

Linux in Early Education

-Presented by

-Steve Oualline (<http://www.oualline.com>)

-Grace Oualline (Age 4)

Topics

- How Grace uses Linux for learning
- Software developed for Grace
- Educational software for Linux
- Linux setup notes
- Resources for Educators
- Demonstration
- Questions

Grace Years 0-1



Grace Years 0-1

-A baby is a loud noise at one end and no sense of responsibility at the other.

- Ronald Knox

- First year's activities:

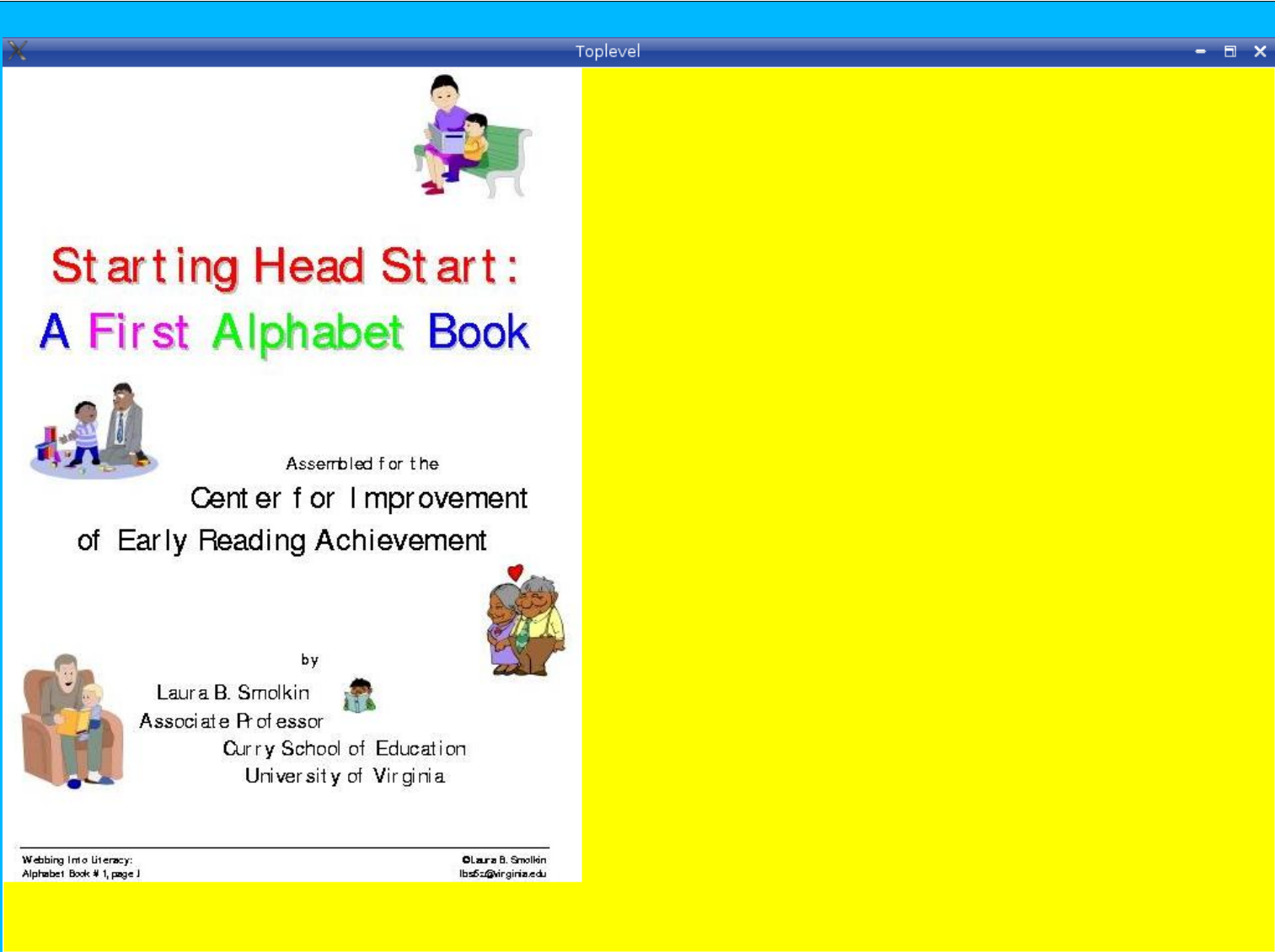
- Eat

- Sleep

- Poop

Educational activities - NIL

Grace's First Program (Year 1.5)



The image shows a screenshot of a web browser window with a blue title bar labeled "Toplevel". The main content area is white and features the cover of a book. The book cover has a yellow background and contains the following text and illustrations:

Starting Head Start:
A First Alphabet Book

Assembled for the
Center for Improvement
of Early Reading Achievement

by
Laura B. Smolkin
Associate Professor
Curry School of Education
University of Virginia

Illustrations on the cover include: a woman reading to a child on a green bench; a man and a child playing with blocks; a man and a child reading together in an armchair; and an elderly couple embracing.

At the bottom left of the page, there is a footer: "Webbing Into Literacy: Alphabet Book # 1, page 1". At the bottom right, there is a copyright notice: "©Laura B. Smolkin lbs5z@virginia.edu".

Grace's First Program (Year 1.5)

- Original Design
 - User Presses letter
 - Picture which begins with that letter shows up
 - Computer says the item in the picture

Too Complex

- Revised Program
 - Press any key
 - Picture and sound show (unrelated to the key)

Results

- Expected Results
 - Grace learned that the computer was fun
- Unexpected Results
 - Grace developed a novel non-verbal method of indicating that she was finished.
 - Daddy learned that replacement keyboards are cheap.
 - The program does not work well on a laptop.
