Arkansas CTE

Advanced Database: Grades 10, 11, 12

Adopted 2009

Introduction to Relational Databases and Database Careers

1.1 Define terminology

1. Prepare a list of terms with definitions 1.1.1

1.2 Explain the purpose of a relational database

1. Explain how a database is relational 1.2.1

1.3 Explain the hierarchy of data

1. Explore an existing database identifying the file, record, field, and entry 1.3.1

1.4 Explain relational database system DBMS

1. Identify advantages of a relational database system DBMS 1.4.1

1.5 Identify the basic objects

1. List the basic objects (table, report, form, query) 1.5.1

1.6 Explain two database management tasks

1. Compact and back up a database 1.6.1

1.7 Explain why you may want to create and use a trusted folder

1. Create a trusted folder 1.7.1

1.8 Discuss careers involving databases

1. Research various database careers 1.8.1

Building a Relational Database and Defining Table Relationships

2.1 Define terminology

1. Prepare a list of terms with definitions 2.1.1

2.2 Discuss the guidelines for designing databases

1. Explore an existing database discussing the following guidelines:
Identify all the fields needed to produce the required information
Organize each piece of data into its smallest useful part
Determine each table's primary key
Include a common field in related tables
Avoid data redundancy
Determine the properties of each field 2.2.1

2.3 Describe how to create a table

1. Create a table naming fields, assigning data types and setting field size properties 2.3.1

2.4 Explain primary key

1. Set, change or remove primary keys 2.4.1

2.5 Identify ways to enhance and improve a table design

1. Enhance a table by using some of the following features:
Set a default value
Add an input mask
Create a lookup field
Set a required field
Add a validation rule and text 2.5.1

2.6 Explain how to define table relationships

1. Create joins using primary tables, related tables, and common fields 2.6.1

2.7 Compare/Contrast different types of relationships

1. Create a one-to-one or one-to-many or many-to-many relationship 2.7.1

2.8 Explain the concept of referential integrity and cascade update/delete

1. Create a relationship adding referential 2.8.1

Maintaining and Formatting Tables in a Database

3.1 Define terminology

1. Prepare a list of terms with definitions 3.1.1

3.2 Explain how to modify records in a table

1. Enter, edit, and delete records 3.2.1

3.3 Explain the importance of the Find command

1. Use the Find command 3.3.1

3.4 Describe how to sort records

1. Sort records in ascending and descending order 3.4.1

3.5 Explain how to filter records

1. Filter records using Filter by Form and Filter by Selection 3.5.1
2. Filter records using an advanced filter 3.5.2

3.6 Identify wildcards

1. Use wildcards in a database (#, ?, *) 3.6.1

Creating Simple Queries

4.1 Define terminology

1. Prepare a list of terms with definitions 4.1.1

4.2 Explain the purpose of a query

1. Create a simple query 4.2.1

4.3 Explain how to create a select query

1. Create and run a select query using various criteria 4.3.1

4.4 Explain how to create a multitable query

1. Create and run a multitable query 4.4.1

4.5 Describe how to create queries using various comparison operators

1. Create queries using various comparison operators (=, <, >, <=, >=, <>, Between… And…, In (), Like) 4.5.1

4.6 Describe how to create queries using various logical operators

1. Create queries using AND, OR, or NOT 4.6.1

4.7 Identify reasons for a calculated field

1. Write a formula for a calculated field 4.7.1

4.8 Describe how to create queries with an aggregate function

1. Create a query with an aggregate function 4.8.1
2. Add a Group By to an aggregate function 4.8.2

Create Simple Forms and Reports

5.1 Define terminology

1. Prepare a list of terms with definitions 5.1.1

5.2 Explain how to create a form

1. Create a form 5.2.1

5.3 Identify ways to modify and format a form

1. Modify and format a form 5.3.1

5.4 Explain the steps necessary to create a main form with a subform

1. Create a main form with a subform 5.4.1

5.5 Explain how to navigate through a form

1. Navigate through fields and records in a form 5.5.1
2. Navigate through fields and records in a main form and subform 5.5.2

