Microsoft Access 2007

Kasun

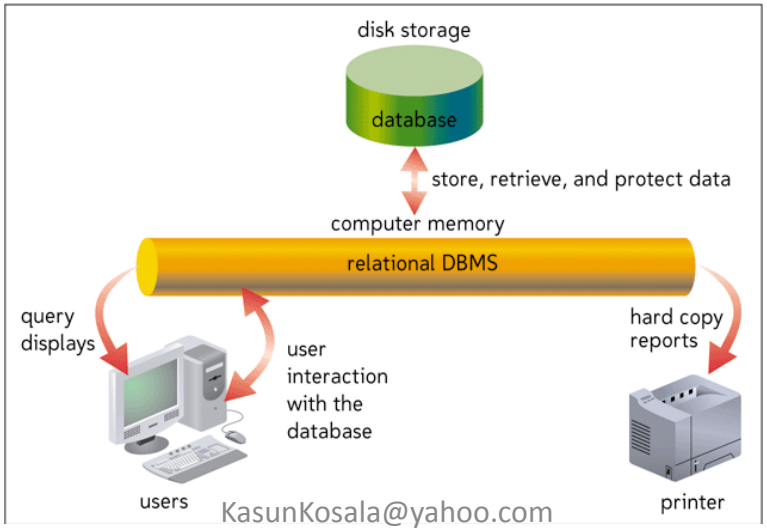
What is Access?

- Microsoft Access is a relational database management system (RDBMS).

- At the most basic level, a DBMS is a program that facilitates the storage and retrieval of structured information on a computer's hard drive.

Relational Database Management Systems

- A **database management system (DBMS)** is a software program that lets you create databases and then manipulate data in them
- In a **relational database management system**, data is organized as a collection of tables

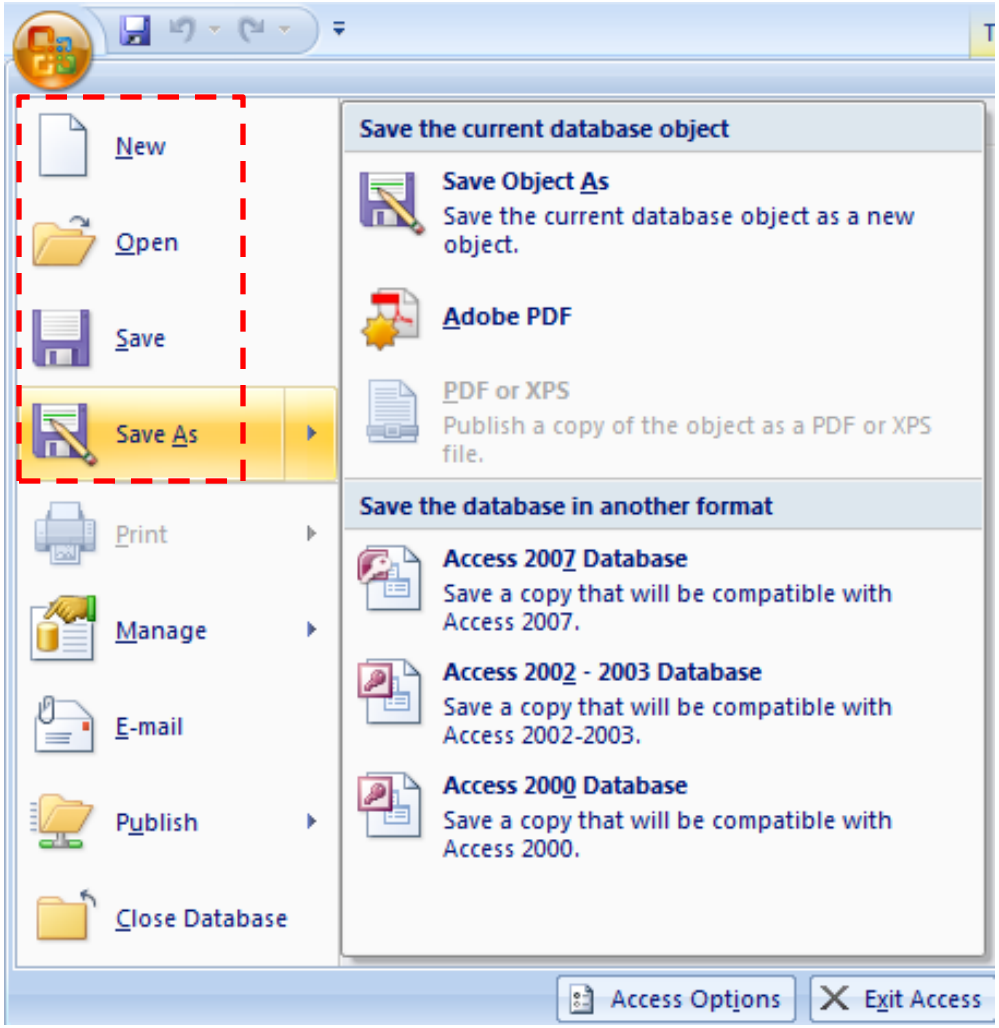


What it has?

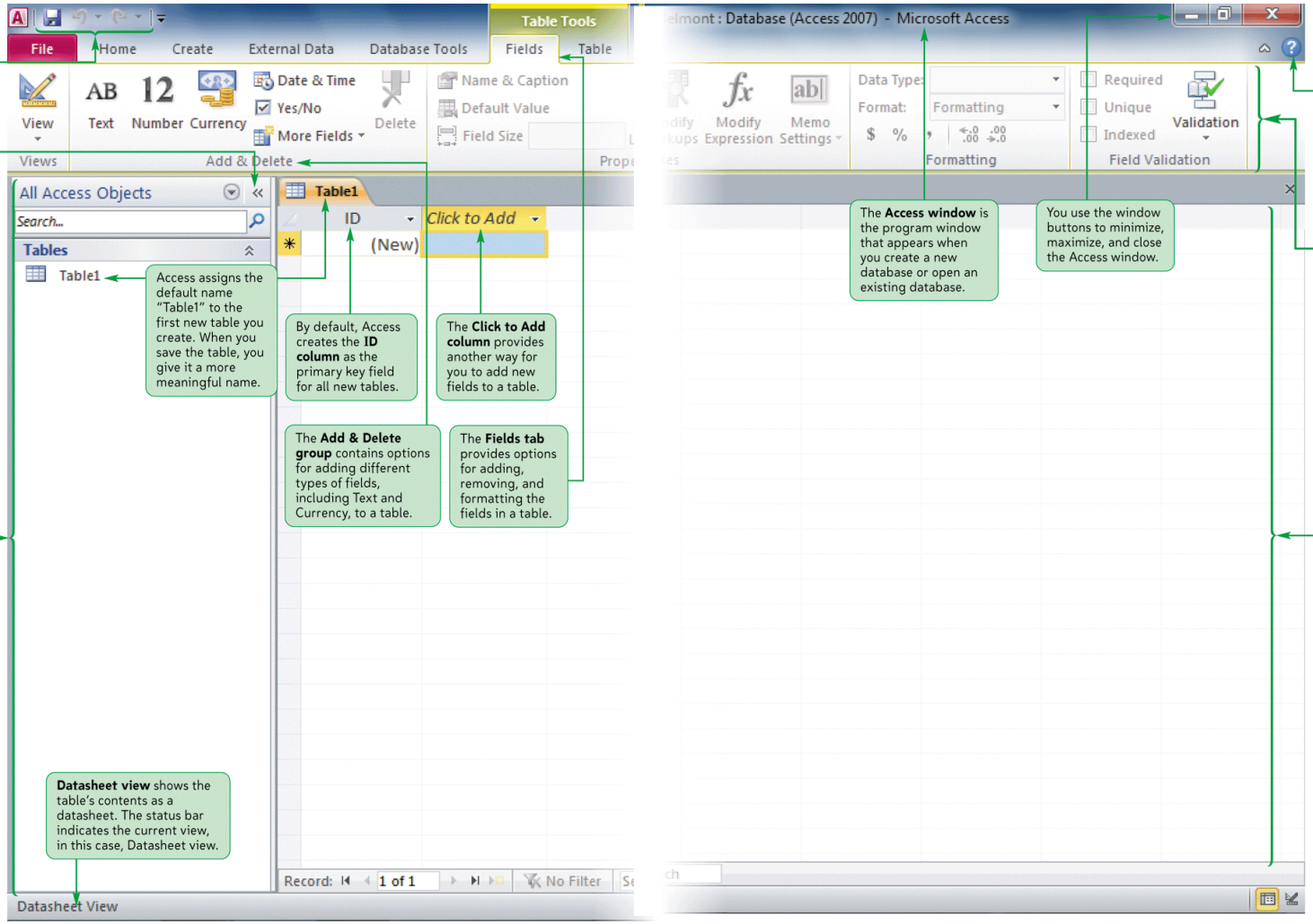
- A **rapid application development (RAD) environment** complete with visual form and report development tools.
- Various **wizards and builders to make development** easier.
- A sprinkling of **objected-oriented extensions.**
- A full-featured **procedural programming language—** essentially a subset of Visual Basic.
- A simplified procedural **macro language unique** to Access.

Getting Started

- Start MS Access.
- Create new Database.
- Save Database.
- Open previously saved Database.
- Adding passwords to Databases.



The Access Window



The Quick Access Toolbar provides one-click access to commonly used commands, such as Save.

The **Shutter Bar Open/Close Button** allows you to close and open the Navigation Pane; you might want to close the pane so that you have more room on the screen to view the object's contents.

The **Navigation Pane** is the area that lists all the objects (tables, reports, and so on) in the database, and it is the main control center for opening and working with database objects.

Access assigns the default name "Table1" to the first new table you create. When you save the table, you give it a more meaningful name.

