Introduction to Database

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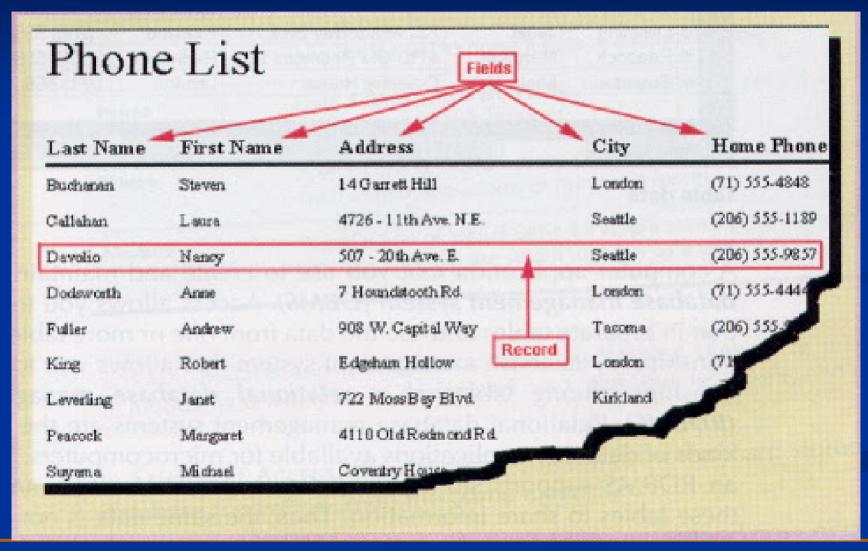
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Agenda

- Database terminologies
- Establish relationships between tables
- Establish validation properties
- Add lookup fields to tables
- Create input masks
- Create select queries
- Add calculated fields to queries
- Specify sort order for queries
- Specify query conditions

Database Terminologies

- **Database** is a collection of information related to a particular subject or purpose

- For example most people keep a list of names, addresses, and phone numbers of the people they contact frequently

- The categories of information that is kept on each individual are most likely consistent

- In data base terms, each individual item of information in the list such as first name or last name is called a **field**.

- The field information for one person in the list is a **record**

- Hence, a database contains fields and records

- To store information, field and record information is contained in a database object called a **table**

- A table is a 2-dimensional grid containing field data

Database Terminologies (2)

Database Terminologies (3)

- A computer application that is used in creating and maintaining databases is a Database management system (DBMS)

- Access allows you to store information in separate tables and use the data from one or more tables through relationships

- Relational Database management system (RDBMS) allows you to establish relationships among tables

- RDBMS supports the storage of field data in separate tables and linking the tables to share information

- Hence, the same data is not duplicated unnecessarily, which improves the accuracy of the information

- 7 classes of database objects in Ms Access: table, query, form, report, a page, a macro, and a module

Classes of Database Objects

- **Table:** an organized collection of rows and columns used to store field data

- **Query:** used to view, change, or organize data

- **Form:** a graphical object that displays data from a table or a query in an easy-to-use format

- **Report:** used to present data in a printed format

- **Pages:** Data Access pages are HTML files designed in Access and formatted to display in Web browser

- **Macro:** a set of one or more actions that are used to automate common tasks such as opening a form or printing a report

- **Module:** a collection of Visual Basic for Application programming components that are stored together as a unit

Classes of Database Objects (2)

- In Ms Access, the database objects are stored in a single database file with a .mdb extension
- Since tables are used to store field and record information, you must create at least one table before you create any other object
- Hence, tables are the primary objects in a database
- Since queries allow you to organize and view data in different ways, a query is always based upon one or more tables
- Working with records in a row-and-column format is often tedious. For this reason, forms are used to make a table or query more accessible
- Forms are based upon tables and queries, users interact with forms directly
- Forms are designed to
  - make data access and maintenance easy
  - prevent users from making destructive changes to table data

Steps in Designing a Database

- Define the purpose
- Plan the Database objects (create a new database)
- Create the Tables
- Create Relationships among the tables
- Create Queries to reorganize data
- Create Forms
- Enter the data/information/records
- Create Pages
- Generate Reports

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