1
INTRODUCING DATA AND DATA MANAGEMENT

PROJECTS

Project 1.1	Identifying Business Data
Overview	A key part of any database design is identifying business data. This can be a daunting task. Your first step is to identify the core business and, from this, primary tasks.
Outcomes	After completing this project, you will know how to: ▲ identify the core business ▲ identify primary tasks ▲ identify business documents
What you'll need	To complete this project, you will need: ▲ the worksheet below
Completion time	15 minutes
Precautions	None

You have descriptions of business activity for two businesses. Read each of the descriptions and then, in your own words, describe:

- the core business
- the steps in the example primary task
- potential data sources

■ Part A: Case #1

Regular customers prefer this business because the produce is farm fresh, delivered by the farmers each morning. Most items are sold by the pound. Customers make their own selections and bring them to the counter to be weighed. The total is calculated as cost per pound times weight plus sales tax. Each customer is given a cash register receipt. Volume customers get a detailed, handwritten invoice on request. All customers pay by cash or check.

1. What is the core business?

_____

_____

_____

2. Describe the primary task steps related to the business activity in the minicase, as they apply to a standard customer.

_____

_____

_____

3. What, if any, business documents are generated?

_____

_____

_____

■ Part B: Case #2

Pickup and drop-off arrangements are generally made by the customer, by phone or over the Internet, or through a travel agency. If arrangements are made over the Internet, the customer receives a confirmation e-mail. Otherwise, the confirmation number is given over the phone. The driver picks up the customer and any additional passengers based on the arrangements made and delivers them to the drop-off point. Depending on the advance arrangements, the driver may be required to make multiple stops and wait at each stop. The trip invoice is printed in advance, and the driver is not authorized to make any changes to the route or stops. Payment by cash or credit card is required, with prepayment preferred. The customer is given a copy of the trip invoice at the last stop.

1. What is the core business?

_____

_____

_____

2. Describe the primary task steps related to the business activity.

_____

_____

_____

3. What, if any, business documents are generated?

_____

_____

_____

Project 1.2	Identifying Human Data Sources
Overview	Employee and manager interviews are common sources of data. They also help identify key business documents. However, you need to know both who and what to ask.
Outcomes	After completing this project, you will know how to: ▲ match questions to correct employee level
What you'll need	To complete this project, you will need: ▲ the worksheet below
Completion time	10 minutes
Precautions	None

You need to interview employees at a department store to get business information and identify business documents. For each type of information, mark the question as A for executive management, B for midlevel and front-line management, or C for employee. Pick the best choice for each question.

___ Long-term business goals

___ Procedure for looking up prices

___ Procedure for looking up the store's purchase cost for a merchandise option

___ Vendor list for restocking orders

___ Steps to complete a sale to a customer

___ Merger plans

___ How to post a return

___ Who gives final approval for vacations
___ Gross sales and profit for the most recent calendar year

___ Operating budget for the warehouse department

___Current inventory levels by department

___ How to log on at a computerized cash register

Project 1.3	Installing SQL Server 2005 Evaluation Edition
Overview	Microsoft SQL Server 2005 (the most current version available when this project manual was written) is a popular database management program. Several editions are available to meet the needs of various businesses and database applications. Evaluation Edition can be downloaded from Microsoft at no charge and lets you take SQL Server on a 180-day "test drive."
Outcomes	After completing this project, you will know how to: ▲ install SQL Server installation prerequisites ▲ install SQL Server 2005 Evaluation Edition
What you'll need	To complete this project, you will need: ▲ SQL Server 2005 Evaluation Edition installation software ▲ a computer running Windows XP Professional or Windows Server 2003. The computer must meet the following hardware minimums: • 500 MHz Pentium III process (or better) • 512 MB RAM (or more) • 1 GB free hard disk space (or more)
Completion time	90 minutes
Precautions	Be sure to check with your system administrator before installing on a school networked client computer. You will need an administrator user name and password to complete the installation. Later exercises will require Internet access. If you see any prompts during installation that do not match the steps provided here, ask your instructor for assistance.

1. If necessary, start the computer and log on as an administrator.
2. Insert the **SQL Server 2005 Evaluation Edition** installation disk.
3. Let the disk autorun and choose **Server components, tools, Books Online, and samples** from Installation or navigate to **\Server** and run **Setup.exe**.
4. Check **I accept the licensing terms and conditions** and click **Next**.
5. In the **Installing Prerequisites** dialog box, click **Install**. The installation program will install all prerequisites.
6. After the prerequisites finish installing, click **Next**.

7. When the **Welcome** screen of the **SQL Server Installation Wizard** appears, click **Next** to start the installation.