By default, Access creates the **ID column** as the primary key field for all new tables.

The **Click to Add column** provides another way for you to add new fields to a table.

The **Add & Delete group** contains options for adding different types of fields, including Text and Currency, to a table.

The **Fields tab** provides options for adding, removing, and formatting the fields in a table.

Datasheet view shows the table's contents as a datasheet. The status bar indicates the current view, in this case, Datasheet view.

The **Access window** is the program window that appears when you create a new database or open an existing database.

You use the window buttons to minimize, maximize, and close the Access window.

The Microsoft Access Help button opens the Help window, where you can find information about Access commands and features as well as instructions for using them.

The Ribbon provides the main Access commands organized by task into tabs and groups.

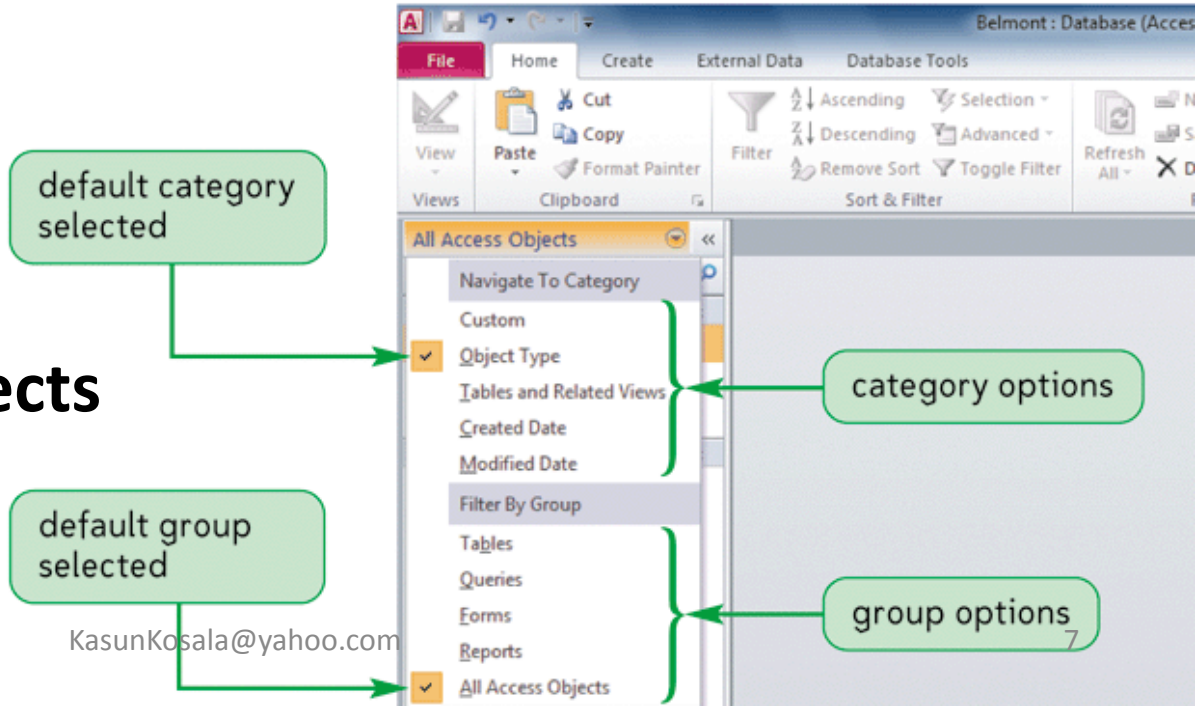
A **datasheet** displays the table's contents in rows and columns, similar to a table that you create in a Word document or an Excel spreadsheet. Each row will be a separate record in the table, and each column will contain the field values for one field in the table.

Working with the Navigation Pane

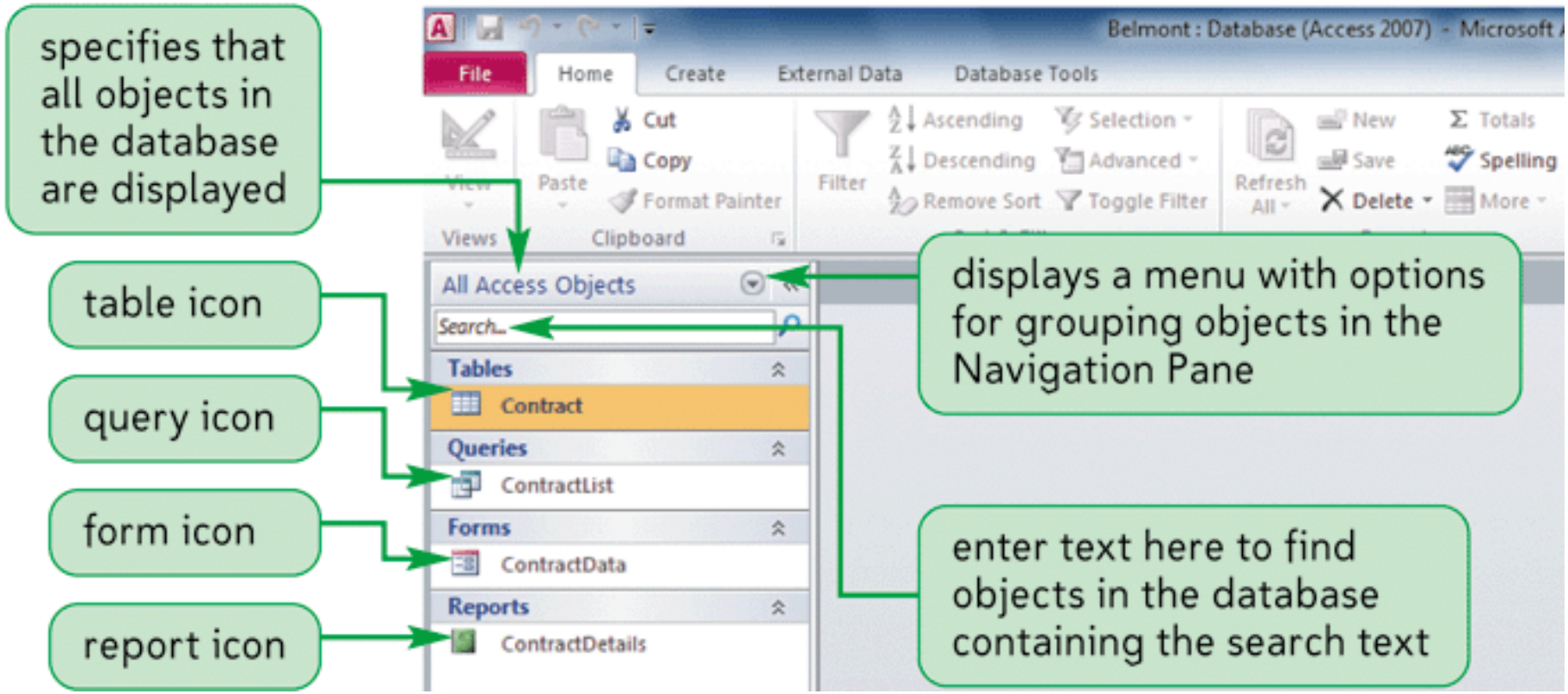
- The Navigation Pane is the main area for working with the objects in a database
- The Navigation Pane divides database objects into categories, and each category contains groups

