ITMG 100 ACCESS LECTURE NOTES 2 THE QUERIES

By now you should have figured out how to normalize a database both from in class and on your own. Download and save the Harkins.mdb file from the ITMG 100 Course Website (located under the access hyperlink from the schedule page). Upon download—proceed to create the necessary relationships as to normalize the database (HINT: Remember that a primary key is in bold for each table and that a primary key can also be listed in another table which is then known as a foreign key)

All About Queries

Now that we have fixed the Harkins database the upper management is very interested in the learning about the information lost as it needs to make many important decisions. Some decisions are about what theater zones are producing best, others are about what types of movies are doing better than others. Since you have been exposed to access you know that these answers can be obtained by running queries of the database. Let's start with some.

We will start with an easy query for review-it is also referred to as either a simple or select query.

Go back to the query option in your access database. Again click on query wizard and select movie_type so that it appears on the right hand side. This time notice that you can select from other tables. Once are done selecting movie_type search for the sales table and select the item sales so that it appears on the right. Upon completion hit next and then notice you have two options in the dialog box—one that allows you to select detailed or summary reports. Click on the summary selection and then hit the summary options box. A new screen will come up asking you what type of summary options you want—select sum and then hit OK. The next screen will ask you to name your query and ask how you want to open it—just select the option that says to run the query upon hitting Finish. If successful you will a listing of all of the different movie types and the sum of their sales. Which movie typed produced the most sales?

Sorting Query Fields

Lets move to one more little advanced step—learning to sort within a query. Right Click on the movie type query and select the sort ascending option A-Z. Save your results as Movie_Query_1.

Creating a Select Query

Often times there are cases when you wish to know an answer based on specific criteria. For example, say you want to know the sum of sales for a particular week. This particular exercise will introduce you how to create this type of query—first as a hard-coded entry. Then the second part will show how you can create a dialog box to come up to entertain many different types of questions (i.e. Instead of always showing week 1, the person will be able to enter in a specific week of their choosing. This time we are going to create a query in design view and not use the query wizard. To accomplish this task complete the following tasks.

QUESTION ASKED "WHAT WHERE THE TOTAL SUM OF TICKET SALES FOR WEEK 3?"

1. Close out of all table and query views that you might have open.
2. Click on queries in your access view.
3. Select the create a new query in design view.
4. Select the sales tables.
5. Select the week_ID field in the sales table and drag it to the query column.
6. Repeat Step 5.
7. Select the sales field and drag it to the query column.
8. Hit the SIGMA button on the toolbar.
9. Underneath the first week_ID column in the row marked total—change GROUP BY to WHERE.
10. Underneath the criteria row type in the number 3 underneath the same column that you used in step 9.
11. Hit the exclamation mark to run the query. If successful your answer should be $12,874,056. You should save your query as movie_query2.

ONE STEP FURTHER – the PARAMETER QUERY

This was great that you were able to find the answer for week 3. But what if you needed the answers for other weeks? Do you really want to recreate new queries for each week? Probably not, and why should you when you don't have to. All you need to do is one little step listed below.

Instead of having a number 3 in your criteria box lets change it to the following syntax: **[which week?]**

When you have completed that task, hit the exclamation mark and run the query again. This time you should get a dialog box that asks you a question 'which week?' and after your response produces an answer. Execute the query and write down your answers to the different weeks listed below. When finished save your query as movie_query3.

Week 2 _____
Week 7 _____

Completing/Developing a AND Criteria Query

There comes a time when you wish to sort on one specific field and on another specific field. For example if we wish to determine what the sales of a particular movie in a particular zone was. Again this time we are going to create a query in design view and not use the query wizard. To accomplish this task complete the following tasks.

QUESTION ASKED "WHAT WHERE THE TOTAL SUM OF TICKET SALES FOR THE MOVIE 'HOSTAGE' IN THEATER ZONE 3?"
1. Close out of all table and query views that you might have open.
2. Click on queries in your access view.
3. Select the create a new query in design view.
4. Select the movie, theater, and sales tables.
5. Select the movie_name, theater_zone, and sales fields from their respective tables and drag them into their respective columns.
6. Enter in the name hostage under criteria underneath the movie name column
7. Enter in the number 3 underneath the theater zone column.
8. Also select the SIGMA button to create the additional row in design view.
9. Select the sum option under sales.
10. View your results after hitting the exclamation mark. Does it list $ $49,175,824.00—if so you have executed the AND Query Correctly_save this as movie_query4

