

## Laboratory Exercise 1.1: Exploring the Access database for the University Example

This laboratory will provide practice in

- Copying and using an existing database
- Examining existing tables, relationships, queries, and reports
- Designing and executing new queries
- Designing and running a new report
- Designing and using a form
- Updating tables

1. Download the *UniversityDB* for Access 2010 from <http://people.uncw.edu/mferner/CSC455/Data%20Files/UniversityDB.mdb> for this book and save it in your timmy directory.
2. Open Access. The initial screen shows the *Office Backstage* view, which has options to create a new database, open an existing database, or look at other content. If you are not at this screen, click on the *File* tab in the upper left hand corner to see it.
3. From the left panel, called the *Navigation Pane*, choose **Open** and then find the directory in which you have stored the downloaded *UniversityDB* database. Double-click on the filename to open it. You should now see the *Home* view. If a yellow warning bar appears, click the *Enable Content* button.
4. In the left panel, click on the down-arrow to see various options for displaying objects. Choose **All Access Objects**. Note that this database contains four tables, a query, a form, and a report. Under the *Tables* object, double click on the **Student** table. Look through the records of that table, and also observe the buttons to minimize, maximize, or close the table. **Close** that table either by clicking on the X button for the table, which is in the upper right of the panel, or by clicking on the icon for the *Student* table in the upper left of the panel, which displays a menu with a *Close* option.
5. Click on the **Database Tools** tab, find the icon for **Relationships**, which has three rectangles connected by lines. Click on the icon to see what relationships Access “knows” about. The lines connecting the tables show that it “knows” that the *facId* in *Class* is related to the *facId* in *Faculty*, that the *classNumber* in *Enroll* matches the *classNumber* in *Class*, and that the *stuId* in *Enroll* matches the *stuId* in *Student*. **Close** the *Relationships* window.

6. Choose the *Queries* object in the left panel. Open *Query1* by double clicking on its name. Notice the query is executed immediately. **Close** the *Query1* results screen.
7. With the *Queries* object still chosen, right-click on *Query1* and choose *Design View*. The design of *Query1* is displayed. The top window shows the tables that are used in the query, along with their relationships. The bottom window shows which fields are included in the query, along with any conditions (criteria). For each field, the designer can choose *Show* or not, to indicate whether the field is to be displayed in the result. If it is not already selected, click on the *Design* tab and press the red *run !* icon on the ribbon to run the query. **Close** the results window.
8. Return to the design screen for *Query1* by a right-click on its name. Change the query: in the upper panel, double click on the *major* field name in the *Student* table to add the major to the query. Now in the lower panel, move the cursor to the *Criteria* line, move to the right into the column for *major*, type **History** to choose only History majors, and execute the query again by pressing the red *run !* icon, noticing the change in the results with this new condition. Go to the *File* tab, select *Save Object As* and enter *History Majors Query*. Return to the *Home* tab, and close the query.
9. Click on the *Create* tab. From the ribbon, choose *Query Design*. In the *Show Table* window, highlight *Class*, click on the *Add* button, highlight *Enroll*, and click on the *Add* button again. Click on the *Close* button of the *Show Table* window. You are now back in the query design window. Choose *classNumber*, *schedule*, *room* and *stuId* as the fields for the query, by double clicking on each one. Add the condition that *stuId* is **S1002** in the *Criteria* line for *stuId*. If not already selected, click on the *Design* tab and press the red *run !* icon on the ribbon to run the query to see the class schedule for student S1002. **Close** the results window, and save the query, entering a name you choose.
10. Under the *Reports* object on the left panel, open the report *Class Lists* by double clicking on its name. **Maximize** the report window on the right to read the whole report. From the *Home* tab, use the pull-down arrow under *View* (far left) and choose *Design View* to see the design for that report. The design is how the placement of items is controlled. **Close** the *Design* screen.

11. Click on the **Create** tab and choose the **Report Wizard** from the ribbon. Click on the down arrow in the *Tables/Queries* window to see a list of all the tables and queries you could use for the report. Choose the **Student** table by clicking on its name. From the *Available Fields* window just below, highlight **lastName** and press the single right arrow button to select it for the report (or simply double click on the field name). Also choose **firstName**. If you accidentally choose an incorrect field, highlight it and use the back arrow to deselect it. Note that the double arrows mean *select all* or *deselect all* fields. Change the table to **Enroll**. Choose **classNumber** and **grade**. Change the table to **Class**. Choose **schedule** and **room**. Now click on the **Next** button at the bottom of the *Report Wizard* window. You have to option to view your data by *Student*, *Enroll*, or *Class*. Choose **by Student** and click on the **Next** button. Now you can choose grouping levels. Choose **lastName**, (which may be displayed already) then click on **Next**. You can choose sorting on several fields. Press the down arrow and choose **Grade**, choose **Ascending**, then click on **Next**. Choose the **Stepped** layout shown, then **Next**. Make the title **Classes by Student**. Choose **Finish**. The report should execute. Examine it to see the effects of your choices. You could print the report by choosing the **File** tab, then **Print**, and choosing among the printer options. It is not necessary to print now. **Close** the report, which should be saved under its title.
12. Under the *Forms* object from the objects panel on the left, double click on **Student Input Form** to open it. Use the navigation buttons at the bottom of the form to step through the *Student* records one at a time by pressing the right or left arrow. You can also enter data using the form. After the last record, click on the right arrow until you see a blank form. Alternatively, click the rightmost navigation button with the yellow asterisk to go past the last record to a blank form. **Enter your own data** – make up an **Id** such as S999 (remember its value!), and enter your **name**, **major**, and **credits**. **Close** the *Student Input Form*. The data will automatically be saved.
13. Under the *Tables* object, open the **Student** table. Notice that the record you entered using the form has been saved in the table. **Close** the *Student* table. Now open the **Enroll** table, move the cursor just below the last record, and **enter two records** with your **stuId** and two **classnumber** values while in the normal (spreadsheet) view to show that you are enrolled in two classes. Be careful to use the same **stuId** you

entered and to use existing *classNumber* values, or you will be unable to add the records. Try to change one of your classes to CSC455. You should get an error when you try to exit. Press the Esc key to back out. Change the *classNumber* back to a valid value.

14. **Delete** the *Enroll* record of student ***S1010*** in ***ART103A***, by moving the cursor to the column before *stuld* to select the record and pressing the *Delete* key. Save your changes and close the table.
15. Choose the *Reports* object. Run the ***Classes by Student*** report by double clicking on its name. Notice you and your new classes are listed, and the deleted record no longer appears.
16. Close the database and submit into [Blackboard](#).