She will press all keys including the power off button.








1st Commercial Software

- Jump Start Advanced Toddler
 - Sing Along Time
- What the program does
 - Move the mouse, click on the right place
 - A video plays
- Results
 - Mouse usage is hard for a 1.5 year old
 - Concept of clicking especially difficult
 - Clicking the right button – very hard.

Good News about Jump Start

-The movies play on Linux!!!

Grace's Second Program

Grace's Movies	
F	
N	
W	
L	
B	
V	
Z	

Grace's Second Program



- Student must press the correct letter to play the video.
- Grace learned the location of the letters in about 1-2 months.

Learning Basic Mouse Usage

- Used Open Source Program gcompris
(Will be discussed later)
- Game: Move the mouse over an obscured picture. Every squared moved over exposes a part of the picture.

Learning Counting

Grace's Movies

Learning Counting

- Same program as the letter video
- Just changed to add new questions and answers.

Getting on-line

- Lots of on-line sites such as:
 - <http://www.pbskids.org>
 - <http://www.4kids2play.nl/eng/>
 - <http://www.fisher-price.com/>
 - <http://www.sesameworkshop.org>
- Almost all sites use Adobe Flash
 - Works just fine with Linux and Firefox

Linux Specific Software

- gcompris
- childisplay
- tuxpaint
- tuxtype
- Edubuntu

Software Notes

- Commercial Software is Written By People Who want money
 - Designed for selling, not usefulness
- Open Source tools designed by people who want software that works
 - Usability is king
- Open Source learning tools designed by engineers who know education and those who don't.
 - Some programs show their engineering roots

gcompris



gcompris

- A collection of lots of learning programs
- Most games work well
- Some are really strange
- Organized by subject (not learning level)
- On-line help is a mess
- ~~Turn off the background music~~
- By far the best learning suite, but could use some help from professional educators.