✓**Object Type**

✓**All Access Objects**

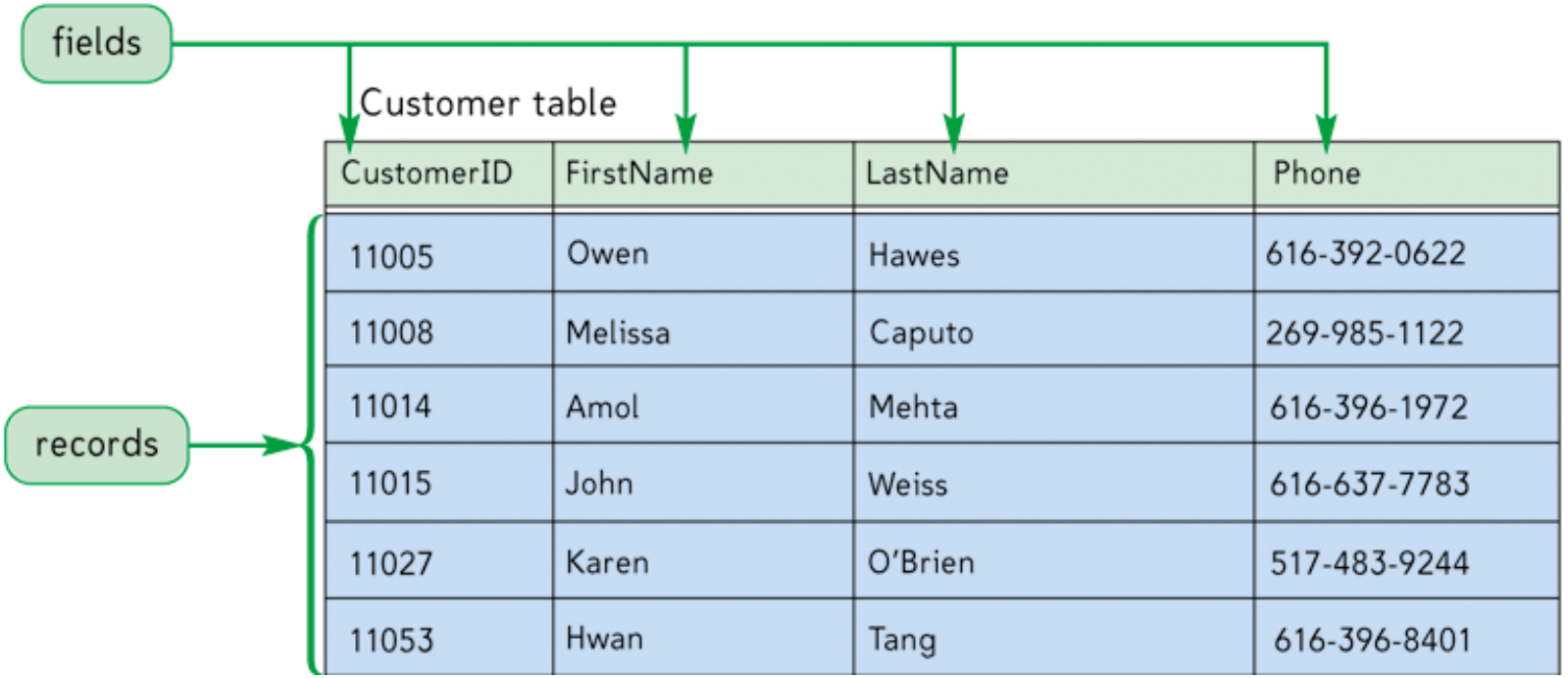


Viewing Objects in the Navigation Pane



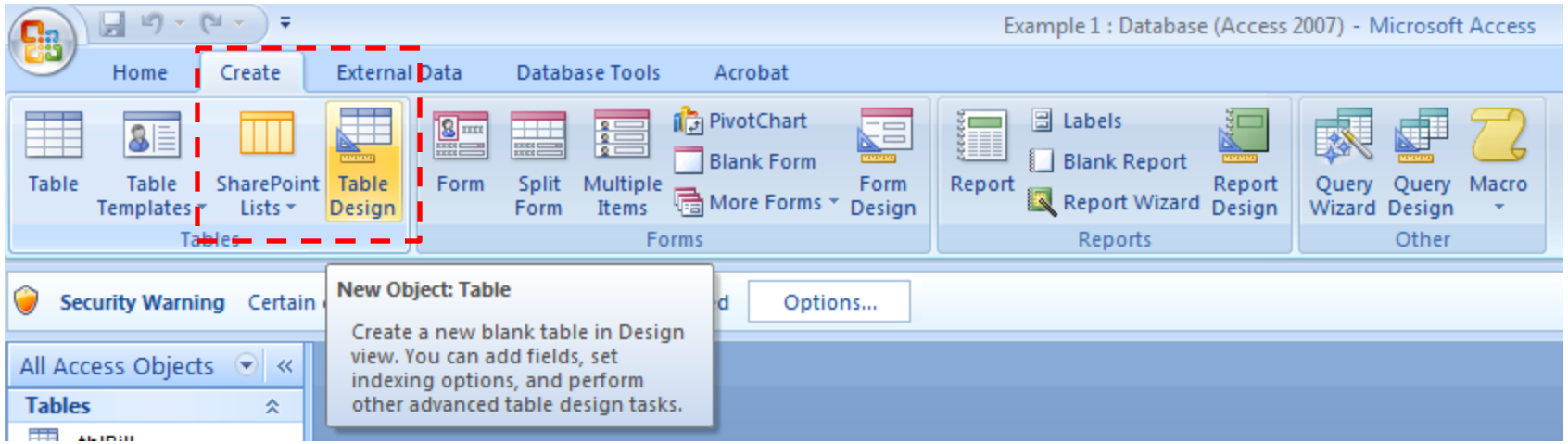
Tables

- Organizing data using Tables



Create Tables Using Design View

- Create Tab in the Ribbon → Table Design

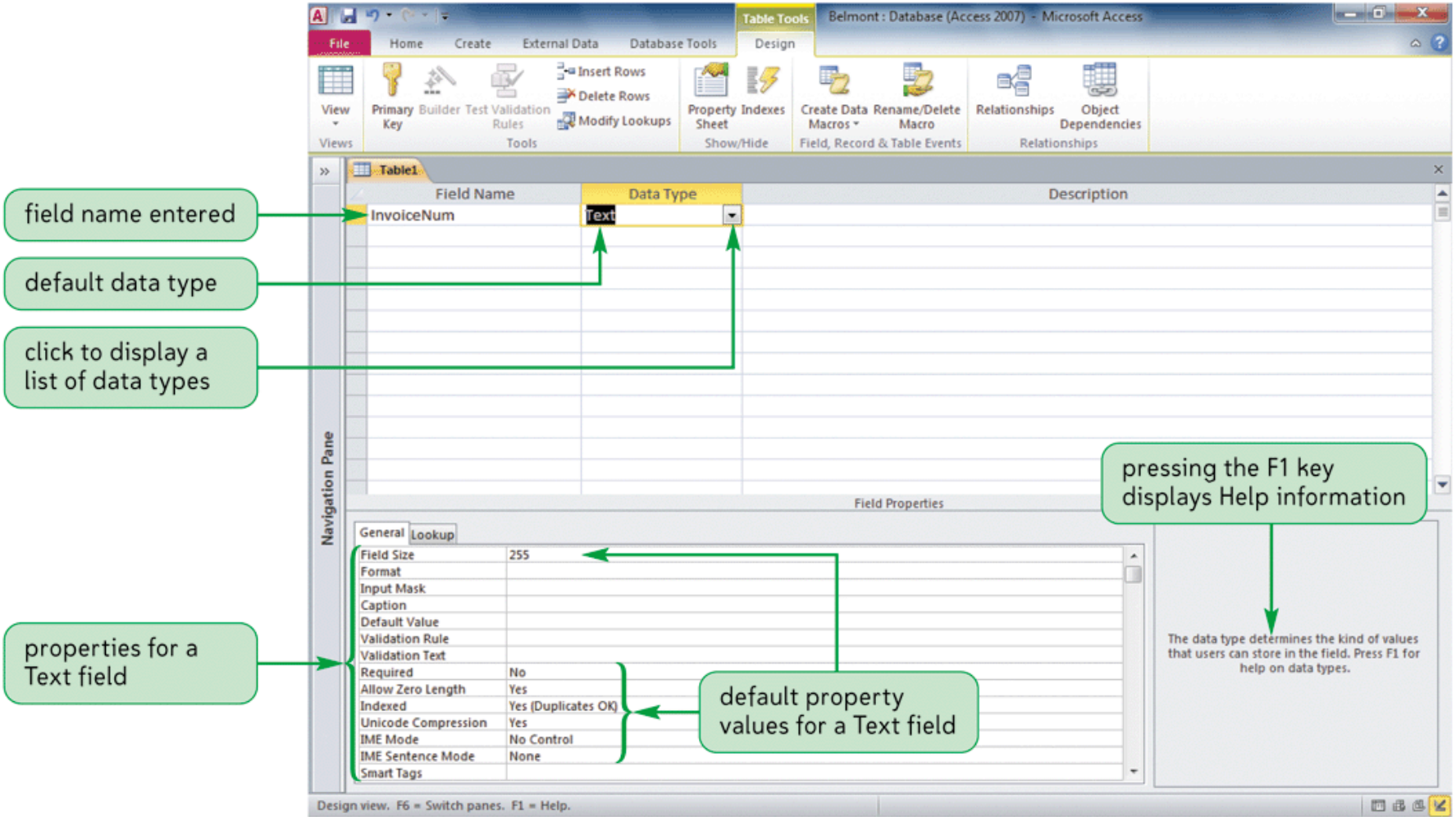


Defining a Field in Design View

- In the Field Name box, type the name for the field, and then press the Tab key
- Accept the default Text data type, or click the arrow and select a different data type for the field. Press the Tab key
- Enter an optional description for the field, if necessary
- Use the Field Properties pane to type or select other field properties, as appropriate

