

# 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
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### 1.2 Explain the purpose of a relational database

1. Explain how a database is relational 1.2.1
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### 1.3 Explain the hierarchy of data

1. Explore an existing database identifying the file, record, field, and entry 1.3.1
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### 1.4 Explain relational database system DBMS

1. Identify advantages of a relational database system DBMS 1.4.1
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### 1.5 Identify the basic objects

1. List the basic objects (table, report, form, query) 1.5.1
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### 1.6 Explain two database management tasks

1. Compact and back up a database 1.6.1
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### 1.7 Explain why you may want to create and use a trusted folder

1. Create a trusted folder 1.7.1
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### 1.8 Discuss careers involving databases

1. Research various database careers 1.8.1
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## Building a Relational Database and Defining Table Relationships

### 2.1 Define terminology

1. Prepare a list of terms with definitions 2.1.1
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### 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

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### 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](#)
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### 2.4 Explain primary key

1. Set, change or remove primary keys [2.4.1](#)
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### 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](#)
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### 2.6 Explain how to define table relationships

1. Create joins using primary tables, related tables, and common fields [2.6.1](#)
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### 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](#)
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### 2.8 Explain the concept of referential integrity and cascade update/delete

1. Create a relationship adding referential [2.8.1](#)
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## Maintaining and Formatting Tables in a Database

### 3.1 Define terminology

1. Prepare a list of terms with definitions [3.1.1](#)
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### 3.2 Explain how to modify records in a table

1. Enter, edit, and delete records [3.2.1](#)
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### 3.3 Explain the importance of the Find command

1. Use the Find command [3.3.1](#)
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### 3.4 Describe how to sort records

1. Sort records in ascending and descending order [3.4.1](#)
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### 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](#)
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### 3.6 Identify wildcards

1. Use wildcards in a database (#, ?, \*) [3.6.1](#)
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## Creating Simple Queries

### 4.1 Define terminology

1. Prepare a list of terms with definitions [4.1.1](#)

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#### **4.2 Explain the purpose of a query**

1. Create a simple query [4.2.1](#)
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#### **4.3 Explain how to create a select query**

1. Create and run a select query using various criteria [4.3.1](#)
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#### **4.4 Explain how to create a multitable query**

1. Create and run a multitable query [4.4.1](#)
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#### **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](#)
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#### **4.6 Describe how to create queries using various logical operators**

1. Create queries using AND, OR, or NOT [4.6.1](#)
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#### **4.7 Identify reasons for a calculated field**

1. Write a formula for a calculated field [4.7.1](#)
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#### **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](#)
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### **Create Simple Forms and Reports**

#### **5.1 Define terminology**

1. Prepare a list of terms with definitions [5.1.1](#)
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#### **5.2 Explain how to create a form**

1. Create a form [5.2.1](#)
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#### **5.3 Identify ways to modify and format a form**

1. Modify and format a form [5.3.1](#)
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#### **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](#)
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#### **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](#)
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#### **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](#)

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## 5.7 Identify different types of conditional formatting

1. Apply conditional formatting to a report [5.7.1](#)
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## 5.8 Explain how to print forms and reports

1. Print various forms [5.8.1](#)
  2. Print various reports [5.8.2](#)
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## Creating Advanced Queries

### 6.1 Define terminology

1. Prepare a list of terms with definitions [6.1.1](#)
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### 6.2 Explain how to create a parameter query

1. Create a parameter query [6.2.1](#)
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### 6.3 Explain how to create a crosstab query

1. Create a crosstab query [6.3.1](#)
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### 6.4 Explain how to create a find duplicates query

1. Create a find duplicates query [6.4.1](#)
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### 6.5 Explain how to create a find unmatched query

1. Create a find unmatched query [6.5.1](#)
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### 6.6 Describe the steps in creating a top values query

1. Create a top values query [6.6.1](#)
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### 6.7 Explain reasons for creating a concatenation

1. Create a concatenated expression using the fields and the & (ampersand) [6.7.1](#)
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### 6.8 Explain the purpose of an action query

1. Create the following action queries: make-table, append, delete, and update [6.8.1](#)
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### 6.9 Explain the reason for an index

1. Create an index [6.9.1](#)
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## Creating Custom Forms

### 7.1 Define terminology

1. Prepare a list of terms with definitions [7.1.1](#)
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### 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](#)

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### **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](#)
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### **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](#)
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### **7.5 Discuss advantages of creating a main form and subform**

1. Create a main form with a subform [7.5.1](#)
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### **7.6 Identify how to change the tab order**

1. Change the tab order in a form [7.6.1](#)
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### **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](#)
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## **Creating Custom Reports**

### **8.1 Define terminology**

1. Prepare a list of terms with definitions [8.1.1](#)
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### **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](#)
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### **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](#)
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### **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](#)
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### **8.5 Explain the purpose of the hiding duplicate values property**

1. Hide duplicate values in a report [8.5.1](#)
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### **8.6 Explain how to create mailing labels**

1. Create mailing labels [8.6.1](#)
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## **Sharing, Integrating, Analyzing and Managing**

### **9.1 Define terminology**

1. Prepare a list of terms with definitions [9.1.1](#)

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## 9.2 Discuss various ways to export

1. Export data from some of the following formats: HTML document, XML, etc. [9.2.1](#)

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## 9.3 Discuss various ways to import

1. Import data from some of the following formats: CSV, text file, XML, etc. [9.3.1](#)

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## 9.4 Identify ways to save database objects as other file types

1. Save database objects as other file types [9.4.1](#)

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## 9.5 Explain Analyzer tools

1. Use the Analyzer [9.5.1](#)

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## 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](#)

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## 9.7 Explain how to create an attachment field

1. Attach documents to and detach from records [9.7.1](#)

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## 9.8 Discuss reasons to split a database

1. Use the splitter [9.8.1](#)

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## Macros and Switchboards

### 10.1 Define terminology

1. Prepare a list of terms with definitions [10.1.1](#)

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### 10.2 Explain the purpose of a switchboard

1. Create a switchboard [10.2.1](#)

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### 10.3 Explain the purpose of a macro

1. Create a macro [10.3.1](#)

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### 10.4 Identify reasons to make a macro group

1. Create a macro group [10.4.1](#)

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### 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](#)

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## Intro to SQL-- Recommended by not required

### 11.1 Define terminology

1. Prepare a list of terms with definitions [11.1.1](#)

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**11.2 Describe briefly the history of SQL**

1. Discuss the history of SQL [11.2.1](#)

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**11.3 Explain how to layout and create a table in SQL**

1. Use the CREATE TABLE command [11.3.1](#)

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**11.4 Explain how to delete a table using SQL**

1. Use the DROP TABLE command [11.4.1](#)

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**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](#)

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**11.6 Explain how to query a database using SQL**

1. Use the SELECT command with various operators and clauses [11.6.1](#)

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**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](#)