

Microsoft Access: Introductory concepts

What is Microsoft Access?

Access is a database program. A *database* is a collection of data related to a particular topic or purpose (e.g., a catalog of books, or a list of all of the students in a program). Database programs like Access can do powerful and complex things with your data, allowing you to make much more efficient and effective use of them.

What can Access do for you?

Some of the things you can do with Access include:

- Enter data quickly, easily, and more accurately
- Organize records in different ways
- Quickly locate specific records, or groups of records (e.g., all students in a certain zip code)
- Eliminate duplicate data/records; eliminate re-keying of data
- Manipulate data to see relationships between them
- Create nicely formatted reports

When to use Access

People often have difficulty determining when to put data in Access vs. Excel or Word. Use Access when:

- You plan to reuse the data more than once (i.e., if you're creating mailing labels that will only be used once, don't bother setting up a database; use Word instead)
- You need to reorganize/look at the data in various ways, including pulling out specific subsets of data
- Several people will be involved in inputting the data into the database

If you have any questions about which program you should use for your purpose, feel free to contact us.

Understanding database concepts

Fields: Categories of data, such as First Name, Last Name, Address, Department, etc.

Forms: Forms are an optional component of a database that make it easier to enter and edit data. Entering data into a form is an alternative to entering it directly into the table.

Input Mask: Input Masks make data entry easier by controlling the values that users can enter in a text box. For example, an Input Mask can make sure that phone numbers always have the correct number of digits.

Lookup Field: A lookup field makes data entry simpler and more accurate by displaying a list of values to choose from. Those values exist in another table or in a list that you enter when creating the field.

Primary Key: A field whose value uniquely identifies each record in a table. Every table must have one. If you do not assign a primary key, Access will assign one for you using automatic sequential numbers.

Queries: Queries allow you to organize and extract data from the database, by finding and retrieving just the data that meets certain conditions (e.g., show only the people who's zip code is 54115).

Records: Groups of related fields, such as all of the information about a particular person.

Relational Database: Collection of one or more tables that can share information.

Reports: Reports allow you to print data in a formatted way.

Tables: Collections of related records. Tables are used to input and store the data in the database.


Validation Rule: Validation rules specify requirements for data entered into a field. When data is entered that violates the Validation Rule, a message is displayed.

Wizards: Access has many "wizards," or screens which walk you through the steps of a given process, such as creating a report. You can choose to use these wizards or perform the steps on your own.

Getting started

When you first start Access 2003, you'll see a blank Access window. To open an existing database, go to File – Open. To create a new database, go to File – New, then choose Blank database. You'll be prompted to save the database right away. You'll then see the database window, a small window with the name of your database at the top, and a list of the database objects (e.g., tables, queries, forms, reports) on the left. This window remains open while you work, and allows you to easily access the different parts of the database and create new ones.

Different views

For each database component, or object, there are at least two different views. One of these is always the *design view*, which allows you to see how an object has been put together, and to modify its structure or layout. The other view is called *datasheet view* for tables and queries, *form view* for forms, and *print preview* for reports. The datasheet view allows you to look at the data in a table or query in a spreadsheet-like format. The form view lets you see how the finished form will appear. The *print preview* lets you see how your report will look before you print it. The names of all of the views are not that important, as long as you know that you switch between them by clicking on the View button on the left side of the toolbar (shown here). 

Creating a new database

When creating a new database, the general procedure is as follows:

- Plan the database (the most important part! - see next section for more information)
- Create new table(s)
- Enter (or import) the data into the new table(s)
- Query (search) the table(s) to retrieve the results you want

Planning & designing a database

Before you actually build the tables, forms, and other objects that will make up your database, it's extremely important to take time to plan the design of your database. A good database design is essential for creating a database that does what you want it to do effectively and accurately, and avoiding the need to redo work later.

Things to consider when designing a database

- What is the purpose of your database?
- What information do you need in the database? Try to think of everything you might need, now and later.
- What do you want to do with the data? Try to anticipate what you might want to do with it in the future.

These things affect what fields you need in the tables, how many and what tables you need in the database, and the relationships between those tables. Spend some time thinking about these things and sketching them out on paper. It will save you a lot of time if you make your mistakes on scrap paper instead of on your actual database! It's a good idea to practice on a made-up or unimportant database first, before attempting to design a "real" database. If you need help planning a database, contact the Help Desk.

Different versions of Access

Generally, databases in older Access formats (e.g., Access 97) are not compatible with databases in newer Access formats (2000 or 2003). When you open a database that was created in an older version of Access with a newer version of Access, you will have to choose one of these options:

- Convert the database to the newer format, in which case the database will no longer be able to be used in previous versions of Access, or,
- Open the database in read-only mode, in which case you will be able to view the database, but will not be able to change it. You will still be able to use the database in previous version of Access.

Assistance and Questions

If you have any questions or need more information, please call the Help Desk at (920) 403-HELP (4357), contact us via e-mail at helpdesk@snc.edu, or stop by the Help Desk in Cofrin 101. The Help Desk is for St. Norbert College students and employees only.