Defining a Field in Design View

Figure 2-10 Table window after entering the first field name



Field Names, Data Types & Primary key

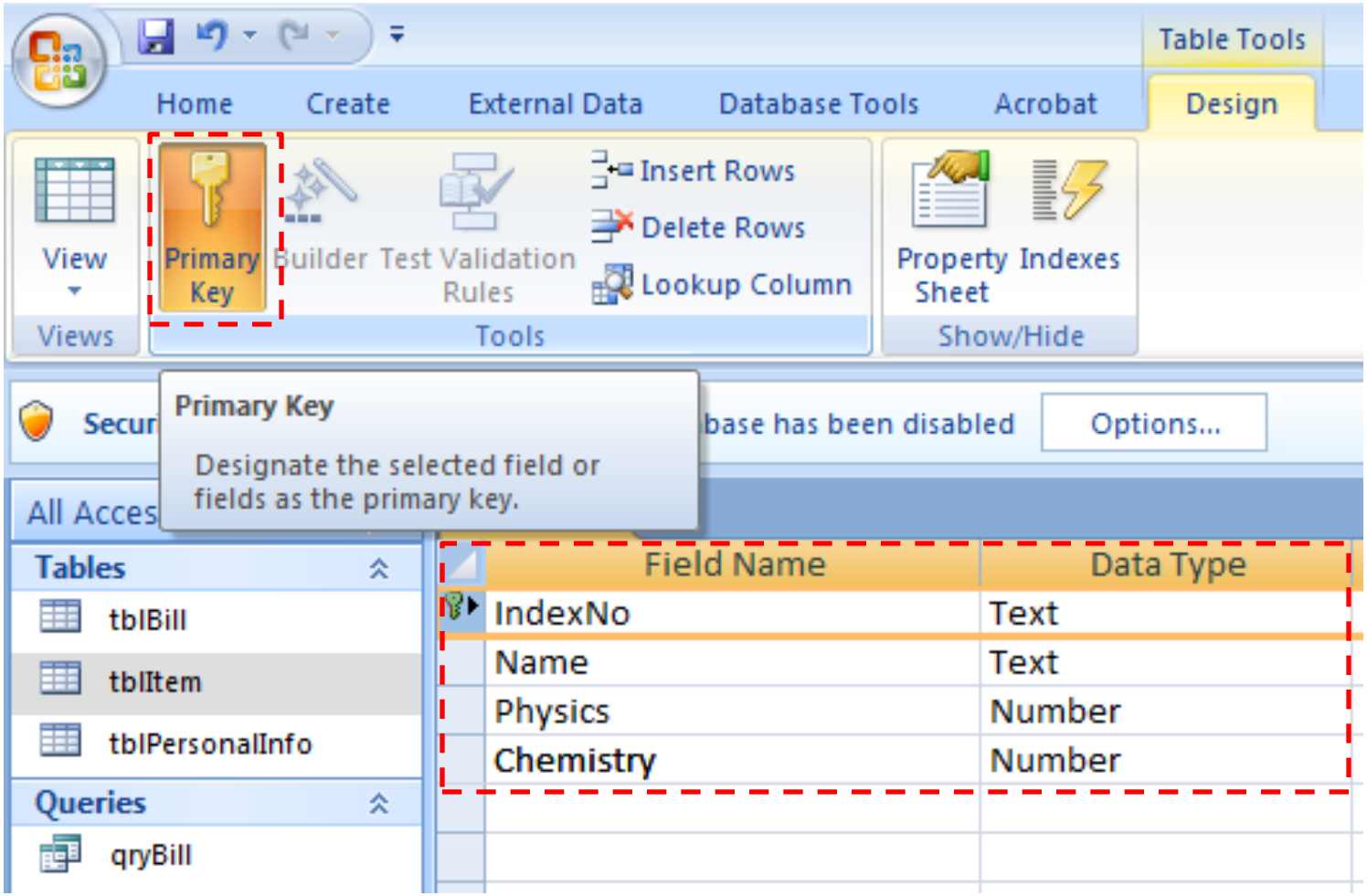
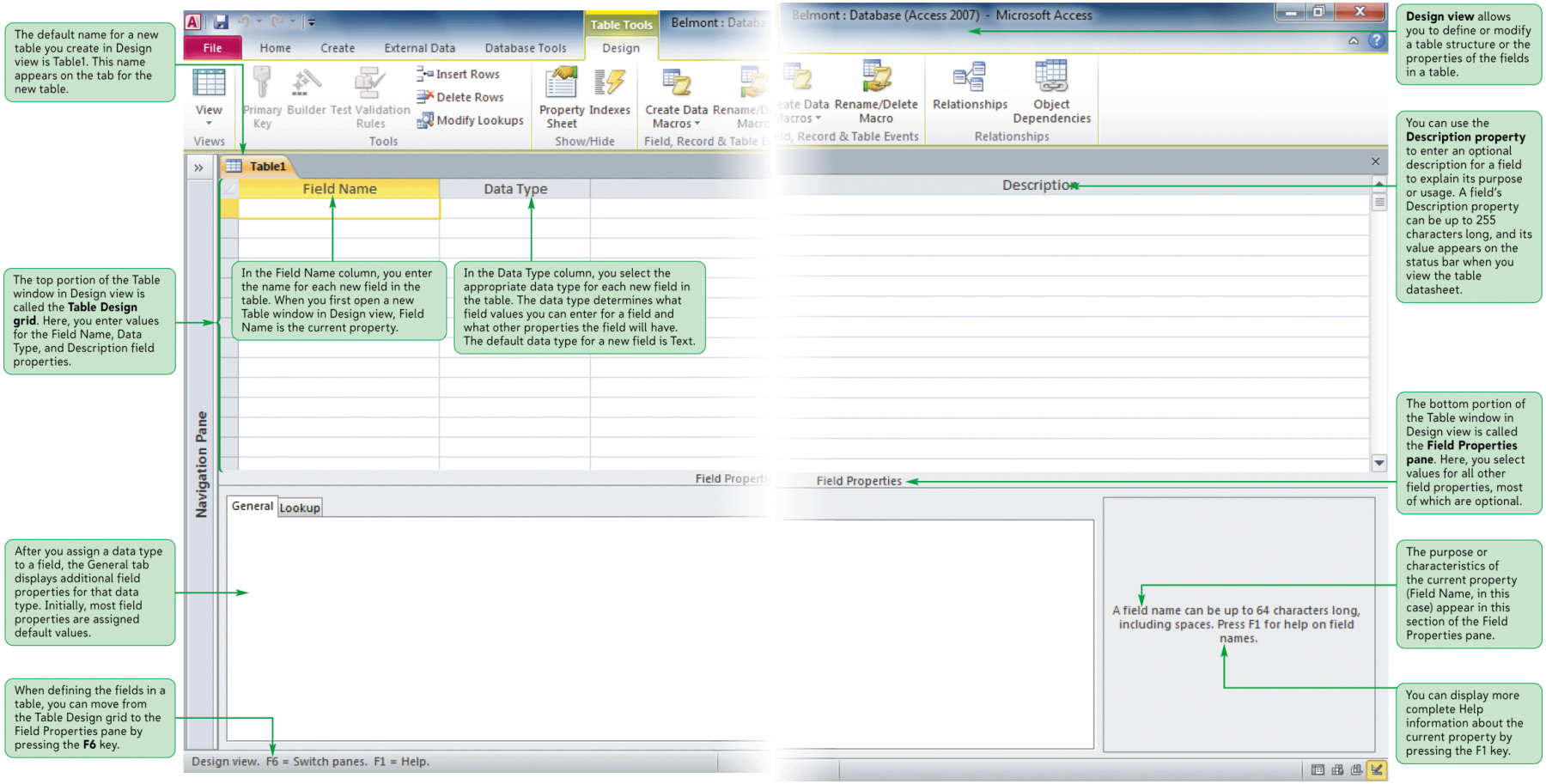


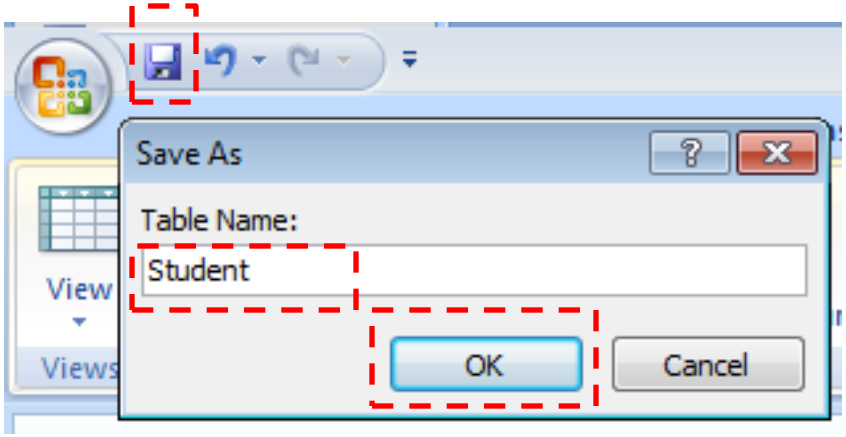
Table Window in Design View

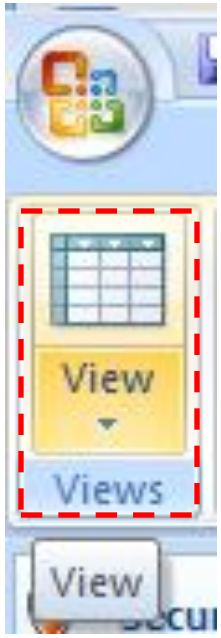


Save, Open & Redesign

- Save (or ^S) →

Type a Name → OK.

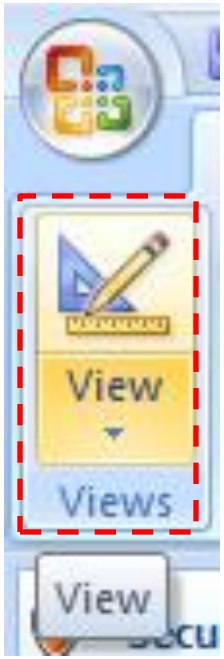




- Opening a Table

  ←Datasheet view Tool

- Changing the Structure →



Navigating a Datasheet

- The **navigation buttons** provide another way to move vertically through the records

Navigation Button	Record Selected	Navigation Button	Record Selected
	First record		Last record
	Previous record		New (blank) record
	Next record		

Find & Replace

Student

IndexNo	Name	Physics	Chemistry	Add New Field
ICT13001	Perera	78	69	
ICT13002	Silva	57	64	
*				