8. Review the **System Configuration Check** dialog box and click **Next** to continue. Warnings on the system configuration check, like the one shown in Figure 1-1, will NOT prevent you from installing SQL Server on the computer.
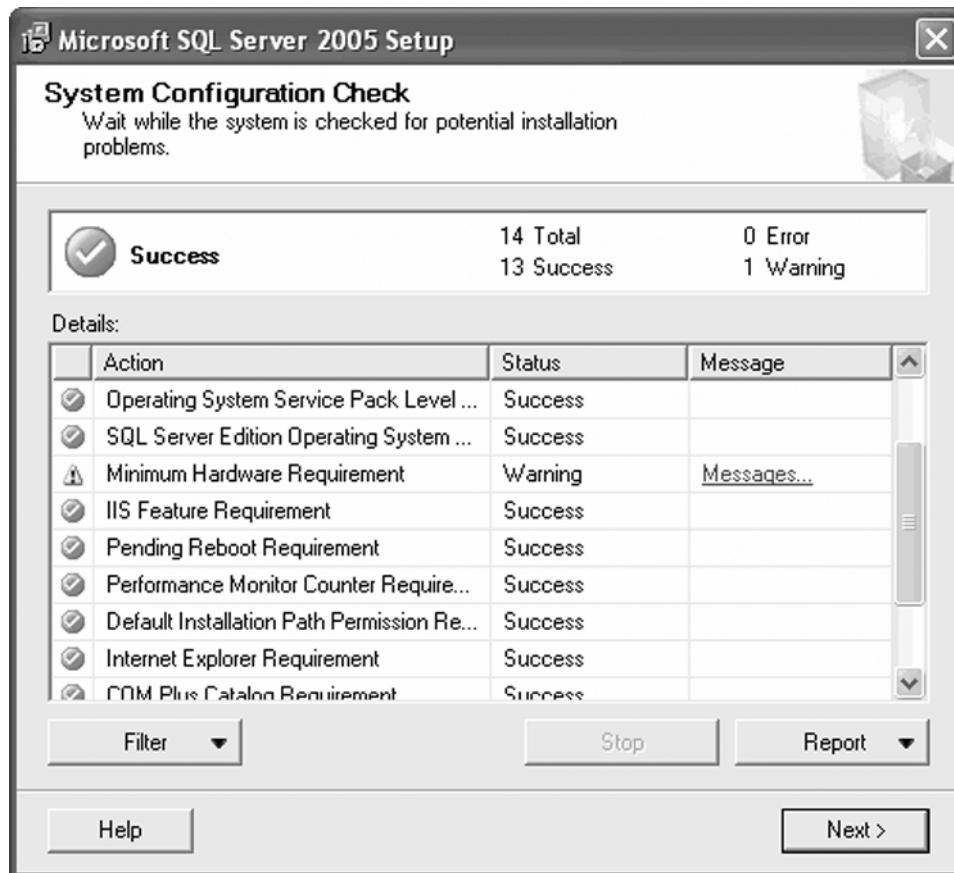

Figure 1-1: Configuration check warning

9. Verify or enter your name and any information in the **Company** field. Your instructor may provide you with a specific name to use in the this field. Click **Next** to continue.

10. In the **Components to Install** dialog box, check **SQL Server Database Services**, **Integration Services**, and **Workstation components, Books Online and development tools**. Your screen should look like the example in Figure 1-2.

Figure 1-2: Installation selections

11. Click **Advanced**.

12. Expand **Documentation, Samples, and Sample Databases**.

13. The sample databases do not install by default. You will need the sample databases for later exercises. Click **Sample Databases** and choose **Entire feature will be installed on local hard drive**, as shown in Figure 1-3.

