Databases

Chapters 17 - 19

Storing and organizing data

Databases are used by:

- Schools
- Banks
- Utility Companies
- Governments

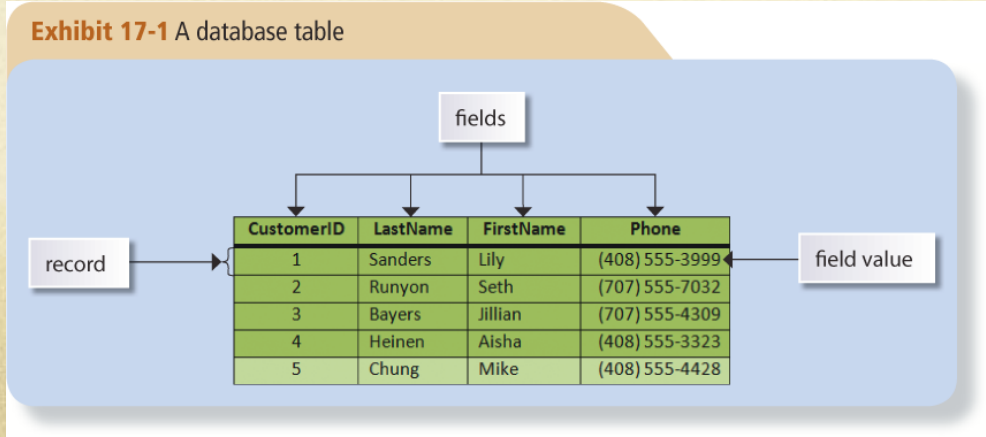
- Stores (inventory, prices, customer lists)
- Nature Conservancy
- Anyone who has large amounts of data to store & organize

Benefits of databases

- reduce data redundancy
- modify only one file
- share data
- saves space

Understanding Database Concepts

- A database is an organized collection of related information.
- Each piece of data in a database is stored in a **field**.
- Related fields are grouped into **tables**.
- A **record** is a row in a table; all the fields in a table about a single person, object, event, or idea.



