Home

Staff and Communication

Administrative Information

RedBase Project

CourseWork (grades)

CS346 – Spring 2007
Database System Implementation

RedBase Project

Project FAQ (look here first!)

Project Part	Handout	Due Date
Paged File Component	PF Specification	supplied
Record Management Component	RM Specification	Sunday April 15
Indexing Component	IX Specification	Sunday April 29
System Management Component	SM Specification	Sunday May 6
Query Language Component	QL Specification	Sunday May 27
Personal Extension	EX Specification	Proposal due Mon. May 21 Demos Mon.-Wed. June 11-13

Supporting Documents
Logistics: Setting Up, Testing, Submission Process, and Grading
Using Purify
Policy on memory use
RedBase Statistics Tracker (optional)

Project Overview

The focal point of the course is the *RedBase* project. RedBase stands for Relational Database, and also alludes to Stanford's color. (We know, Stanford's color is really Cardinal, it.) RedBase is a complete single-user relational database management system. It involves a significant amount of coding, and the project must be completed by each indi The project is highly structured, but there is enough slack in the specification so that creativity is both allowed and required. The basic project is divided into four parts:

1. *The Record Management (RM) Component:* In this part you will implement a set of functions for managing unordered files of database records. This component wil will provide. The Paged File component performs low-level file I/O at the granularity of pages.
2. *The Indexing (IX) Component:* In this part you will implement a facility for building indexes on records stored in unordered files. Your indexing facility will be basec rely on the Paged File component.
3. *The System Management (SM) Component:* In this part you will implement various database and system utilities, including data definition commands and catalog n component will rely on the Record Management and Indexing components from Parts 1 and 2. It also will use a command-line parser, which we will provide.
4. *The Query Language (QL) Component:* In this part you will implement RQL -- the RedBase Query Language. RQL consists of user-level data manipulation commanc Language component will rely on the three components from Parts 1-3, and it will use the command-line parser that we are providing.

In addition to the basic project, each student will design and implement a significant extension to RedBase. We expect that students will get ideas about extensions as the aspects of record management, long fields (BLOBs), object management, text management, sorting, indexing, join algorithms, clustering, statistics and query optimizatio concurrency control, recovery, security and authorization, compression, networking, versioning, external functions, stored procedures, views, integrity constraints, trigge