Figure 1-3: Installing sample databases
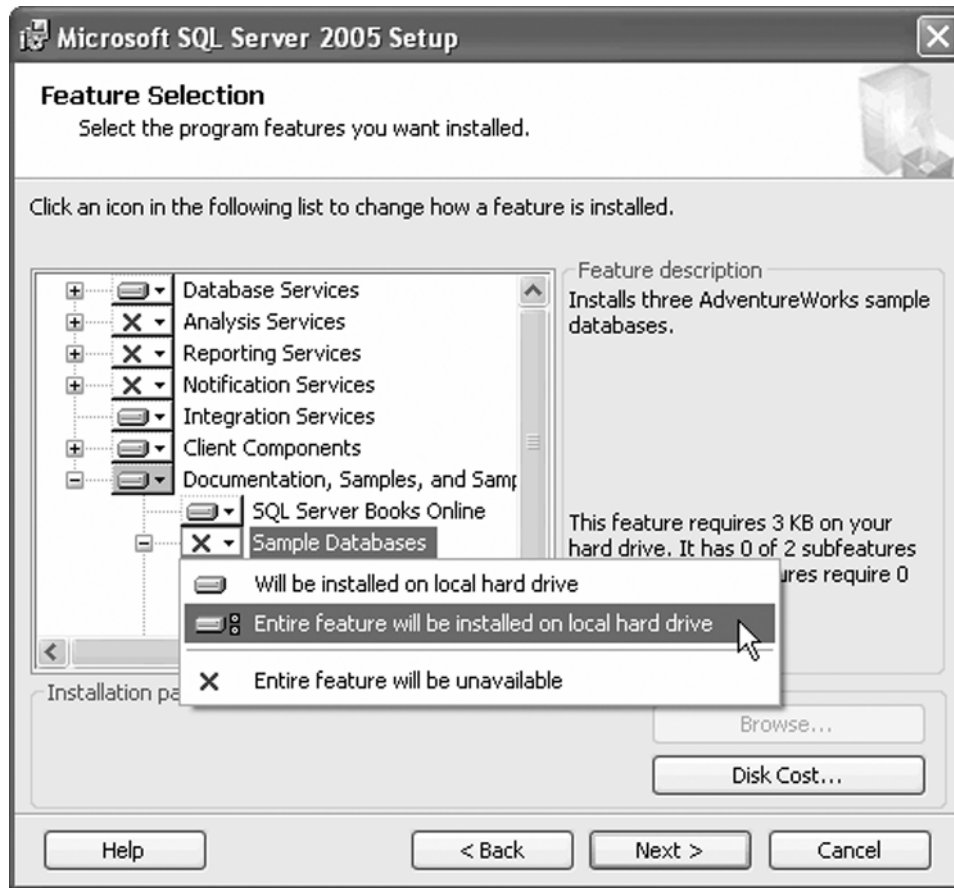
14. Click **Sample Code and Applications** and choose **Entire feature will be installed on local hard drive**. Your feature selections should look like Figure 1-4.
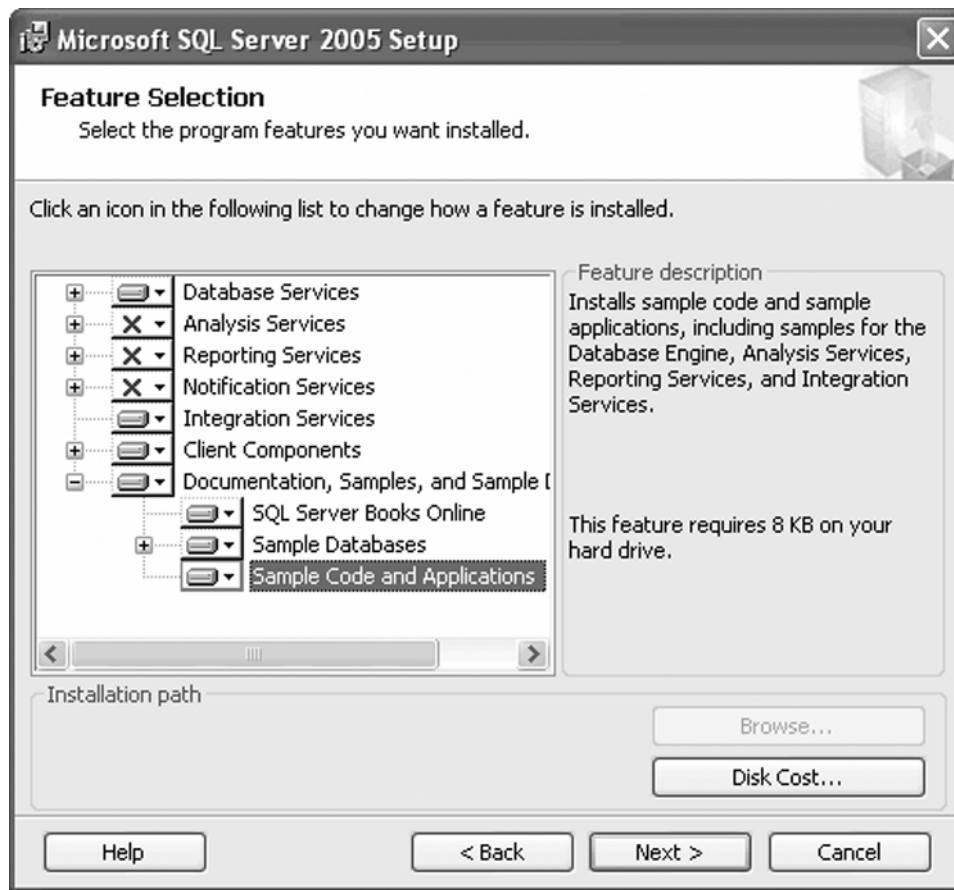
Figure 1-4: Completed advanced feature selections

15. Click **Next**.

16. Leave **Default instance** selected and click **Next**. The first instance, the first copy of SQL Server running on the computer, installs as the default instance. You can have other copies running as independent database servers under different names on the same computer.

