

DATABASE THEORY AND IMPLEMENTATION

Micheal H. Vernon, Division of Natural Sciences, Lewis-Clark State College, 500 8th Ave, Lewiston, ID 83501, 208-792-2178, mvernon@lcsc.edu

John Haehl, Division of Business, Lewis-Clark State College, Coeur d'Alene, ID, 208-792-2675, jhaehl@lcsc.edu

ABSTRACT

This paper (presentation) demonstrates how to use a hands-on approach to teaching database theory and implementation. One of the unique features of this approach is that it shows how to download software and set up a reader's own pc as a database web server. Readers can begin exploring database theory immediately. Relational database theory and algebra are defined and presented mathematically with ample examples and experiments.

INTRODUCTION

This book is about Relational Database Theory and Implementation. The book is aimed towards students at the upper division level who have had a course in SQL. The entire book is online at <http://lochsa.lcsc.edu/Databasetext.html>.

One of the unique features of this book is that it begins with a hands-on chapter that allows readers to download software to set up their own pc as a database web server. Students or readers are expected to have a pc with either Windows XP or Linux as its operating system.

From this point relational database theory and algebra are defined and presented mathematically with ample examples and experiments that students conduct on their pc's database server. This approach continues in an exploration of Entity-Relationship Modeling and is incorporated into a mathematical approach to Normalization.

Multiple Case Studies are included and used to illustrate database concepts. Although students are expected to have a previous course in sql, a self-contained chapter on sql follows after the theoretical material.

REFERENCES

- [1] E. F. Codd, A Relational Model of Data for large Shared Data Banks, Communications of the ACM, Vol 13 / Number 6/ June, 1970
- [2] Stefan Stanczyk, Bob Champion, Richard Leyton, Theory and Practice of Relational Databases, Second Edition, Taylor and Francis, 2001
- [3] Thomas Connolly and Carolyn Begg and Anne Stachan, Database Systems, Second Edition, Addison-Wesley, 1998
- [4] Apache2triad 1.5.3, apache2triad.net
- [5] MySQL 4.1.14-nt-log, mysql.com