Databases

Mario A. Rodriguez
1.992 ENVIT Class
Introduction to Databases

☀ What is a Database?
   - Tables
   - Queries
   - Forms
   - Reports

☀ Integration with your PocketPC
Good Rules to follow

- Every field in a table should contain a single indivisible item.
  - See sample row.
- No two fields can be dependent on one another.
  - Spreadsheet example.
- All the fields in one row must be unique.
  - One date field per row.
Designing Tables

- Design on paper FIRST
- Create a list possible fields.
- Visualize how the fields are going to be used.
- Data types: number, text, memo . . .
- Visualize the report in your mind.
Our Field Notebook

- Type of measurement:
  - Dissolved oxygen, conductivity, pH, temp, depth
- Frequency of sampling
- Units (conversion factors)
- Options (calibration measures initial state)
- Owner (probe used)
- Notes (max and min)
Let’s Create the Table
Extracting Information

- **Simple Queries**
  - Allow you to manipulate data from different tables.
  - Specify content in forms and reports.
  - They come in many different flavors.

- **More complex relationships**
  - Creating relationship among tables
    - one-to-one
    - one-to-many
    - many-to-many
Indexes and Data Validation

- Indexes help you:
  - Keep good performance (it orders rows).
  - Keep relationships among tables.
  - Support referential integrity.
  - Show me some examples!

- Input masks
  - Help you avoid data entry errors.
  - Makes everything look good.
Structured Query Language

- **Select Queries**
  - Creates a subset of the table
  - Using aggregate functions
    - You can count, sum, and average records.

- **Action Queries**
  - Append new data from an exogenous source.
  - Update and Delete.
User Interfaces with Forms

- Basic Input Types
  - Learn how to format nicely on the screen
- Creating a Lookup form
  - Become a power user
    - DoCmd.OpenForm
- Learn about the Switchboard
Reports

- Take the Microsoft advantage
  - Can export to spreadsheets, Word . . .
  - Learn about the chart wizard
  - ActiveX controls
- Report tools
- Dynamic controls
Pocket PC Application

- Synchronizing with ActiveSync
- Setting up environment for Embedded Visual Basic
- Writing your code