

This presentation provides an overview of using networked file spaces to support creating online student portfolios. First, I have provided a brief overview for having students create portfolio materials and an example of a student assignment. The balance of the document describes means of implementing the networked file spaces to support making portfolio materials available online.

## Why create on-line portfolios?


- Support alternate forms of assessment
- Encourage students to envision projects for a wider audience
- Enable more authentic kinds of projects
- Facilitate collaboration
- Allow students to see each other's work


A portfolio, by collecting a series of student products, demonstrates student learning and progress toward achieving the goals of the course.

The primary reason most people use portfolio assessment is to give students opportunities to display proficiency in ways other than multiple choice exams. Asking students to build a portfolio also encourages them to think strategically about the audience who might view the products.

## Portfolio Creation Process

 acquire raw data and/or imagery and save it in **private networked file space.**

 create portfolio materials from data and/or imagery using standard software (Office, Appleworks, whatever).

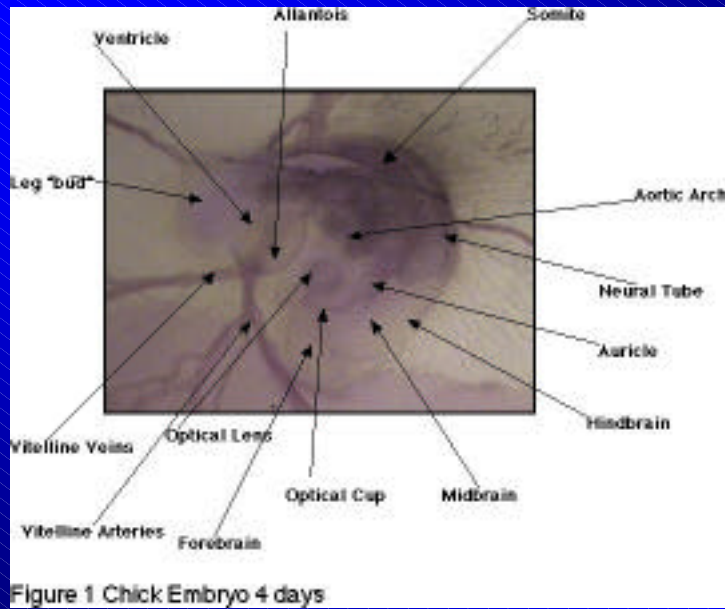
 save finished materials in web-compatible format (pdf, html, jpeg, png, etc.)

 move the finished portfolio materials into a **public networked file space.**

This is an overview of the steps we have used for student portfolio generation. We want students to use standard tools (productivity software, image editing and analysis, web publishing, etc) as much as possible. The key is producing products that result in web-compatible file formats, including pdf (Adobe's 'Portable Document Format', produced by Acrobat and a variety of other software packages (Illustrator, Ghostscript); html ('HyperText Markup Language', produced by Office, Appleworks, and many other, more specialized, applications); jpeg ('Joint Photographic Experts Group' produced by most graphics applications); and png ('Portable Network Graphic' produced by newer graphics applications).

In the next slide, I have provided a sample student project, for demonstrative purposes, but the balance of this presentation deals with the networked file space component (i.e. the yellow parts) of the the process.

## An actual student product



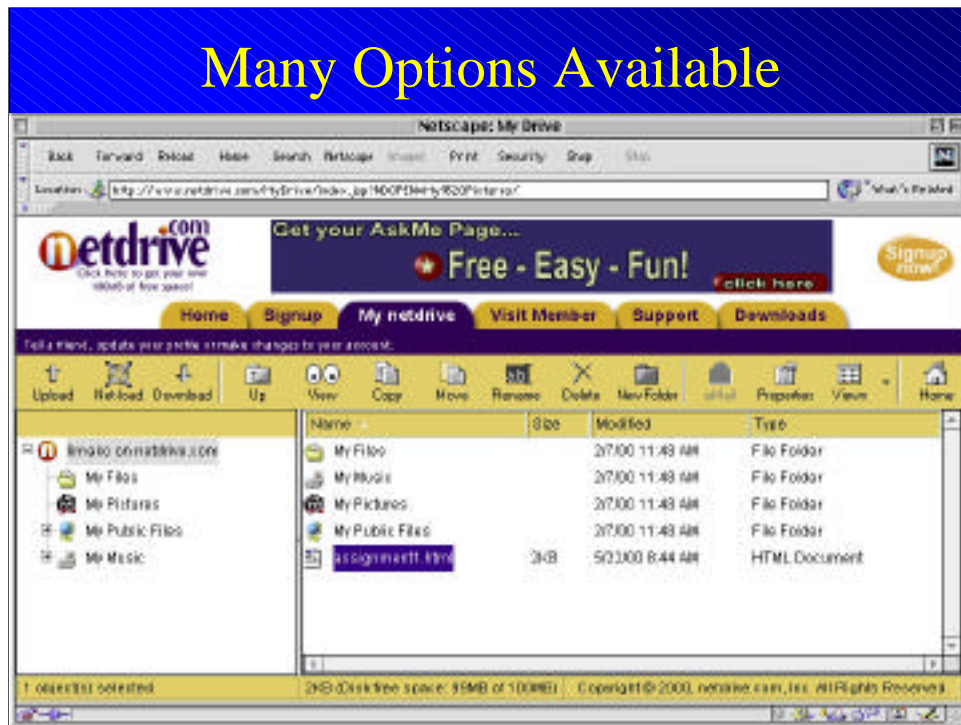
This figure was created by introductory biology students on their very first day of Introductory Biology, in a class taught by a Teaching Assistant. The imagery was captured using a TeachCam, saved into a networked file space, downloaded onto a student workstation, and annotated using Appleworks.

