



INTRODUCTION

The Work Order System (WOS) is a web-based application, which is developed to replace the traditional paper-based work order forms used by the GIST group. The WOS allows users to submit HOPS and CAPS work orders via a web-based form, check on the work order status via a table layout with sorting and filtering functionalities, and search for specified work orders. GIST members can use the WOS to check in/out work orders, add comments, suggest priority, and assign team members to each individual work order. GIST administrators and superusers can use the WOS to generate status report. GIST auditors can use the WOS to monitor work order information and status report in a read-only mode. Finally, GIST administrator may assign temporarily administrative privilege to GIST member by upgrading their role to superuser. The WOS helps GIST members and administrators to manage and process CAPS and HOPS work orders using a uniform web-based interface, which shortens processing time and minimizes handling errors in addition to giving customers dynamic status check capability. The WOS is built with extensibility in mind; its database table schemas and application structure can be easily extended to handle work orders for different groups in the future.

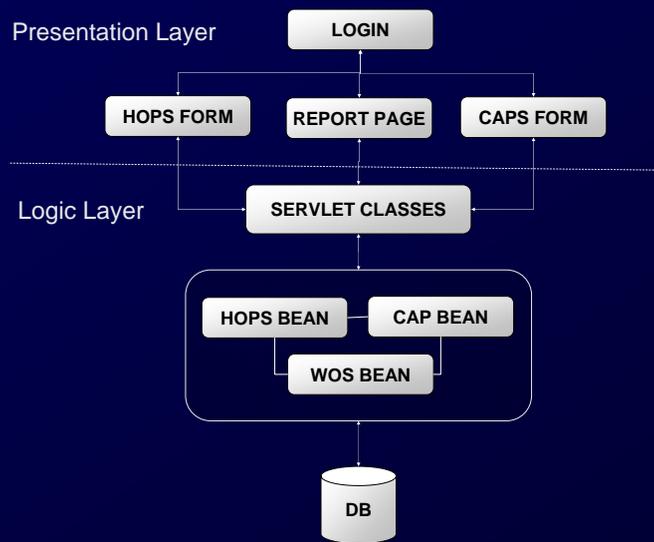
USER ROLE

Administrator	Access to all features
Superuser	Temp Admin role, view work order statistics
Auditor	Admin role with read only capability
GIST Member	Modify work order, and generate report
Requester	Submit Request, and view work order status

APPLICATION DESIGN

As the WOS needs to be able to run on multiple platforms and be extensible, we choose to use the J2EE technology. To be precise, we use Java Servlet to implement the application controller, which handles the program flows, and we use Java Server Page (JSP) to program the front end, which populates the HTML codes from database records. At last, we use Java Bean to implement the model class, which handles the interaction between the database and the servlet. All the WOS database tables are stored in an Oracle database, and we employ the CAS database framework to handle the persistent pool functionality and other primary database operations.

The WOS application confronts with the MVC paradigm, which contains two layers: a logic layer that controls the program flow and the database connection, and a presentation that displays data and handles user interactions. In our case, the Java servlet and Java bean classes belong to the logic layer and the JSP classes belong to the presentation layer.



DATABASE DESIGN

The Work Order table includes all the common work order fields. The HOPS and CAPS table contain additional form fields specified to that group. Each tuple in the HOPS/CAPS table has a corresponding tuple in the Work Order Table. This referential integrity is enforced by using foreign key constraints. Each work order is requested by a requester, handled by a team of GIST members, and managed by one or more GIST administrators.