Completing/Developing a OR Criteria Query

There are also times where you wish to sort on a condition where the answer can be determined by an OR condition. For example, perhaps you wish to know the answer to which movies had either the highest or the lowest sales for a given week. ***In this example will be wanting to find the answer to this specific question "What where the movies that had sales less than100,000 and more than 1,000,000** in week 3".Again we will engage in creating a query in design view. To accomplish this task complete the following tasks:

1. Close out of all table and query views that you might have open.
2. Click on queries in your access view.
3. Select the create a new query in design view.
4. Select the movie, week, and sales tables.
5. Select the movie_name, week_ID, and the sales fields from their respective tables.
6. Enter in the number 3 underneath the week_ID column_you will also want to hit the SIGMA button and select the 'WHERE' option in the TOTAL row in the same column.
7. Enter the following under criteria row under the sales column
   a. In the first row type <100,000
   b. In the second row type >1,000,000
8. If executed correctly, your query result in listing five movies. Save the query as movie_query5.

Creating a Calculated Field Query in Access

There are cases where we would like to manually create calculated fields in our queries. For example we might want to create a query that calculates the weekly paycheck for our employees. You'll notice that there is an hourly rate field in the employee table that you just recently imported. To make this query work you will have to create an table that contains the input for the hours. Why would you have to create a new table?

After you have created your table you can begin the query.
1. select the query button in access and click on create query in design view.
2. now select the employees, hours, and sales tables.
3. now think about what do you want your query to show? Probably you want it to show WEEK_ID, EMPLOYEE_NAME (first or last?), RATE, and PAY_AMOUNT.

4. with the exception of the last amount all of this information is found in the table. So to find the PAY_AMOUNT what calculation would we execute?
5. Right—it would be rate * hours_worked.
6. In access we can create the field by writing a little bit of code (not much). First place the cursor in an empty field column in your open query.
7. right click and select the ZOOM Option.
8. Type in the following Code--- paycheck: [employees.rate]*[hours.h_worked]
9. Once you have done that hit ok and then click on the exclamation mark if successful you should see a query that lists the week_ID, employee name, hour rate and paycheck amount.
10. OK, so what does the code mean? Hopefully by running the query you'll be able to tell that the first part of the code is the title of the calculated field. The colon separates the title from the calculation.
11. then perhaps you'll notice that the brackets separate the two items being calculated in this case rate times hours worked.
12. the challenge is that these two items exists as fields in different tables, hence why the notation is TABLE.FIELD or in other words employees.rate.
13. Now that you have successfully created this query—alter the query to show all the paychecks issued for week 3.
14. what is your answer?

Exporting to Excel

Access like all the other office products integrate very well with each other. In this example we wish to take our query results and export them to Excel so that we can make a chart of the answer. With the query still open (after being executed) select Tools on the top bar, and then select Office Links (hint you may have to select the double arrows to expand menu options). You should notice that you have some options to merge the data with work, publish it with word, or analyze it with Excel. Select the last option. If successful Excel will open up and you can then make a chart out of the data.

Importing Data into Access from Excel

NOTE BEFORE YOU BEGIN YOU MUST DOWNLOAD THE employees.xls file from the web.
1. open up the access database that you wish to import the data into (PS. It also helps if you have the excel sheet already set up in the table format that you wish to create).
2. click on file and select the option "Get External Data"—this will then give you the option to either link or import data—select "import data". This will cause a wizard dialog box to appear.
3. your next step will be to locate the folder in which your excel file exists. You will want to note that by default the import wizard opens up window explorer looking for an Access Database. Click on Files of type— search for MS Excel and select that option. You will then be able to view all the Excel files. Click on the employees.xls file.
4. Upon completion you will see a import spreadsheet wizard appear. You'll notice that it contains all the worksheets of the database. Click and view the different sheets until you locate the worksheet that contains the data you wish to import.
5. By default, Access asks if the first row contains column headings. Fortunately for this example it does. Make certain the box is check and click next to continue.
6. In this next stage you are asked whether or not you wish to store the data in a new table or append (add) the data to an existing table. In this case we wish to create a new table—so select that option and click on next.
7. you are then given the option to have access create an index of the field. Since this is a simple table it is not necessary.
8. Access also realizes that you should have a primary key in your new table and offers to create one for you. However, this Excel sheet was designed for access and already has one. Select the option that lets you choose the primary key. Make certain the employee_ID field is selected and click next.
9. Your last step before completion is to give the table a name. Since this is a table that contains data regarding employees –type that name in and click finish.
10. If successful you will receive a message explaining that access is finished importing file and it will list the location of where the file was imported from.