Chapter 3: Hands-on Activity – Relational Database System

The database consists of a group of programs that can be used as an interface between a database and the user of the database and application programs. The software acts as a buffer between the application programs and the database itself. In the relational database model, all data elements are placed in two-dimensional tables, or relations. As long as they share at least one common element, these relations can be linked to output useful information.

Use Microsoft Word's table feature to create a relational database system for a university that contains at least three tables. There should be tables that store information about the students, faculty, and classes. Remember that you are creating a relational database system and the tables must have a field in common. Name the three tables **Students**, **Faculty** and **Classes**. Save the Microsoft Word file as **Ch3Relational.doc**.

Faculty			
Field Name Field Size		Field Type	

Students			
Field Name Field Size		Field Type	

Classes			
Field Name	Field Name Field Size		

Chapter 3: Hands-on Activity – Selecting a Database Management System

Selecting the best database management system for an organization begins by analyzing database needs and characteristics. The information needs of the organization affect the type of data that is collected and the type of database management system that is used. Important characteristics of databases include the following:

- **Database size** The number of records or files in the database
- **Database cost** The purchase or lease costs of the database
- **Concurrent users** The number of people who need to use the database at the same time (the number of concurrent users)
- **Performance** How fast the database is able to update records
- Integration The ability to be integrated with other applications and databases
- Vendor The reputation and financial stability of the database vendor

Use table feature in Microsoft Word to create the chart below to compare three database management systems. Which database management system would you select for your school or company? Save the file as **Ch3DBMS.doc**.

Characteristics	Database 1	Database 2	Database 3
Database size			
Database cost			
Concurrent users			
Performance			
Integration			
Vendor			

Chapter 3: Hands-on Activity – Manipulating Data and Generating Reports

A database manipulation language is used to manipulate the database. It allows managers and other database users to access, modify, and make queries about data contained in the database to generate reports. SQL is an integral part of relational databases. SQL uses standardized and simplified procedures for retrieving, storing, and manipulating data in a database system. Once a user has created a database using a database management system, the SQL commands that are generated by the database can be viewed and manipulated by the person that created the database.

Create a database application using Microsoft Access to keep track of the items sold at a store. Create a table named **Ch3Items** that will contain the Item ID, Item Name, Item Type, Item Price and Store Location. Use the following table structure:

Field Name	Field Size	Field Type	Primary Key
ItemID	2	Text	Yes
ItemName	30	Text	
ItemType	30	Text	
ItemPrice	7	Number, Decimals(2)	
StoreLocation	30	Text	

Enter the data from the following table into the **Ch3Items** table.

ItemID	ItemName	ItemType	ItemPrice	StoreLocation
01	Shirt	Brown	12.50	Shirlington
02	Pants	Blue	30.00	Dumfries
03	Shirt	Black	12.90	Springfield
04	Pants	Red	25.00	Shirlington
05	Shoes	Black	15.90	Springfield
06	Shoes	Brown	34.00	Dumfries
07	Jacket	Orange	5.90	Dumfries
08	Shirt	Green	10.00	Charlotte
09	Pants	Silver	15.90	Dumfries
10	Shirt	Brown	34.89	Shirlington

11	Jacket	Blue	23.00	Charlotte
12	Pants	White	12.90	Springfield
13	Jacket	Black	50.90	Dumfries
14	Pants	Green	65.00	Springfield

Save the database file as **Ch3Store.dbf.** Using the **Ch3Store.dbf** file, create a report using the report wizard. Sort the records in ascending order based on the Item Name. Use **Store Database** as the report title. Save the report as **Ch3Store.rpt**

Using the **Ch3Store.dbf** file, perform the following queries:

- 1. Display the Item ID, Item Name, Store Location and Item Price for all items from the Springfield store. Save the query as **SpringfieldStore**. View the SQL statement(s) created by Microsoft Access for the query. (While viewing the Query Grid, click on View on the menu, Click on SQL View.)
- Display the Item ID, Item Name, and Item Price for all items that cost more than \$50. Sort the records in ascending order based on the Item Name. Save the query as ItemSort. View the SQL statement(s) created by Microsoft Access for the query. (While viewing the Query Grid, Click on View on the menu, Click on SQL View.)
- 3. Display the Item ID, Item Name and Store Location for all items from the Dumfries store. Save the file as **DumfriesStore**. View the SQL statement(s) created by Microsoft Access for the query. (While viewing the Query Grid, Click on View on the menu, Click on SQL View.)
- Display the Item Name and Item Type for all items that are Black. Save the query as BlackItems. View the SQL statement(s) created by Microsoft Access for the query. (While viewing the Query Grid, Click on View on the menu, Click on SQL View.)
- 5. Display the Item Name and Item Price for all items that cost less than \$60. Save the query as **SixtyLess.** View the SQL statement(s) created by Microsoft Access for the query. (While viewing the Query Grid, Click on View on the menu, Click on SQL View.)