

STAT:5400
Computing in Statistics

More on relational database concepts

Lecture 16
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Expressing one-to-many and many-to-many relationships in relational databases

- one-to-many relationships are expressed by linking a foreign key in one table (the “many file”) to the primary key of another table
- many-to-many relationships require a special table whose primary key consists of two fields, each of which links back to the primary key of another table

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Getting existing data from other sources into a Base database

- Base can directly access files created by some other database software
 - select “Connect to an existing database” from Database Wizard screen
- if your existing data isn’t in one of the listed formats
 - create tables in Base with the correct structure for the data
 - get the data for each table into an Open Office Calc spreadsheet
 - * Calc can directly read Excel spreadsheets
 - * Calc can read .csv (comma separated values) files exported from other software
 - make sure that the column headings in the Calc spreadsheet match the field names in the target Base table
 - for each table, highlight and copy all the data (including column headings) in the Calc spreadsheet
 - click “Tables” in the left panel of the main OpenOffice.org Base window

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- right click in the Tables section of the screen, below the list of existing tables, and select “Paste”
- Select “Append data” and enter the name of the target Base table
- Check to make sure that all the column headings and target fields match, and click “Create”
- If there are violations of uniqueness of the primary key, you will get an error message
- hints
 - * if you have established a relation between fields in two different tables, be sure to add the new records into the table with the primary key before you add the new records with matching foreign keys to the other table
 - * if the Base table has an auto-generated primary key, you will have to put the next sequential values in a column of your spreadsheet

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Exporting data from OpenOffice.org Base

- Open your OpenOffice.org database in Base
- Open a blank spreadsheet in OpenOffice.org Calc
- In the left panel of Base, click “Tables.”
- Then right click on the name of the table you want to export, and select “Copy.”
- In the Calc window, select “Edit/Paste.” The data from the Base table will appear in the spreadsheet.
- Use “File/Save as” to save the data in your choice of the many formats that Calc can write. A good choice if you want to read the data into SAS is Text CSV (.csv).
 - Don’t worry about the warning message. Accept the defaults that Calc suggests.

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Reading .csv files into SAS

One option is to use the Import Wizard.

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SQLite: another database management system for Linux

- installed on our DIVMS network
- start it up by entering `sqlite3` or same command followed by the name of a database that either already exists or that you intend to create with this session
- exit with Ctrl-D
- documentation at <http://www.sqlite.org/docs.html>

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