

# What is a Database?

A Database is...

- ▣ an organized set of stored information usually on one topic
- ▣ a collection of records
- ▣ a way to organize information in a file so that you can examine information on a variety of ways and access the information in new ways
- ▣ a type of "filing cabinet" that can help you manage, manipulate, organize, sort and modify information

# What are Databases Good For?

- ☐ Easy way to organize and sort information
- ☐ Use the information (mail merge)
- ☐ Analyze information
- ☐ Group information
- ☐ Find specific information
- ☐ Look at patterns and relationships between information
- ☐ Take up less space
- ☐ Help you manage large collections of information

# Examples of a Database

 student information cards

 library catalogs

 encyclopedias

 phone books

 file folders

 cookbooks

 doctor's records

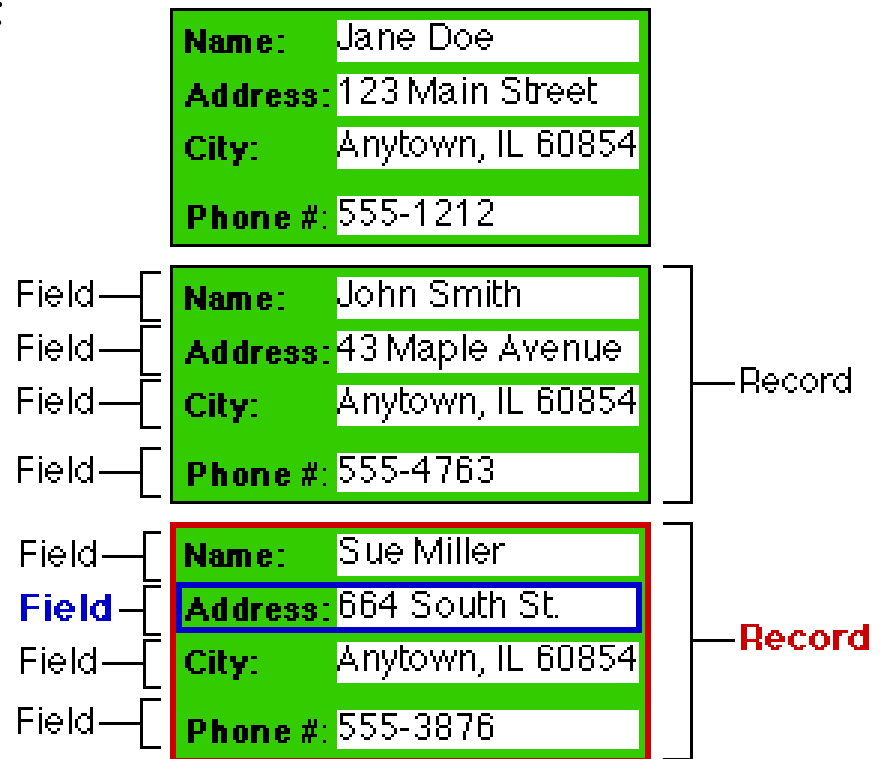
# Basics of a Database

Databases are made up of

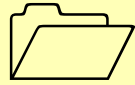
-files

-records

-fields



File ↑



# Files



A **file** is a collection of related database information.

Ex.

A Video Collection

Famous Virginians

Address Book

# Records

A **record** is a collection of data about a single product, activity, or transaction.

Ex.

Titanic

L. Douglas Wilder

Person in the Address Book

<b>Name:</b>	Jane Doe
<b>Address:</b>	123 Main Street
<b>City:</b>	Anytown, IL 60854
<b>Phone #:</b>	555-1212

↑  
This **record** is  
about Jane Doe.

# Fields

A **field** is each **separate piece** of information (but related) in a record. Fields are the “building blocks” for records containing the data you want to store, find, sort and print.

Ex.

Name

Address

City

Phone #

<b>Name:</b>	Jane Doe
<b>Address:</b>	123 Main Street
<b>City:</b>	Anytown, IL 60854
<b>Phone #:</b>	555-1212

↑  
This record has four fields.



# Planning Your Database



What is your **goal**?

- ✍ Determine the **type of information** you will want/need before you begin designing it
- ✍ **Sketch it out** on paper first
- ✍ Decide on your **field names** and put them in order of preference
- ✍ Make sure you keep things **CONSISTENT**

# Data Types

An Important Part of Planning!!!

Each **field** holds a different type of information.

There are 10 different types of data!