## Networked File Space Goals

- Provide public and private spaces
- Provide web-publication capabilities
- Universally accessible
  - Any OS (mac, pc, unix)
  - Standard Networking (tcp/ip)
- Uses standard interface elements
- Encrypted passwords
- Under Local Control
- Open Source/Free Software

These are very roughly ranked goals for a system to be used to provide networked file spaces for portfolio creation and publication. These are the goals we have used in establishing our networked resources. Not every site will find every goal compelling, but I can make a pretty good case for each one, given our local context and circumstances.

## Many Options Available



There are many free, online services which already provide shared and public file spaces for anyone who wants to sign up. One option for creating portfolios is to encourage students to use whatever system they prefer and to simply provide a URL to the instructor to bookmark and share with the rest of the class.

This example shows NetDrive, which uses a java applet to show the file listing and which provides a panoply of tools for manipulating the files in the directory. You simply click on buttons in the browser to upload, download, or rename files.

Disadvantages of Netdrive are that it does not use standard interface elements, is not under local control, and is not open-source or free software.

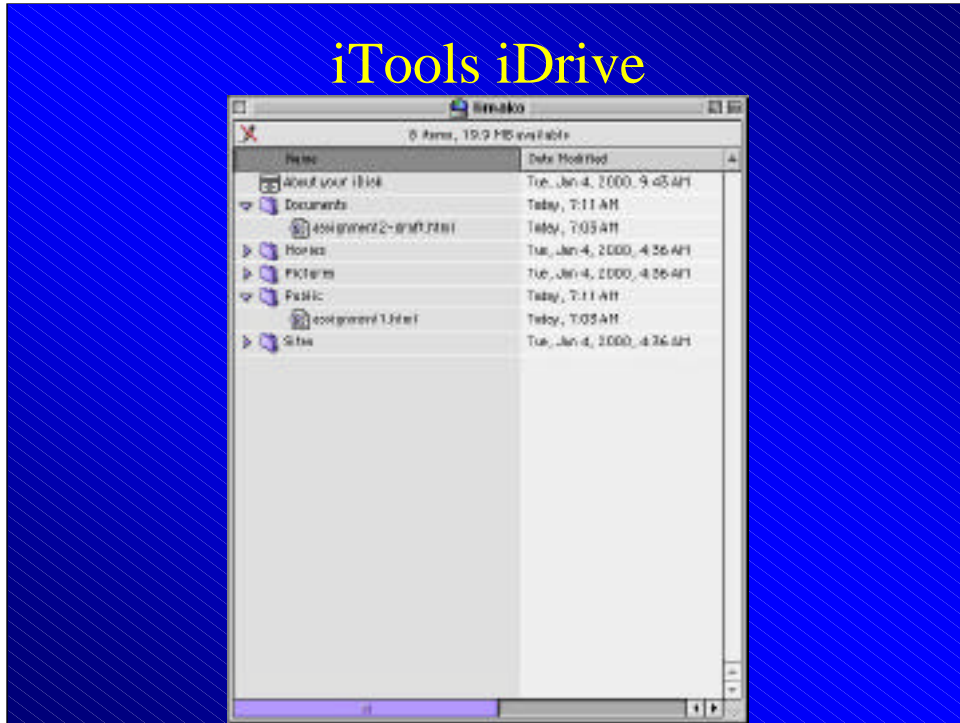


A somewhat more powerful version is iTools, by Apple. MacOS 9 users can install a browser plugin that provides access to these services, which include private and public file spaces.

