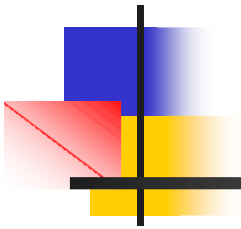
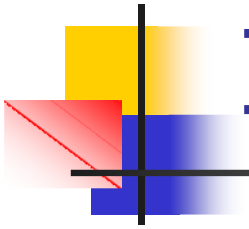


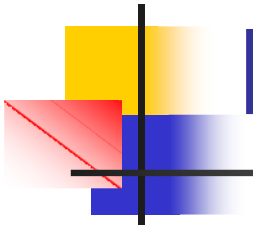
Picture Book Application for One Laptop per Child

Presented by Dan Wexler



Introduction

- Educational Software for students in grades 1 – 5.
- Combines a simple text editor with graphics capabilities.
- Very useful and effective environment to facilitate student writing.
- Created for OLPC Program



Purpose: Useful/Effective Writing App for Students

- Adds graphics and creativity to writing process
- Makes writing more enjoyable for students
- Writing is a core skill – 3Rs
- Practical – easy for students to use, and teachers to work with (no programming involved)

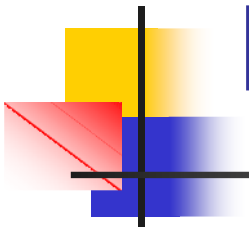
Target Audience

- **One Laptop Per Child (OLPC)** – Potential to reach millions of children
- Laurence School – good testing environment
- Elementary Schools
- Elementary School Children

Storybook Weaver: Application currently used by schools for creating picture books

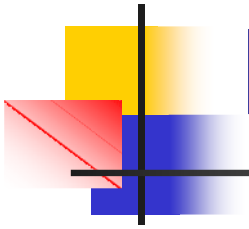
Severely limited:

- Extremely limited drawing tools
- No ability to import graphics
- Frequent crashes and file corruptions
- It takes 2 – 3 minutes to save a document of about eight pages
- Cannot copy and paste edited or user-generated graphics
- Cannot specify the save location when exporting as html
- Does not run on Linux



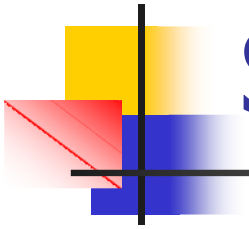
Basic Specs

- Everything must be easy to use, and kid friendly: Big Buttons, simple interface, intuitive icons, etc.
- Text editor, like *Wordpad*
- Library of graphics students can drag and drop into the workspace
- Simple graphics-editing and creating program, like *Paint*
- Create multi-page documents
- Import graphics



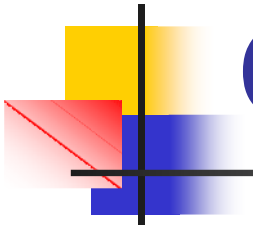
More Specs

- Platform independence – optimized for OLPC laptops running Linux
- Very thin
- Layer graphics
- Save project as web page
- Download and install app from web



Squeak – Proposed Development Platform

- Squeak is one of five languages with built-in support in the OLPC laptops
- Object-oriented – based on Smalltalk
- Open Source
- Cross Platform/OS/Hardware
- Supports multilingual apps
- Co-developed by Alan Kay – prof at UCLA
- Used for multimedia and education apps
- Powers the etoys application which is shipped in all OLPC machines
- Large online Squeak community
- At least one widget that can be used for this program has already been developed - Bookmorph
- Has numerous education apps, but most involve simple programming, and are for older students