Fields

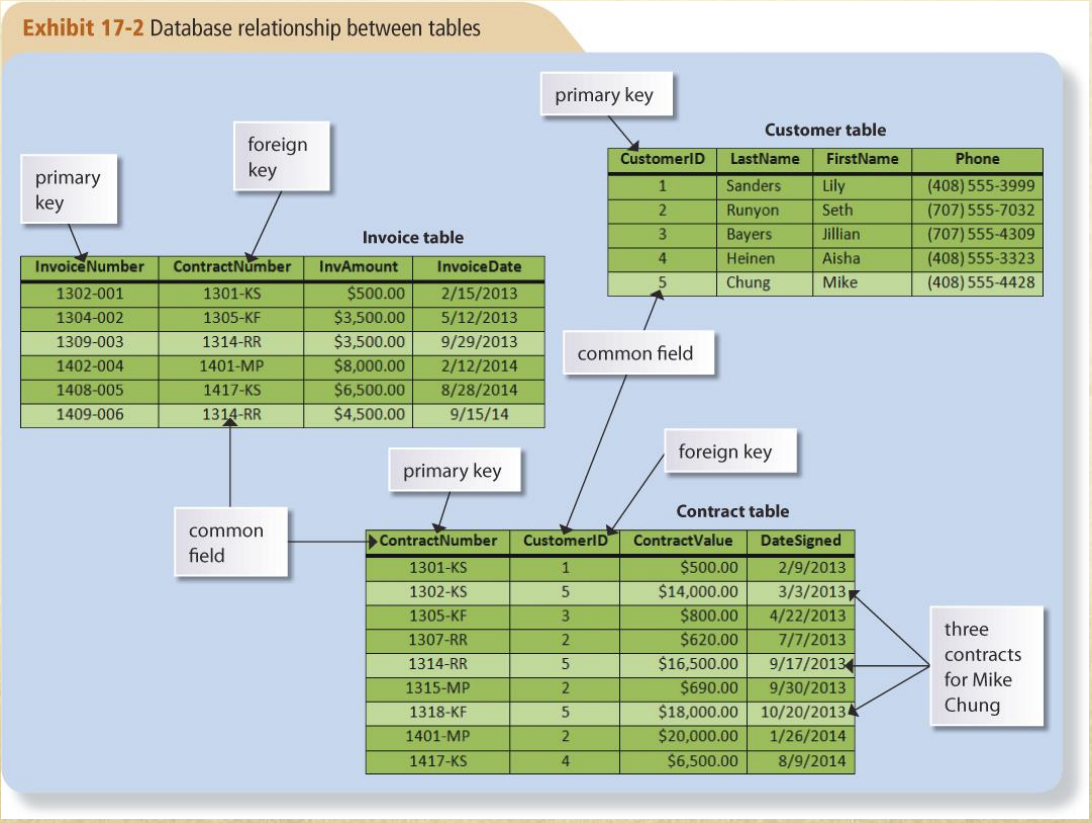
Data Type

- text
- memo
- number
- currency
- date/time
- Autonumber

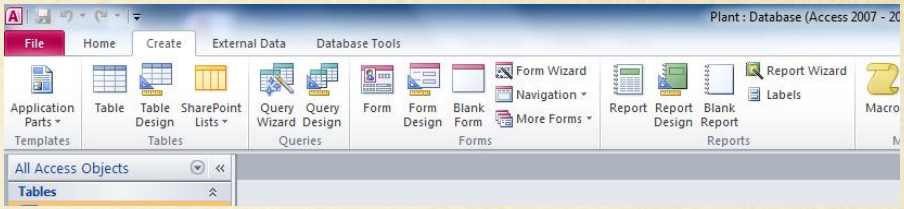
Field Name

- <= 64 characters
- can contain letters, numbers, spaces and many punctuation marks
- cannot contain periods, commas exclamation points or square brackets

- A database that contains more than one related table is a **relational database**.
- **Common field** is a field that appears in more than one table.
- **Primary key** is a field, or a collection of fields, whose values uniquely identify each record in a table.

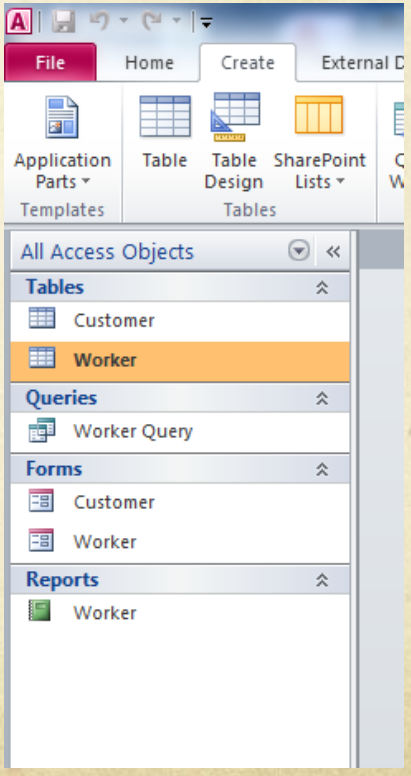


Access Key Terms:



Parts of an Access Database:

