CSIT 154
Database Concepts
4 Credits

Community College of Baltimore County
Common Course Outline

Description

CSIT 154 – Database Concepts: provides an introduction to database design and implementation and the fundamentals of database management systems (DBMS). Students will utilize structured query language (SQL) to manipulate and retrieve data through queries. Topics include data definitions, data manipulation, data management, data modeling, and data organization with an emphasis on entities and relationships. The role of security, data integrity, and recovery for database systems is examined.

Pre-requisites: CSIT 101 or consent of the Program Director

Overall Course Objectives

Upon completion of this course, students will be able to:

1. identify the major components of a database and a DBMS;
2. distinguish between the primary database models such as hierarchical, network, relational, and object-oriented;
3. design a database;
4. normalize a database;
5. manage a database;
6. create a multi-table relational database using SQL;
7. create keys and indexes;
8. implement integrity constraints;
9. write and execute queries;
10. describe the role of a Data Base Administrator (DBA);
11. distinguish between database management architectures including client/server, web applications, windows applications, and data warehouses;
12. utilize CASE (Computer-Aided Systems Engineering) software to design Entity Relationship (E-R) models for the logical design of a database;
13. map conceptual model to logical model components;
14. identify security measures;
15. differentiate between various methods for concurrent updates; and
16. explain various data recovery processes.

Major Topics

The Common Course Outline (CCO) determines the essential nature of each course.
For more information, see your professor's syllabus.

I. Components of a database
II. Components of a DBMS
III. Database design
IV. Structured query language
V. Comparison of file processing and database processing
VI. Functions of a DBMS
VII. Functions of the data dictionary
VIII. Role of the DBA
IX. Database models
X. Database design
XI. Keys and indexes
XII. Relationships
XIII. Logical design
XIV. Entity relationship diagrams
XV. Normalization
XVI. Integrity constraints
XVII. Database maintenance
XVIII. Concurrent processing
XIX. Data recovery and back-ups
XX. Security

Course Requirements

Grading will be determined by the individual faculty member, but shall include the following, at minimum:

- Five comprehensive projects
- Two exams

Other Course Information

A grade of C or better in this course is needed in order to register for CSIT 254 or CSIT 256.

Date Revised: 4/6/2021

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