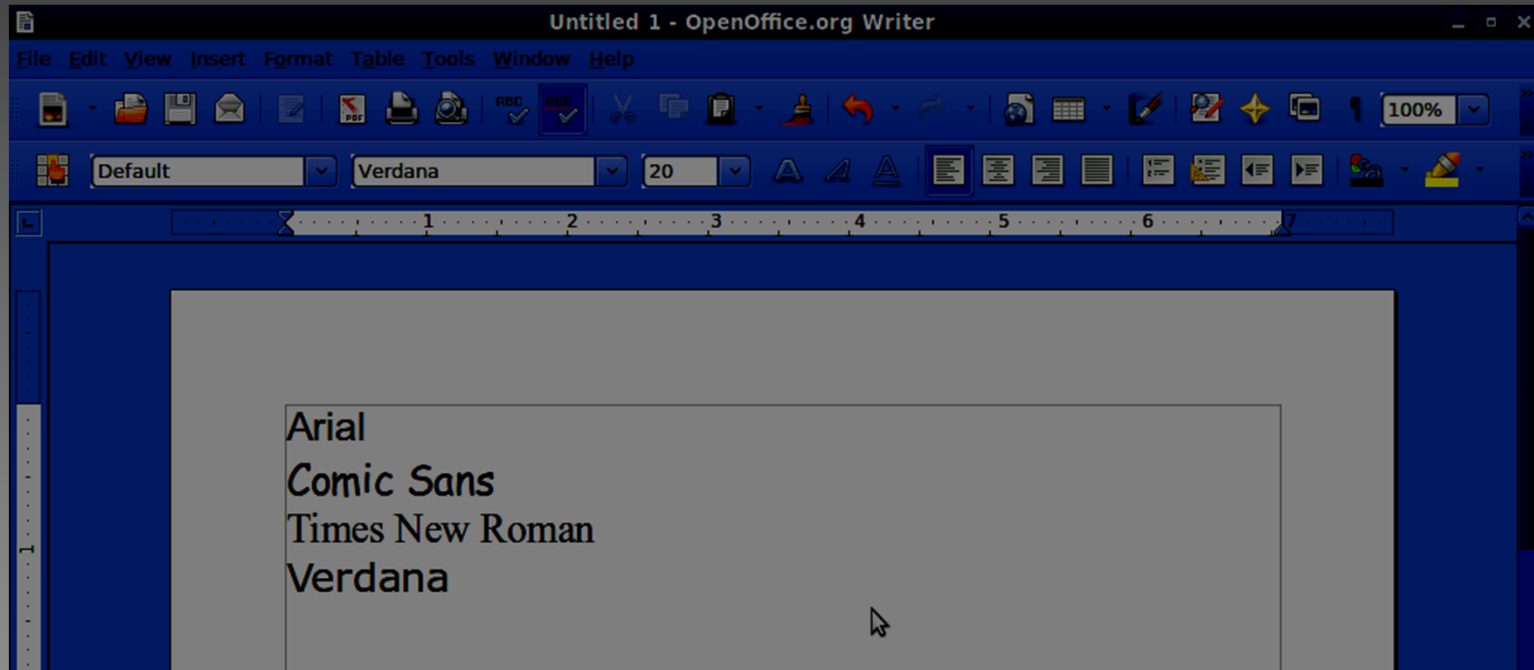
**Obstacle #4**  
**Compatibility**

# Formatting