When you click on the orange 'Open My iDisk' button, you are challenged to authenticate, and then a new drive icon appears on the desktop. When you open it, a drive image is mounted to the desktop, which a user can interact with identically to using any physically connected media.

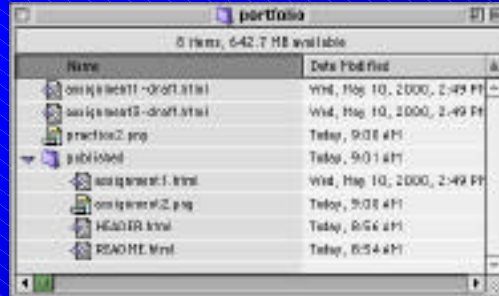
Disadvantages of iTools are that it is: MacOS 9 only -- no PC or earlier MacOS support -- not under local control, and not based on open source or free software.

## iTools iDrive



This shows the view a user has when they have opened their iTools iDrive. There are a variety of folders for storing items. Items placed in the Documents folder are private, while items placed in the Public folder are available to be downloaded by others. Other users can interact with the Public folder the same way that the user interacts with the iDrive.

## Netatalk, Samba, & FTP



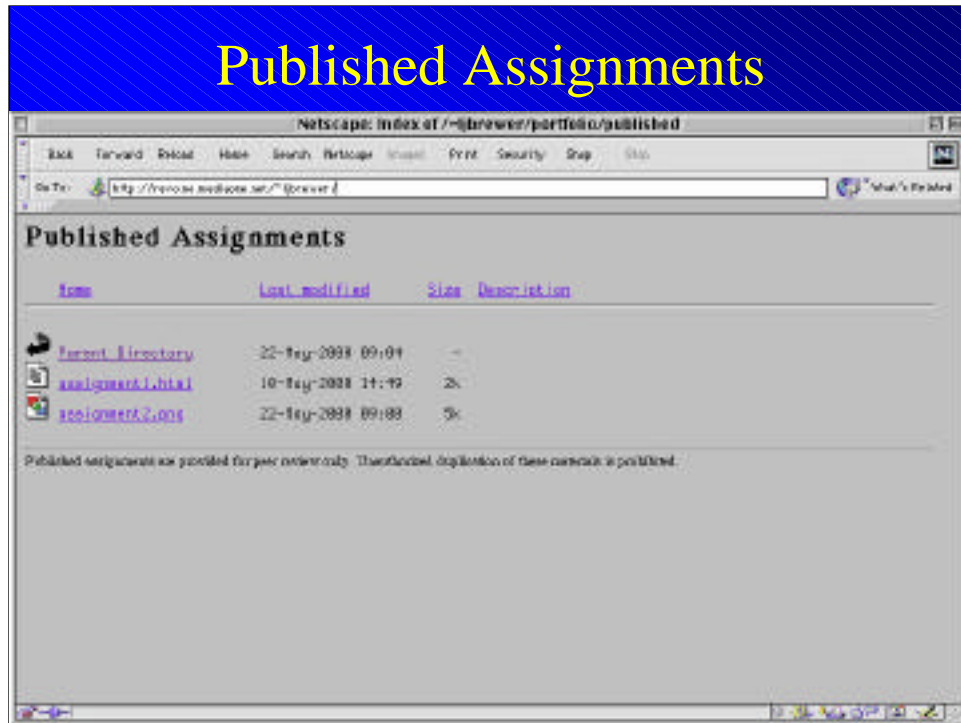
Using a Unix (or Linux) server and several free software packages, it is possible to create a system similar to iTools, but that is multi-platform and under local control:

Netatalk, Samba, and ftpd, can be installed to provide shared file service that is accessible anywhere from any OS. Apache can be configured to serve items in the 'Published' folder on the WWW.

Students can drag documents into the window to save them on the server, or drag them into the 'published' folder to make them available via the web.

This system meets all of the design goals.

# Published Assignments



Here is what the items in the Published folder might look like on a server. There are prettier front-ends which could be used for the indexed view, but this is the standard one that comes with the Apache webserver.

## Other possibilities

- Other netdrive-like systems
- Windows NT/2000
- MacOS X Server

There are other means of accomplishing most or all of the goals.

As with many technology implementation issues, much depends on the skills of the local IT staff and the existing infrastructure. Ideally, a system for building on-line portfolios could simply be piggy-backed onto a system for providing students with on-line personal file space. For these systems to be really successful, they need to integrate seamlessly into the students' work flow and provided a real value-added experience without requiring extensive training and debugging. If such a system is already in place, simply adapting it for the purpose of creating an on-line portfolio allows you to build on the documentation and free support already developed and provided by local entities.