Web Courses - prototype of Internet connectivity in Reactor Lab

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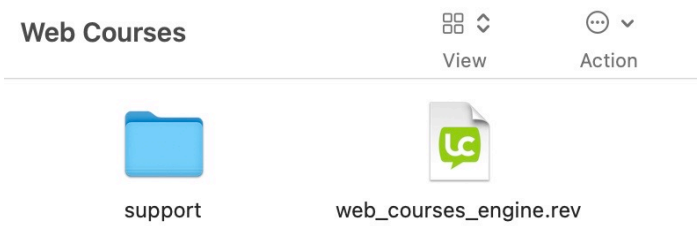
The Web Courses project was developed in 2001-2003 to demonstrate Internet connectivity by desktop apps in order to distribute and update interactive modules. Partial funding for the work was provided by the Engineering Research Center (ERC) on Environmentally Benign Semiconductor Manufacture at the University of Arizona, hence ERC.

The desktop app was developed with the tool Revolution (.rev) which was later renamed LiveCode. Revolution-LiveCode files are called “stacks” after files in their predecessor, Apple’s HyperCard.

The main file is termed by Web Courses as the “engine.” This file initializes the software and opens subsequent files. All files are cross-platform across a wide variety of operating systems. The screenshots shown here were taken with the files running in the development environment of LiveCode Community 9.6.2. The cross-platform engine file can be built into operating-specific standalone apps by LiveCode.



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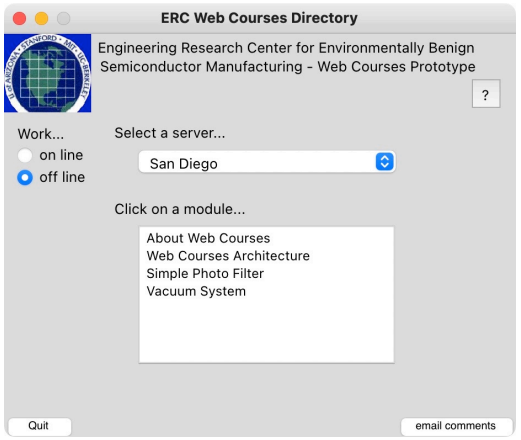
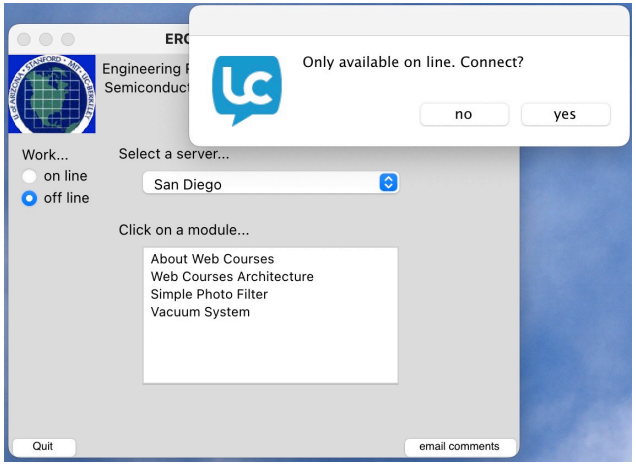
The window below on the left was opened by the main file from the support/scripts/erc_directory.rev file.
The lab has opened in the off line state. The user selected the server San Diego and clicked on the module About Web Courses.

The module hasn’t been accessed previously, so the user is notified that it is only available on line.