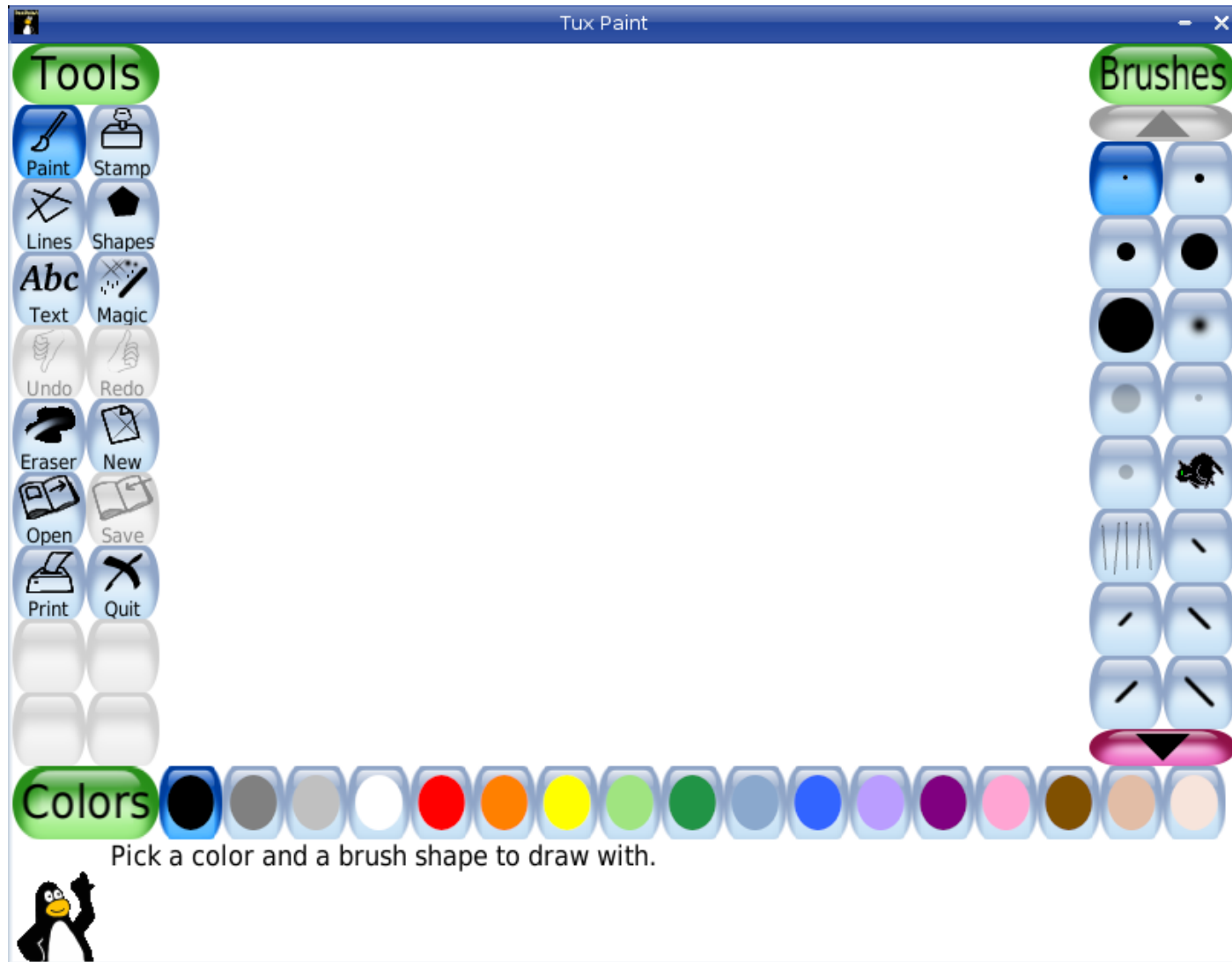
Chidsplay



Childsplay

- gcompris lite.
- Not as many games
- Not quite as good
- No way to turn off the music!!!

tuxpaint



tuxpaint

- Very nice child's painting program.
- A little research is needed to get the thing to go full screen.

tuxtype



tuxtype

- Typing tutor
- Games are a little strange
- Restart difficult

Note: After playing commercial games
Grace lost the ability to use the keyboard.
She shows little interest in this game.