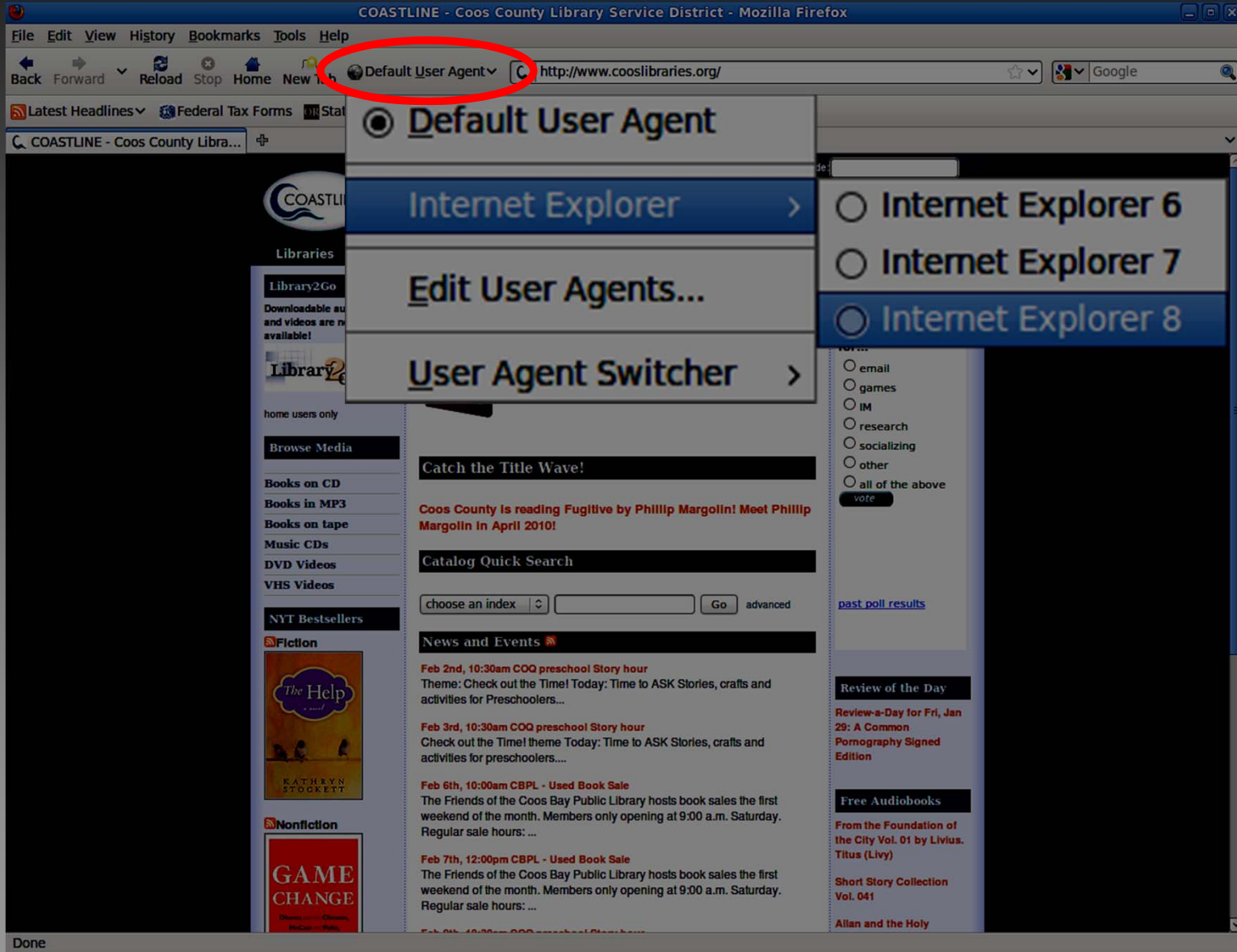
**Compatibility fix:**  
Defaulting to save in Microsoft formats.