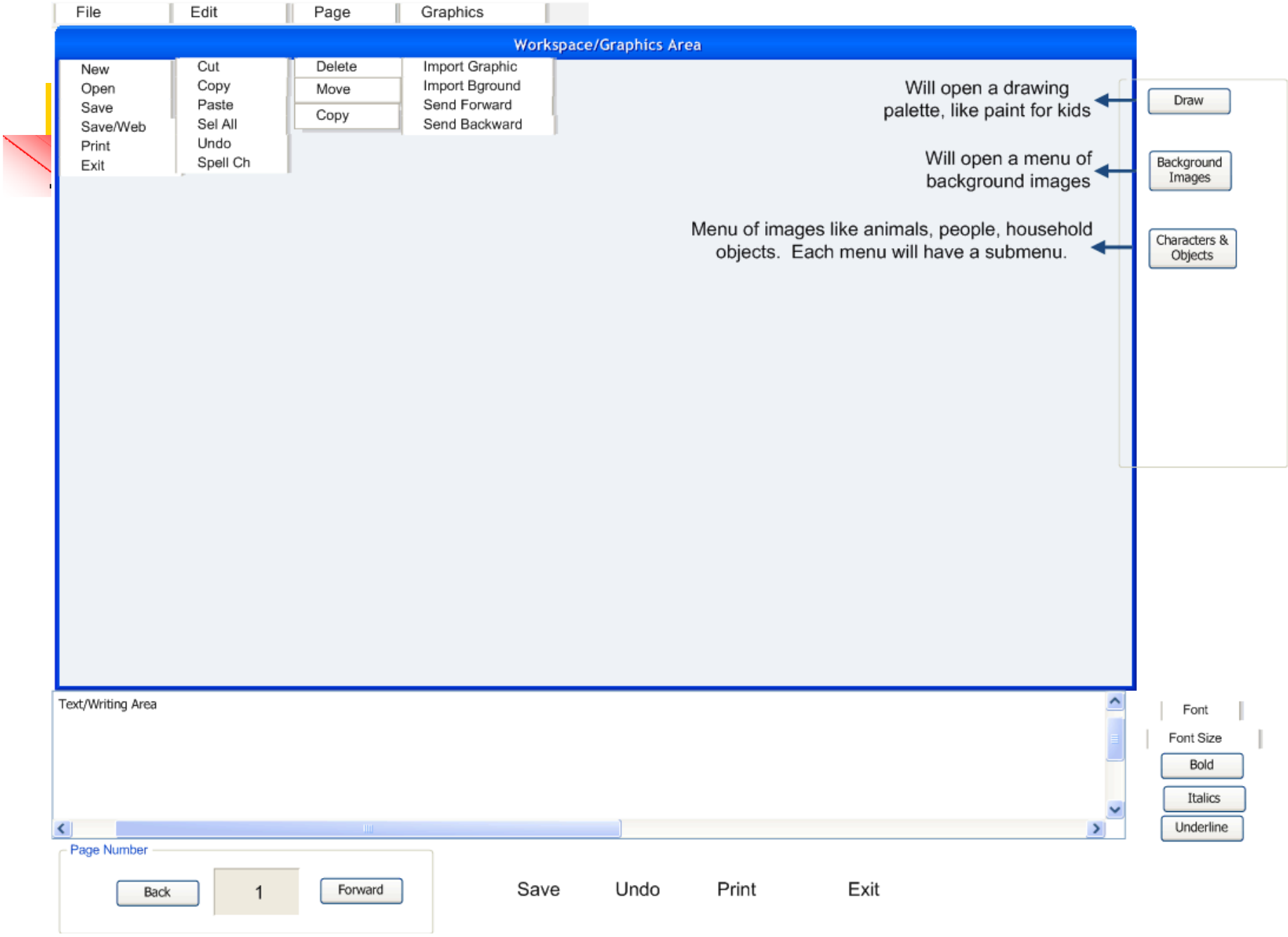


One Laptop per Child - OLPC

- Produces cheap laptops ($140) to children in developing nations
- Non profit organization
- Most of the 2 billion children living in the developing world receive inadequate education - improve these children's ed. through tech
- Led by Nicholas Negroponte from MIT Media Lab
- Alan Kay, a prof at UCLA's CS Dept. is a collaborator
- Supports Squeak
- All software is open source – OLPC provides source code for all of its apps
- Has ed. software already written, but nothing like *Picture Book*
- Has software we can use in our app, like a Paint app, and the Cairo 2D graphics library/API
- Has a hosting site/source code management system for OLPC projects, like sourceforge
- Beta 2 machines have been deployed to children in launch countries
- Has orders of over 1 million laptops from countries throughout the world
- Partner with AMD, Red Hat, Real Networks
- Connects to Internet and other OLPC laptops through Mesh network
- Only 512mb of storage (flash memory)
- Can be powered by a hand crank
- OLPC community is looking for developers to create, "Educational applications of all sorts ."
- We are applying to receive a few OLPC laptops to test the Picture Book application on

OLPC Children's Machine XO

Mock Up


File
Edit
Page
Graphics
Workspace/Graphics Area
New
Open
Save
Save/Web
Print
Exit
Cut
Copy
Paste
Sel All
Undo
Spell Ch
Delete
Move
Copy
Import Graphic
Import Bground
Send Forward
Send Backward
Will open a drawing palette, like paint for kids
Will open a menu of background images
Menu of images like animals, people, household objects. Each menu will have a submenu.
Draw
Background Images
Characters & Objects
Text/Writing Area
Font
Font Size
Bold
Italics
Underline
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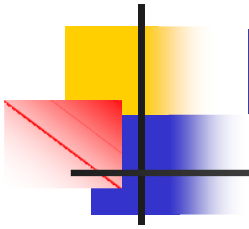
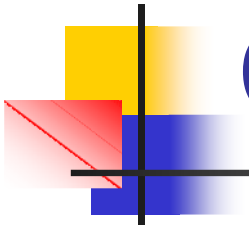
1
Forward
Save
Undo
Print
Exit



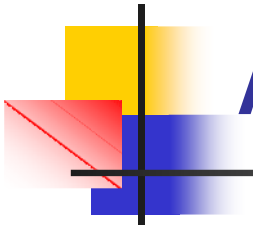
More About Graphics

- Adding graphics to the graphics library should be like installing fonts
- Open architecture so a designer can save graphics into the graphics folders and they will be part of the graphics library
- I can have a designer create a handful of graphics for us to work with



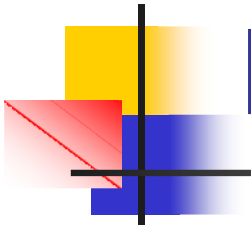
Challenges

- Making the graphics engine work
- Making this work on a $140 laptop with 512 Mb. storage, with a 7.5 inch screen, 1200 x 900 pixels.
- Making the software thin and the files small
- Developing an attractive, kid-friendly interface
- Saving as html



About Me

- Elementary School Tech Director
- Completed Master's in Ed. Tech. from UCLA Grad School of Ed.
- Very basic programming experience
- Available to meet evenings



Links

- www.sqeak.org
- http://wiki.squeak.org/squeak
- http://www.squeakland.org/
- http://www.cs.ucla.edu/classes/spring07/cs130/hw/picturebook.html - description of picture book app on CS130 site
- http://www.laptop.org/ - One Laptop Per Child site
- http://wiki.laptop.org/go/Software_projects - description of the software being developed for OLPC
- Google *Storybook Weaver* to learn more about this app
- http://dev.laptop.org/git.do?p=projects/rgbpaint;a=summary – paint program written for OLPC
- http://dev.laptop.org/git.do - source code for OLPC apps
- http://wiki.laptop.org/go/Project_hosting - Project hosting through OLPC