Edubuntu



Edubuntu

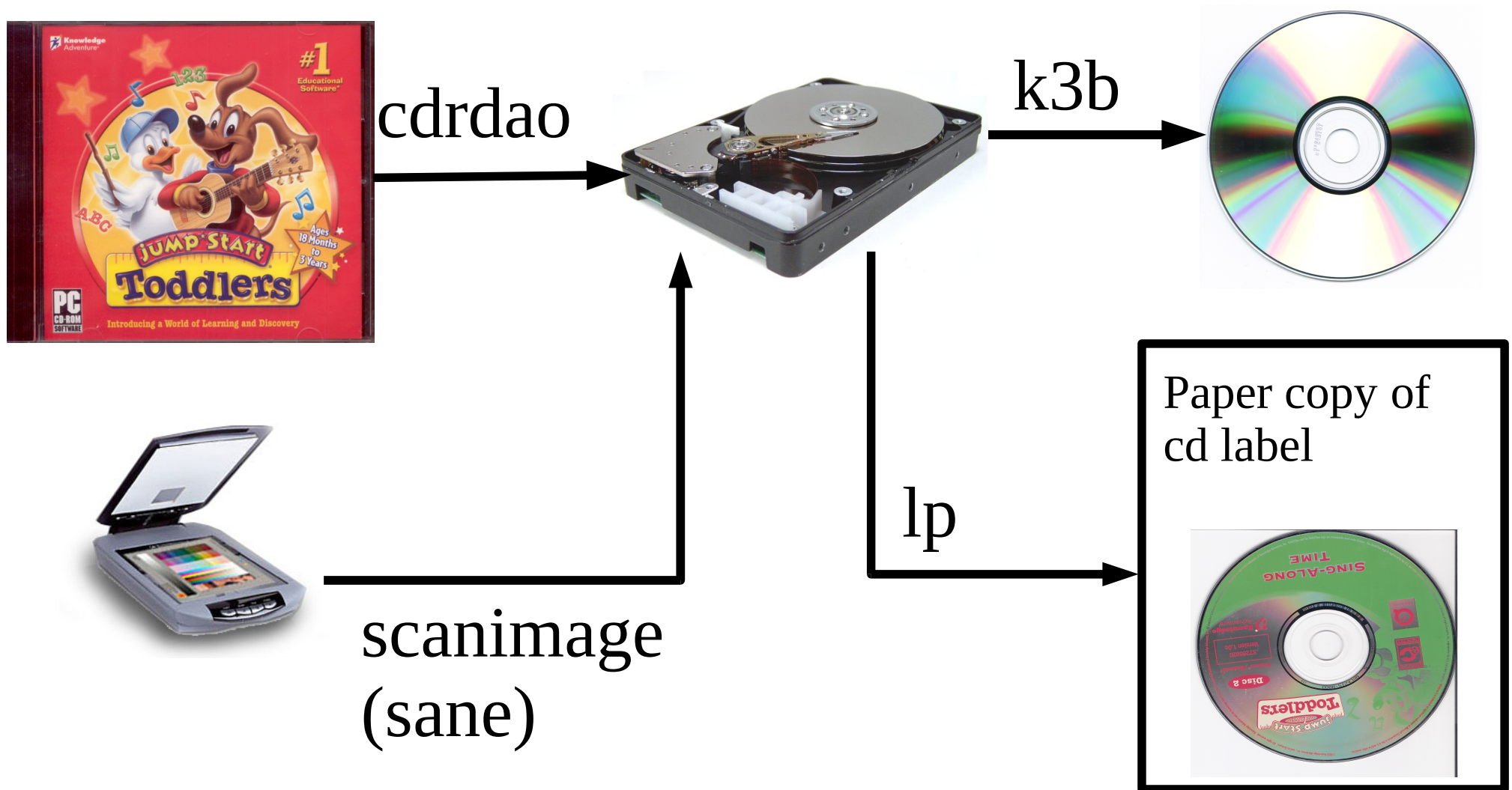
- A live CD educational version of Linux
- Can also be installed on the hard drive.
- Another disorganized collection of stuff.
- Contains nothing you can't get with a normal Linux distribution