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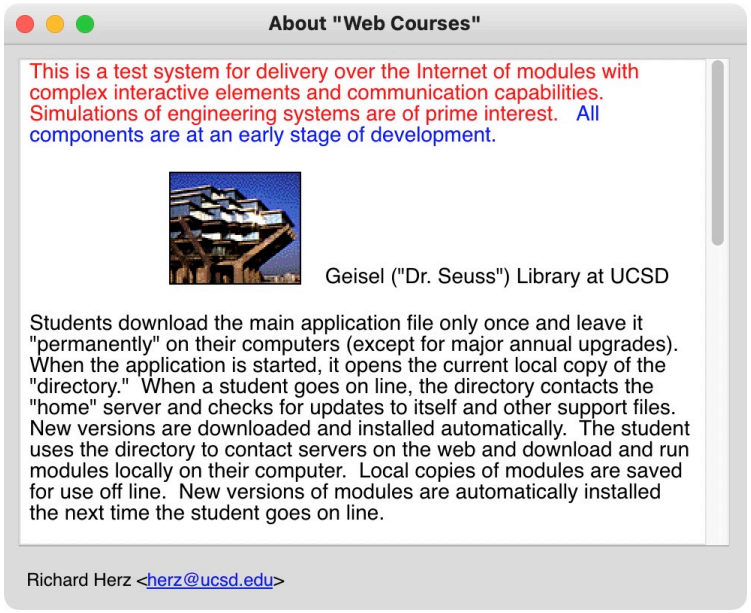
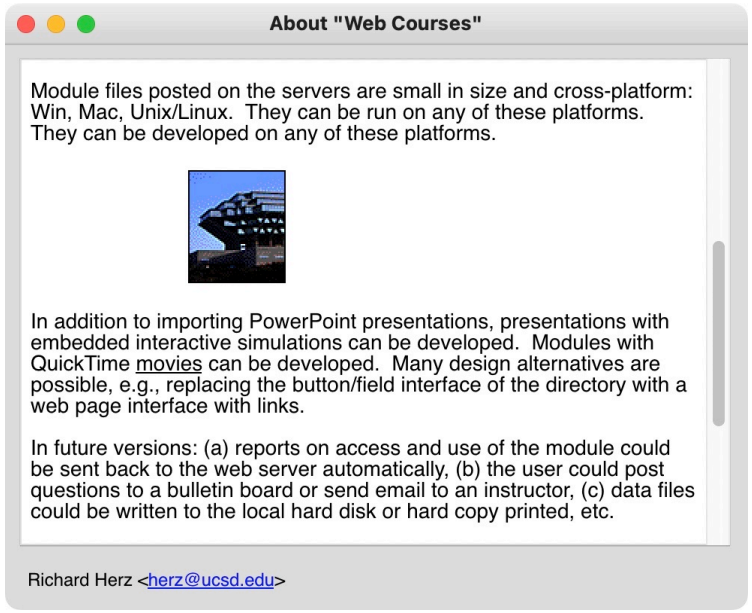
The user clicked the on line button in order to download the About module. The desktop scripts accessed the file on the remote server, downloaded the file and opened this window. The field in the window scrolls and can contain graphics.





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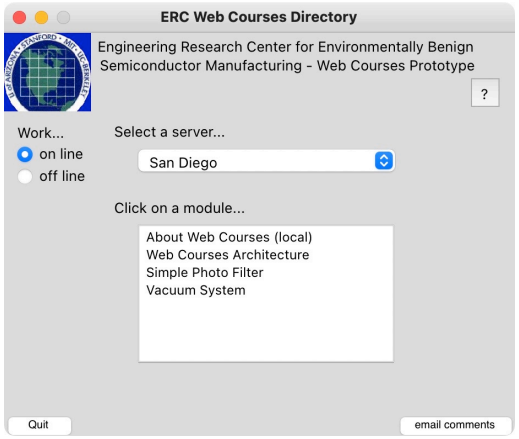
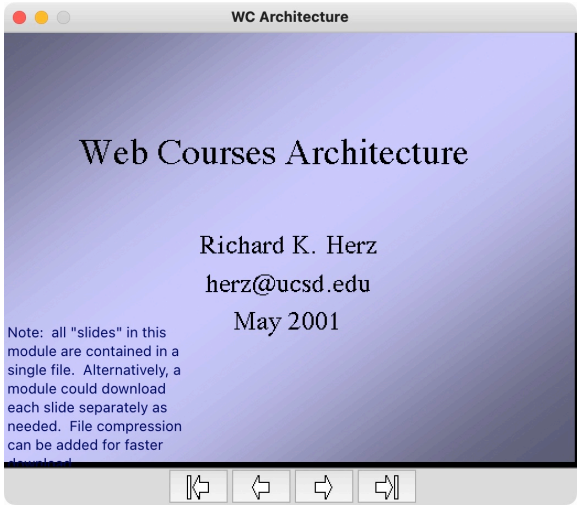
Next, the user accessed the Web Courses Architecture module.

Screenshots on the following slides show the screens of the Architecture module as the navigation arrow buttons are clicked.