17. In the **Service Account** dialog box, choose **Use the built-in system account**. You would typically not use this account in a secure production environment for security reasons.

18. Under **Start features at end of setup,** check **SQL Server Agent** and **SQL Browser**. Your selections should look like the example in Figure 1-5.
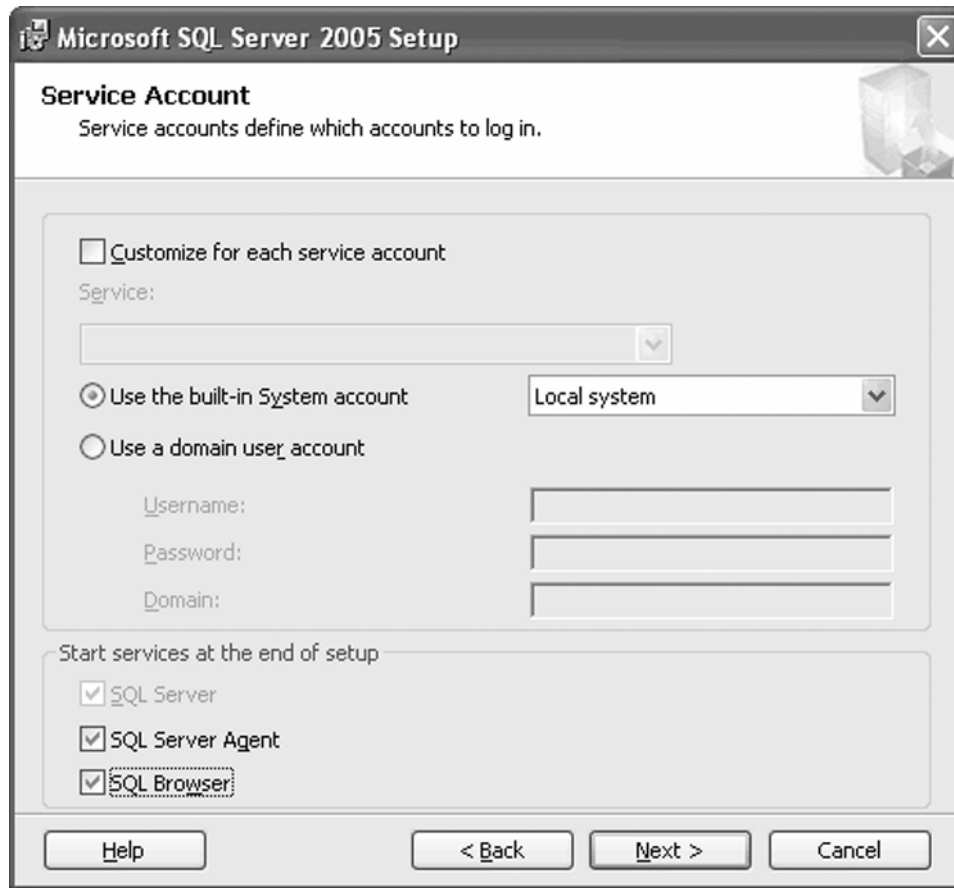
Figure 1-5: Account selections

19. Click **Next**.
20. When prompted for an authentication mode, select **Mixed Mode.** You must provide a password for the sa (system administrator) user. This user has unlimited access to the database server and all databases. Unless provided a different password by your instructor, enter **P@55word** as the password and then click **Next**.
21. Leave **Collation Settings** at default and click **Next**, as shown in Figure 1-6. Collation settings determine the character set used and the default sort order.
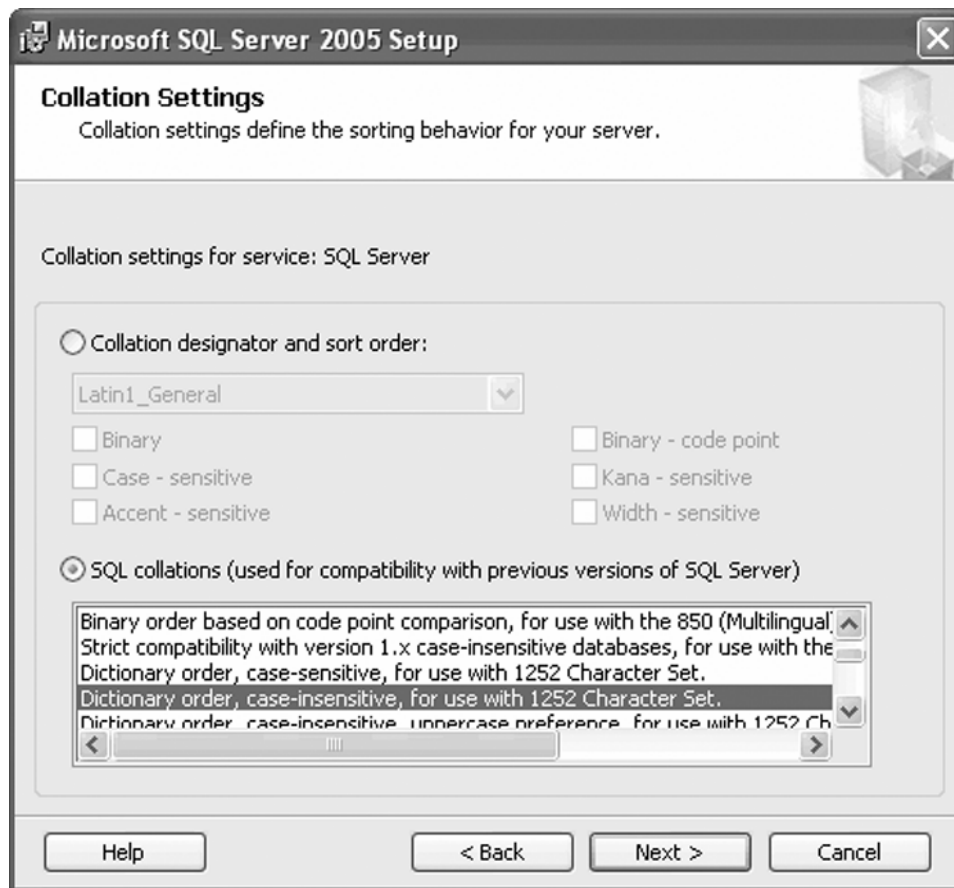
Figure 1-6: Collation settings

