

# **Introduction to Computer Applications**

**CISY 1225  
Chapter 9**

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**Last updated: May 2014**

**Good Morning**

## General Comments

- Midterm exam
- In order to pass the course, you must need:
  - a) at least 30 out of 60 marks on the final examination; and
  - b) a combined mark of at least 50 out of 100 marks on the course

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## General Comments

- Final exam
  - Computer exam = 30
  - Written = 30
  - Must need at-least: 30/60
- Before final exam
  - Computer = 25 + 4 (Bonus)
  - Written = 15
- To pass the course: Minimum marks required
  - 30/60 (Final) and
  - 50/100 (Total)

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## General Comments

- Bonus Marks
  - Very helpful
  - Some students still didn't do exercises and projects
  - Chapters 5-12
    - Exercises and projects

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## CISY 1225 Custom book

### Chapter 9 Introduction to Access

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# Exploring Microsoft Access 2010

by Robert Grauer, Keith  
Mast, Mary Anne Poatsy



## Chapter 1 Introduction to Access

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## Objectives

- Objects in Access database
- Practice good database file management
- Back up, compact, and repair Access files
- Create filters

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## Objectives (continued)

- Sort table data on one or more fields
- Know when to use Access or Excel to manage data
- Use Relationships window
- Understand relational power

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## Databases are Everywhere!

- Internet
  - uses databases extensively
- Every time you are asked to input data
  - you're accessing a database
  - Examples: Google, Ebay and Abercrombie

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# Objects

- What are objects?
  - Components that make a database function
- Four most commonly used object types
  - Tables
  - Queries
  - Forms
  - Reports
- Two less commonly used object types
  - Macros
  - Modules

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# Database Components

- Objects
  - Tables
  - Fields
  - Records

School Database					
Student Table			Course Table		
S-ID	S-FN	S-LN	C-ID	C-Name	
S01	Bob	Woods	C01	Intro to Microcomputer Applications	
S02	Ted	Trees	C02	Computer Applications for Business	
S03	Carol	Rose	C03	Introduction to Computer Science	
S04	Alice	Lilies	C04	Introduction to Programming	

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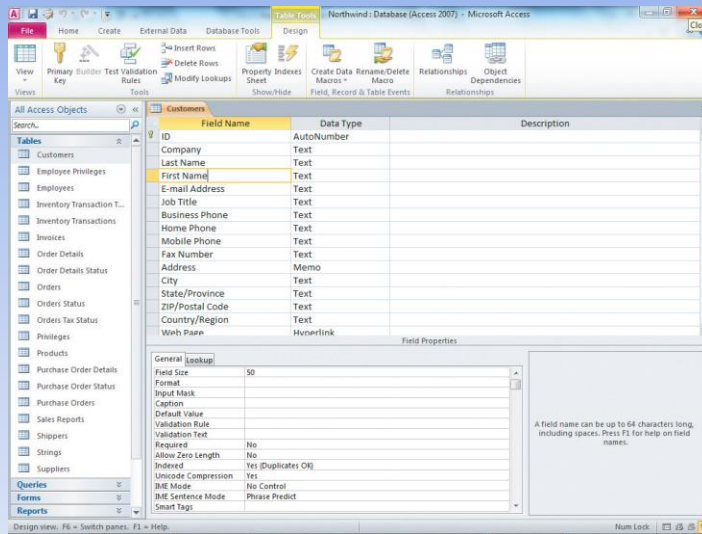
## Navigating in Access

- Navigation Pane
  - Organizes and lists the database objects in an Access database
- Access Ribbon
  - Contains the icons that enable you to perform functions to maintain your database