Find and Replace

Find | Replace

Find What: ICT13004

Find Next

Cancel

Look In: Student

Match: Whole Field

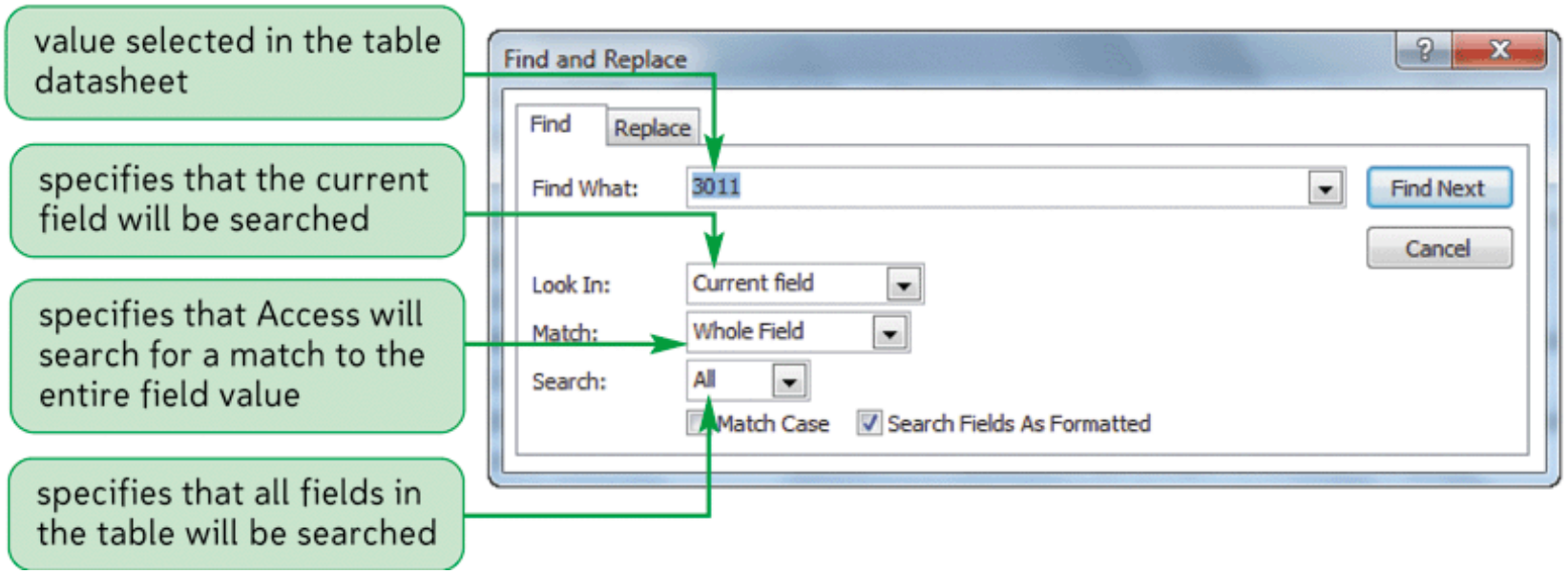
Search: All

Match Case Search Fields As Formatted

Finding Data in a Table

- The **Find command** allows you to search a table or query datasheet, or a form, to locate a specific field value or part of a field value

ure 3-3 Find and Replace dialog box

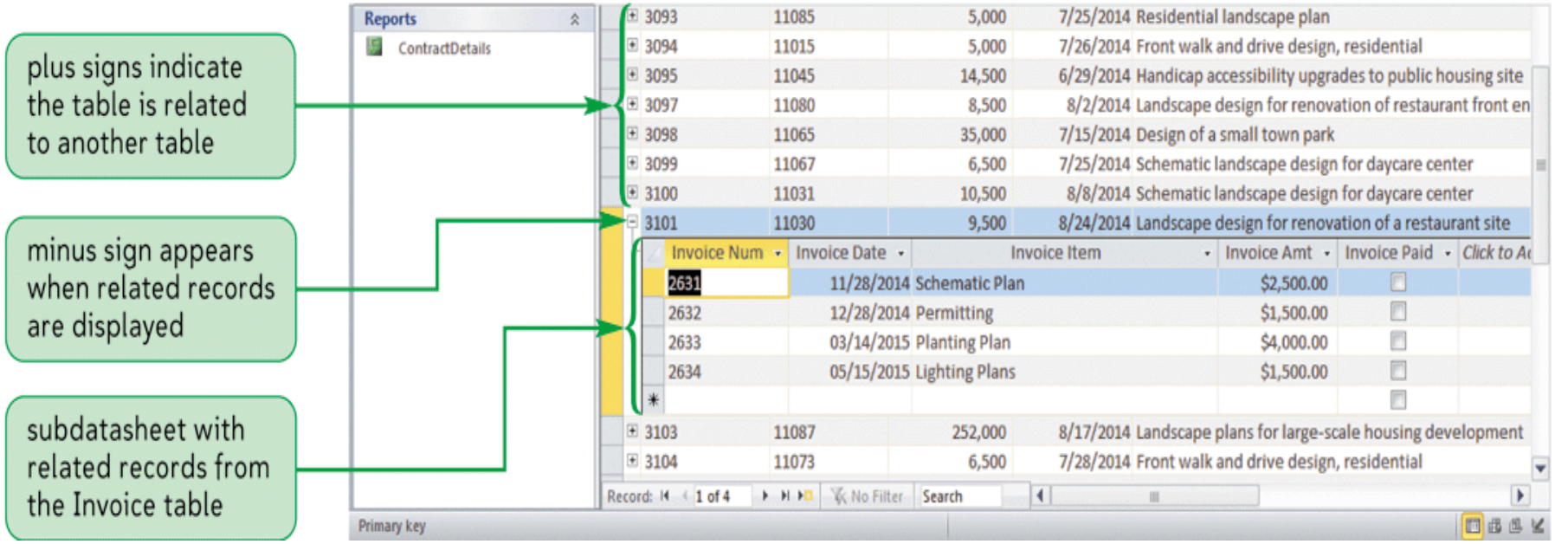


Deleting a Record

- With the table open in Datasheet view, click the row selector for the record you want to delete
- In the Records group on the Home tab, click the Delete button (or right-click the row selector for the record, and then click Delete Record on the shortcut menu)
- In the dialog box asking you to confirm the deletion, click the Yes button

Deleting a Record

Figure 3-4 Related records from the Invoice table in the subdatasheet



Guidelines for Designing Databases

- Identify all the fields needed to produce the required information
- Organize each piece of data into its smallest useful part
- Group related fields into tables
- Determine each table's primary key
- Include a common field in related tables
- Avoid data redundancy
- Determine the properties of each field

Guidelines for Setting Field Properties

- Choose an appropriate data type

Data Type	Description	Field Size
Text	Allows field values containing letters, digits, spaces, and special characters. Use for names, addresses, descriptions, and fields containing digits that are not used in calculations.	0 to 255 characters; default is 255
Memo	Allows field values containing letters, digits, spaces, and special characters. Use for long comments and explanations.	1 to 65,535 characters; exact size is determined by entry
Number	Allows positive and negative numbers as field values. Numbers can contain digits, a decimal point, commas, a plus sign, and a minus sign. Use for fields that will be used in calculations, except those involving money.	1 to 15 digits
Date/Time	Allows field values containing valid dates and times from January 1, 100 to December 31, 9999. Dates can be entered in month/day/year format, several other date formats, or a variety of time formats, such as 10:35 PM. You can perform calculations on dates and times, and you can sort them. For example, you can determine the number of days between two dates.	8 bytes
Currency	Allows field values similar to those for the Number data type, but is used for storing monetary values. Unlike calculations with Number data type decimal values, calculations performed with the Currency data type are not subject to round-off error.	Accurate to 15 digits on the left side of the decimal point and to 4 digits on the right side
AutoNumber	Consists of integer values created automatically by Access each time you create a new record. You can specify sequential numbering or random numbering, which guarantees a unique field value, so that such a field can serve as a table's primary key.	9 digits
Yes/No	Limits field values to yes and no, on and off, or true and false. Use for fields that indicate the presence or absence of a condition, such as whether an order has been filled or whether an invoice has been paid.	1 character
Hyperlink	Consists of text used as a hyperlink address, which can have up to four parts: the text that appears in a field or control; the path to a file or page; a location within the file or page; and text displayed as a ScreenTip.	Up to 65,535 characters total for the four parts of the Hyperlink data type

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Guidelines for Setting Field Properties

- The **Field Size property** defines a field value's maximum storage size for Text, Number, and AutoNumber fields only
  - ✓Byte
  - ✓Integer
  - ✓Long Integer
  - ✓Single
  - ✓Double
  - ✓Replication ID
  - ✓Decimal

Changing the Format of a Field in Datasheet View

Figure 2-5 Contract table datasheet

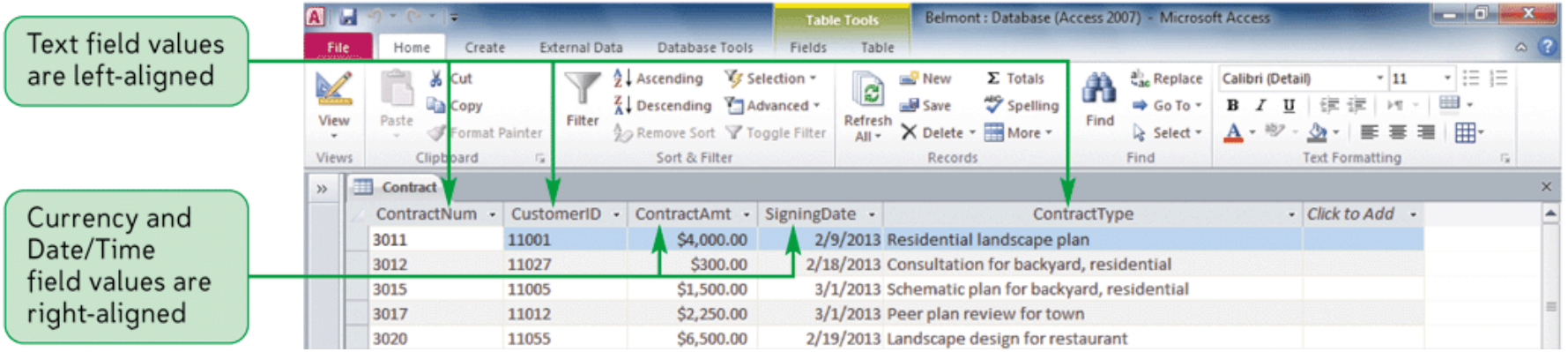
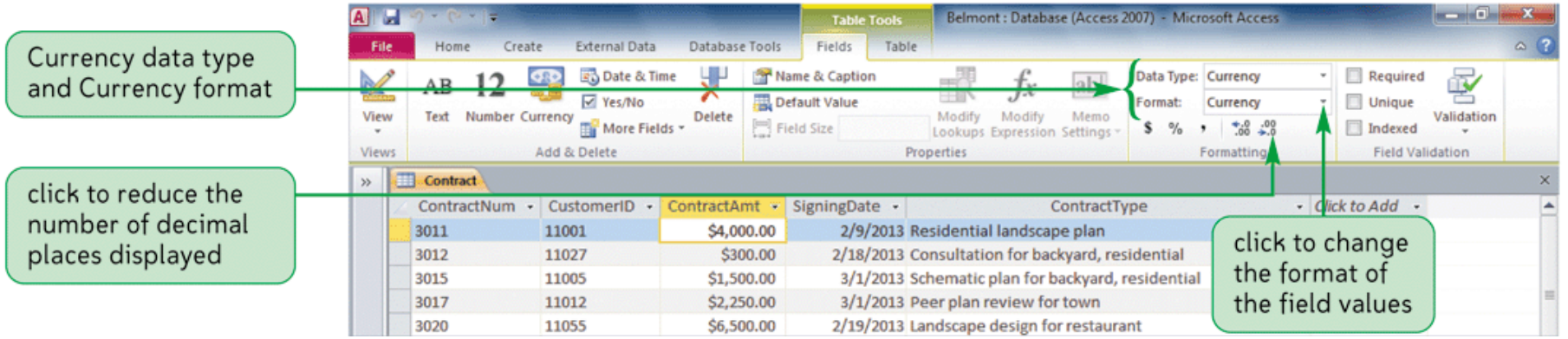


