

Using an Intranet Portal to Manage Computer Rooms

Lab Management
Information Technology
UC Davis

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Abstract

Managing a public computing facility requires a level of technical skills as well as organizational and customer service skills. Combine the complexity of maintaining the day to day operations with the high demands for on campus computing, and you have the potential for highly stressed and overworked staff.

The Information Technology Lab Management group at UC Davis focuses on minimizing the stress and workload through its implementation of online tools, processes and procedures. Both students and FTE utilize these resources to provide a high quality of service in a cost effective and timely manner to over 300 faculty and 85 percent of the student population. These resources include print queue monitoring and control, real time information on available computers, and access to documented procedures.

While these resources were available, they were not accessible in any central way. A new person on staff would have to memorize a litany of web links to obtain access to the tools. Two years ago, a student consultant identified a need to bring these resources together in one effective way. A single point of entry was established that presented all the tools in one way. Thus, a portal called the CRC (Computer Room Consultant) Central web page was created.

The portal allows student consultants and managers to

- View who is logged on in a specific room
- Display what jobs are printing and are waiting on the print queue
- Display room specific reservation schedule
- Displays available open seats at another room within the last five minutes
- Send messages to individual client machines
- Cancel or reprioritize print jobs
- Single point for links to disk quota, whois, and campus network status information
- Post shifts to trade or take shifts
- Print standard signs and handouts
- View current problems for the room and report problem machines
- Report theft alarm calls
- Access most up to date procedures, FAQs, and room specific information

Design of the Portal

The CRC Central main page was recently redesigned. In the redesign, our main goals were to make information quickly accessible, organize the information logically, and keep the design clean and simple, yet maintain a professional appearance. There are three main areas of CRC Central: 1) quick tabs, 2) multiple selections and 3) the main viewing area. The quick tabs are the most often used items and accessible with a single click. For the items with multiple selections, we used pull down menus in order to include the maximum amount of choices with the minimum amount of screen space. Most items, when selected, will appear in the main viewing area.

Technical Background

Our servers are Hewlett-Packard Unix-based computers. We are using Apache as the web server. The various lab servers are running the Samba and CAP packages to appear as NT and Appleshare servers to the clients. See page 5 for a diagram of the various servers.

The computer rooms are configured to force our clients to logon before they can use the PCs or Macs. This allows us to track who is on what computer and what programs they are running. The lab servers also manage print queues with the PPR package. See <http://lm.ucdavis.edu/people/tim/lab/> for more information. The Samba, CAP, and PPR packages have a variety of text based programs which report status and run commands.

The portal needed to take the information from those text-based programs and present it on the web. We implemented CGI scripts on the web server that make remote calls to the various servers and return the data. In many cases it was necessary to build "wrapper" scripts on the servers to retrieve only the data necessary. This method is shown on page 6. We used Perl to develop the CGI scripts on the web server and the wrapper scripts on the lab servers. The wrapper scripts just send data back and forth between the web server and lab servers, while the CGI scripts process info from web forms and format the data for the web.

Development Utilizing Student Consultants

One of the most interesting aspects about the portal is that it is entirely developed by students. While staff provided some of the contents, students designed the portal for their

use. A diverse group of students with some possessing technical skills and others possessing graphic design skills worked on the creation and continued evolution. This was clearly a grass roots campaign by students to create a tool that they will need to use on a daily basis.

In addition, the sense of ownership and opportunity to develop skills was important in the success of the portal. Students who were the primary users of the tools knew their needs most intimately. A tool that will ultimately help consultants on the job is very important. Students enjoyed learning how to create a successful portal. They built not only a portal but also both skills and experience that will become highly valued when they pursue a career.

Identifying the Need and Early Development

Nearly three years ago, one student had a vision to consolidate the numerous tools on a single web page. His supervisor allowed him to pursue his vision by allocating time away from existing duties, the use of a computer for development, and access to the production web server for Lab Management. He soon came up with a web page created initially for the hardware support student crew and not the computer room consultants. Another student took up the project where the other had left off and adopted a new web page specifically designed for computer room consultants.

Continuous Evolution and the Future

The portal is not finished and continues to evolve. The combination of the highly changing technology environment and the drive to polish the portal's look and feel created an incremental approach to development. Features were added and dropped, functionality was refined, and the portal's graphics improved. Content is changed continuously, especially with procedural guides that are linked to specific software or hardware support. Students have access to development tools and have incentives through their performance reviews to add to CRC Central. Even as we continue to refine the user interface, more improvements are always being suggested and added. The default page currently used for occasional announcements will soon undergo a change to display constantly updated information including: training class schedules, a tip of the day, important announcements and perhaps more features yet to be imagined.

Internet zone

Back Forward Stop Refresh Home AutoFill Print Mail

Address: http://crc.ucdavis.edu/

CRC Central Information Technology

Shift Trades CRC Docs IT Prob IT Print Report Alarm

Rooms Available Daily Classes Pages Printed Rule Violations Supervisor Tools SLM Lab Management

Print Queue Computer Users Schedules Calendars Room Logs Working at... Other Tools

Computer Room Consultant Duties Checklist

[Opening](#) [Hourly](#)
[Before Classes](#) [Closing](#)
[After Classes](#) [Other](#)

There are many duties that a Computer Room Consultant needs to perform. Most are outlines in the CRC Policies and Procedures. This is a quick checklist of some of the important tasks.

Opening

- Arrive at least 15 minutes early.
- Turn on workstations and make sure they boot properly.
- Clean and turn on printers.
- Check both bulbs of overhead projectors and replace one if it is burnt out.
- Check to make sure projection system is working.
- Check to make sure there are working dry erase markers with all white boards.
- Print out a list of classes for the day and write class schedule on whiteboards.
- Print out the daily available classroom web page and post around the lab.

Before Classes

- Fifteen minutes before the start of the class, announce that a class will be entering soon and ask users to please finish their work and leave.
- Check with Instructor and change the **Class in Session** sign to Class in Session or Yield.
- Pick up trash and straighten chairs.
- Check to make sure machines are at logon screens and working.
- If you have not worked with the instructor before, introduce yourself and inform the instructor where they can find you.
- Check with the instructor to see if they have any special needs or questions.

After Classes

- Check with the instructor to see if there were any problems.
- Make sure the projection system is turned off.

Internet zone



