Development of an Object-Oriented Module-based Extensible Student Intranet Web Application in PHP5

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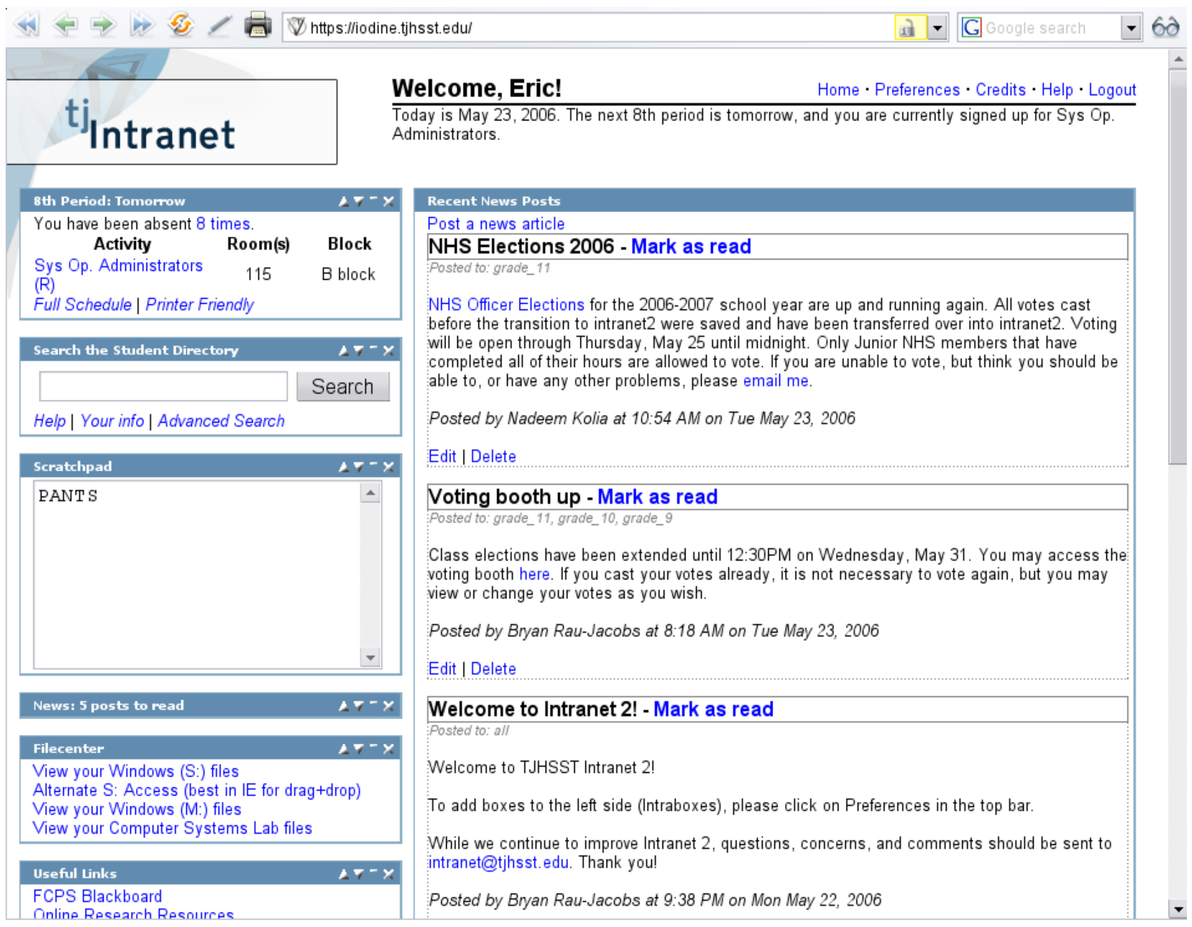
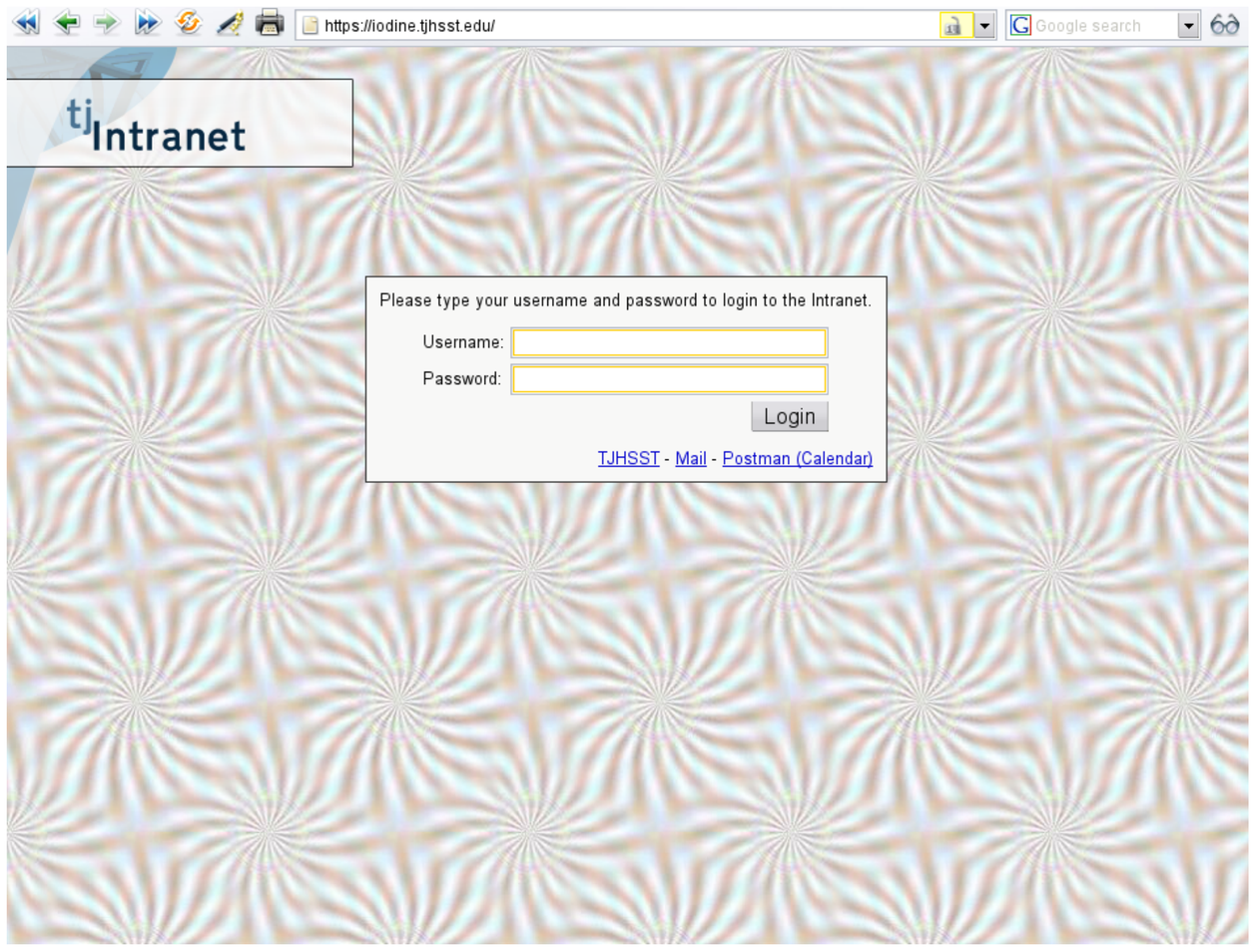
Background