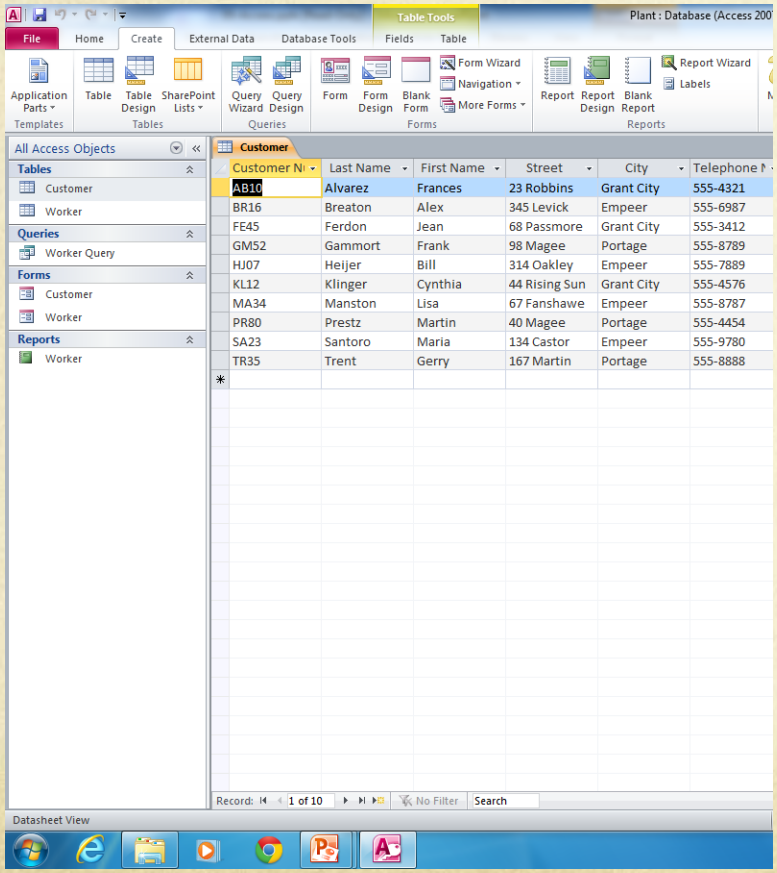
- Table – holds the data
- Form – see one record at a time
- Query – ask question/manipulate data
- Report – get info out (looking good)



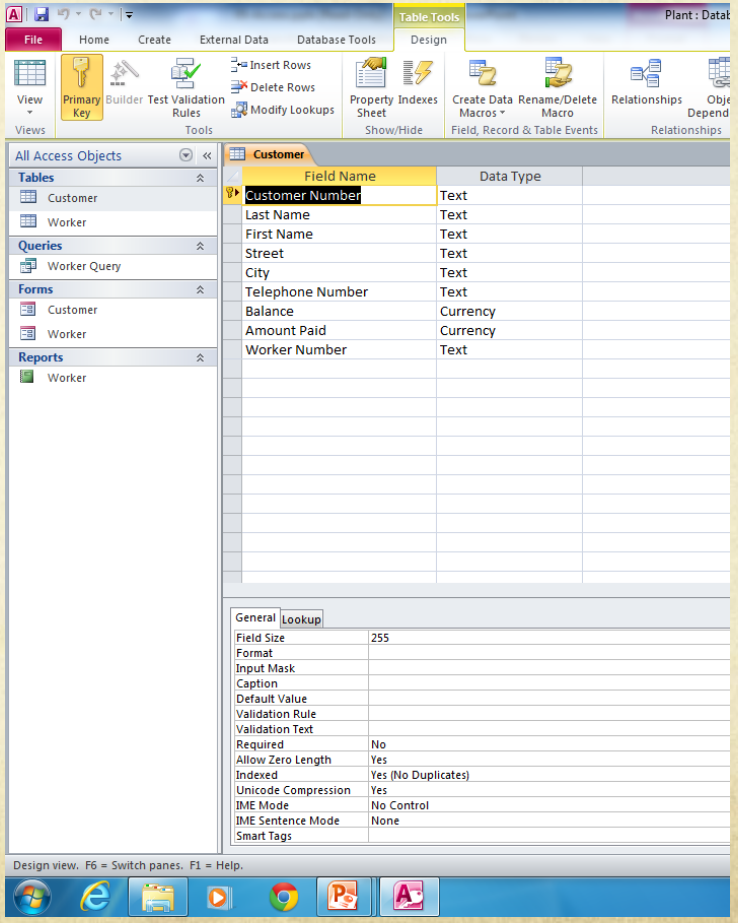
- Primary key – uniquely identify a record
- Relationship – ties tables together