Figure 2-6 Format of the ContractAmt field



Creating a Table in Design View

- Creating a table in Design view involves entering the field names and defining the properties for the fields, specifying the primary key, and saving the table structure

Design for the Invoice table

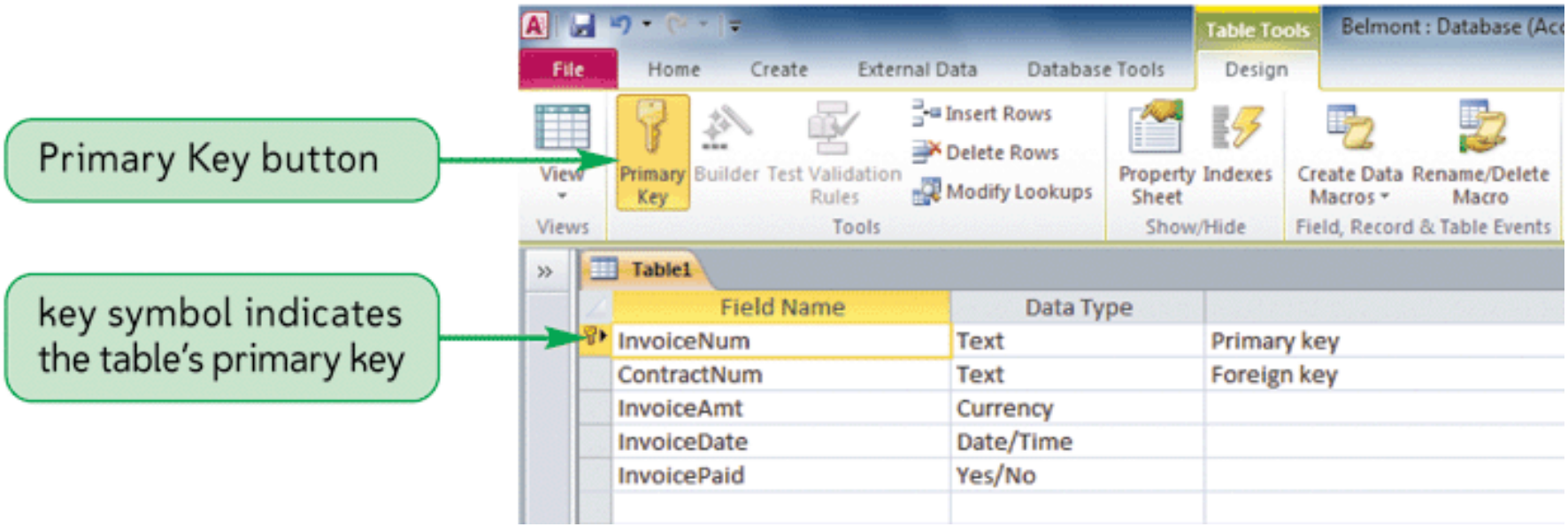
Field Name	Data Type	Field Size	Description	Other
InvoiceNum	Text	4	Primary key	Caption = Invoice Num
ContractNum	Text	4	Foreign key	Caption = Contract Num
InvoiceAmt	Currency			Format = Currency
				Decimal Places = 2
				Caption = Invoice Amt
InvoiceDate	Date/Time			Format = mm/dd/yyyy
				Caption = Invoice Date
InvoicePaid	Yes/No			Caption = Invoice Paid
				Format = Yes/No

Specifying the Primary Key in Design View

- Display the table in Design view
- Click in the row for the field you've chosen to be the primary key to make it the active field. If the primary key will consist of two or more fields, click the row selector for the first field, press and hold down the Ctrl key, and then click the row selector for each additional primary key field
- In the Tools group on the Design tab, click the Primary Key button

Specifying the Primary Key in Design View

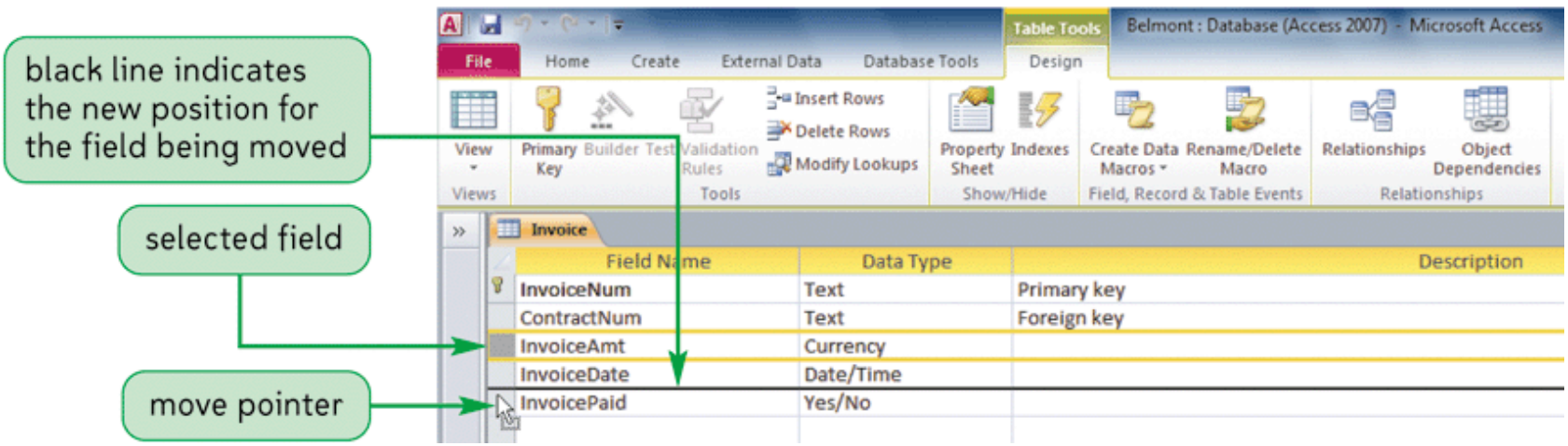
Figure 2-16 InvoiceNum field selected as the primary key



Moving a Field

- To move a field, you use the mouse to drag it to a new location in the Table window in the Table Design grid

Figure 2-17 Moving the InvoiceAmt field in the table structure

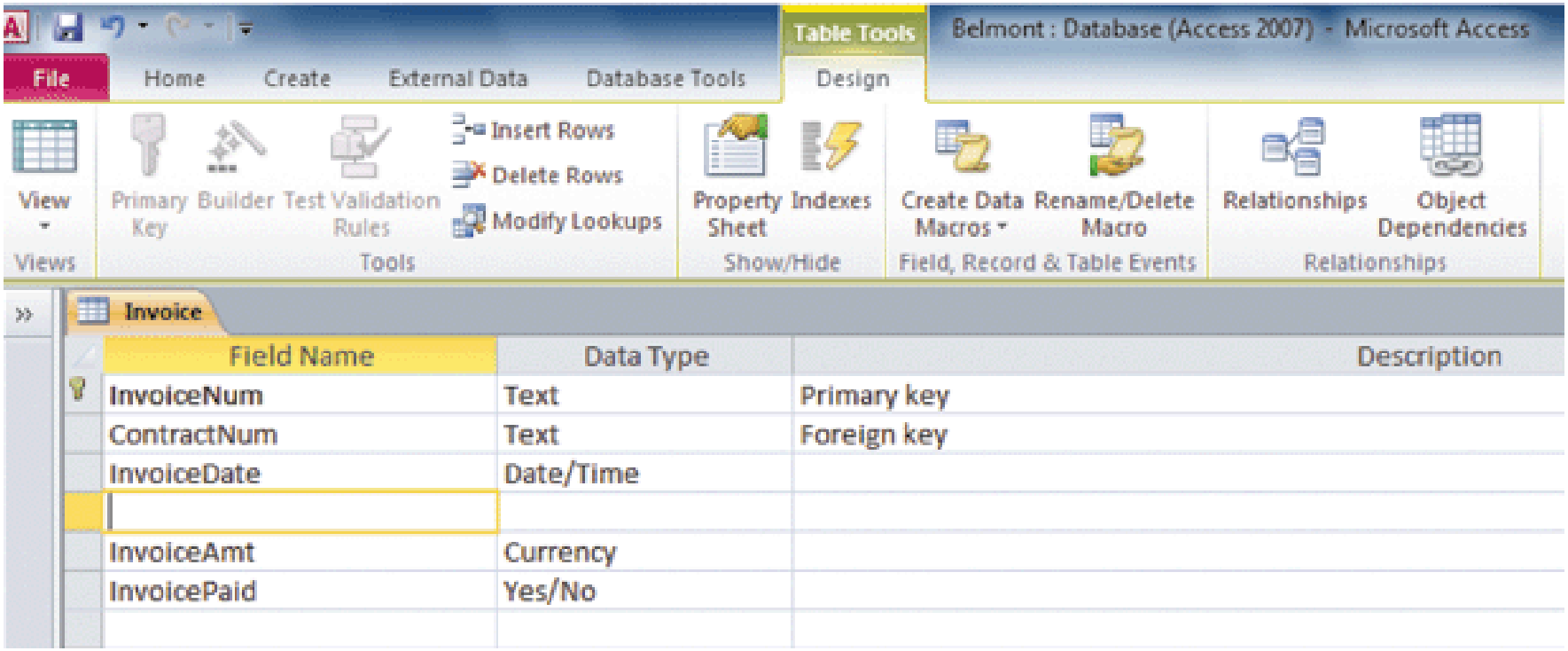


Adding a Field Between Two Existing Fields

- In the Table window in Design view, select the row below where you want the new field to be inserted
- In the Tools group on the Design tab, click the Insert Rows button
- Define the new field by entering the field name, data type, optional description, and any property specifications