# Formatting



**Compatibility fix:**  
Install commonly-used licensed fonts.

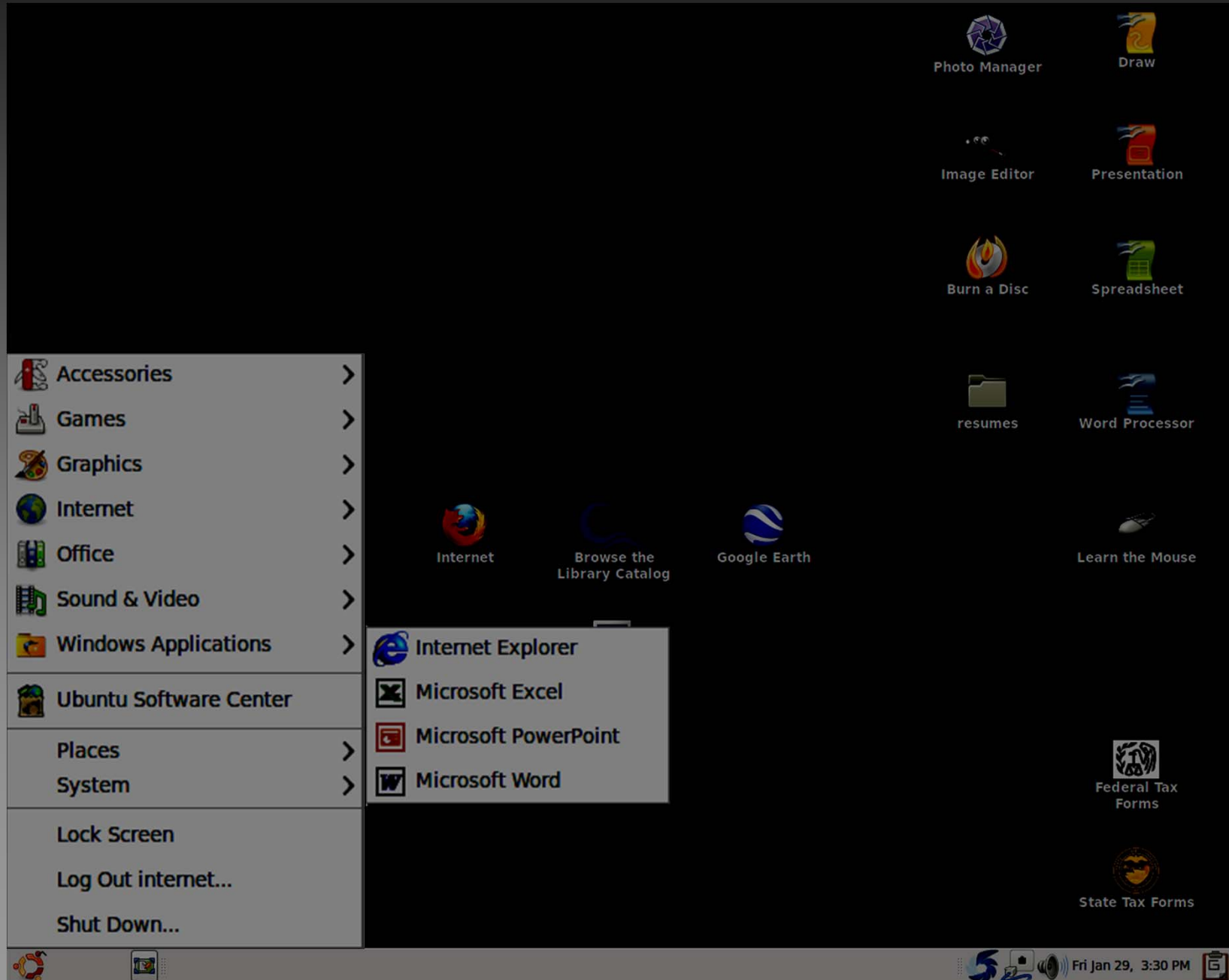
# Firefox can play pretend



Compatibility fix:  
Installing User Agent Switcher plugin in Firefox.



# A glass of Wine a day



The image shows a screenshot of an Ubuntu desktop environment. The desktop background is dark. On the left side, a menu is open, listing various categories and applications. The categories include Accessories, Games, Graphics, Internet, Office, Sound & Video, Windows Applications, Ubuntu Software Center, Places, System, Lock Screen, Log Out internet..., and Shut Down... The applications listed under the menu are Internet Explorer, Microsoft Excel, Microsoft PowerPoint, and Microsoft Word. The desktop contains several icons: Photo Manager, Draw, Image Editor, Presentation, Burn a Disc, Spreadsheet, resumes, Word Processor, Internet, Browse the Library Catalog, Google Earth, Learn the Mouse, Federal Tax Forms, and State Tax Forms. The taskbar at the bottom shows the date and time as Fri Jan 29, 3:30 PM.

- Accessories >
- Games >
- Graphics >
- Internet >
- Office >
- Sound & Video >
- Windows Applications >
- Ubuntu Software Center
- Places >
- System >
- Lock Screen
- Log Out internet...
- Shut Down...