Two Views

Datasheet view – shows contents

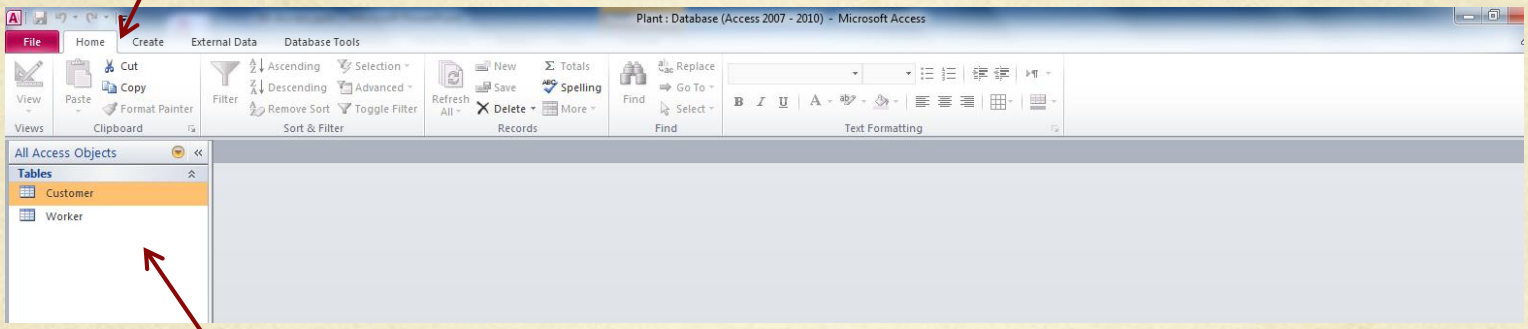


Design View – shows structure



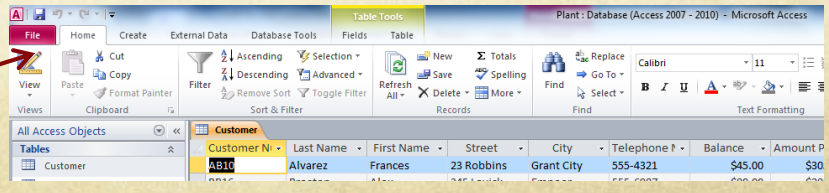