## Working with Table Views

- Datasheet View
- Design View

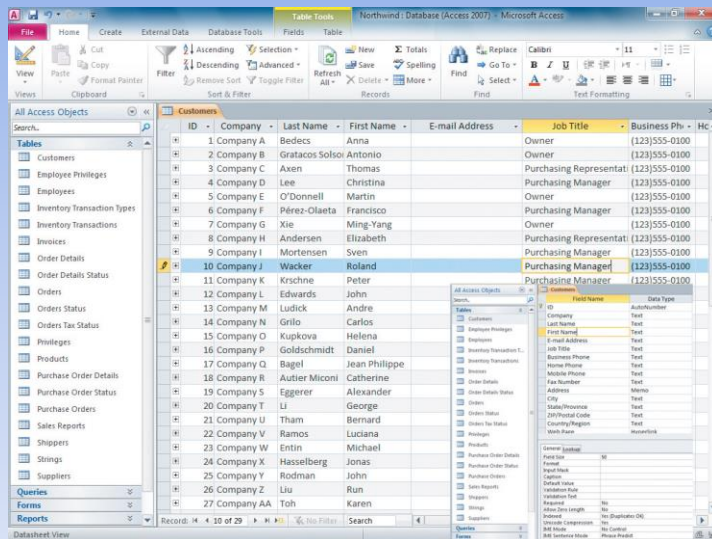
# Design View



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# Datasheet View



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## Using Forms, Queries and Reports

- Tables: contains raw data
  - Primary Key: unique identify record
- Forms: enable users to enter, modify, delete data
- Queries: allow users to ask questions
  - Criteria
- Reports: Professionally-looking formatted information

## Tips on Database Management

- Database files
  - should be named using meaningful names
  - should be stored in meaningful folders and subfolders
- Back up your files!

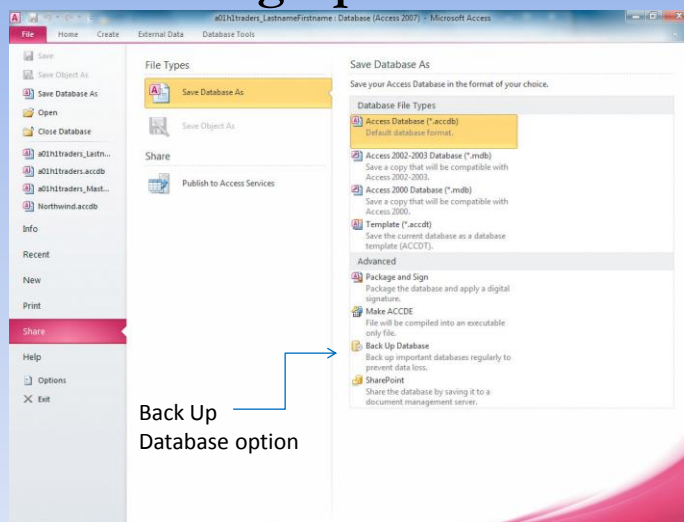
## Compacting & Repairing a Database

- Access databases increase in size over time
- Compacting
  - Avoids loss of data
  - Recovers unclaimed space
  - Defragments fragmented databases
  - Repairs corrupt databases

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## Steps in Compacting & Repairing and Backing-up Your Database



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## Backing Up a Database

- Backups are critical to a database
- Access provides a default file name, including the original file name and adds on the current date
- Default extension for Access databases is *accdb*

## Filters

- A filter displays a subset of records based on specified criteria
- Will always display the entire record selected based on criteria selected
- All data extracted must be contained within a single table
- Hides unwanted records, but does not delete them

## Types of Filters

- Filter by Selection
- Filter by Form

## Filter by Selection

- Displays only records that match selected criteria
- To implement a Filter by Selection
  - Click in any cell field that contains the criterion on which you want to filter
  - Click Filter by Selection in the Sort & Filter group
  - Select Equals “criterion” from the list of options
- Only the records that match the selected criteria will be displayed

## Filter by Form

- Displays table records based on multiple criteria.
- Allows the use of AND and OR conditions
- Allows the use of comparison operators
  - Comparison operators include:

Greater than	>	Less than	<
Greater than or equal to	>=	Less than or equal to	<=

## Filter using ANDs and ORs

- ANDs restrict selection criteria
- ORs expand selection criteria

## Access or Excel?

It is better to use Excel, if you:

- Are more comfortable with its ease of use
- Only need one worksheet to handle all of your data
- Have mostly numeric data
- Require subtotals and totals for worksheet
- Want to use “what if” scenarios on data
- Need to create complex charts and/or graphs

