# Adventure Works Cycles

Adventure Works Cycles, the fictitious company on which the AdventureWorks sample databases are based, is a large, multinational manufacturing company. The company manufactures and sells metal and composite bicycles to North American, European and Asian commercial markets. While its base operation is located in Bothell, Washington with 290 employees, several regional sales teams are located throughout their market base.

In 2000, Adventure Works Cycles bought a small manufacturing plant, Importadores Neptuno, located in Mexico. Importadores Neptuno manufactures several critical subcomponents for the Adventure Works Cycles product line. These subcomponents are shipped to the Bothell location for final product assembly. In 2001, Importadores Neptuno, became the sole manufacturer and distributor of the touring bicycle product group.

# Product Overview

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|  | Mountain-200 Product No: BK-M68B-38  Size: 38  Weight: 25  Price: $2,294.99 |
| Mountain-300 Product No: BK-M47B-38  Size: 35  Weight: 22  Price: $1,079.99 |  |
|  | Road-150 Product No: BK-R93R-44  Size: 44  Weight: 14  Price: $3,578.27 |

## **Moving from Spreadsheets to Databases**

Word processing and spreadsheet applications were the engines that drove the fledgling personal computer market. In the early PC days, WordPerfect and Lotus 1-2-3 dominated the productivity software business. Today, most office workers use Microsoft Word and Excel on a daily basis. It’s probably a safe bet that more data is stored in Excel spreadsheets than in all the world’s databases. It’s an equally good wager that most new Access users have at least intermediate-level spreadsheet skills, and many qualify as Excel power users.

Excel 2010’s Data ribbon offers elementary database features, such as sorting, filtering, validation, and data entry forms. You can quickly import and export data in a variety of formats, including those of database management applications, such as Access. Excel’s limitations become apparent as your needs for entering, manipulating, and reporting data grow beyond the spreadsheet’s basic row-column metaphor. Basically, spreadsheets are list managers; it’s easy to generate a simple name and address list with Excel. If your needs expand to contact management and integrating the contact data with other information generated by your organization, a spreadsheet isn’t the optimal approach.

The first problem arises when your contacts list needs additional rows for multiple persons from a single company. You must copy or retype all the company information, which generates redundant data. If the company moves, you must search and replace every entry for your contacts at the firm with the new address. If you want to record a history of dealings with a particular individual, you add pairs of date and text columns for each important contact with the person. Eventually, you find yourself spending more time navigating the spreadsheet’s rows and columns than using the data they contain.

Contact lists are only one example of problems that arise when attempting to make spreadsheets do the work of databases. Tracking medical or biological research data, managing consulting time and billings, organizing concert tours, booking artist engagements, and myriad other complex processes are far better suited to database than spreadsheet applications.

Moving to a relational database management system (RDBMS), such as Access, solves data redundancy and navigation problems and greatly simplifies updating existing information. After you understand the basic rules of relational database design, Access makes creating highly efficient databases quick and easy. Access 2010 has a collection of wizards to lead you step-by-step through each process involved in developing and using a production-grade database application. Unfortunately, no “Relational Wizard” exists to design the underlying database structure for you, but you’ll find a wealth of pre-built database templates in the Backstage page’s New tab. (Click the ribbon’s File tab to open the new Backstage page.)

**Tip**

If your goal is learning relational database fundamentals, start with Access 2010. Access is by far the first choice of universities, colleges, trade schools, and computer-training firms for courses ranging from introductory data management to advanced client/server database programming. The reason for Access’s popularity as a training platform is its unique combination of initial ease of use and support for advanced database application development techniques

## **Reliving Database History**

Databases form the foundation of world commerce and knowledge distribution. Without databases, there would be no World Wide Web, automatic teller machines, credit/debit cards, or online airline reservation systems. Newsgathering organizations, research institutions, universities, and libraries would be unable to categorize and selectively disseminate their vast store of current and historical information. It’s difficult to imagine today a world without a network of enormous databases, many of which probably contain a substantial amount of your personal data that you don’t want to be easily available to others.

### **The Early History of Databases**

The forerunner of today’s databases consisted of stacks of machine-readable punched cards, which Herman Hollerith used to record the 1890 U.S. census. Hollerith formed the Computing-Tabulating-Recording Company, which later became International Business Machines. From 1900 to the mid-1950s, punched cards were the primary form of business data storage and retrieval, and IBM was the primary supplier of equipment to combine and sort (collate) punched cards, and print reports based on punched-card data.

The development of large computer-maintained databases—originally called databanks—is a post–World War II phenomenon. Mainframes replaced punched cards with high-capacity magnetic tape drives to store large amounts of data. The first databases were built on the hierarchical and network models, which were well suited to the mainframe computers of the 1950s. Hierarchical databases use parent-child relationships to define data structures, whose diagrams resemble business organization charts or an inverted tree with its root at the top of the hierarchy. Network databases allow relaxation of the rules of hierarchical data structures by defining additional relationships between data items. Hierarchical and network databases ordinarily are self-contained and aren’t easy to link with other external databases over a network.

Early databases used batch processing for data entry and retrieval. Keypunch operators typed data from documents, such as incoming orders. At night, other operators collated the day’s batch of punched cards, updated the information stored on magnetic tape, and produced reports. Many smaller merchants continue to use batch processing of customer’s credit-card purchases, despite the availability of terminals that permit almost instantaneous processing of credit- and debit-card transactions.

**Note**

Hierarchical databases remain alive and well in the twenty-first century. For example, data storage for Windows 2000’s Active Directory and Microsoft Exchange Server is derived from the hierarchical version of Access’s original relational Jet databases. The name Jet comes from the original Access database engine called Joint Engine Technology.

The Internet’s Domain Name System (DNS) is a collection of hierarchical databases for translating character-based Internet domain names into numerical Internet Protocol (IP) addresses. The DNS database is called a distributed database, because its data is held by a global network of thousands of computers.



# John’s Juice Corner

John’s Juice corner was established in the year of 2002 by John. Initially it was started in a small shop. Today Juice corner has over 300 branches over USA. The secret behind this success story is the recipes of John’s Mother Angelica. She has discovered about 500 secret recipes which are all used by John.

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| **Individual Products** | **Price** |
| Apple Juice | $12.00 |
| Grape Juice | $15.00 |
| Hot Soup | $20.00 |
| Tender Coconut | $20.00 |
| Vennila | $20.00 |
| Strawberry | $18.00 |
| Cherry | $25.00 |
| Cone | $20.00 |

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| **SNO** | **Product Name** | **Product Image** |
| **1** | **Apple Juice** |  |
| **2** | **Grape Juice** | A picture containing container, glass, beverage, alcohol  Description automatically generated |
| **3** | **Hot Soup** | A cup of tea  Description automatically generated with medium confidence |
| **4** | **Tender Coconut** | A picture containing beverage  Description automatically generated |
| **5** | **Vennila** | A close-up of a light bulb  Description automatically generated with low confidence |
| **6** | **Strawberry** | A picture containing cup  Description automatically generated |
| **7** | **Cherry** | A picture containing cup, indoor, coffee cup  Description automatically generated |
| **8** | **Cone** | A close-up of a fire  Description automatically generated with low confidence |