Using Excel Pivot Tables to Analyze Student Data
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Imagine an Excel worksheet of student enrollment figures with hundreds or thousands of rows of data. The worksheet lays out all the data about your students’ academic history, bio/demo, courses and grades. It's a lot of data to deal with — listed in row after row and divided into multiple columns. How can you get easily obtain useful information out of the worksheet? How can you make sense out of all of this data?

You can get all the answers you need by using Excel PivotTable — it's like turning a mob of students into a marching band. A PivotTable turns all that data into small, concise reports that tell you exactly what you need to know.
How many of you have seen something like this before?

Often, the presentation is quickly followed up by the request – “How many of our current students are from XYZ city, county, or state?” or “What is the average advisor load?” or “What is the average number of withdrawals by major?”

and... oh, by the way, I need this information in a ½ hour.
Before you start to work with a PivotTable report, take a look at your Excel worksheet to make sure it is well prepared for the report.

When you create a PivotTable report, each column of your source data becomes a **field** that you can use in the report (fields summarize multiple rows of information from the source data).

The names of the fields for the report come from the column titles in your source data. Be sure that you have named each column across the first row of the worksheet in the source data.
In the example below, the column titles: Term, T-Number, Name, Student Type, and Student Classification will become the field names.
The remaining rows below the headings should contain similar items in the same column. In other words, a column that contains Student IDs should not include Student Type, and so on.

There should be no empty columns within the data that you are using for the PivotTable.
When the data is ready, select the data (including the column titles) that you wish to review in the Pivot Table. Then, on the **Insert tab**, in the **Tables group**, click on the **PivotTable** icon. The **Create PivotTable** dialog box opens.

Select a **table or range** is already selected for you. The **Table/Range** box shows the range of the selected data. **New Worksheet** is also selected for you as the place where the report will be placed.
On one side of the new worksheet is the **Layout Area** and on the other side is the **PivotTable Field List** (this list shows the column titles from the source data (i.e., Term, T-Number, Name, etc.)

You create a PivotTable report by right-clicking a field name and selecting a location to move the field to or by dragging and dropping the field name to 1) Report Filter, 2) Column Labels, 3) Row Labels, or 4) Values.
Now you are ready to build the PivotTable. The fields you select for the report depend on what you want to know.

We’ll start with finding out how many students we have by Student Type. To get the answer, you need data about the student type. Right click on the field **Student Type** (in the **PivotTable Field List**) and select “Add to Row Labels.”

You also need data to count, so right click on the field **T-Number** (in the **PivotTable Field List**) and select “Add to Values.”

⚠️ Remember – you can drag and drop the fields.
That's it! With just two mouse clicks you know how many students are enrolled at your institution by Student Type.
A report filter is used to focus on a subset of data in the report. For example, if you are looking at student data from multiple terms, you can add the Term field to the PivotTable report as a report filter. By using the Term field as a report filter, you can see a separate report for Fall 2010 or Spring 2011, or you can see students for both terms together.

To add this field as a report filter, right-click the Term field (in the PivotTable Field List) and then click “Add to Report Filter.”
The new Term report filter is added to the top of the report. The arrow by the Term field shows (All), and you see the data for both terms. To see the data for either Fall 2010 or Spring 2011, select the individual term and click on “OK”.

[Diagram showing the Term filter and data tables for both terms]
If you want to drill down on a particular summary value, just double click on it. Excel will create a new sheet with the data corresponding to that specific PivotTable value (this is extremely useful).
A PivotChart provides a graphical representation of the data in a PivotTable.

A PivotChart displays data series, categories, data markers, and axis just as standard charts do. You can also change the chart type and other options such as the titles, the legend placement, the data labels, and the chart location.

To create a PivotChart from an existing PivotTable report:

1. Click on the PivotTable
2. Click on the PivotChart button on the Excel ribbon
3. Select chart type and press OK
Examples
Once you create a PivotChart, you can manipulate (or filter) the data you wish to view in the chart by modifying the data elements. To do this, select the dropdown menu and select only the items you wish to view.

Select the “Select All” checkbox to uncheck all boxes on the list. You can then select only the values you wish to view. Once selected, click OK.
In the example below, we initially viewed all Student Classifications by Student Type (example A). After selecting the Student Classification dropdown menu, clicking on the “Select All” checkbox, and selecting the “1st Sem Freshman” checkbox, the chart changed to only reflect 1st Sem Freshman by Student Type (example B).
Some useful tips on Excel PivotTables

1. You can apply any formatting to the pivot tables/charts.
2. You can easily change the pivot table summary formulas. Right click on the pivot table and select “summarize data by” option.
3. If the original data from which pivot tables is modified, right click on the pivot table and select “Refresh Data” option.
4. SHORTCUT - If you press F11 while your cursor is somewhere inside the pivot table, you’ll get a very nice, dynamic and customizable pivot chart.
5. There are many other useful PivotTable and PivotChart features available in Excel. To learn more, search the Microsoft Excel Help keywords “PivotTable” or “PivotChart.”
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Questions?