22. Leave the **Error and Usage Report Settings** at default and click **Next**.
23. Review the components on the **Ready to Install** dialog box list and click **Install**. This starts the installation. A dialog box informs you of installation progress.
24. When the installation is complete, click **Next**.
25. Click **Finish**. You have installed SQL Server 2005 Evaluation Edition.

Project 1.4	Learning About SQL Server Management Studio
Overview	SQL Server 2005 includes a variety of management tools. You will use selected tools throughout the course. You need to be able to launch the tools when needed. This project focuses on SQL Server Management Studio.
Outcomes	After completing this project, you will know how to: ▲ identify the computer (and SQL Server database server) name ▲ launch SQL Server Management Studio ▲ shut down and restart SQL Server
What you'll need	To complete this project, you will need: ▲ a computer running Microsoft SQL Server 2005 Evaluation Edition
Completion time	45 minutes
Precautions	Do not make any changes to the sample databases. If prompted to save changes when exiting any utility, choose No. The steps provided here assume you are running SQL Server 2005 on Windows XP Professional.

■ PART A: Identifying the server name

You installed a default instance of SQL Server. Because of this, the server name is also used as the database server name. You need to identify the server name.

1. Click **Start** and then open the **Control Panel**.
2. If the **Control Panel** is in **Category View**, click **Switch to Classic View**. The classic view is shown in Figure 1-7.
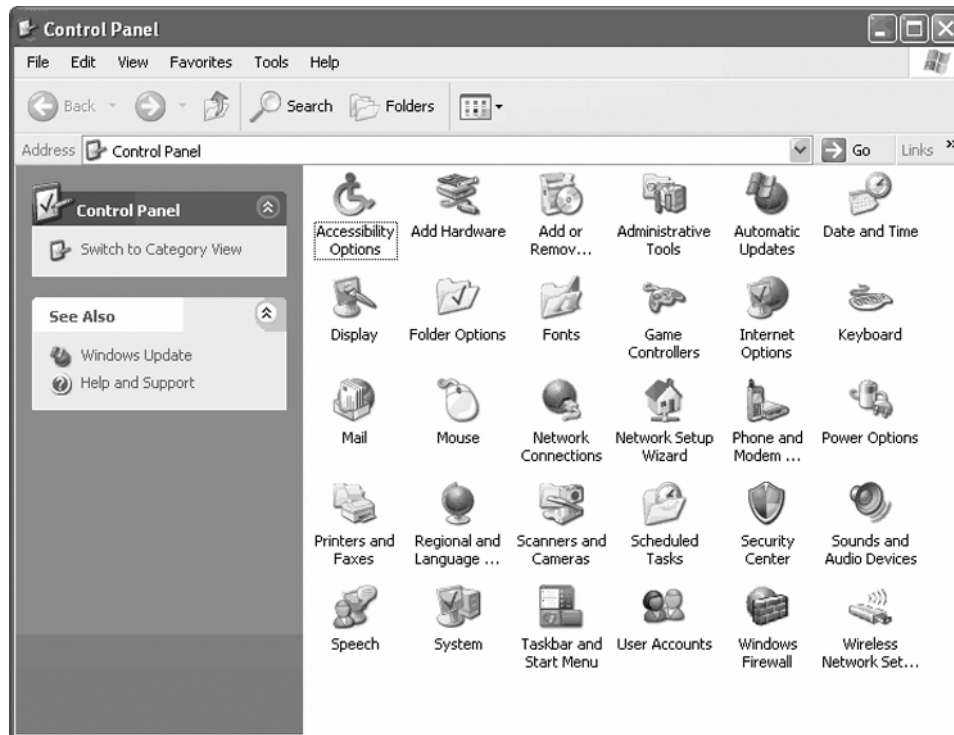
Figure 1-7: Control Panel classic view

