

Cmpe 321 Introduction to Database Systems

Prerequisite: CmpE250- Data Structures and Algorithms

By Topic: Data Structures and their related algorithms; knowledge of C/C++ or Java programming language

Course Description:

Most of the important issues related to databases and database management systems are covered at an introductory level. The approach taken is practical and intuitive understanding of the material is emphasized. Throughout the course the relational model is stressed. Other important data models are also explained briefly. SQL, a standard query language for relational model is also emphasized. The assignments cover both the design and also the use of a database management system.

Recommended Books

- "Fundamentals of Database Systems", Elmasri and Navathe, Addison Wesley
- "Database Management Systems", Ramakrishnan and Gehrke, McGraw Hill
- "Database Systems (The Complete Book)", Garcia-Molina, Ullman & Widom, Prentice Hall

Topics Covered

1. Introduction to and basic concepts of database and database management systems
2. The physical level of databases
3. An overview of relational databases
4. Relational algebra and relational calculus
5. SQL data definition and manipulation language
6. Logical design of relational databases
7. Views
8. Relational integrity rules
9. Query optimization
10. Recovery and concurrency in database

11. Introduction to XML
12. Introduction to deductive and object-oriented databases

Projects (specs will be given in due course):

1. Design of a simple storage manager.
2. Implementation of the simple storage manager.
3. Design and implementation of a web based relational database using a commercial database management system.

Grading Policy:

Midterm 1	17%
Midterm 2	18%
Projects	35%
Final	30%