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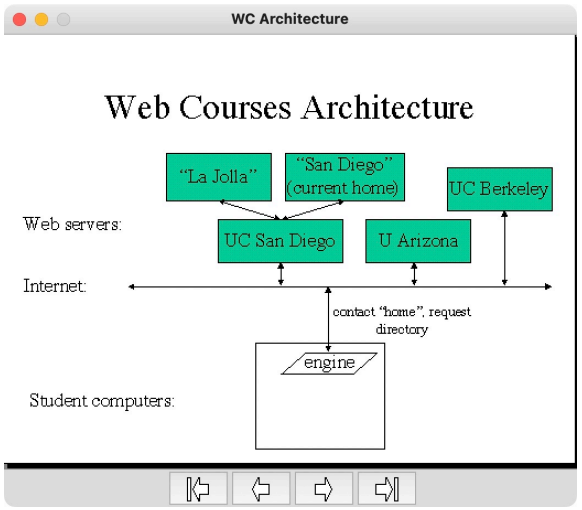

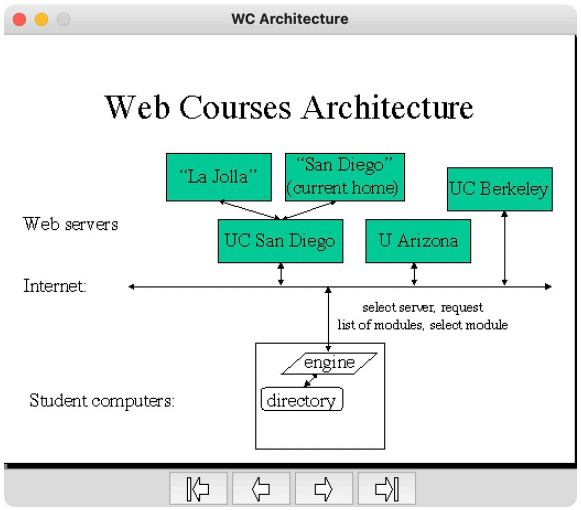

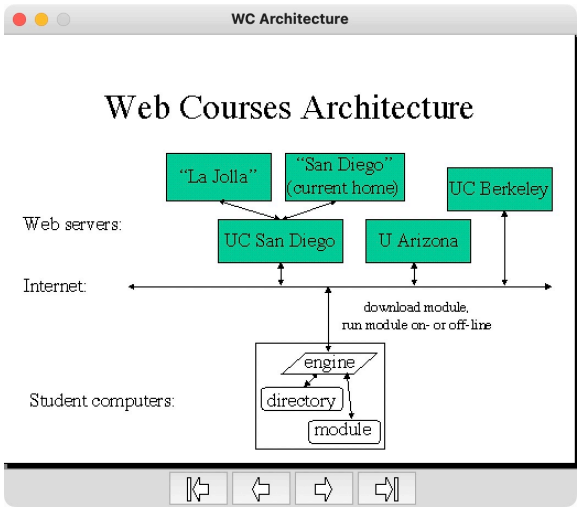

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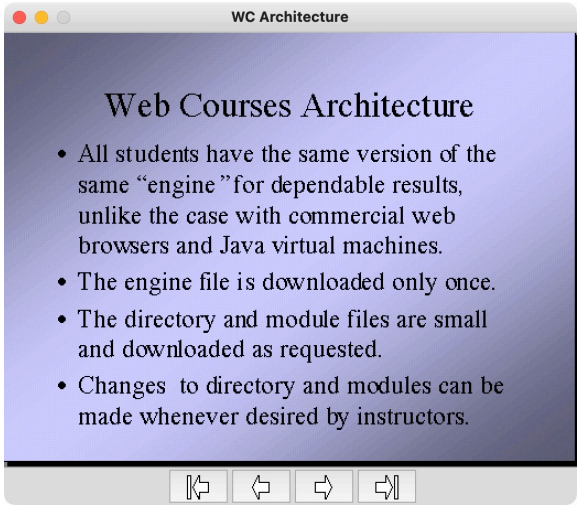