3. Right-click **System** and choose **Open**.
4. Click the **Computer Name** tab and locate the **Full computer name** field. This field is shown in Figure 1-8.
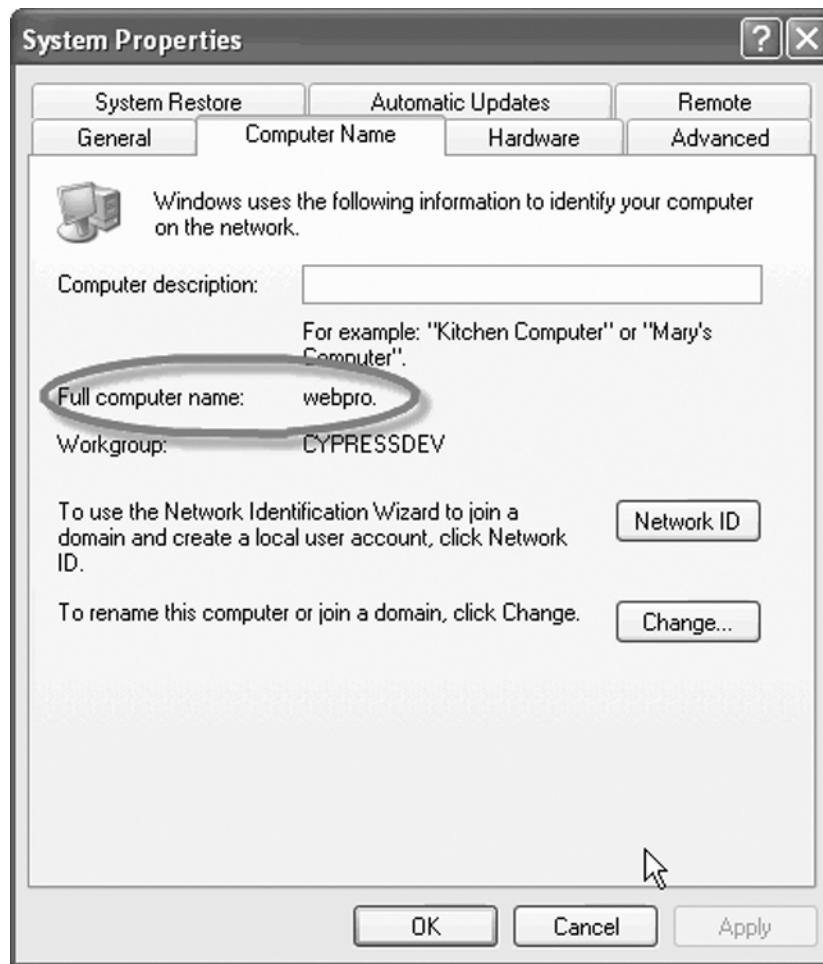
Figure 1-8: Computer name

5. Record the name:

_____

_____

6. Click **Cancel** to exit the **System** utility.
7. Close the **Control Panel**.

■ Part B: Becoming familiar with SQL Server Management Studio

SQL Server Management Studio is the utility that you will most often use when working with SQL Server during this course. It is also the primary management and administration tool in a production environment. You need to be familiar with a few basics. You should be logged in as an administrator user before starting this portion of the project.

1. Click **Start,** point to **All Programs**, select **Microsoft SQL Server 2005**, and then click **SQL Server Management Studio.**

2. When prompted to connect, verify that your computer name is in the **Server name** list box and that **Windows Authentication** is selected as the authentication type, as shown in Figure 1-9. Click **Connect**.

Figure 1-9: Sample Connection dialog box

3. The pane on the left is the **Object Explorer**. The folders you see are containers for databases, utilities, and server-level objects. Click the plus to the left of **Database** to expand that folder.

