Simple Database Design

This activity station is actually two stations in one. Part I of the station focuses on creating a very simple to use database (using MS Excel), while Part II focuses on using this database in conjunction with MS Word to create a form letter.

Part I: Creating the database

While MS Excel is not typically thought of as a database application, it can be used to create simple databases of records in which the user can search, sort, and even filter the data stored.

First, we need to review some vocabulary for those of you unfamiliar with databases.

Record: Each database is made up of multiple records. Each record contains fields of information specific to that record. For example, an address book is one type of database. Each person you list in your address book, along with all his or her personal information, forms a record.

Field: As mentioned, records are made up of a number of different fields. Each field represents one type of information related to that record. All records within a database have the same fields, although the data contained in those fields will generally be different for each record. For example, each person is a record in our address book example. Within each record, you would want that persons' name, address, phone number, email address, etc. Each of these items listed would be a field.

What other types of databases are you familiar with? Name one:

_____

For that database, what kinds of records does it maintain?

_____

What are some fields contained within those records?

_____

Now that we've defined those terms, let's get started by creating a simple database.

Open up Microsoft Excel on your computer.

For this activity, I'd like for you to create an address book, as we'll be using it for the form letter activity. You may decide how many fields you would like to create and what those fields will be.

Determine what fields you will want to include and type them in row one across the top of the blank worksheet. Put one field in each column. (Tip: Rather than make *name* as one field, create two fields: *first name* and *last name* – when data contains two or more words or types of data, consider creating fields for each type rather than creating one field, ex. *Address=street, city, state, zip*)

Click on the cell A1 (that is the cell in column A, row 1). Then click on Data>Form and then hit OK, indicating that you want Excel to automatically select row one as your heading row.

A new window should appear, displaying each of the fields and a small text box to the right, along with a series of vertically placed buttons on the right hand side. This is the data input form that we will use to populate our database.

Begin populating your database by typing information into each of these fields. Click the *New* button to create each new record. Create at least ten (10) records. You'll notice that the information you input will show up in the worksheet viewable in the background. Be sure to save this file, as we will be using it again later.

OK, so you've now created a simple database. Congratulations! However, we're not finished yet. While it's nice to have this information all in one place, what makes a database so powerful is the fact that the data can be searched, sorted, and filtered. Let's take a look at how to do each of these three functions.

Searching (looking for records):

While in the data input form that we were using previously, note the *Criteria* button on the right side.

Click on *Criteria*. Note that nothing much seems to change other than the word "Criteria" appears above all the buttons. Once in this mode, you can type information in any **one** of the same text boxes you've been using. The difference is that this time, instead of adding a new record like before, you are now inputting search criteria. In other words, each of the text boxes are now individual search boxes allowing you to search each of the fields you've created. By clicking on the *Find Prev* and *Find Next* buttons, you can view all records that meet the search criteria you inputted.

Sorting (reorganizing the records):

Return first to the worksheet where all your data is stored.

Click on cell A1 (same that we selected earlier) and then, Data>Sort.

A box will pop up and provide you with options for sorting. You can sort by three different fields, in either ascending or descending order. For example, you might want to sort, first by last name, and then by city, both in ascending order. Using two of the three sort options would enable you to do this.

The data in your database worksheet will now resort based on the sort criteria you chose.

Filtering (showing and hiding certain records):

Return first to the worksheet where all your data is stored.

Click on cell A1 (same that we selected earlier) and then, Data>Filter>Auto filter.

This will automatically put small up/down arrows next to each of the fields in Row A.

By clicking on any of these arrows, you have the ability to do one of several things:

- Sort the entire database, ascending or descending by the field selected.
- Show all
- Show top 10…
- Show all based on custom variables (try this one out if you like)
- Show all that include data of this type (for this one, you may select any one term/phrase to have the records filtered to show only records with this term or phrase – for example, you can filter on the "address" field to show only records of those who live in Charlotte.)
- You may remove the filter feature by returning to Data>Filter>Auto filter and deselecting this option.

Congratulations! You've just completed **Part I** of this activity station. However, we're not finished yet. Part II of this activity station involves using this database to help create a form letter.

Creating Form Letters

One of the great things about a form letter is that it allows you to type a personalized letter to many people at once without having to actually type the letter over and over, making the personalized changes. In other words, you can write one letter and use a database with all the personalized information to automatically insert the unique information for each letter. Let's stop talking about it and try it!

One thing that you'll discover when using technology is that it will occasionally not do what you intended for it to do. I had created this activity station but when I shared it with my Saturday class, I discovered that I had designed it for a different version of Word. It will therefore not work for you.

So, what I would like for you to do is this:

1. Using the Help feature in Word (which can be access via the animated icon that appears on your screen anytime you open Word or via the Help menu at the top of the screen), type in the words, "form letter."
2. Select the option having to do with creating a form letter, also called "data merge manager." I do not have the exact wording in front of me but the choice should be obvious.
3. Follow the step-by-step instructions provided by the Word help screen. It's well written and should walk you through what you need to do to create a form letter.

   Speaking of which, can you name a few reasons how you might use this new skill in your library?
   - _____
   - _____
   - _____

That's it! If there's still time, keep practicing. If not, move on to the next station.