Creating Computer Availability Maps: Increasing Access to Library Resources

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CREATING COMPUTER AVAILABILITY MAPS: Increasing Access to Library Resources

Our library created computer availability maps in order to provide patrons with real-time availability of computers in the Kimbel Library and Bryan Information Commons. This presentation will review how the library created the computer availability mapping system, including loading Perl scripts onto library computers, linking the computers to an SQL database, programming an administrative console with drag-and-drop capabilities for each machine and publishing the maps to a variety of public interfaces including help desk monitors, web pages and the mobile library website.

PART 1: BACK-END

PART 1A: Start with LAMP Stack

- Unique ID for each machine is stored in the `computer_name` column
- Values for login/logout script are stored in the `status` column. (0 = available, 1 = in-use)
- Mac or PC designation is stored in the `computer_type` column
- Values for icon positioning are stored in the `left_pos` and `top_pos` columns
- Timestamp and floor-location information are given in the `updated_at` and `bldg` columns

PART 1B: Create the Database

- Login/logout scripts denote whether computers are “available” or “in-use” by showing a value of 0 or 1, respectively

PART 1C: Load the Login/Logout Perl Script

- Test API functionality by logging in to the admin console, moving icons, saving moves and checking to see whether the database records and displays updated positioning

PART 2: FRONT-END

PART 2A: The API

- Drag-and-drop functionality with AJAX / jQuery UI library
- Drop-down to switch between floors and buildings
- Two-minute JavaScript refresh to update availability, with timestamp reflecting when map was last updated
- Map symbol key
- Metrics showing available Macs and PCs in total per floor

PART 2B: Making the Maps

- Used blueprints as framework
- Re-designed in Adobe Illustrator and Photoshop
- Icons: green = available, red = in-use
- Symbols denote Mac or PC
- Pages were brought online using PHP, HTML and CSS

PART 3: PUBLICATION

PART 3A: Web Pages

- Map was hosted outside of our normal web design environment (different header/footer, etc.) to minimize monitor display issues

PART 3B: Help Desk Monitors

- Two LCD monitors above help desk
- JavaScript dashboard script cycles maps to enable two maps to show on each monitor
- Displayed by connecting a PC to each monitor via VGA cable
- Used full-screen browser function with zoom of 85% for optimal display

PART 3C: Mobile Pages

- Created separate mobile style sheet
- Header was commented out
- Created mobile tabs vs. drop-down navigation
- Used viewport meta tag
- No media queries

NEEDS

- Maintenance schedule is needed to test system components (login/logout scripts, database performance, refresh script, computer software, browsers, operating systems)
- Cross-browser testing was done using ParallelBox Desktop virtual machine software
- Testing across devices was done using CODiemo’s mobilephoneemulator.com
- Usability and user experience testing was done informally

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SUPPORTING FILES

Kim Griggs Code Package: github.com/griggsk/availability-map
Kimbel Library API Files: www.coastal.edu/library/maps/availability/files/availabilityfiles.zip

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