

Project Description

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Title: tjTalk School Question Forum

Background:

All students have had that evening when they don't understand how a carbon lattice works, or they need a succinct efficient explanation of Riemann sums. What is worse, is the class's chemistry or calculus whiz may not be available to call upon at that moment. This results in long nights spent trying to ask friends, parents, and whoever else to try to get some satisfactory response... which is sadly sometimes unsuccessful. tjTalk aims to connect the questioners and the whizzes.

Using a tree-based structure to focus on specific subject matters, it provides a way for students to ask questions and get quick answers from other students or teachers. The project creates an information sharing community that will encourage collaboration and peer education forward. For efficiency and ease of use, tjTalk also bypasses the troubled students have to go through to put their question in the right place, and for the knowledgeable students to look for the question. The questions asked are automatically filed in the system by AI-generated keywords, and are assigned quickly to a person who has a particularly high score in that part of the forum.

tjTalk is built on the SchoolTool school administration system, and will also provide teachers with information about the students' level of knowledge in their classes, based on peer ratings of answers to questions.

Description:

First quarter was dedicated to getting a bootstrapped SchoolTool instance set up and running, and to the start of development on the basic interface and functionality of a question forum. Second quarter was dedicated to writing more advanced features, such as notifications of answers to questions, question assignment, intelligent question placement, and scoring. Third and fourth quarter were dedicated to implementing these, and to actual deployment and testing of tjTalk.

tjTalk is written on on the Zope 3 application server. Hence, it uses the Python programming language for the main code, ZCML for the configuration files, and ZPT (Zope Page Templates) to render pages or other on-the-fly resources. It will get to the user in the form of a website with HTML, Javascript, and CSS.

During the process of writing it, a parallel development was the release of Python versions 2.6 and 3.0, and the consequent dropping of support for Python 2.4. To facilitate the future transfer of Zope and SchoolTool to the more recent releases of Python, tjTalk was modified to use Python 2.6 and 3.0 syntax and libraries, sacrificing backwards compatibility with Python 2.4.

Features:

- Object-oriented tree-based forum structure - the root tjTalk object contains "question container" objects (representing topics of discussion), which in turn can recursively contain either objects of the same type (representing subtopics) or "question" objects. Intuitive and stylish page templates for all pages, in order for the server-generated information to be comprehensive while also look good and inviting

- Questions and answers - Question objects contain Answer objects in no particular order
 - the order is determined at the time of display in order of “helpfulness”: sorting by score (highest first), then by date.
- Voting - any user can view the questions and answers, but authenticated users are granted 1 vote per answer: positive or negative. The vote counts towards the answer’s score, and the cumulative person score of the answer’s author
- Voting security - no double votes, voting for your own answers, etc
- Ability to follow questions for updates (bookmarks)
- Lists of the most recently asked and recently answered questions - updated every time one of these events happen via a recursive method of continuously calling a parent object’s questionAsked or questionAnswered method.
- Search functionality - word counts propagated through the questionAsked and questionAnswered methods - allows, for example, the “Computer Science” category know the word “java” is mentioned more in it than in “English”. Therefore, if the word “java” is found in the search query, there will be more weight on returning results from inside “Computer Science” than from in “English”.