Adding a Field Between Two Existing Fields

Table structure after inserting a row



Field Name	Data Type	Description
InvoiceNum	Text	Primary key
ContractNum	Text	Foreign key
InvoiceDate	Date/Time	
InvoiceAmt	Currency	
InvoicePaid	Yes/No	

Deleting a Field from a Table Structure

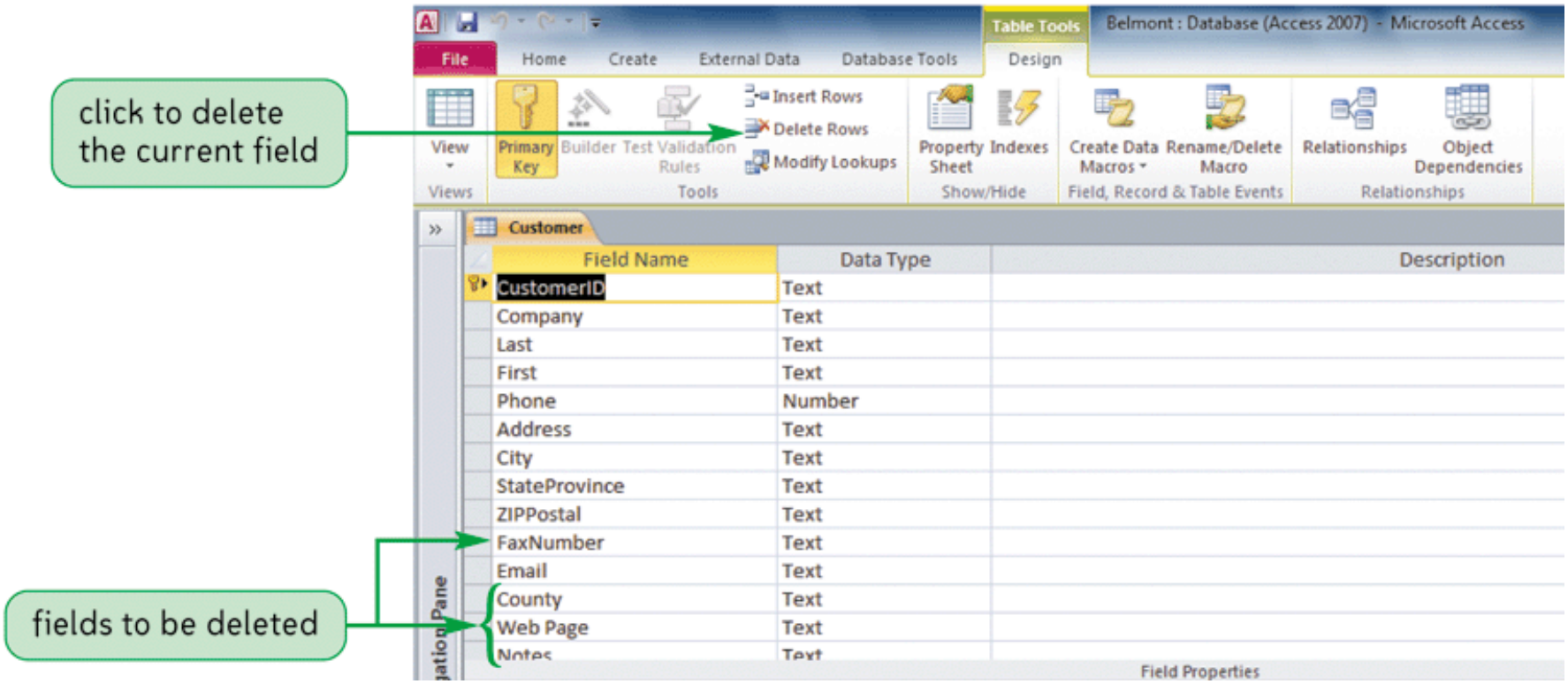
- In Datasheet view, click the column heading for the field you want to delete
- In the Add & Delete group on the Fields tab, click the Delete button

or

- In Design view, click the Field Name box for the field you want to delete
- In the Tools group on the Design tab, click the Delete Rows button

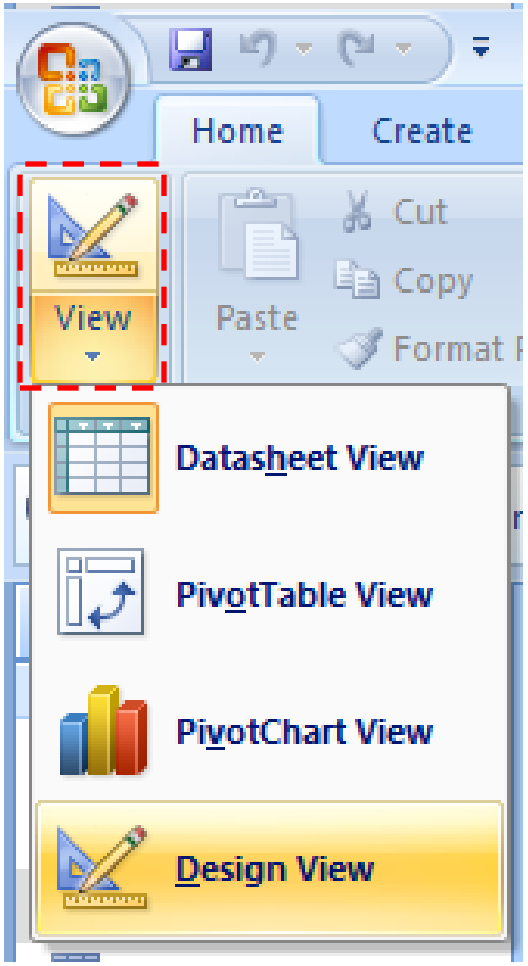
Deleting a Field from a Table Structure

Figure 2-31 Customer table in Design view

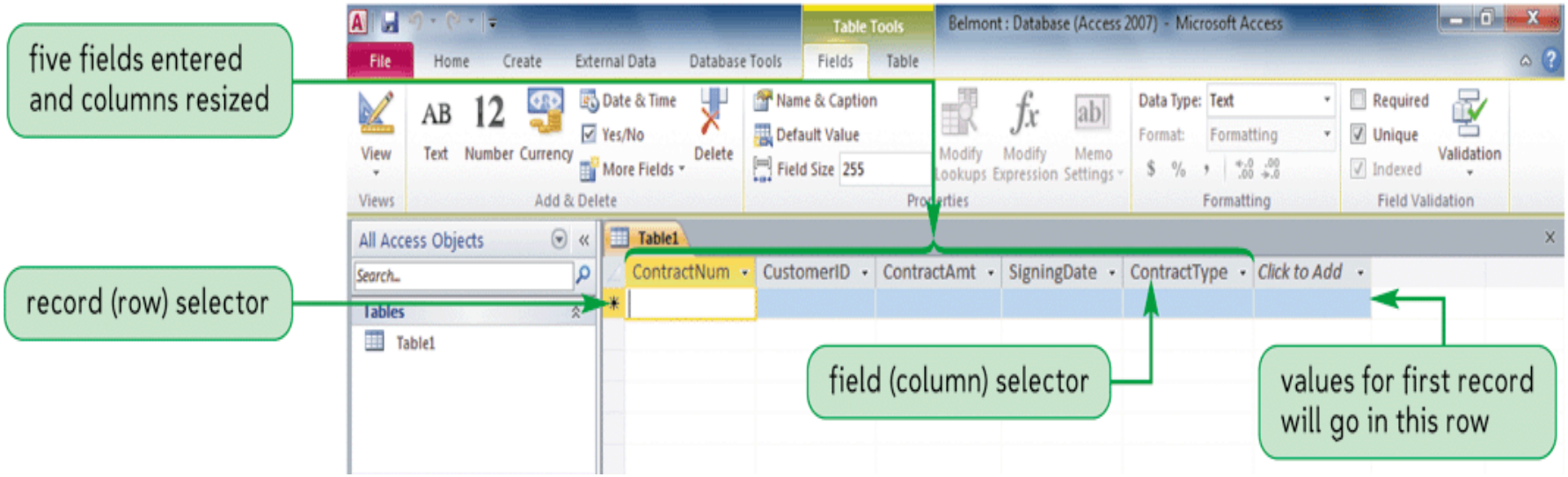


Different view of Tables

- Datasheet view
  - To view, add, edit or delete Table data.
- PivotTable view
  - To view a table in different angles.
- PivotChart view
  - To draw charts against selected fields.
- Design view
  - To change the structure of a Table.



