

Access 2007

Overview and Tables



CALIFORNIA STATE UNIVERSITY, SACRAMENTO

WORKSHOP DESCRIPTION.....	1
Overview	1
Prerequisites	1
Objectives	1
TERMS TO KNOW.....	2
OBJECTS OF A DATABASE.....	2
Navigation Pane	2
Table	2
Query	2
Form	2
Report	3
PLAN YOUR DATABASES.....	3
TABLES.....	3
TERMS TO KNOW.....	3
VIEWS	4
Datasheet View	4
Design View	5
ACCESSING COMMANDS.....	6
The Ribbon	6
The Quick Access Toolbar	6
The Microsoft Office Button	6
CREATE A TABLE	6
Use the Table Template	6
Use Design View	7
TABLE SETUP	7
Data Types	7
Field Properties	8
EXERCISE - CREATE FIELDS, DATA TYPES AND FIELD PROPERTIES	8
CREATING AN INPUT MASK.....	9
RECORDS.....	9
Add Records to the Datasheet	9
Editing Data	9
Deleting Data	10
SETTING A DEFAULT VALUE	10
SETTING A PRIMARY KEY.....	10
MODIFYING THE DATASHEET.....	11

WORKSHOP DESCRIPTION

Overview

Using MS Access, you can take the information from various sources and organize it into a single relational database. You define the relationships between sources of information, and MS Access can manage the connections for you. With the objects you create—such as forms, queries, and reports—you can keep all your information up-to-date quickly and efficiently; get answers to questions; and print reports, charts, and labels.

Prerequisites

Basic familiarity with Windows Vista, XP, or 2000 and some experience using Access, Word, or Excel.

Objectives

In this Windows-based workshop, participants will be introduced to Access terms and table views. Hands-on exercises will include creating a database, adding records, and editing a table. An overview of data types and field properties and a demonstration of input masks is also included.

TERMS TO KNOW

Database

A collection of data related to a particular topic or purpose.

RDBMS

A **R**elational **D**ata**B**ase **M**anagement **S**ystem enables you to organize and analyze data stored in tables. This is accomplished by creating table **relationships**.

Relationship

A connection between two tables that enables the tables to share data. For example, a human resources department may have a table with employee data such as their employee ID number and address and another table with salary information and the employee ID. Since the employee ID is in both tables it allows the creation of a relationship. So you can create a query that gives you the employees' names, addresses, and salary information in one view.

OBJECTS OF A DATABASE

Navigation Pane

You work with all the objects that follow—which make up a database—by using the Navigation Pane.



Northwind Traders	⌵	⏪
Customers & Orders	⌵	
Inventory & Purchasing	⌵	
Suppliers	⌵	
Shippers	⌵	
Reports	⌵	
Employees	⌵	
Supporting Objects	⌵	

Table

The fundamental structure of a relational database management system. In Microsoft Access, a table is the object that stores data in records (rows) and fields (columns). The data is usually about a particular category of things, such as employees or orders.

Query

Once you have added information into your database, you may want to manipulate and/or analyze the data. You can use a query to perform calculations and totals or to select only certain kinds of data for a report. For example, you can define a query to show all student assistants who have worked over three hundred hours.

Form

The easiest way to add data to a database is by using a form. In Access you can use a form to add, view, and edit your data one or more records at a time. You can also work with data from several tables at once with forms.

Report

Using reports, you can print your data in a broad variety of layouts and type styles. Reports can print data from fields; text you define; totals and the results of calculations; or charts, pictures, or other objects—even another report. You can also use reports to print mailing labels.

PLAN YOUR DATABASES

- Determine its purpose
- Determine the tables required (separate tables by subject)
- Determine the fields required
- Eliminate redundancies
- Determine the table relationships
- Ensure that changes don't create inconsistencies with other information
- Use data validation to keep your data format consistent

TABLES

A table is the fundamental component of a database. A table stores data in records (rows) and fields (columns). The data is usually about a particular category of things, such as employees or orders.

TERMS TO KNOW

Record

A collection of data about a person, a place, an event, or some other item. A record is represented as a row in datasheet view of a table, query, or form.

Field

An element of a table that contains a specific item of information, such as last name. A field is represented by a column or cell in a datasheet. On a form, you can use a control, such as a text box, to display data from a field.

Datasheet

Data from a table, form, or query displayed in a row-and-column format.

Field Property

Attributes of a field that affect its appearance or behavior. The list of field properties for a field appears in the lower half of a table's Design view when you select the field.

Primary Key

A field whose value uniquely identifies each record in a table. In a relationship, a primary key is used to refer to specific records in one table from another table.

Input Mask

A format you specify to assist data entry in a control or field. An input mask consists of literal display characters (such as parentheses, dots, or dashes) and mask characters that specify where data is to be entered, what kind of data is allowed, and how many characters are allowed. An input mask is primarily used when telephone or identification numbers or dates and/or times are entered.