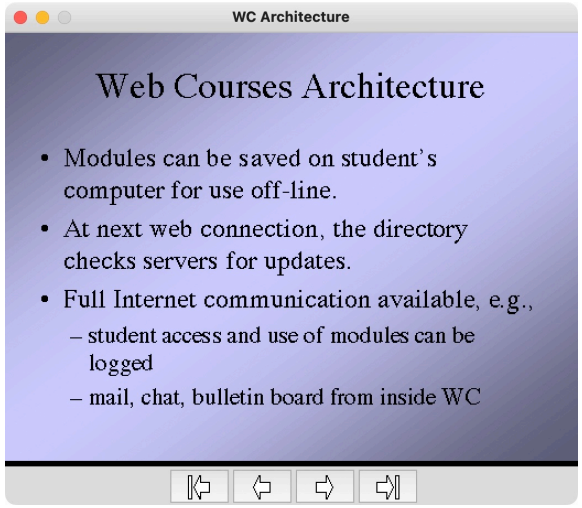

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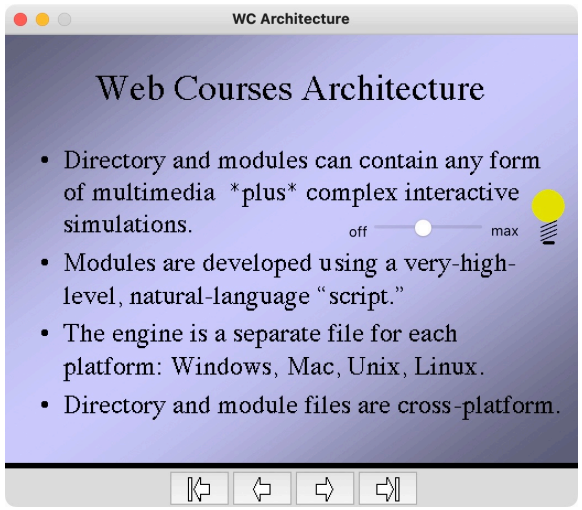

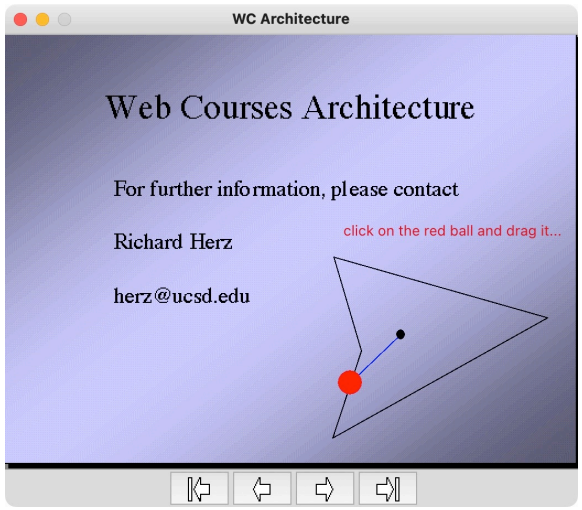

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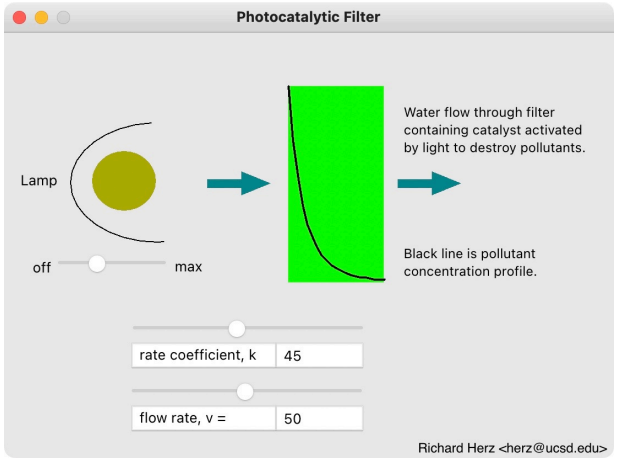
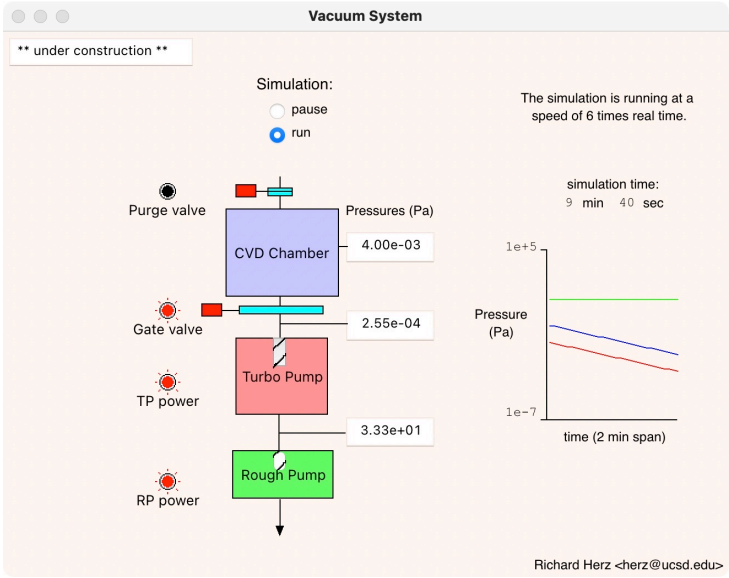
Below are two other modules on the San Diego server. Sliders, radio buttons, check boxes and other controls are changed by the user to update simulation parameters, which dynamically updates the graphics display.