Microsoft Access

Ribbons

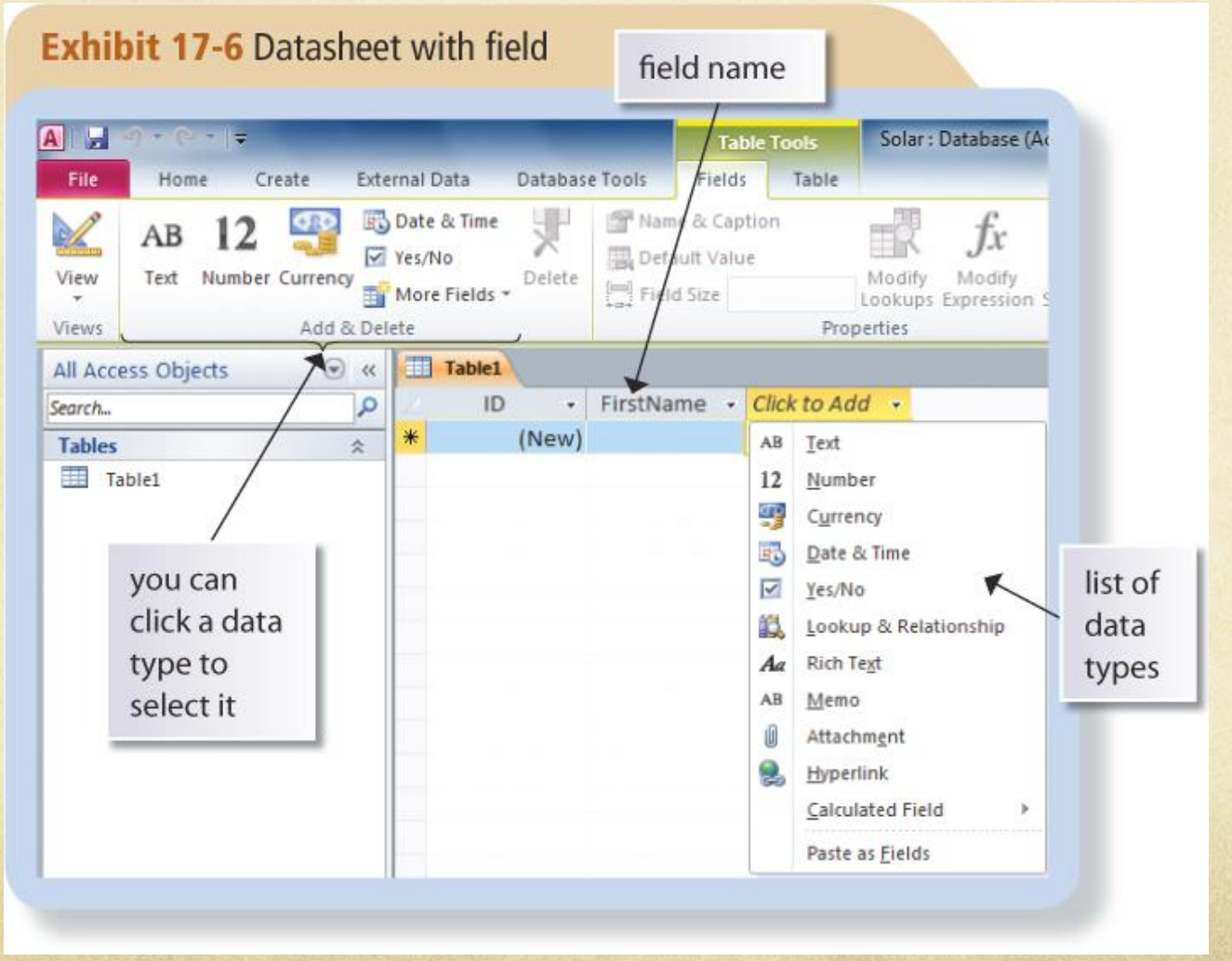


Navigation Pane - shows objects (tables, forms, reports and queries that are part of the database

