

Access Table Design

Computer Training Solutions



1. Overview of Access

- ⊕ Introduction to Database Concepts and Terminology
- ⊕ Database Planning and Design
- ⊕ Examine the Access Environment
- ⊕ Examine the Access Objects

2. Creating a Table

- ⊕ Examine a Table
- ⊕ Create a Table Using the Table Wizard
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- ⊕ Input Validation
- ⊕ Lookup Fields

3. Relationships

- ⊕ Relationships Overview
- ⊕ Create Relationships
- ⊕ Print Relationships
- ⊕

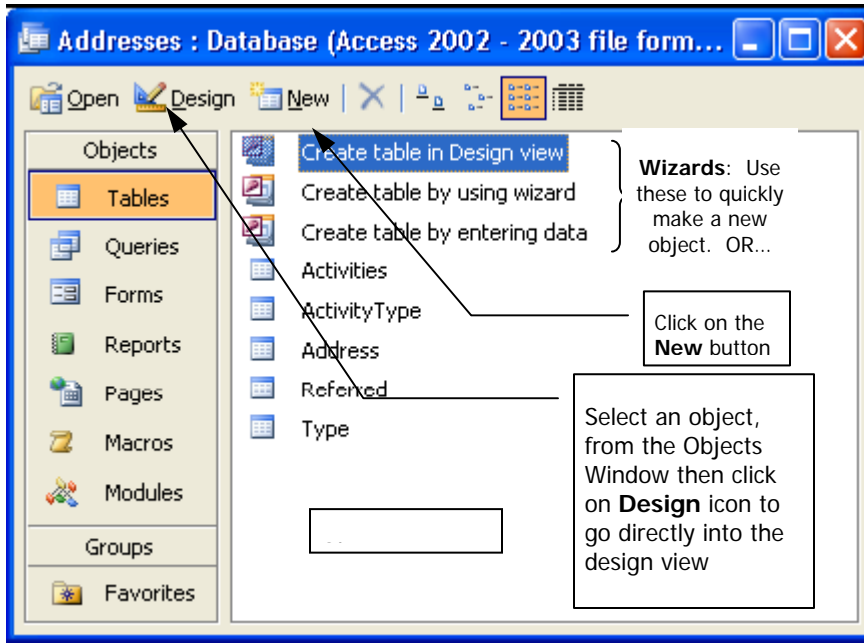
IMPORTANT NOTE:

Individuals may develop Access databases ONLY if they are on a stand-alone computer, will not be shared with other individuals, used for statistical purposes only and do NOT contain patient information. Access databases developed internally by individuals other than by Manitoba eHealth Application Developers will NOT be supported.

Manitoba eHealth Computer Training Solutions can offer training in Access only, not support.

For more information on having a database developed for your needs, please contact the Service Desk at 940-8500.

The Database Window



Objects Bar: Select the type of object you want to view.

Wizards: Use these to quickly make a new object. OR...

Click on the **New** button

Select an object, from the Objects Window then click on **Design** icon to go directly into the design view

Database Objects

- Tables** **Tables** store related data in rows (records) and columns (fields).
- Queries** **Queries** view, filter, calculate, change, sort and examine the data stored in tables.
- Forms** **Forms** are custom screens that provide an easy way to enter and maintain data in a table or query.
- Reports** **Reports** present data from a table or query in a printed format – no data entry can be done in this view.
- Pages** **Pages** are forms saved as Web pages so that the database can be accessed over the Internet.
- Macros** **Macros** automate common tasks and can be invoked by clicking a button or pressing a shortcut key.

Query Criteria Examples

Type This Criteria	Records Displayed If The Value In The Field
Canada	Is equal to Canada
Between 1/1/2006 and 3/31/2006	Is between (and including) the dates of January 1, 2006 and March 31, 2006
S*	Starts with the letter "S"
*S	Ends with the letter "S"
S	Contains the letter "S"
>20000	Is greater than 20,000
<=2/15/2006	Is less than or equal to the date of February 15, 2006
Not Canada	Does not equal Canada
Is Null	Is blank
Is Not Null	Is not blank
>=now()	Is greater than or equal to the current date
<>MB	Is equal to all other provinces except not Manitoba
Not a*	Does not begin with the letter "A"
>=[AmountOwed]	Is greater than or equal to the entry you type for the AmountOwed field when prompted by Access

Modules **Modules** are groups of procedures that are written in Visual Basic programming language and used to automate tasks.

Keyboard Shortcuts

Open a Database	CTRL + O
Close a Database	CTRL + W
Print Current View	CTRL + P
New Record	CTRL + +
Delete Record	CTRL + -
Cancel Changes	ESC
Insert Date	CTRL + ;
Help	F1
Copy Value From Same Field In Previous Record	CTRL + "
Switch between design window panes	F6



NOTE: Criteria is NOT case-sensitive


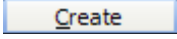
Table Field Data Types

Text (Default) Stores text or numbers. Maximum 255. Default 50	Memo Stores up to 64,000 characters (text or numbers)
Number Stores numbers that can be used in calculations	Date/Time Stores dates, times, or both
Currency Stores numbers that represent money	AutoNumber Automatically fills in a unique number for each record
Yes/No Stores only one of two values – yes or no	OLE Object Stores objects such as graphics, charts, documents
Hyperlink Stores clickable links to Web pages on the Internet or files on a network.	Lookup Wizard Helps you create a field whose values are selected from another table, query, or list of values

What is a Relational Database?

It is a type of database in which you group data into one or more distinct tables that can be related to one another by using fields common to each related table.

Creating a New Database



1. Click on **File** from the Menu Bar, and then choose **New**.
2. From the **Task Pane** on the right side of the screen, click on the  **Blank database...** icon.
3. Type a file name, and then click the  button.