Applications in the menu:

- Internet Explorer
- Microsoft Excel
- Microsoft PowerPoint
- Microsoft Word

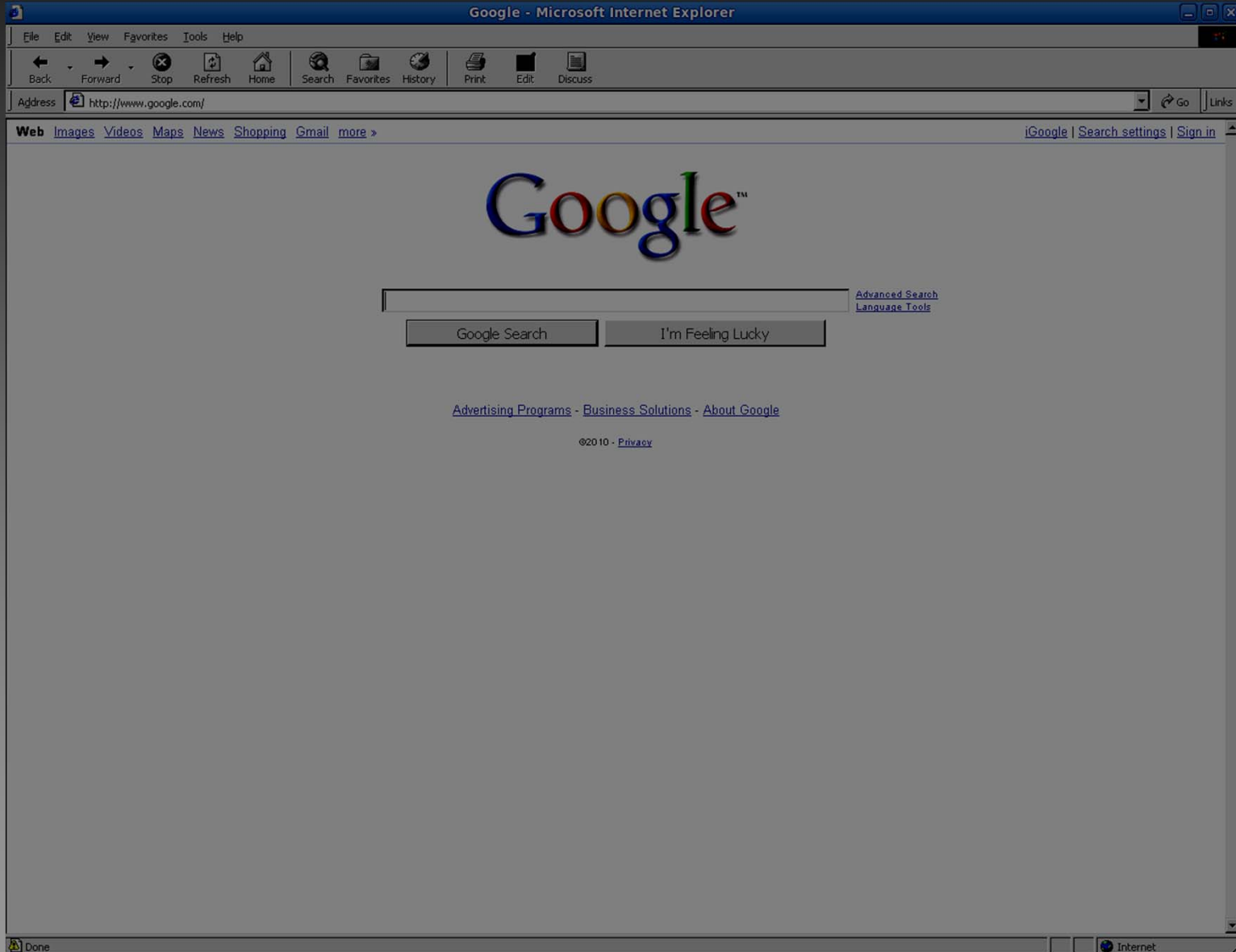
Desktop icons:

- Photo Manager
- Draw
- Image Editor
- Presentation
- Burn a Disc
- Spreadsheet
- resumes
- Word Processor
- Internet
- Browse the Library Catalog
- Google Earth
- Learn the Mouse
- Federal Tax Forms
- State Tax Forms

