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IPRO-338- Maintaining and Implementing a Knowledge Management System-Spring 2006

Abstract

The problem that IPRO-338 addressed is the lack of knowledge transfer from one semester's IPRO team to the next semesters IPRO team in the IPRO program. Our solution to the problem is to build, maintain, and implement a knowledge management system for the IPRO program. Prior to this semester, IPRO 338 had built and tested iKNOW, a knowledge management system and iGROUPS, a communications management system. The twin aims of IPRO 338-Spring 2006 was to enhance both the systems physically for more effective and user friendly processing and to completely deploy the systems in the IPRO program.

Sub-Team Objectives

In spring 2006, IPRO 338 was divided into the search engine, web services and implementation sub-teams.

A good search engine is essential to retrieve the captured knowledge and hence, is a critical component of our Knowledge Management system. The Search Engine sub-team worked for two semesters to replace the original AIRE search engine with the new Lucene Search engine to enhance the search capabilities.

The Web Services sub-team developed a web service that served as an intermediate layer between iKNOW and external interfaces. This was essential to make iKNOW accessible for various outside parties, to integrate iGROUPS and iKNOW and to easily implement functionality upgrades to the system.

The Implementation sub-team's primary objective was to help the IPRO teams fully utilize iKNOW and iGROUPS. The sub-team also served as an interface between the IPRO office and spring 2006 IPRO teams.

Challenges

The Search Engine sub-team faced a considerable task in order to improve the iKNOW search since the team had to learn a new technology and apply it to a system with which they had no prior experience. The Web services sub-team had to recode most of iKNOW's functionalities, design a central access point and ensure that the system correctly authorized and validated all data. The implementation sub-team had to overcome the significant challenge of changing the organizational culture within IPRO teams and IPRO faculty so that team members were able to utilize the iKNOW and iGROUPS systems.

Accomplishments

The Search Engine sub-team completed the transition into the Lucene 2.0 search engine. The upgrade meant better search results including relevancy-ranked searches and functional Boolean searches. The Web services team implemented the Simple Object Access Protocol (SOAP) technology, an industry standard for unified access to the iKNOW system. The Web services sub-team also developed technology such that the iKNOW system could be upgraded without requiring changes to the application layer. The implementation team uploaded data from previous semesters' IPRO, visited IPRO teams multiple times to ensure they had the required training and help to upload data to iKNOW. The Implementation sub-team also conducted usability tests to gather user feedback and suggest improvements to the system. The implementation team was largely successful in making other IPRO teams understand the need for Knowledge Management. Additionally, the sub-team worked in collaboration with the IPRO Administration to develop a certification program to encourage teams to comply with the iKNOW and IGROUPS upload requirements before the IPRO day competition

Summary and Future Outlook

Spring 2006 has been a semester of accomplishments for IPRO-338. The technical teams improved the Knowledge Management systems significantly to make it more user-friendly and technically advanced. The implementation team ensured the successful implementation of iKNOW and iGROUPS throughout the IPRO program. Integration of iKNOW and iGROUPS, development of iGROUPS 3.0 and complete, effective utilization of both the systems by IPRO teams are future challenges that will be addressed based on the foundation provided by this semester's work.