Template

Access 2007 has a variety of templates to help you get started quickly. There are templates for tables and for complete databases.

VIEWS

Datasheet View

Data from a table, form, or query displayed in a row-and-column format. Data can be entered directly into the datasheet.

The screenshot shows the Microsoft Access 2007 interface with the 'Customers' table in Datasheet View. The table has the following data:

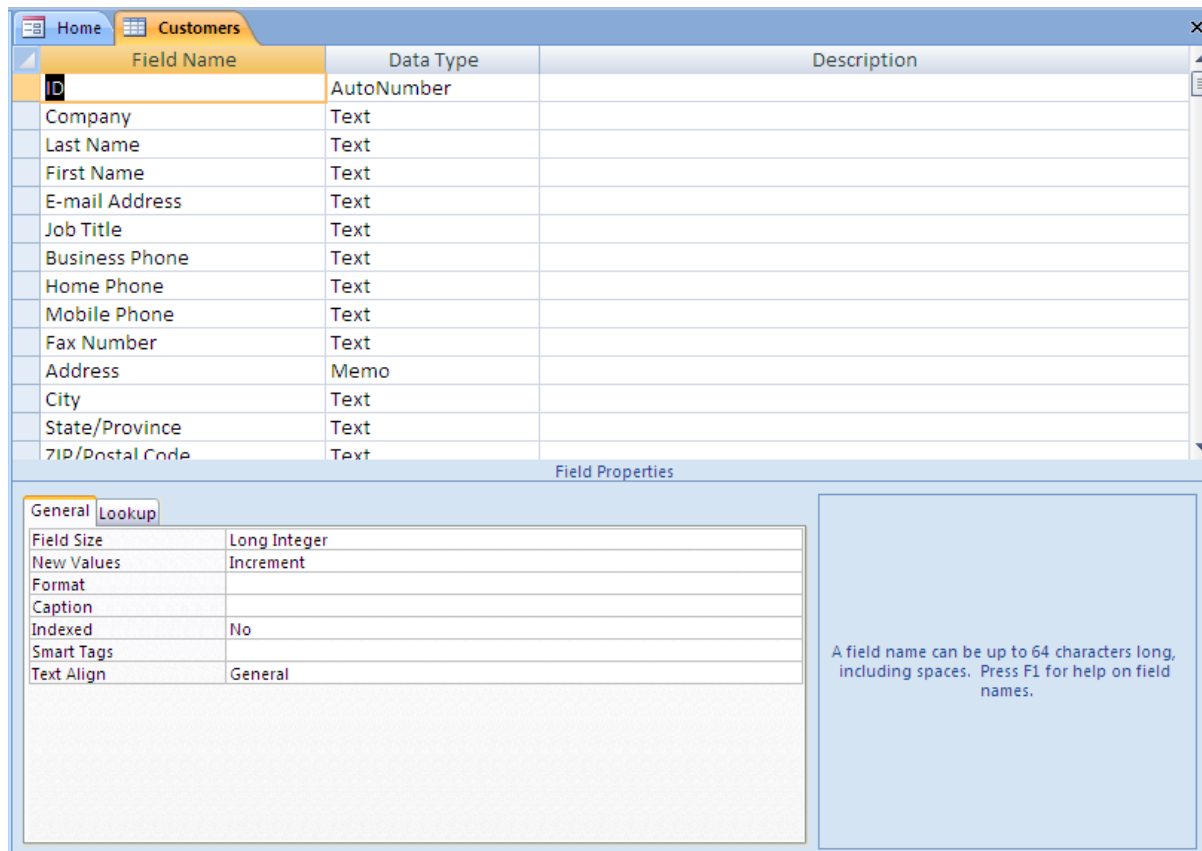
ID	Company	Last Name	First Name
1	Company A	Bedecs	Anna
2	Company B	Gratacos Solso	Antonio
3	Company C	Axen	Thomas
4	Company D	Lee	Christina
5	Company E	O'Donnell	Martin
6	Company F	Pérez-Olaeta	Francisco
7	Company G	Xie	Ming-Yang
8	Company H	Andersen	Elizabeth
9	Company I	Mortensen	Sven
10	Company J	Wacker	Roland
11	Company K	Krschne	Peter
12	Company L	Edwards	John
13	Company M	Ludick	Andre
14	Company N	Grilo	Carlos
15	Company O	Kupkova	Helena
16	Company P	Goldschmidt	Daniel
17	Company Q	Bagel	Jean Philippe
18	Company R	Autier Miconi	Catherine
19	Company S	Eggerer	Alexander
20	Company T	Li	George
21	Company U	Tham	Bernard
22	Company V	Ramos	Luciana
23	Company W	Entin	Michael
24	Company X	Hasselberg	Jonas
25	Company Y	Rodman	John

Labels and arrows in the image:

- Field Selector:** Points to the column headers (ID, Company, Last Name, First Name).
- Field:** Points to a data cell in the first column.
- Record Selector:** Points to the plus sign in the first column of the selected row.
- Navigation Bar:** Points to the bottom status bar.
- Active Record:** Points to the number '5' in the status bar.
- Total Number of Records:** Points to the number '29' in the status bar.