Taskbar: Fri Jan 29, 3:30 PM



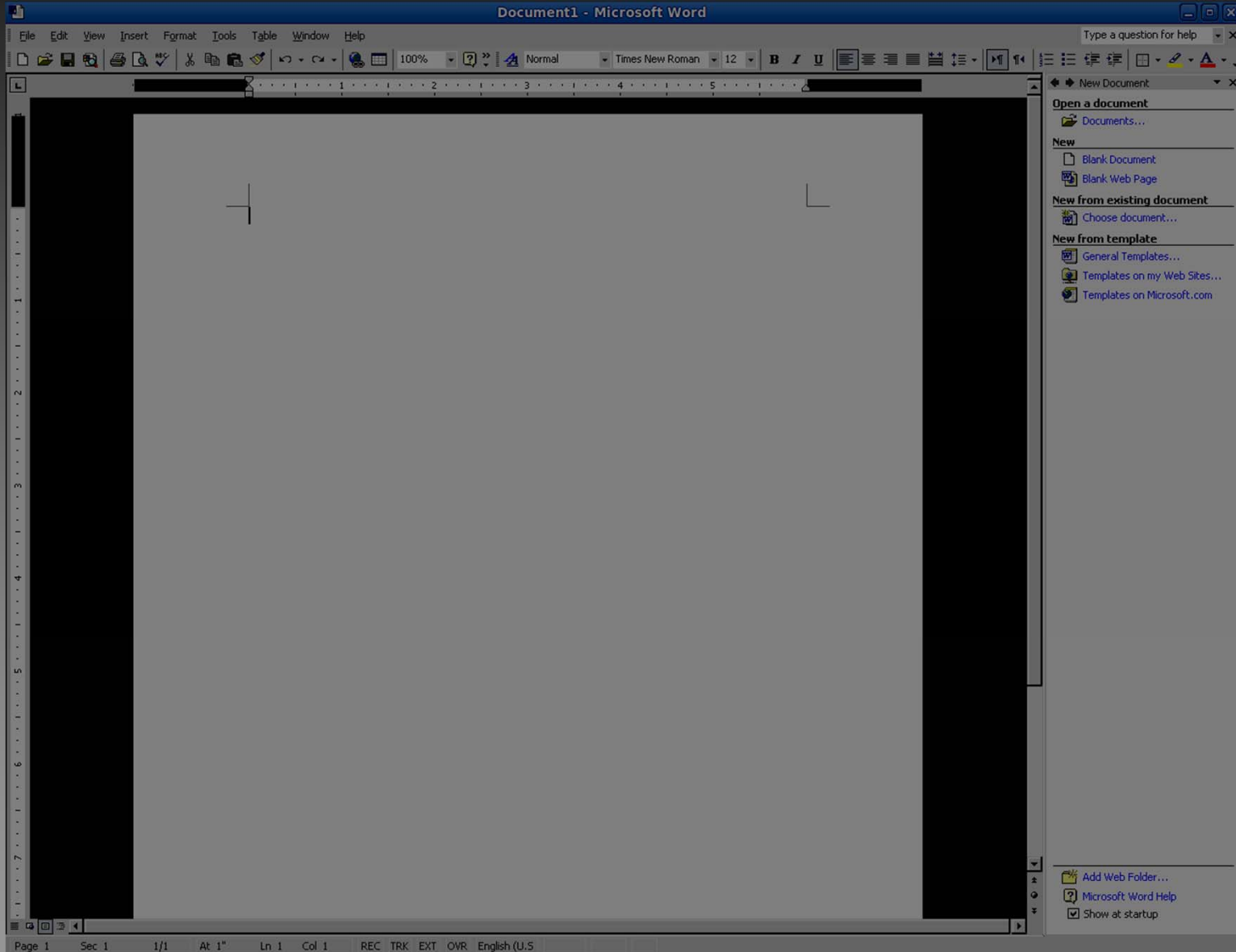
# A bit of freedom hating: IE6



**Compatibility fix:**  
Installing some Windows applications through Wine.



# More freedom hating: MS Word



**Compatibility fix:**  
Installing some Windows applications through Wine.



# We eat our own dog food

Internet filtering →  DansGuardian

Network monitoring →  Nagios

Instant messaging →  Pidgin

Email →  qmail

Online calendar → WebCalendar

Content management →  WordPress

# Our recommendations

## **Recommendation #1:**

Make sure that you have an open-minded staff.

## **Recommendation #2:**

Try (or at least research) before you buy.

## **Recommendation #3:**

Help your patrons by making things look familiar.

## **Recommendation #4:**

Accept that trial & error is a given.

## **Recommendation #5:**

Don't upgrade your particular flavor of Linux right away. If it ain't broke...

# Thanks!

This presentation was made using open source software.



**Ubuntu Linux**  
Operating system



**OpenOffice  
Impress**  
Presentation program



**Mozilla Firefox**  
Web browser



**GIMP**  
Image editor



**Shutter**  
Screenshot utility

**Questions?**

# For further information



**View this presentation on slideshare:**

<http://www.slideshare.net/nbpl/linux-desktops>



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