**Text** - text or numbers like phone # or zip code

**Memo** - notes, descriptions, or summaries

**Number** - numbers that you calculate

**Date/Time** - date and time ONLY

**Currency** - money ONLY

# Data Types

continued

**Auto#** - computer automatically assigns a number

**Yes/No** - can answer **yes/no** OR **true/false** OR **on/off**

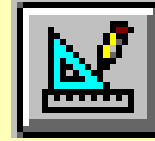
**OLE Object** - can insert a picture, sound or file

**Hyperlink** - can jump to a document or web page

**Lookup Wizard** - can produce a "drop down" menu of choices



# Design View



This is where you **start off**. It allows you to add fields, rearrange fields, change field properties, etc...

This view allows you to see the **structure** or the “**blueprint**” of the table or form.

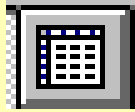
The screenshot shows the Microsoft Access Design View for a table named 'Table1'. The table structure is as follows:

Field Name	Data Type	Description
First Name	Text	

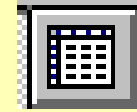
Below the table structure, the 'Field Properties' window is open, showing the 'General' tab for the 'First Name' field. The properties are:

- Field Size: 50
- Format:
- Input Mask:
- Caption:
- Default Value:
- Validation Rule:
- Validation Text:
- Required: No

A note on the right side of the Field Properties window states: "The data type determines what users can store in the field."



# Data Sheet View



This allows you to see several records at the same time. It displays the data in columns and rows.

You actually enter the data for your records here!!!

StudData99-00 : Table				
	first name	last name	parent name(s)	address
▶	Mary	Sunshine	Mr. And Mrs. Sunshine	15 Any St.
	Larry	Lobster	Mr. Lobster	22 Main St.
	Sally	Simon	Ms. Clark	345 Greene St.
	Barry	White	Mr. and Mrs. White	12 Main St.

# Components of an Access Database

There are **six** components to an **Access** database.



**Tables**



**Queries**



**Forms**



**Reports**

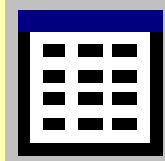


**Macros**

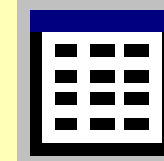


**Modules**

(macros and modules are for advanced users so we will not discuss those!)



# Tables



A **table** is a collection of related data that is stored in columns and rows.

StudData99-00 : Table							
	first name	last name	parent name(s)	address	city	state	zip code
▶	Mary	Sunshine	Mr. And Mrs. Sunshine	15 Any St.	Manassas	VA	20110
	Larry	Lobster	Mr. Lobster	22 Main St.	Manassas	VA	20110
	Sally	Simon	Ms. Clark	345 Greene St.	Manassas	VA	20110
	Barry	White	Mr. and Mrs. White	43 Main St.	Manassas	VA	20110
	Mike	Short	Mr. And Mrs. Short	44 Main St.	Manassas	VA	20110
	Jim	Black	Mrs. Jones	356 Greene St.	Manassas	VA	20110



# Queries

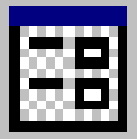


A **query** is a stored question about data in your table. It asks the database to find specific information to meet the conditions you asked for.

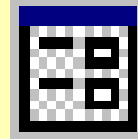
Query1 : Select Query			
	first name	last name	Bus#/Walker
▶	Sally	Simon	walker
	Barry	White	walker
	Jim	Black	walker

In this query...

I asked it to list all of the students who were walkers.



# Forms



**Forms** provide a quick way to view, enter, and change information in a database.

The screenshot shows a database form window titled "StudData99-00". The form contains the following fields and values:

Field	Value
first name	Mary
last name	Sunshine
address	15 Any St.
city	Manassas
state	VA
zip code	20110
phone	123-4567
birthday	3/6/90
Bus#/Walker	1st run 3



# Reports



You create a **report** so that you can easily output your database to the printer.





## *StudData99-02*

<i>last name</i>	Black
<i>first name</i>	Jim
<i>Bus#/Walker</i>	walker
<i>address</i>	356 Greene St.
<i>city</i>	Manassa
<i>state</i>	VA
<i>zip code</i>	20110
<i>phone</i>	123-5736
<i>birthday</i>	1/1/90



# Let's Try It Out!!!



-  Back to School Database
-  Questions & Answers
-  Traits R Us
-  Check It Out!!!