**Transforming Rows in Power Query** (25 minutes)

The focus of this section will be

* Presentation: Sorting, removing duplicates, filtering, filling a table (maybe grouping)
  + Demo: office characters
    - We have a list of RSVP’s to an office party and we want to clean up our dataset a little bit. (You are consulting with the Party Planning Committee).
      * Sorted A-Z
      * Remove duplicates
    - We could do this in basic Excel but we may have more people signing up for the list. And we may want to use it for other parties.

1. Create the connection (table)
2. Immediately you see a null. This is a special thing in Power Query. We want to get rid of them so we can hit our drop-down filter button and do so.
3. Now while we are up here we can sort from A-Z as well.
4. Check it out, now we have a running list of steps we have taken on this data.
   1. You’ll see that the first step is
5. If I hit the gear-box, we can get another look at what we did here.
6. If I remove it, we will see that things are still sorted from A-Z, but we have the nulls still.
   1. There is no undoing this!
7. So let’s filter out the NULL’s again.
8. Now let’s remove the duplicates, to do this I will go to Remove Rows -> Remove Duplicates.
   1. You’ll also see there is an option here to remove blank rows, this would have worked the same way to get rid of the NULLs.
9. Last but not least, there is a `Klevin` in here, we don’t want that, of course the data wouldn’t have been able to tell us that! .
10. Now let’s close and load this. I’m just going to hit the standard close and load.
    1. You’ll see we have a query here.
    2. We have the Queries & Connections tab here on the right, named Table1, that’s not a very descriptive name so let’s rename that to party\_rsvp.
    3. If you want to close this out, you can open it again, it’s Data -> Queries & Connections.
11. Check out that we have two tables.
12. We still have the original data, that is nice. Let’s say we add to it.
    1. I am going to add a Roy and then insert a blank row.
    2. Now right-click that and the resulting table is updated.

* + Demo: regional sales

Here we have a table, we don’t have a header row, and we need to fill down the Region, and we would like be able to slice and dice on this data a little bit, for example filtering, aggregating and so forth.

1. Select everything, our table does not have headers, but we are going to name them, just double-click on the column name. See that those come across as steps in the query as well.
2. Now we want to fill down the blanks for the Regions, we can do that by going to the Transform tab, you will select Fill, Fill Down to fill the nulls down with blanks.
3. Now we’ve got everything. Close and load but I’m really not interested in this table per se, I’d like to be able to aggregate and summarize it, and to do that I can automatically add to a PivotTable. It says PivotTable report but same idea.
   1. See there are some other options here, we can create a Table, PivotTable, or Only Create Connection where the data is not loaded into the workbook, we just have a connection to that data.
   2. Also there is the option to add this data to the Data Model, this would be used if you are using Power Pivot.
   3. And now we can use it like any other PivotTable.

* Exercise: drills on transforming rows
  + Drill: Census regions

1. Name this query “State populations”
2. Get rid of the Total row.
3. Fill down the region and division
4. Sort by State Population, from high to low.
5. Then load this into a PivotTable to analyze.

Things to show during the demo:

1. If I hold down the Control key I can fill down two columns at the same time.
2. I can name the query over in Properties when I am in the Query Editor.

After the demo, show that you can group:

1. Let’s say I know that I am always going to want to analyze this by Region. I can actually group this data in Power Query rather than throwing it together in PQ:
   1. Right-click on query name, Edit.
   2. Right-click on region column, go to Group By. I am now going to group by total state population by region.

