

DYNAMIC BIOLOGICAL DATABASE WEB INTERFACE AND PERFORMANCE ANALYSIS

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Project Description:

This project participates in the establishment a database structure for analysis of data acquired by sensors that capture sound, location and (in some occasions) images of particular biological sound emitters (such bird chirping). The database is internet accessible and uses standard accessibility protocols.

Project Objectives:

The scope of the LS-LAMP's participation includes Web design, compatibility study, performance analysis and, depending on the expertise of the student, database programming.

The Web design interface must be intuitive, logical, simple and tailored for both the scientific and K-12 communities. The design will therefore be implemented with feedback from biologists and K-12 students. In addition, the K-12 design must also be interesting and fun.

The compatibility studies include accessing the database using standard established protocols (such as DiGIR) and verifying proper functioning. The student will design accessibility test suites, participate in the correction of any discrepancies and write a compatibility report.

As part of the performance analysis, the student will test the outer bounds of the database in real-time data collection, service to end-users and querying ability. The student will design test suites for maximum data acquisition and will measure the system's performance. The student will also measure the response times to the web-users depending on the database load and make improvement recommendations. The student will also design querying tests and will observe the systems ability to accurately respond to such queries.

Depending on her/his ability and knowledge, the student may also participate in the actual database and querying interface design.

Prerequisites:

Knowledge of html, php and perhaps mySQL desirable. Extensive programming experience in other languages such as C, C++ or Unix scripts will substitute for lack of knowledge in web-based programming. Ability to work in teams and independently design and execute test suites a must.