Button to Change from Datasheet to Design View is on the Home ribbon

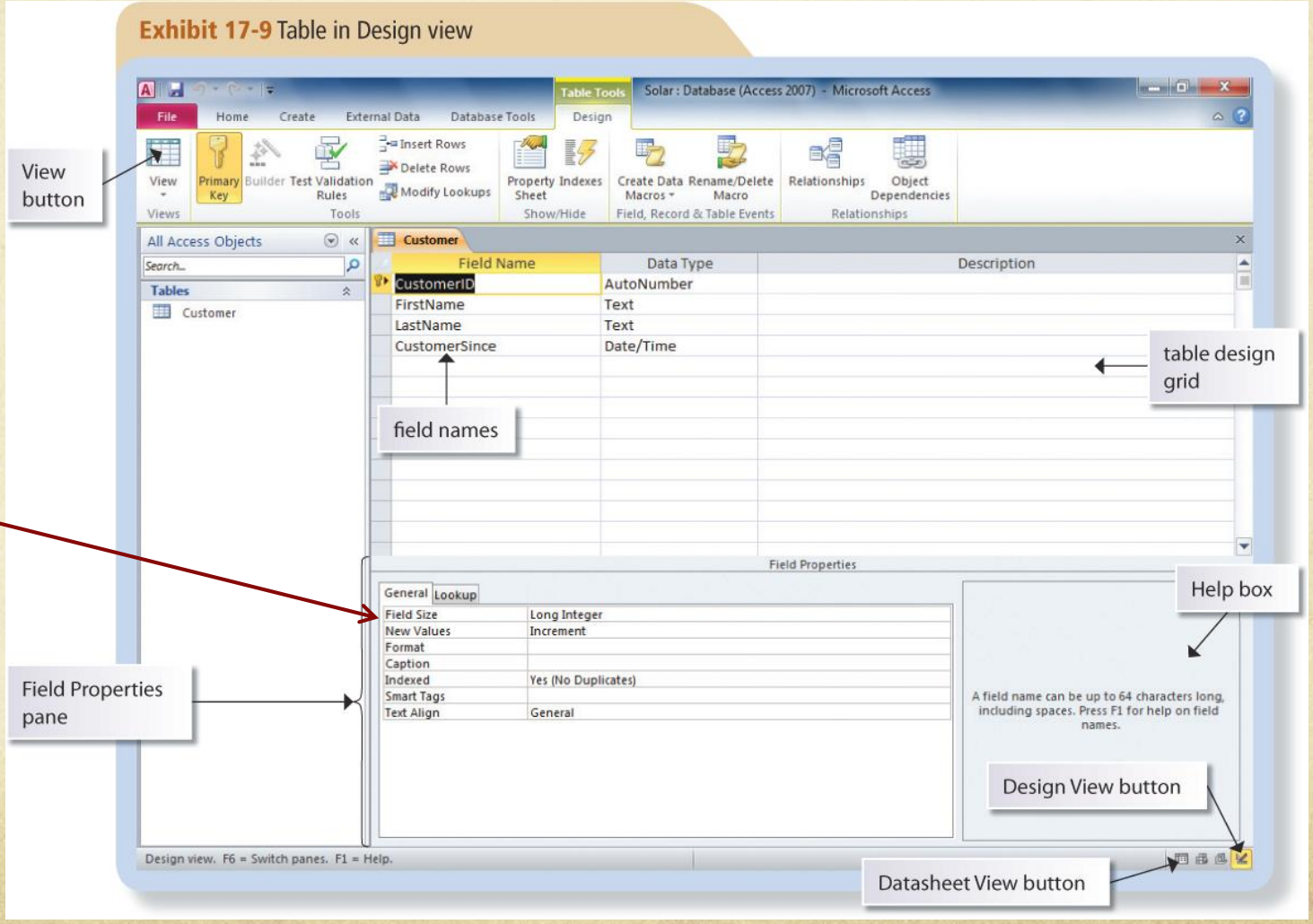


You Can Create a Table in Datasheet View

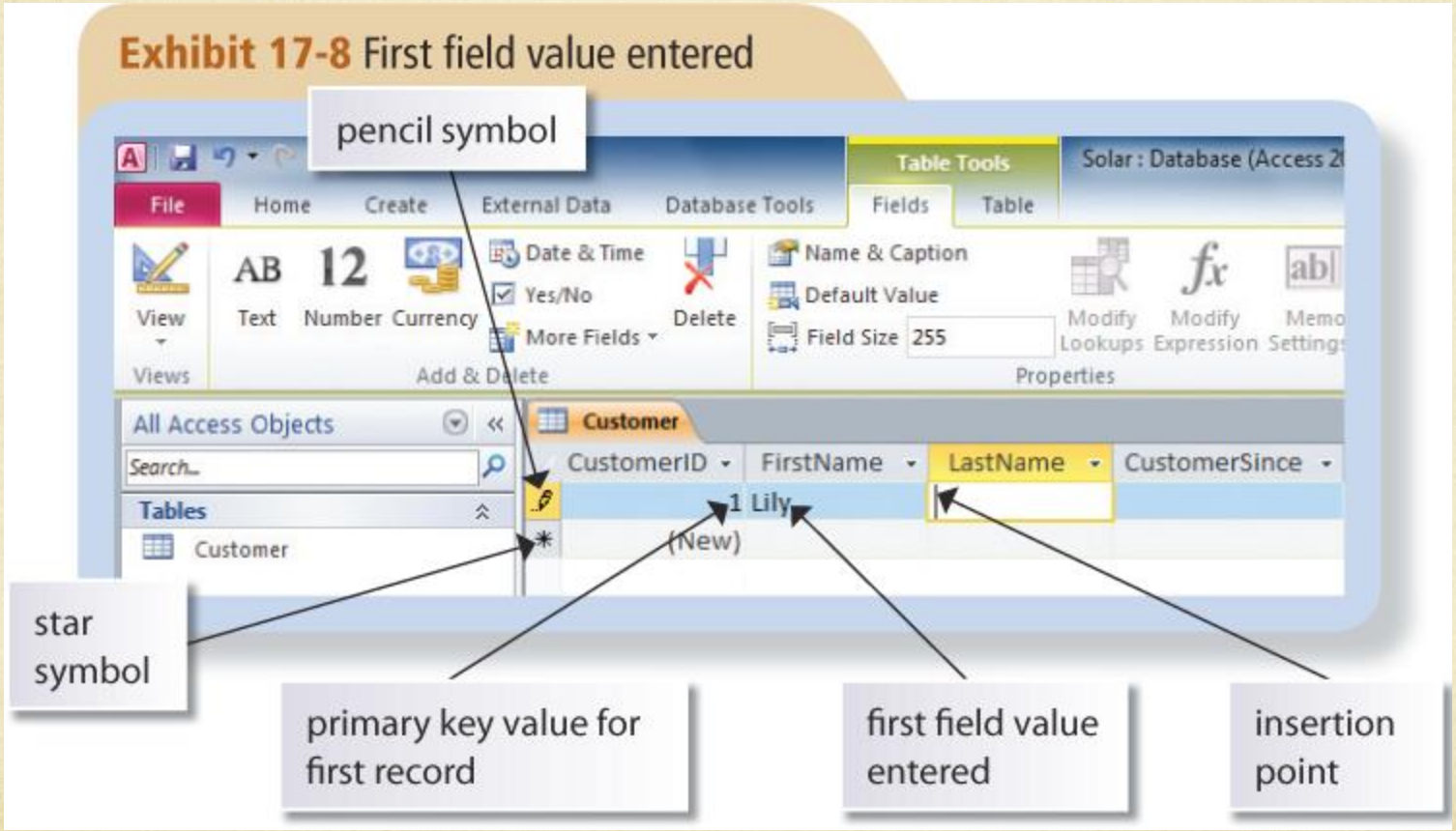


Or You Can Create a Table in Design View (my recommendation)

Change the size of a **text** field from 255 (default) to something reasonable to save bytes



Enter Data into a Table using Datasheet View



Or Enter Data by Using a Form

Forms allow you to view one record at a time for easier data entry or retrieval.

You can create a form for a table using the form wizard.

Or with the table selected that you want to create a form for, select the Create tab and chose the Form option.

You can also create forms in design view, but it is easier to let the wizard do the work for you. You can always modify the form in Design view later.