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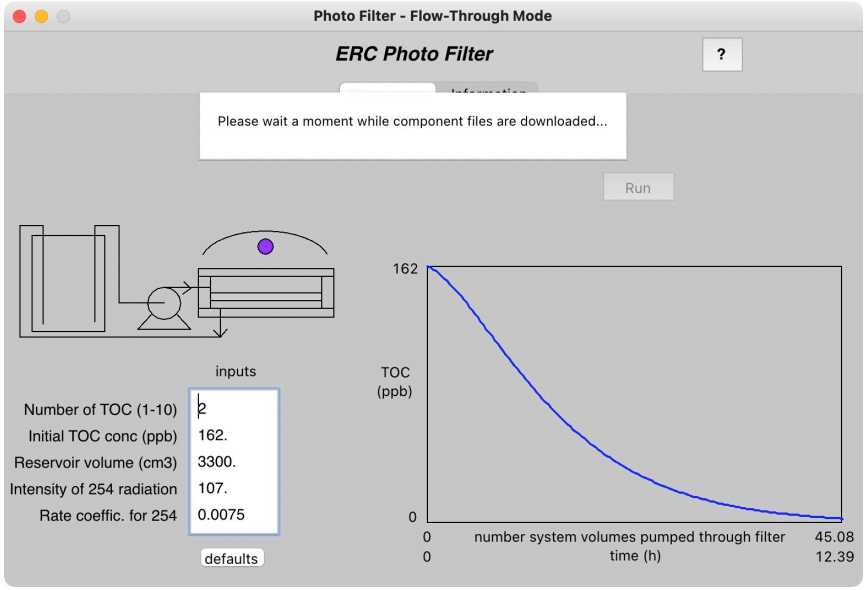
Now the user has selected another remote server, Arizona.

The Photocatalytic Filter module was then selected. This module contains a file that displays the modules visible window as well as other files in the module with computational and data units.



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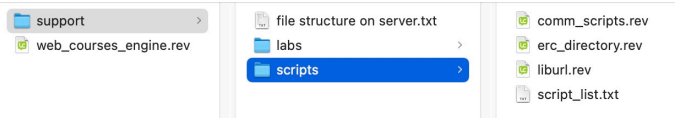
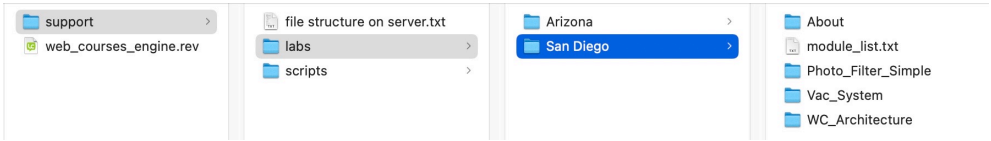
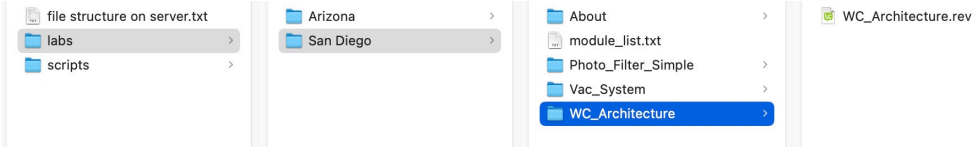
Screenshots below show some of the folder structure in the project. The same folder structure is present on the server.







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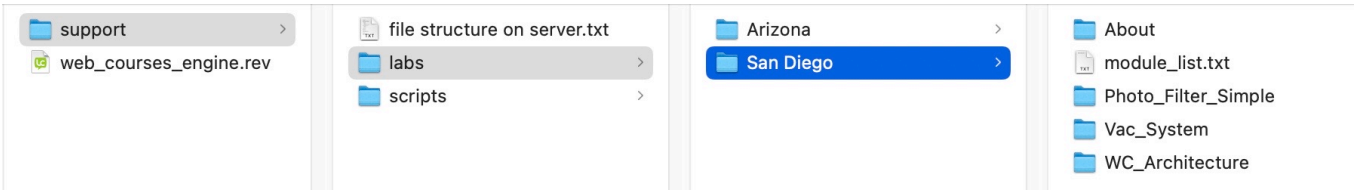
The module_list.txt file for each server contains, for each module, the module name, the file name, the date of the latest version, and a (local) notation if the file is present on the client and available for off line use.



module_list.txt

```
About Web Courses $ about.rev $ 20030621 $ (local)
Web Courses Architecture $ WC_Architecture.rev $ 20030526
Simple Photo Filter $ photo_filter_simple.rev $ 20030526
Vacuum System $ Vac_System.rev $ 20030526
```