4. You should see databases named **AdventureWorks** and **AdventureWorksDW**, as shown in Figure 1-10. These are the sample user databases. You will be using these occasionally in class.
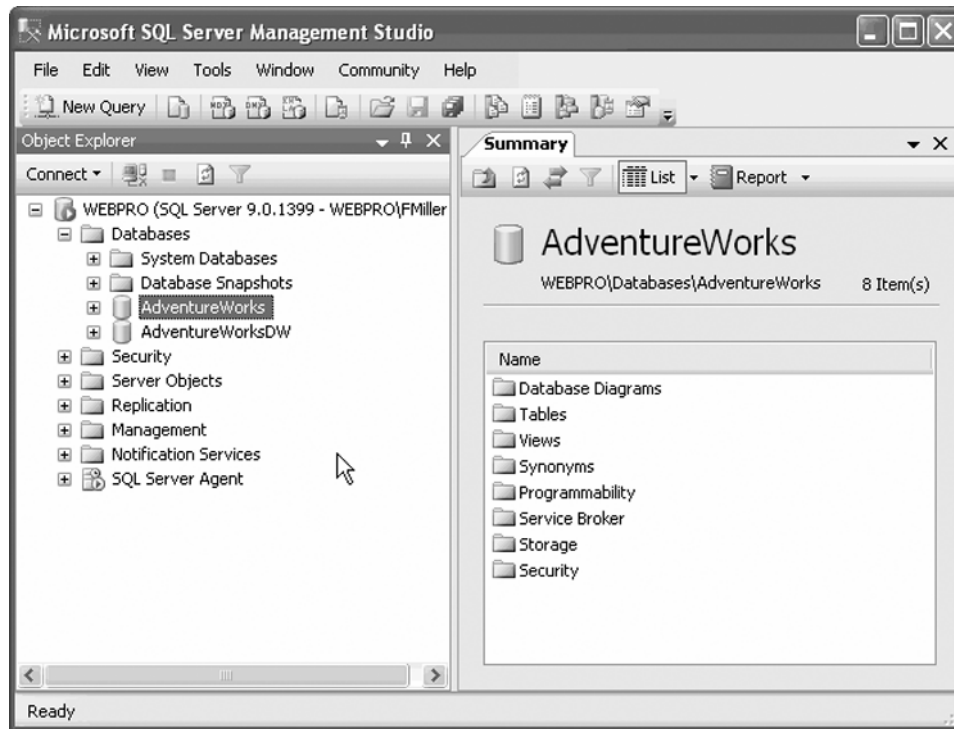
Figure 1-10: Sample databases

5. Right-click **AdventureWorks** and click **New Query**. This opens a query window. The query window is where you will most often be executing commands to view and manage database data.

6. In the toolbar above the query window, you should see a drop-down list with **AdventureWorks** selected as shown in Figure 1-11. This is your default database, also called the working database. Commands that run against a database or the data it contains will assume this database, unless a different database is specified.
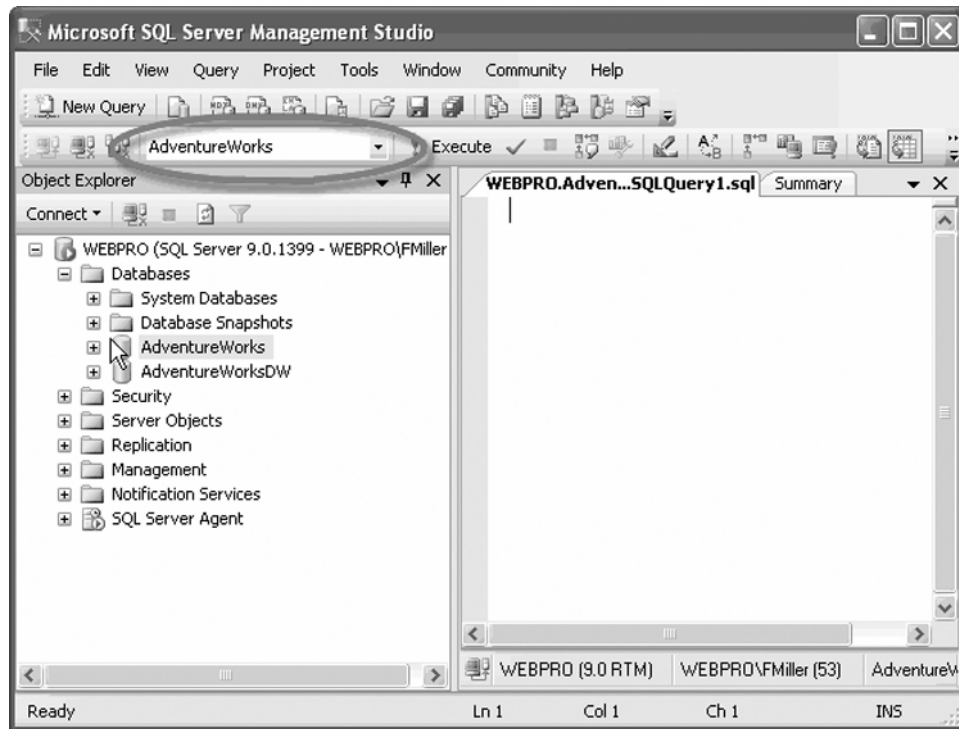
Figure 1-11: Default (working) database

7. Click the drop-down list. What other database names do you see listed?

_____

_____

Most of these are known as system databases. They are a necessary part of SQL Server 2005. During this course, you won't be doing much with the system databases.