Commerical (Windows) Software

- Basic operation:
 - 1) Put the CD In the drive
 - 2) Click - Click - Click
- Grace knows how to put CDs in the drive.
- Grace does **NOT** how to properly handle CDs.

Grace is Not Allowed to Use Original CDs

- Grace only uses copies of CDs



Linux Setup Notes

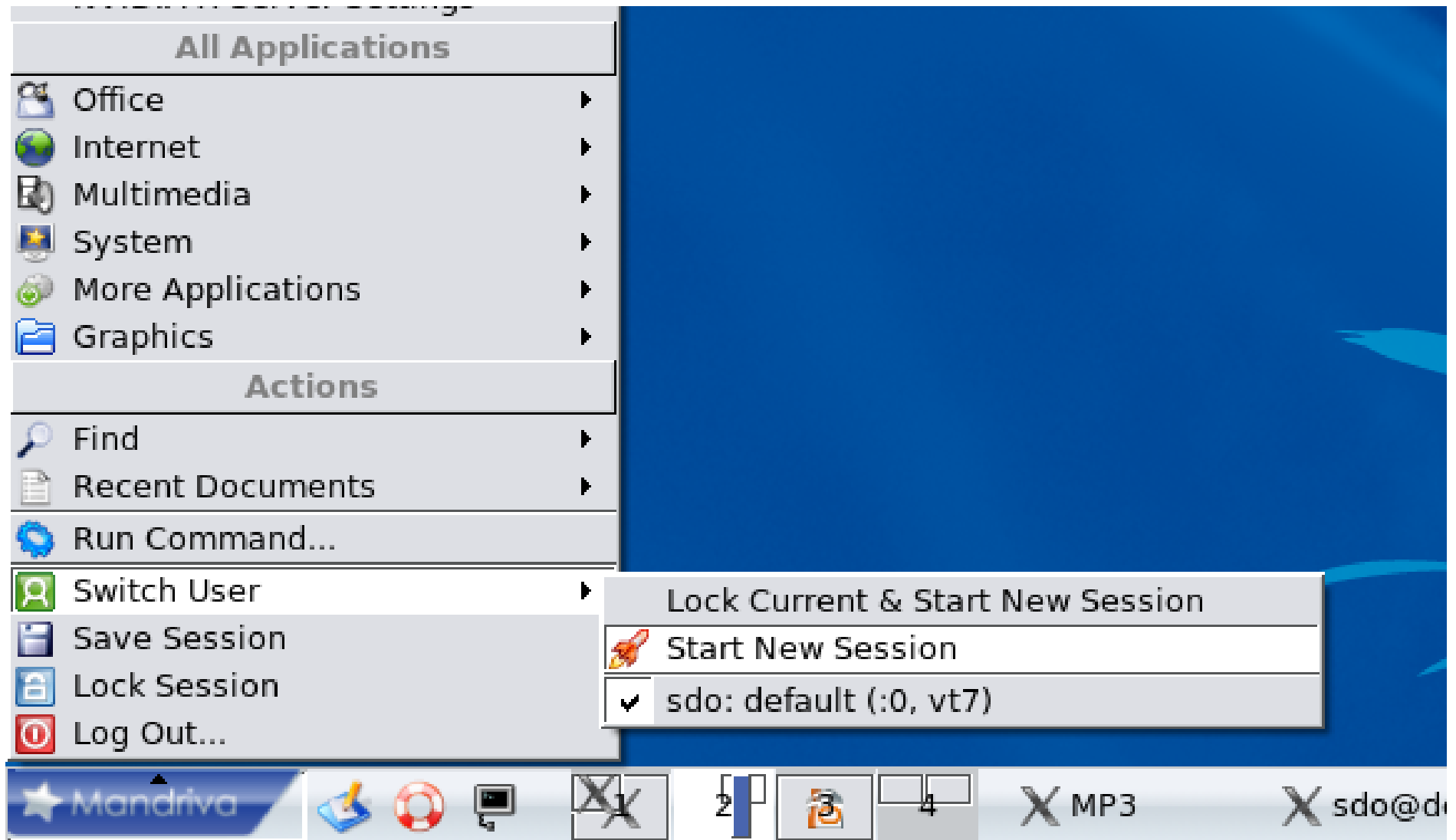
- Before Grace the computers were on all the time.
- After Grace all screen are password locked.



