22S:166
Lab session 3
Introduction to OpenOffice.org Base

Oct. 16, 2009

1 OpenOffice.org

OpenOffice.org `www.openoffice.org` is an open-source office software suite for word processing, spreadsheets, presentations, graphics, and relational databases. It is available in many languages and runs on all common computers, including those using the Linux operating system. It can read and write files from other common office software packages, including Microsoft Word, Excel, and Powerpoint. It can be downloaded and used completely free of charge for any purpose. The newest version is OpenOffice.org 3.0. (The version installed on our Linux network as of October, 2008, is OpenOfficeorg 2.4.)

OpenOffice.org stores data in an international open standard format. It can exchange data among its various components, enabling such operations as merging names and addresses from a database or spreadsheet into a word-processing document. The relational database component is called Base.

Documentation in the form of manuals and tutorials are found at the above link under "I need help with my OpenOffice.org." Deocumentation specifically of Base is contained in:

- Getting Started Guide (Chapter 8 in OOo 3.x Guide, Chapter 10 in OOo 2.x Guide)
- OpenOffice.org User Guide for 2.x, Chapter 7
- Tutorials `http://wiki.services.openoffice.org/wiki/Documentation/Tutorials`
  - one under Dennis Daniels' tutorials
  - one under Dai's tutorials
- Tutorials from other sources
  - http://sheepdogguides.com/fdb/fdb1main.htm
  - http://www.euclideanspace.com/software/information/relational/example/

2 Creating a database in OpenOffice.org

Before diving into the software to create a database, we must plan the structureof the tables and relationships. We wish to create a database to store some information about patients in a clinical trial. Some information about each patient is stored only once: patient id, birthdate, date of randomization, treatment assignment. Other

information (CD4 counts) is measured and recorded many times for each patient: date of blood draw, CD4 count. We will create two tables within our database and establish a one-to-many relationship between them.

2.1 Creating the database

To start Base on our Linux network, click the RedHat icon and select "Office/Database Development." The database wizard will come up. Make sure that "Create a new database" is checked, and click "Next."

On the next screen – "Deciding How to proceed after saving the database" – make sure that "Yes, register the database" and "Open the database for editing" are checked. Registering the database makes it accessible to the other components of OpenOffice.org for exchange of data. Click "Finish."

You will be prompted for the filename of the database and the folder in which to save it. The only downside of registering a database is that it makes it tricky to move or rename it later, so specify the name and path with care.

2.2 Designing tables

On the next screen, click "Tables" in the left hand panel. Notice that a different list appears under "Tasks." Click "Create table in design view." After a pause, a spreadsheet-like screen comes up that enables you to define fields for the table.

We will begin with the Patients table. We want a unique numeric patient number as the primary key for this table. Enter "Patid" under "Field name." Tab to the "Field type" column. Use the pull-down menu to select "Integer." A new section opens at the bottom of the window to allow you to enter "Field properties." Set "Entry required" to "Yes." Next create a field called "Birthdate." Set the field type to "Date." In the "Field properties" section, click in the small second box after "Format example," and select "12/31/1999." Create another field called "Randdate" with the same characteristics. Finally, create a field called "TrtGroup." Set it to type "Text(fix)–CHAR" and to length 1. To make the "Patid" field the primary key for this table, right click in the box to the left of its field name, and check "Primary key." If you forget to do this before saving the table, Base will give you a message that there is no primary key.

To save this table structure, click "File" and "Save." Specify the table name "Patients" and click "OK." When you get back to the main database window, you must click "File" and "Save" again to save the new table in the larger database structure. This two-step save process must be carried out for each new table, form, relation or whatever.

Now we will create the CD4 count detail file. It will have its own primary key, a "Patid" field as a foreign key for linking back to the Patients table, fields for the date of blood draw and the measured value.

ID	integer	AutoValue = Yes
Patid	integer	Entry required = Yes
Date	Date	12/31/1999
CD4	small integer	

Designate ID as the primary key. Save and close the Design window, and save the new table.

2.3 Defining the relationship between tables

Next we need to create the link between the Patid fields in the two tables. Click "Tools" and "Relationships." Add each of the tables by clicking its name and then clicking "Add." Then close the Add tool. You will get a window with all the fields of each table listed. In the CD4 table listing, click on "Patid" and, while holding down the left mouse button, slide the mouse over to the "Patid" field name under "Patients." Release the mouse button, and a figure connecting the two fields should appear. Save and then close the Relation Design window, and save in the main database window.

2.4 Creating a data entry form

In the main database window, click "Forms" in the left panel, then "Use the wizard" in the Tasks window. Select all the fields from the Patients table by clicking >>. Click "Set up a subform." Check "Add Subform" and "Subform based on existing relation." Click "CD4" as the relation, and click "Next."

The next step is "Arrange controls." It allows you to rough out the style in which the fields will be presented for data entry in the form and subform. Choose what you like, and click "Next." Similarly, choose the style and color you like and click "Next."

Name the form "Complete patient." Save the form, and then save your work in the main database window.

We also need to create a form for entering CD4 data for existing patients.

2.5 Entering data

Left click on the Complete Patient data entry form that you created. Enter data in the fields at the top of the form. When you click in "Patid" in the CD4 subform area, Base will automatically fill in the value from the top of the screen. When you have entered all data, find the "Save record" icon at the bottom of the screen and click it. Find the "New record" arrow. To add more CD4 data for the same patient, click it with your cursor in the subform. To start entering a brand new patient, put your cursor in the Patid field before clicking the "New Record" icon.

2.6 Creating a query

We will create a query that pulls data from both tables, using the relationship. It can then be used to view the data, or as the basis for a formatted report. Click "Queries" in the left panel, then "Create Query in Design View." Add both the Patients and the CD4 tables to the query. Close the Add window. You should see a window with a box for each table, and the relationship between them. Below is a spreadsheet in which you will specify the contents of the query. Click in the Field row of the first column, and select Patid from the Patients file. Move across the columns, selecting the desired field from the desired table for each one. Be sure that "Visible" is checked for all the fields.

Save and name your query, then Save when you get back to the database window.

To display the entire contents of your linked tables, double-click on the name of your query. Close it when you're finished looking at it.

To display only a subset of your records, right click on the query name, and choose "Edit." Go to the "Criterion" row and enter a value to match in one of the fields. Save your query, and double-click its name in the database window.

2.7 Creating a report

Base can create reports based on linked tables. Click Reports in the left panel, then "Use Wizard to Create Report."