8. Choose **AdventureWorks** so it remains the default database.

9. Type the following in the query window:

SELECT * FROM Person.Contact

Tip: The command is not case sensitive, so you don't have to worry about matching case.

10. Press **F5** to execute this command. This is the basic procedure for executing commands in a query window. You'll be shown additional details later in the course. This returns data to a pane identified as the **Results** page.

11. Next to the **Results** tab, you should see a tab for **Messages**. Click this tab to view any messages returned by the database server.

12. Click the **X** in the upper-right corner of the query window shown in Figure 1-12. This closes the query window.
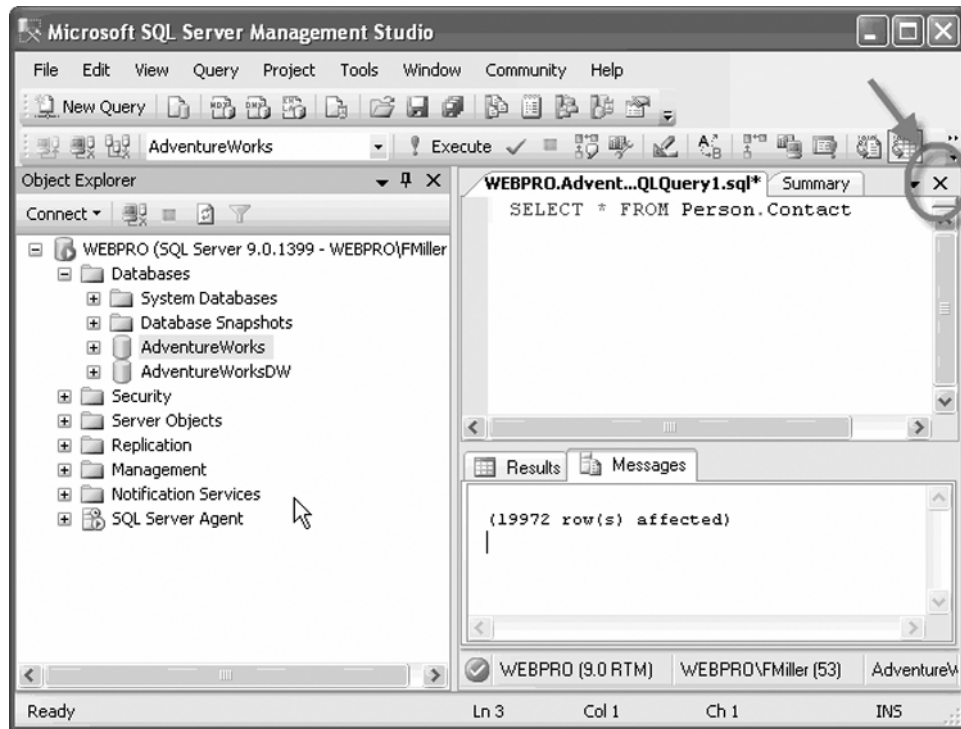
Figure 1-12: Close button

13. A dialog box prompts you to save changes. Click **No**.
14. Expand each of the remaining top-level folders so you can see what is contained in each.

■ **Part C: Shutting down and restarting SQL Server**

You might occasionally find it necessary to shut down and restart SQL Server. One way to do this is through Management Studio.

1. In the **Object Explorer** pane, right-click your server name and choose **Stop**. Click **Yes** when prompted to verify your action.
2. When prompted to also stop **SQL Server Agent**, click **Yes**.
3. When the progress dialog box closes, you have shut down SQL Server.
4. To start SQL Server, right-click your server name and choose **Start**. Click **Yes** when prompted to verify your action.
5. When the progress dialog box closes, you have restarted SQL Server. Ask your instructor for assistance if an error dialog box appears. Exit Management Studio.

Project 1.5	Identifying Key Management Areas
Overview	One of the early tasks in design and development is identifying key management tasks. Management areas can be used to enforce a rough organization on identified tasks.
Outcomes	After completing this project, you will know how to: ▲ match management tasks to key management areas
What you'll need	To complete this project, you will need: ▲ the worksheet below
Completion time	10 minutes
Precautions	None

You need to match management tasks to task categories. Make the best selection for each task. Although task categories can be used more than once, you might not use some tasks. The task categories are:

A - Server Access Security
B - Physical Security
C - Data Organization
D - Data Access
E - Data Accuracy

___ Set limits on who can run commands to view table data

___ Assign logins and passwords

___ Identify important data

___ Decide how data will be represented in the database

___ Deploy the server in a locked room

___ Identify primary tasks performed by each user

___ Implement RAID storage

___ Reduce the server attack surface area