Linux Virtual Screens

- Linux supports multiple virtual terminals
- Terminals 1-6 are for text.
- Terminals 7-? are for X Windows.
- (Actual numbers are distribution dependent)
- Ctrl-Alt-F1 - Go to terminal 1.
- Ctrl-Alt-F2 - Go to terminal 2.
- Etc.

Starting a New Session



Starting Two X Window Sessions Automatically

- It is possible to start multiple X Window sessions and login multiple users automatically.
- You need to configure XDM or KDM (depending on what system you use)
- The configuration is beyond the scope of this class.

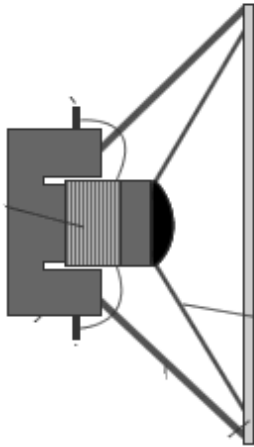
Windows XP Setup Note

- You can create accounts on Windows XP
- Protection against account to account interference is limited
- You can not setup an account with my daughter's name.
- “Grace” is a reserved account according to Microsoft.

Commercial vs. Open Source Instructions

Commercial

- Student gets voice instruction



Open Source

- Ask Daddy



Commercial vs. Open Source Usage

Commercial

- Click click click



Open Source

- Keyboard and mouse



Commercial vs. Open Source Rewards

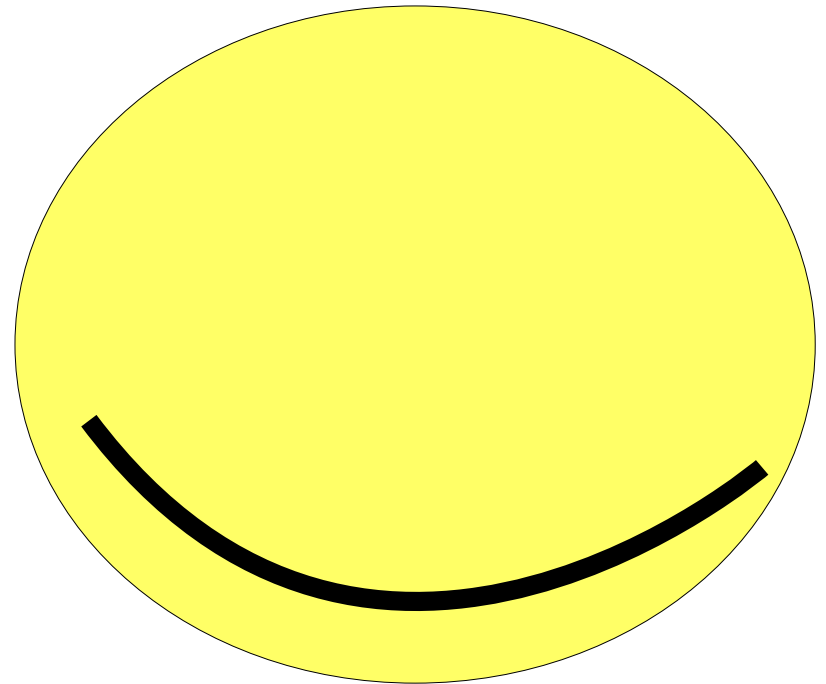
Commercial

- Video Plays



Open Source

- Minimal



Commercial vs. Open Source Lifecycle

Commercial

- \$49.95
- \$39.95
- \$19.95
- 5 CDs for \$9.99
- Nothing added

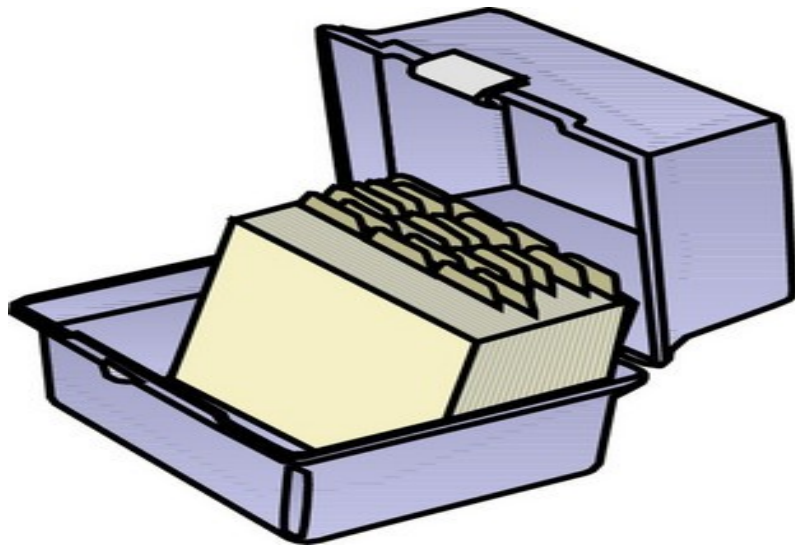
Open Source

- V1.0
- V1.2
- V1.5
- V2.0
- Features added

Commercial vs. Open Source Organization

Commercial

- Organization
- Frequent character themes



Open Source

- Minimal



Commercial vs. Open Source Support

Commercial