Design View

This is a window that shows the design of a table. In **Design** View, you can create new table fields with various Data Types and field properties.



Field Name

Title of the field

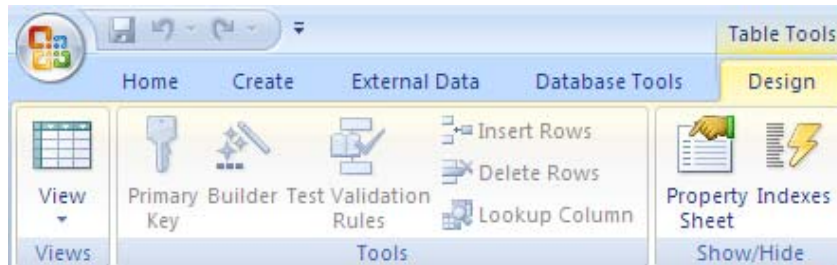
Data Type

The attribute of a variable or field that determines what kind of data it can hold. Supported data types include text, numeric, yes/no, and date/time.

Description

The description of the field. Always use this field. Make the information concise and informative. The description will appear on the status bar when the field is selected!

ACCESSING COMMANDS



The Ribbon

The Ribbon has buttons that allow you to execute commands. The commands are grouped and accessed via tabs.

The Quick Access Toolbar

Use the Quick Access Toolbar for commands that are accessed frequently. To add a command to the Quick Access Toolbar, right-click on the command on the Ribbon and choose **Add to Quick Access Toolbar**.

The Microsoft Office Button

The Microsoft Office Button allows you to access commands such as **Open** and **Save As**.

CREATE A TABLE

Use the Table Template

Use the Table Template to create a table from a variety of predefined table types.

- 1 Begin a blank database.
- 2 Click the **Create** tab.
- 3 Click the **Table Templates** button and chose **Contacts**.
- 4 Save the table by right clicking on the tab with the table name. Rename the table “contacts.”

NOTE: You can modify or extend the resulting table after you have created the table.

Use Design View

When a table is created in design view, you are in total control of how the table will be set up.

- 1 From the **Create** tab, click the **Table** button.
 - 2 Change the view to **Design View**.
 - 3 Save your table as **tblStaff**. Access will automatically create and assign a primary key.
- A new, blank table design will appear in Design View
- 4 Delete the field Access automatically created.
 - 5 In **Field Name**, type the following names for the column headings of the new table: **StaffID**, **FirstName**, **LastName**, **Department**, **Extension**, **CampusZip**.
 - 6 Choose the appropriate **data type**. For **StaffID** choose **AutoNumber**. For **Extension** and **CampusZip** choose **Number**. For **FirstName**, **LastName**, and **Department** choose **Text**.
 - 7 Write concise and informative descriptions. Remember these will be seen on the status bar.
 - 8 Enter a few records in **Datasheet View**.

TABLE SETUP

Data Types

The attribute of a variable or field that determines what kind of data it can hold. For example, the Text and Memo field data types allow the field to store either text or numbers, but the Number data type will allow only numbers to be stored in the field.

Date Type	Format
Text	Default – Up to 255 characters
Memo	Only 64,000 bytes allowed.
Number	Any numeric type
Date/Time	Whatever is entered in this field will be in date/time format
Currency	Up to 15 digits to the left of the decimal point and 4 digits to the right
AutoNumber	Cannot be updated – auto assigned by MS Access
Yes/No	Only Yes and No will be allowed in this field
Ole Object	An embedded object such as a picture
Hyperlink	A link to another document, table, URL, etc.
Lookup Wizard...	Starts the wizard for defining fields which have their values in another table

NOTE: Any field which has a text or memo data type will be defaulted to LEFT alignment, and any field which has a number, date/time or yes/no data type will be defaulted to RIGHT alignment.

Field Properties

Field	Function
Field Size	Adjust the size of a text or number field
Decimal Places	The number of places to the right of the decimal point
Input Mask	Displays formatting characters for place holders so they do not have to be typed
Caption	A label used in forms and reports; the default is the field name
Default Value	Automatically entered in a new record
Validation Rule	Limit the data entered in a new record
Validation Text	The text displayed when incorrect data is entered into a Validation field
Required	Set the field so data must be entered
Allow Zero Length	Allow zero-length strings to be stored in a text or memo field
Indexed	Speed up searches on fields that are searched frequently

EXERCISE - CREATE FIELDS, DATA TYPES AND FIELD PROPERTIES

Create the following table.

