

CIS 111 – Intro to Relational Database Management Systems

Course Description

This course provides fundamental database concepts to develop students' knowledge of database management. It also addresses the most current database issues such as database design, data integrity, concurrent updates, and data security. Special features include detailed coverage of the relational model, Structured Query Language (SQL), and views, database design, database administration and management. Finally, the course introduces advanced topics including distributed databases, data warehouses, stored procedures, and triggers fostering an introductory understanding of database management.

Instructional Materials

Ricardo, C. M. (2012). *Databases Illuminated, Second Edition*. Sudbury, MA: Jones & Bartlett Learning, LLC.

Course Learning Outcomes

1. Describe the role of databases and database management systems in managing organizational data and information.
2. Recognize the historical development of database management systems and logical data models.
3. Explain how data is physically stored and accessed.
4. Recognize the basic file organization techniques.
5. Compose conceptual data modeling techniques to capture the information requirements.
6. Recognize the purpose and principles of normalizing a relational database structure.
7. Design a relational database so that it is at least in 3NF.
8. Prepare database design documents using the data definition, data manipulation, and data control language components of the SQL language.
9. Demonstrate the basic mechanisms for accessing relational databases from various types of application development environments.
10. Distinguish the role of databases and database management systems in the context of enterprise systems.
11. Analyze the key principles of data security and identify data security risk and violations in data management system design.
12. Describe the core concepts of data quality and their application in an organizational context.
13. Summarize the difference between on-line transaction processing (OLTP) and online analytic processing (OLAP), and their relationship among business intelligence, data warehousing and data mining.
14. Summarize how database systems support enterprise and web-based applications.
15. Evaluate the ethical concerns inherent in database management systems and how these concerns effect legislation or organizational policies.
16. Use technology and information resources to research issues in database systems.
17. Write clearly and concisely about relational database management systems using proper writing mechanics and technical style conventions.