- Officially Supported
- But just try and get support

Open Source

- Officially unsupported
- But support available
 - Forums
 - Mailing Lists

Commercial vs. Open Source Design

Commercial

- You have to wonder why some things were made

Open Source

- Same thing

Higher Education Windows Style

- Where do I click?
- How do I get around the <whatever> limit of this program.
- I need an upgrade
- Shrug and reboot

Linux Student

- Take it apart and put it together again
- If it has a problem I'll fix it and then contribute the patch.
- Large user community
- Works with old (junk) hardware.
- Reboots not needed

Problem Solving

- Window's student – If it doesn't work:
 - I must have clicked in the wrong place.
 - Try random clicking
 - Don't look inside (that's illegal)
- Linux Student – If it doesn't work
 - Investigate the source
 - Ask the forum or mailing list
 - Find the problem, fix it and contribute it to the project.

Higher Education cont.

- Windows – Cost \$\$\$
- Linux – Cost \$0.00
- Windows “technolog” -- getting around the bugs, limits, and strange design.
- Linux – Pushing the cutting edge technology forward

Resources

- <http://www.edubuntu.org/>
- <http://www.tux4kids.com> (tuxpaint, tuxtype, tuxmath)
- <http://www.schoolforge.net>
- <http://www.happypenguin.org>

Live Demonstration

- Press any key (custom program)
- Press a letter (custom program)
- Count (custom program)
- tuxpaint
- gcompris

Questions

- Contact information:

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<http://www.oualline.com/scale>