Intranet was the system used by students to sign up for 8th period activities, look up information about students, and provide other useful school-related functions. A PHP web application, the Intranet authenticated students and faculty against the school's Novell account system. Over the years, the system has experienced the stress of new technologies, new students, and software upgrades, revealing flaws in the system. It is not designed in an object-oriented approach, and thus it is very difficult to extend or add new features. Since new requests for Intranet were building daily, it became necessary to build a new platform for the system, which would allow us to fix bugs and develop new features. This new platform, known as Intranet2, or 'Iodine', implements paradigms in Object-Oriented programming and collaborative development. The platform also utilizes the Smarty template system to separate design from logic.





Collaborative Development

In order to aid collaboration between Iodine developers, we use the 'tjforge' system, powered by the Trac web application. This allows us to keep track of various bugs and requested features, as well as monitoring the progress of development. We also use the phpDoc system, to easily document the API (Application Programming Interface) for all methods and classes in the application. The phpDoc system takes comments in the application code itself and produces professionally formatted documentation in various formats. We also use the Mercurial revision control system to allow for a common repository of code, and to keep track of which developer changed what. The great flexibility of the Mercurial system also allows for developers to easily run development environments outside the main production server, making it easier to test the application without affecting users.

Application Structure

The majority of Intranet2 is coded in PHP5, a server-side language primarily used for websites that also supports an Object-Oriented programming model. We will also make use of XHTML, CSS, Javascript, and the Smarty template engine for displaying information.

Following in the footsteps of other successful projects that we researched, we decided that a modular approach would be best. Everything in Iodine is a module. All processing in the application goes through the 'core' module, which handles URL argument parsing, the loading of modules, and the creation of some global objects. Core gives control of processing to the Display module, which, in turn, loads all of the Intraboxes, and displays the pane content that the user requested.