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## Access or Excel? (continued)

It is better to use Access when you:

- Need multiple related tables to store data
- Have a large amount of data
- Need to connect to and retrieve data from external databases (such as Microsoft SQL Server)
- Need to group, sort, and total data based on criteria
- Need multiple users to have access to application simultaneously
- Need built-in tools to help organize data
  - Ability to create relationships between tables

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## Relational Databases

- Access—a Relational Database Management System (RDBMS)
  - Allows the user to create relationships between tables
- Relationships—the set of rules on how tables will be related
  - Good database table design is based on normalization

## Creating Relationships

- A common field—used to relate two tables together
- Join lines—allow relationships between two tables to be created on a common field
- Three types of relationships used by Access to manage relationships between tables:
  - Enforce referential integrity
  - Cascade update related fields (see Chapter 2)
  - Cascade delete related records (see Chapter 2)

## Using the Relationships Window

- Relationships should be created after the tables are created, but before any sample data is entered
- Relationships between tables are represented by join lines in the Relationships window
- Most common method of connecting two tables is using a primary key from the primary table to the foreign key in the related table

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## Referential Integrity

- Ensures that data cannot be entered into a related table unless it first exists in the primary table
- Example:
  - Banks would not want to offer a loan to an individual unless that individual was already established as a customer of the bank.
  - Thus, the customer has to be entered into the customer table, before a new loan can be made in the loan table with that customer's ID.

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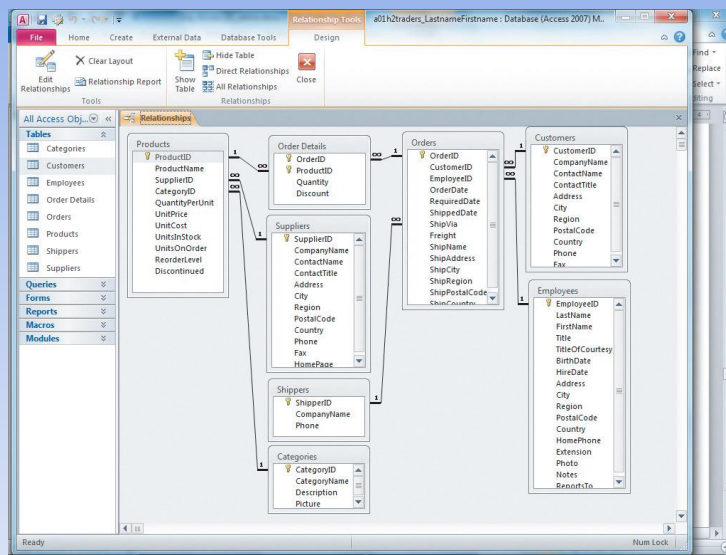
## Using Sample Data

Before entering the real data, populate your tables with sample, yet representative, data in each of your tables

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## Relationships Window



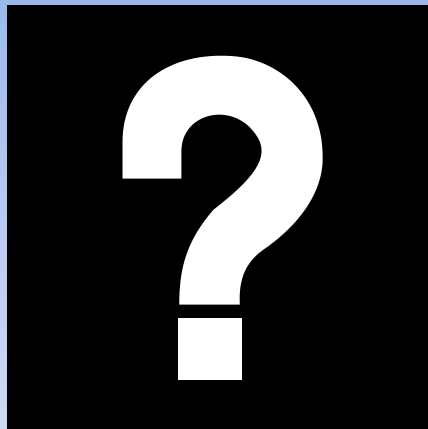
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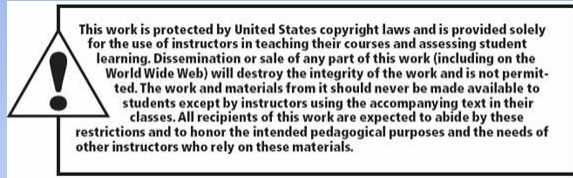
## Summary

- Access works best for large amounts of data stored in multiple related tables using relationships between tables
- Access allows you to sort and filter data
- Access allows you to compact and repair and back up your data
- Practicing good database file management will improve the quality of your database

## Questions



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