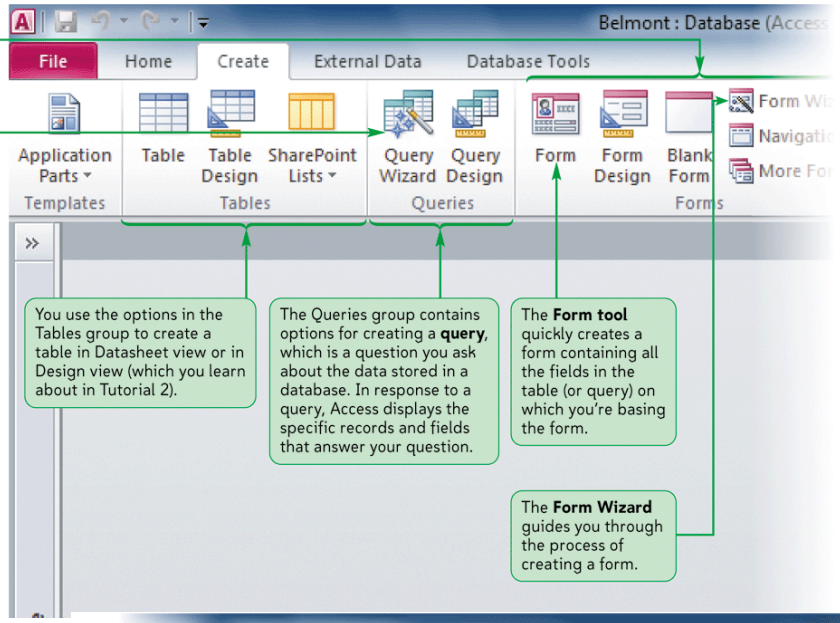
Creating a Table in Datasheet View



Options in Create Tab

The Forms group contains options for creating a **form**, which is a database object you use to enter, edit, and view records in a database.

The **Query Wizard** button opens a dialog box with different types of wizards that guide you through the steps to create a query. One of these, the **Simple Query Wizard**, allows you to select records and fields quickly to display in the query results.

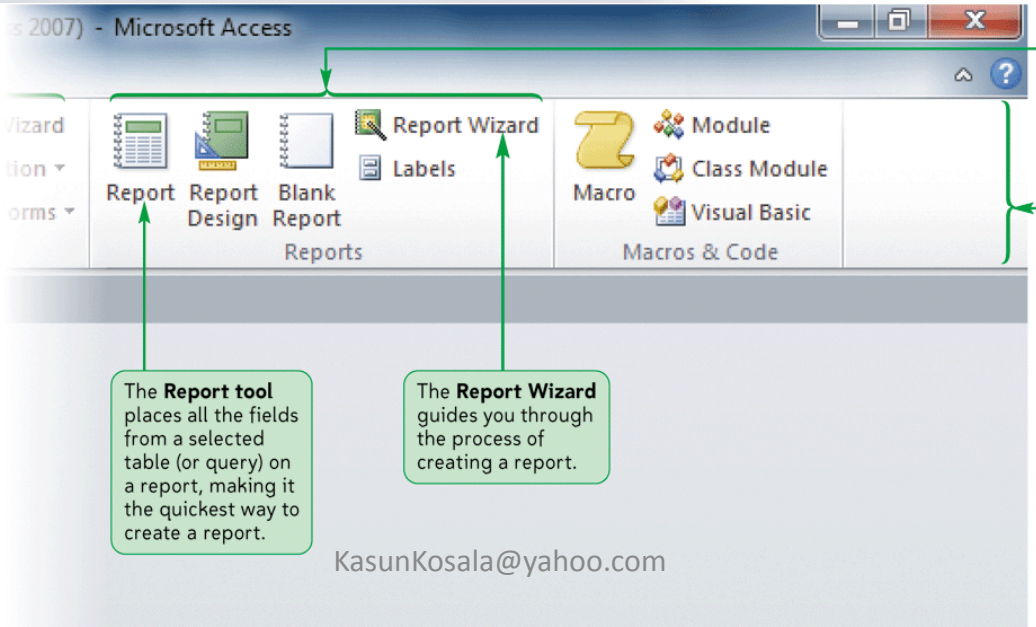


You use the options in the Tables group to create a table in Datasheet view or in Design view (which you learn about in Tutorial 2).

The Queries group contains options for creating a **query**, which is a question you ask about the data stored in a database. In response to a query, Access displays the specific records and fields that answer your question.

The **Form tool** quickly creates a form containing all the fields in the table (or query) on which you're basing the form.

The **Form Wizard** guides you through the process of creating a form.

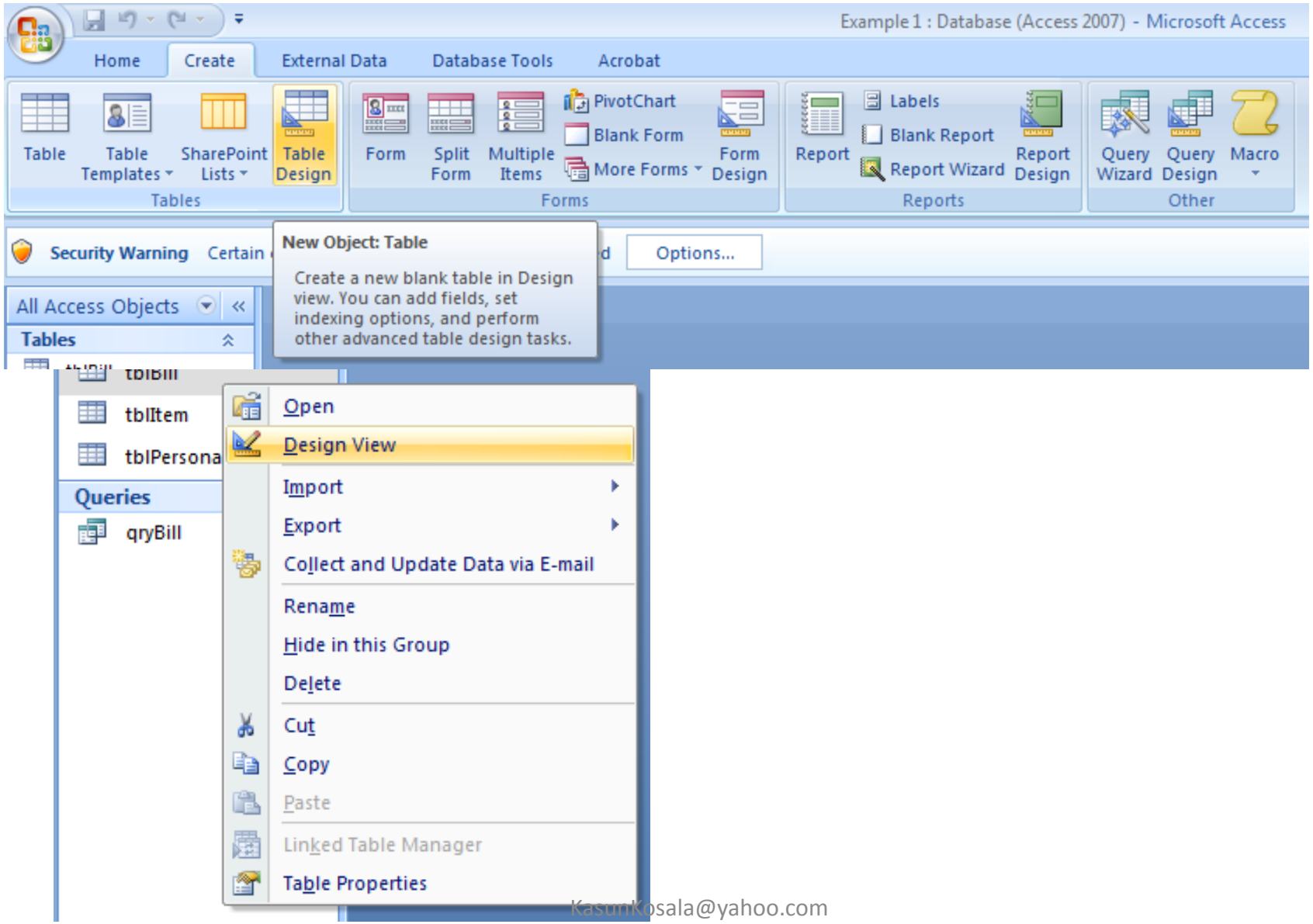


The Reports group contains options for creating a **report**, which is a formatted printout (or screen display) of the contents of one or more tables (or queries) in a database.

The **Create tab** provides options for creating various database objects, including tables, forms, and reports. The options appear on the tab grouped by object type.

The **Report tool** places all the fields from a selected table (or query) on a report, making it the quickest way to create a report.

The **Report Wizard** guides you through the process of creating a report.


Example 1 : Database (Access 2007) - Microsoft Access
Home
Create
External Data
Database Tools
Acrobat
Table
Table Templates
SharePoint Lists
Table Design
Tables
Form
Split Form
Multiple Items
PivotChart
Blank Form
More Forms
Form Design
Forms
Report
Labels
Blank Report
Report Wizard
Report Design
Reports
Query Wizard
Query Design
Macro
Other
Security Warning
Certain
Options...
New Object: Table
Create a new blank table in Design view. You can add fields, set indexing options, and perform other advanced table design tasks.
All Access Objects
Tables
tblItem
tblPersona
Queries
qryBill
Open
Design View
Import
Export
Collect and Update Data via E-mail
Rename
Hide in this Group
Delete
Cut
Copy
Paste
Linked Table Manager
Table Properties