Forms

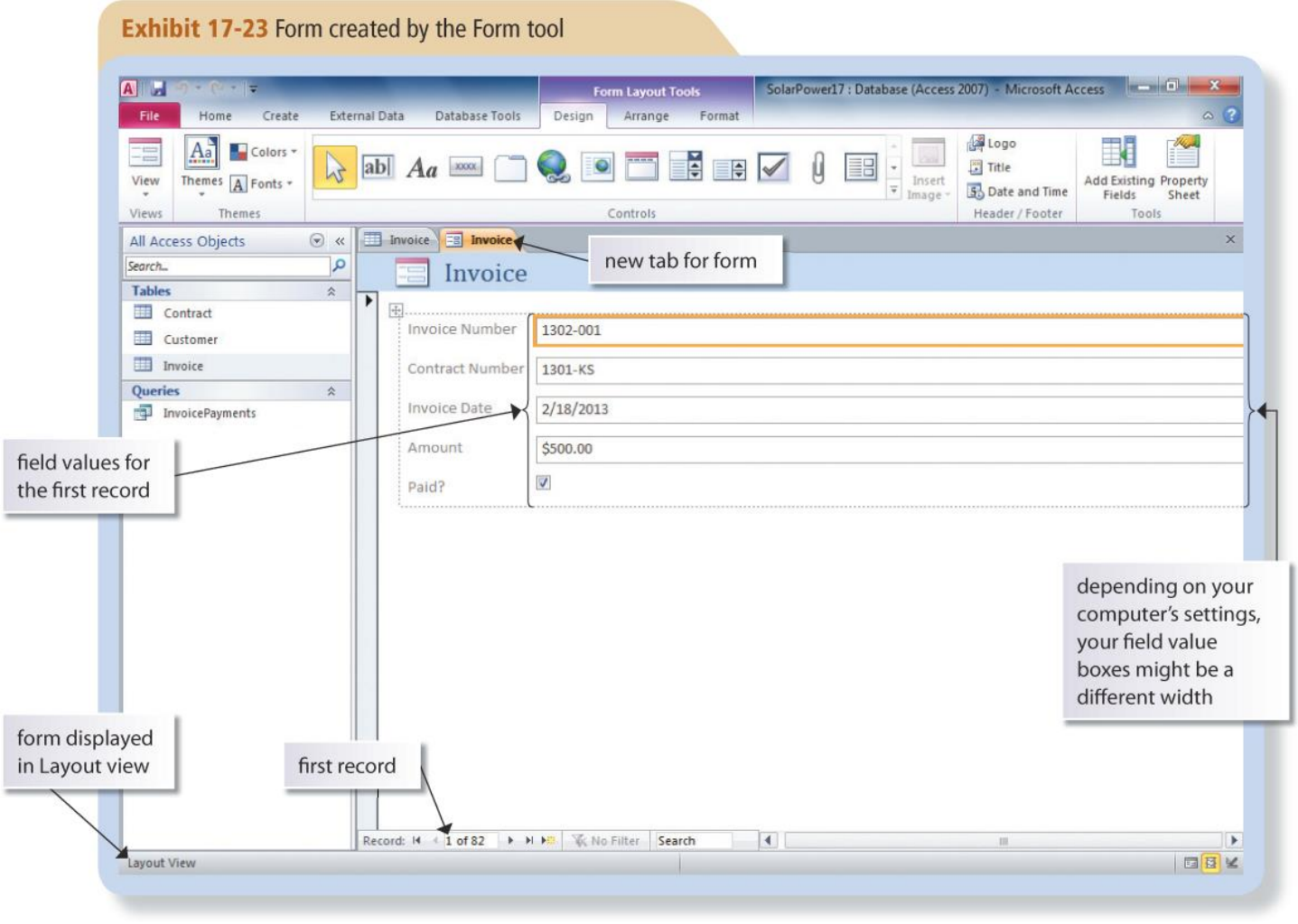


Exhibit 17-23 Form created by the Form tool
Form Layout Tools
SolarPower17 : Database (Access 2007) - Microsoft Access
File
Home
Create
External Data
Database Tools
Design
Arrange
Format
All Access Objects
Tables
Contract
Customer
Invoice
Queries
InvoicePayments
Invoice
Invoice
new tab for form
Invoice Number
1302-001
Contract Number
1301-KS
Invoice Date
2/18/2013
Amount
$500.00
Paid?
field values for the first record
depending on your computer's settings, your field value boxes might be a different width
form displayed in Layout view
first record
Record: 1 of 82
No Filter
Search
Layout View

Goodies

These properties can make data entry easier and less error prone:
(These properties are found in design view)
Note: Only the Input Mask is in the book

Input Mask – forces a format,
for example a phone number : (xxx) xxx-xxxx

Lookup Wizard – creates a pull-down menu for easier and more error free data entry. (found under data types)

Validation Rule – makes sure the data entered meets a specific criteria. An error message is displayed if the data does not meet the criteria.

Required Skills

You should know how to

- Create a new **database**
- Design an Access **table**
- Create a table in a database
- Define **fields** in a table
- Understand the rules for naming tables and fields
- Determine **data types** for fields
- Modify field properties
- Determine the field that will be the **primary key**
- Add, delete or modify fields in a table
- Change from **design view** to **datasheet view** (and vice versa)
- Enter data into a **record**
- Add additional records to a table
- Change data in a table
- Use a **form** to view a record
- Save a table
- Understand the terms used when working with an Access database

Homework/Labs

- Review Chapters 17 – 19 in the CMPTR book
  Make sure that you can:
- Build a table in datasheet view or design view.
- Enter records into an Access table.
- Add new records, modify or delete existing records.
- Create a form using the form button or form wizard.
- Use a form to add, modify or delete records.

If you are not comfortable with these skills, re-do the in-class lab on your own or work with the exercises in the book.