Object Naming Conventions



For ease of identifying objects, the following “tags” can be used to precede the object names:

Tag	Object	Example
tbl	Tables	tblSuppliers
qsel	Select Queries	qselLocalSuppliers
frm	Forms	frmSuppliers
rpt	Reports	rptSupplierInformation
mcr	Macros	mcrOpenSuppliersForm
pge	Pages	pgeSupplierInformation

Creating a New Table Using a Wizard

1. Click  **Tables** icon in the Objects bar
2. Double-click the  **Create table by using wizard** icon.
3. Follow the onscreen instructions

Creating a New Table in Design View


1. Click  **Tables** icon in the Objects bar and double-click the  **Create table in Design view** icon.
2. Type a field name in the **Field Name** column.
3. Press Tab, click the **Data Type** drop-down arrow and select the data type for the field.
4. Repeat steps 2 & 3 as necessary to add new fields to the table.
5. Choose one of the fields to be the Primary Key (see heading “Deciding Which Field To Use As A Primary Key”).
6. Click the **Save** button on the Standard toolbar.
7. Enter a table name using the proper naming convention
8. Click **OK**.

Deciding Which Field To Use As A Primary Key

A Primary Key is a unique identifier for each record. It cannot be duplicated or left blank. There are three types of primary keys:

Type of Primary Key	Description
Auto-Number	Used to automatically enter a sequential number when a new record is added to the table.
Single-field	Set for fields that contain unique values, such as Social Insurance Number, Employee Numbers.
Multiple-field	Used in situations when one field is not unique, but two fields in combination contain unique values.

A Rule of Thumb to remember is that every field in a table must relate to the Primary Key, the whole Primary Key and nothing but the Primary Key.

To make a field the Primary Key, be sure to be in Table Design View, and then click on the Primary Key Icon .

Field Naming Conventions

For ease of identifying fields, the following “tags” can be used to precede the field names:

Tag	Field Type	Example
str	Text	strFirstName
mem	Memo	memSupplierNotes
dtm	Date/Time	dtmOrderDate
cur	Currency	curBillingAmount
lng	AutoNumber	lngSupplierID
ysn	Yes/No	ysnHealthInsurance
byt	Number	bytNumberOfChildren
int	Number	intWhiteCellCount
lng	Number	lngWardID
sng	Number	sngBloodPressure
dbl	Number	dblPercentage

NOTE: AutoNumber field types can ONLY be linked to LongInteger field types when related in another table.

Modifying The Design of a Table

Table Modification	How You Do it
Rename a field	Click on the field name and type a new name.
Delete a field	Click anywhere in the field row, right-click and choose Delete Rows
Add a Field	Select the field exactly where you want the new one to appear, then click the Insert Rows icon

Table Design WARNINGS

Although you should modify the design of a table to increase its usefulness, some pitfalls should be considered such as:

- When you delete a field, you also delete any data that the field contains
- When you rename or delete a field from a table design, you must also make the same change in any queries, forms or reports that use that field. If you don't, queries that use the field will not work; forms and reports that contain the field will display an error message.
- When you resize a field to a smaller size or type, you might truncate any data that does not fit into a smaller field

TIP: Always make a backup copy of the Table before making changes to the design of an Object. See the heading “Copying an Object” below.

Switching Views



Click the View button (the first icon) on the toolbar. This will toggle the view between Design View and the Object View. (Datasheet View, Query Dynaset View, Form View, Report Preview)

Copying an Object

1. Select the object.
2. Right-Click and choose **Copy**.
3. Right-Click an open white spot in the Object window.
4. Select **Paste**.
5. Give the Object a name.
6. Click on **OK**.

Filtering by Selection

To filter out specific data in either a Table or a Query:

1. Click in the cell containing data to use for the filter criteria.
2. Click the **Filter By Selection** button.



Removing a Filter

Click the **Remove Filter** button.



Exercise 1

1. If you had a field containing the following information which data type would you assign to the fields?
 (Use the proper tag to identify the data type.)

Data	Data Type	Data	Data Type
SIN Number		Customer Name	
Order Date		Product Price	
Quantity Amounts		Phone Number	
A field tracking if the employee has attended orientation training			

2. Open the database named **Newprac**.
3. Use Design view to create a table with the following fields based on the information provided. Determine what name you would give the field, what data type you would use and what captions you might use. Be sure to use the proper naming conventions for the fields.

Field Description	Field Size
Employee ID's (we want the numbers to be generated automatically)	not required
Equipment – to track the name of the computer at our desk	25
Serial# - of the computer	15
Purchase Date	--
Purchase Price	--
Warranty – a field to indicate whether the computer is still under warranty or not	--
System Information – a field to contain lots of data about the computer	> 255 characters

4. Select one field as the Primary Key.
5. Save the table as MyInventory using the proper tag to identify this object as a table.
6. Compare your table with the answer key on the next page. How did you do? Make any necessary changes and save the table again.
7. Close the table.
8. Close the database.

Exercise 1 Continued

Answer Key:

Data	Data Type	Data	Data Type
SIN Number	str (Text)	Customer Name	str (Text)
Order Date	dtm (Date/Time)	Product Price	cur (Currency)
Quantity Amounts	byt (Number)	Phone Number	str (Text)
A field tracking if the employee has attended orientation training			ysn (Yes/No)

tblMyInventory : Table	
Field Name	Data Type
lngEmpID	AutoNumber
strEquipment	Text
strSerial#	Text
dtmPurchaseDate	Date/Time
curPurchasePrice	Currency
ysnWarranty	Yes/No
memSysInfo	Memo

Captions should be created for each field.

The Primary Key would be set on the lngEmpID field.