SOUTHEAST Technical College

Southeast Tech · · Computer Information Systems

Introduction to Databases CIS-194 30 O

Spring Term 2022-2023 School Year Section 30 O 3.00 Credits 01/09/2023 to 05/05/2023 Modified 01/05/2023

Course Description

This course teaches students the fundamentals of proper relational database design. Exposure to data modeling is provided by using many real life examples. Activities designed to develop "professional skills" include teamwork and team building, presentation, and project management. Hands-on experience working with relational databases is obtained by using the Structured Query Language (SQL). Creation of a normalized database utilizes Entity Relationship Diagrams (ERD's).

Outcomes

Course Outcomes

Upon successful completion of this course, the student shall be able to

- Define and utilize database terminology effectively.
- Create queries using SQL.
- Diagram users' requirements using modeling techniques.
- Transform data models into normalized relations.
- Describe database access standards.

Program Outcomes

Science and Technology

- Develop software applications to solve a business problem.
- Demonstrate proficiency in the design and use of databases.

Problem Solving/Critical Thinking

- Appraise the strengths and weaknesses of one's completed work.
- Analyze a client's software requirements in order to develop possible solutions.

Professionalism

- Utilize professional resources (i.e. professional organizations, media and IT websites).
- Use effective time management skills.

Communication

- Research and present an IT topic using appropriate terminology.
- Write programs with clarity, efficiency, and accuracy.

Additional Outcomes

Course Materials

Oracle online curriculum is used in this course which also serves as the textbook.

Deliverables

Assignments

Assignments are to turned in via MyTech while quizzes and tests are to be completed online in the Oracle online curriculum.

There will also be two projects to present in the class.

✓ Evaluation Procedures and Grading

Criteria

Exams (40% of grade)

Exams are assigned from the Oracle web site. There are 6 exams (2 1-part and 2 2-part). The lowest test score will be dropped from the final grade.

Quizzes (20% of grade)

Quizzes are given after most lessons. They are being recorded in 4 parts (midterm, final, midterm, final)

Labs/Database Projects (40% of grade)

- Each assignments will be given a due date.
- Being absent from class is not an excuse for turning in an assignment late.
- A due dates will not be changed unless prior arrangements have been made.
- Student may receive partial credit for partial solutions.

Breakdown

Grading Scale:

A: 89.5 -100%	B: 79.5 - 89.5%	C: 69.5 - 79.5%	D: 59.5 - 69.5%	F = 59% and Below

Additional Items

The class is broken into two parts

Part 1:

Database Design

This part lays the foundation for understanding relational databases and database design. After learning about the Oracle Academy and Oracle's commitment to education, students plunge into the theory and practice of data modeling. A data model is a conceptual representation of the data structures in a database. The data structures include the data objects (entities), the associations between data objects (relationships), and the rules that dictate operations on the objects (business rules). Students are exposed to data modeling through many real life examples that are relevant to their age group -- case studies include a fast food restaurant and a small music business. In addition to data modeling concepts, the course engages students in activities designed to develop "professional skills." The skills highlighted in the Database Design course include teamwork and team building, public speaking, interviewing, presentation, and project management. The data modeling portion of the course culminates in Section 15 with a final project which assesses all of the data modeling skills learned to date. After completing the project, students begin to learn the Structured Query Language (SQL), the standard language for querying and modifying relational databases. The final three sections of the course (Sections 16-18) introduce the SQL programming language and teach students how to write basic SELECT statements

Daily assignments will be mostly completed in a group setting.

A project and presentation will be completed as group.

Part 2:

Database Programming with SQL

In this part students gain an understanding of relational databases through the powerful Structured Query Language (SQL). The SQL commands, functions, and operators supported by Oracle as extensions to standard SQL are emphasized. Students learn to create and maintain database objects such as tables, indexes, views, constraints, and sequences. Students practice SQL using SQL Workshop, an application that is available via a web browser in Oracle

HTML DB. The Database Programming with SQL portion of the Academy curriculum is designed to help prepare students to pass the Oracle Certified Professional (OCP) exam, “Introduction to Oracle9i SQL Exam.” As part of the Academy, many students will want to take the OCP exam as it is the industry standard for proficiency with SQL. In the Database Programming with SQL course, students focus on searching for a job, job interviewing skills, and writing cover and thank you letters.

Daily Assignments will be completed as individuals.

A project and presentation will be completed as a group.

Course Outline