5.6 Explain how to create, format, and modify a report

1. Create a report 5.6.1
2. Modify and format a report 5.6.2

5.7 Identify different types of conditional formatting

1. Apply conditional formatting to a report 5.7.1

5.8 Explain how to print forms and reports

1. Print various forms 5.8.1
2. Print various reports 5.8.2

Creating Advanced Queries

6.1 Define terminology

1. Prepare a list of terms with definitions 6.1.1

6.2 Explain how to create a parameter query

1. Create a parameter query 6.2.1

6.3 Explain how to create a crosstab query

1. Create a crosstab query 6.3.1

6.4 Explain how to create a find duplicates query

1. Create a find duplicates query 6.4.1

6.5 Explain how to create a find unmatched query

1. Create a find unmatched query 6.5.1

6.6 Describe the steps in creating a top values query

1. Create a top values query 6.6.1

6.7 Explain reasons for creating a concantenation

1. Create a concantenated expression using the fields and the & (ampersand) 6.7.1

6.8 Explain the purpose of an action query

1. Create the following action queries: make-table, append, delete, and update 6.8.1

6.9 Explain the reason for an index

1. Create an index 6.9.1

Creating Custom Forms

7.1 Define terminology

1. Prepare a list of terms with definitions 7.1.1

7.2 Explain how to create a form using various tools

1. Create a form using the Datasheet tool, Multiple Items tool, and Split Form tool 7.2.1

7.3 Compare/Contrast the three types of controls

1. Explore an existing form and identify the bound, unbound and calculated control `7.3.1`

7.4 Explain how to create a custom form

1. Create a custom form with some of the following: form header, footer, title, logo, label, etc. `7.4.1`

7.5 Discuss advantages of creating a main form and subform

1. Create a main form with a subform `7.5.1`

7.6 Identify how to change the tab order

1. Change the tab order in a form `7.6.1`

7.7 Discuss ways to enhance the visual effects of a form

1. Add some of these visual effects to a form: lines, rectangle, special effect properties, backgrounds, logo, etc `7.7.1`

Creating Custom Reports

8.1 Define terminology

1. Prepare a list of terms with definitions `8.1.1`

8.2 Explain how to modify and

1. Modify a report adding some of these features: grouping and sorting, totals, backgrounds, lines, logos, etc. `8.2.1`

8.3 Explain how to create a custom report

1. Create a custom report with some of these features: report header/footer, page header/footer, group header/footer, dates, page numbers, titles, lines, etc. `8.3.1`

8.4 Explain grouping and sorting of data in a report

1. Add grouping and sorting to a report `8.4.1`
2. Apply the keep together property to a report `8.4.2`

8.5 Explain the purpose of the hiding duplicate values property

1. Hide duplicate values in a report `8.5.1`

8.6 Explain how to create mailing labels

1. Create mailing labels `8.6.1`

Sharing, Integrating, Analyzing and Managing

9.1 Define terminology

1. Prepare a list of terms with definitions `9.1.1`

9.2 Discuss various ways to export

1. Export data from some of the following formats: HTML document, XML, etc. 9.2.1

9.3 Discuss various ways to import

1. Import data from some of the following formats: CSV, text file, XML, etc. 9.3.1

9.4 Identify ways to save database objects as other file types

1. Save database objects as other file types 9.4.1

9.5 Explain Analyzer tools

1. Use the Analyzer 9.5.1

9.6 Explain how to embed or link various objects in a form

1. Add and modify some of these to a form: a chart, pivot chart/table, link data from a worksheet, link to a table in another database 9.6.1

9.7 Explain how to create an attachment field

1. Attach documents to and detach from records 9.7.1

9.8 Discuss reasons to split a database

1. Use the splitter 9.8.1

Macros and Switchboards

10.1 Define terminology

1. Prepare a list of terms with definitions 10.1.1

10.2 Explain the purpose of a switchboard

1. Create a switchboard 10.2.1

10.3 Explain the purpose of a macro

1. Create a macro 10.3.1

10.4 Identify reasons to make a macro group

1. Create a macro group 10.4.1

10.5 Explain the process of adding a command button to a form or report

1. Add a command button to a form or report 10.5.1
2. Add a command button to a form and assign it to a macro 10.5.2

Intro to SQL--Recommended by not required

11.1 Define terminology

1. Prepare a list of terms with definitions 11.1.1

11.2 Describe briefly the history of SQL

1. Discuss the history of SQL `11.2.1`

11.3 Explain how to layout and create a table in SQL

1. Use the CREATE TABLE command `11.3.1`

11.4 Explain how to delete a table using SQL

1. Use the DROP TABLE command `11.4.1`

11.5 Explain how to add and modify records using SQL

1. Use the INSERT INTO command `11.5.1`
2. Use the UPDATE command `11.5.2`

11.6 Explain how to query a database using SQL

1. Use the SELECT command with various operators and clauses `11.6.1`

11.7 Explain how to sort a database in SQL

1. Use the ORDER BY command to sort in ascending and descending order `11.7.1`