Name the table **tblEmployees**. Use the primary key that Access automatically assigns.

Note: To move from field to field, use the <Tab> key.

<u>Fieldname</u>	<u>Data Type</u>
LastName	Text
FirstName	Text
PhoneNumber	Text
City	Text
NewEmployee?	Yes/No
DateEntered	Date/Time

CREATING AN INPUT MASK

An input mask allows you to control the format of the data that is entered. This ensures consistency and can save data entry time.

1 Open the table you just created in **Design View**.

2 Select the **PhoneNumber** field.

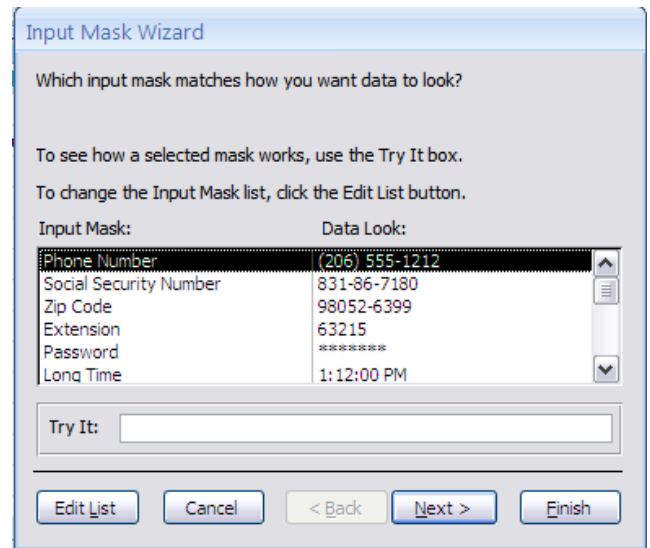
To select a field, click the row selector for the desired field

3 In Field Properties, click the ... button for **Input Mask**

4 Choose the **Phone Number** format. Use the **Try it:** box. Click **Next**.

5 Click **Next** and choose the option **With the symbols in the mask, like this:**


6 Click **Finish**.



RECORDS

Add Records to the Datasheet

1 Open the **tblEmployees** table in **Datasheet View**.

2 Click **New Record** button  or click in the first field of a new record.

3 Type the data you want, and then press **<Tab>** to go to the next field.

4 At the end of the record, press **<Tab>** to go to the next record.

Enter the following information

LastName:	Brown	Williams	Harper
FirstName	Percy	Randall	William
PhonenNumber:	916-555-9833	916-555-9877	916-555-2333
City:	Sacramento	Sacramento	Sacramento
New Employee?:	No	Yes	No
Date Entered:	6/30/04	5/1/07	1/08/90

Editing Data

1 Open the **tblEmployees** table in **Datasheet View**.

- 2 To edit data within a field, click in the field you want to edit.
- 3 To replace the entire value, move the pointer to the leftmost part of the field until it changes into the plus pointer, and then click.
- 4 Type the text you want to insert.

Deleting Data

- 1 Select the information to be deleted.
- 2 Press the **Delete Key**.
- 3 To delete an entire record. Click the record selector button and press the **delete key** or choose **Delete Record** from the **Home** tab.

SETTING A DEFAULT VALUE

You can set a default value for a field when there will be common values used. This helps to eliminate errors and save data entry time.


General	Lookup
Field Size	50
Format	
Input Mask	
Caption	
Default Value	Sacramento ...
Validation Rule	
Validation Text	
Required	Yes
Allow Zero Length	No
Indexed	No

- 1 Open the **tblEmployees** table in **Design View**.
- 2 Select the **City** field to set a default value for that field.
To select a field, click the row selector for the desired field.
- 3 In **Field Properties**, click in the **Default Value** text box.
- 4 Type **Sacramento**.

- 5 Go to **Datasheet View**. Enter a record with a Sacramento address and another with an Elk Grove address.

SETTING A PRIMARY KEY

Each table should have a primary key. The primary key will help you set up table relationships.

- 1 To set the primary key, select a field in **Design View** and click the **Primary Key** button  on the ribbon.
- 2 Multiple fields can combine to be the primary key.
- 3 Delete the **StaffID** field. Select the **FirstName** field, press and hold the **control key** on your keyboard while selecting the **LastName** field.

MODIFYING THE DATASHEET

Columns and Rows

- **Change row height**
Position on the lower border of any record selector on the far left and drag the border down or up.
- **Change column width**
Position on the right border of the field selector (the column title area) and double click for auto fit or drag to the selected size.
- **Hide a column**
Position on the field selector right border and drag to the left border. Right-click a column header and choose **unhide columns** to make it reappear.

The **More** button on the **Home tab** also has options to change row and column layouts and display hidden columns.