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About the Author

This lab was designed and written by Peter Myers.

Peter Myers has worked with Microsoft database and development products since 1997. Today, he specializes in all Microsoft BI products and provides mentoring, technical training, and education content authoring for SQL Server, Office, and SharePoint. Peter has a broad business background supported by a bachelor’s degree in applied economics and accounting, and he extends this with solid experience backed by current MCSE and MCT certifications. He has been a SQL Server MVP since 2007.

Document Revisions

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Lab Overview

Introduction

Note: This lab is the fifth in a series of seven labs, which explore self-service BI with Excel 2013 and Office 365 Power BI. If you plan to complete all of the labs, we recommend that you complete them in the order in which they were designed, although the labs can be completed in any order you choose.

In this lab, you will explore Power View in an Excel 2013 by creating two Power View reports based on the data model created in Lab 01 and prepared for Power View reporting in Lab 04.

Objectives

The objectives of this lab are to:

- Become familiar with the Power View design features
- Create visually compelling Power View reports by using various visualization types

Exercises

This hands-on lab comprises the following exercises:

1. Exploring the Power View Design Environment
2. Creating Power View Reports

Estimated time to complete this lab: 30 minutes
Exercise 1: Exploring the Power View Design Environment

In this exercise, you will open an existing Power Pivot workbook, and then explore the Power View ribbon tab functionality and the data model interface by using the Power View Fields pane.

Task 1 – Opening and Exploring the Excel Workbook

In this task, you will open an existing Excel workbook (completed in Lab 04).

1. To open Excel, on the taskbar, click the Excel program shortcut.
2. In Excel, click Open Other Workbooks (located at the bottom of the left panel).

   ![Open Other Workbooks](image)

   Figure 1
   Locating the Open Other Workbooks Command

3. Select Computer, and then click Browse.
4. In the Open window, navigate to the D:\PowerBI\Lab05\Starter folder.
5. Select the Sales Analysis.xlsx file, and then click Open.

   Note: This is the workbook completed in Lab 04.

6. If prompted with security warnings, click Enable Content for each warning.

   ![Enable Content](image)

   Figure 2
   Enabling the Workbook Content
7. On the **File** ribbon tab (also known as the backstage view), select **Save As**, select **Computer**, and then click **Browse**.

8. In the **Save As** window, navigate to the **D:\PowerBI\Lab05** folder.

9. Click **Save**.

**Task 2 – Exploring the Power View Designer**

In this task, you will create a Power View report and explore the Power View designer.

1. To insert a Power View report, on the **Insert** ribbon tab, click **Power View**.

   ![Power View Reports](image)

   **Figure 3**
   *Inserting a Power View Report*

2. Notice that the Power View report is available alongside the existing Power View report added in **Lab 04**.

3. On the **Power View** ribbon tab, notice the functionality for clipboard operations, undo/redo operations, managing themes and background images, viewing the field list and filters area, and inserting additional Power View reports, text boxes and pictures.

   **Note:** Additional context-driven ribbon tabs will be available when configuring data visualizations within the Power View sheet.

The large pane beneath the ribbon is the report canvas. This is a WYSIWYG (What-You-See-Is-What-You-Get) designer that supports an interactive design and data exploration experience.

To the right of the report canvas is the **Power View Fields** pane. Notice that it exposes the Power Pivot data model that consists of a list of tables. Within each table is a list of fields, and possibly hierarchies and key performance indicators (KPIs).
4. In the **Power View Fields** pane, to reveal the fields from the **Product** table, click the small triangle to the left of the table name.

![Power View Fields](image)

**Figure 4**
*Expanding the Product Table*

5. Expand the **Products** hierarchy to reveal the hierarchy levels that are also fields.

6. Notice the list of fields, and the various icons that denote the different type of fields.

**Note:** The icons (■) you see next to the **Photo**, **Product** and **SKU** fields indicate that they represent values at the lowest granularity of the table. Data model developers can mark fields as label fields to help Power View users understand that these fields can be used to see all entries of the table, and to ensure they group appropriately.

![Expanded Products Hierarchy](image)

**Figure 5**
*Reviewing the Product Table Fields*
7. To collapse the **Product** table, click the small triangle to the left of the table name.

8. Finally, below the **Power View Fields** pane, notice the **Fields** drop zone. This is the layout area. To add and configure a layout, you can simply select, or drag, fields into the various drop zones. (Different drop zone layouts will be available for different visualizations.)
Exercise 2: Creating Power View Reports

In this exercise, you will create two Power View reports. The first report will consist of four different, yet related, interactive data exploration experiences. You will then analyze sales by using the tables, column and bar charts, and an animated scatter chart. The second Power View report will consist of a slicer and map.

The completed reports will look like the following.

![Figure 6](image)

*Figure 6
Previewing Report 1*
Figure 7
Previewing Report 2

Task 1 – Setting the Report Title

In this task, you will set the report title.

1. Right-click the Power View2 report tab, and then select Rename.
2. Replace the text with Sales Analysis, and then press Enter.
3. In the report canvas, click the Click Here to Add a Title text, and then enter Sales Analysis.
Task 2 – Creating a Card Report to Display Individual Products

In this task, you will create and resize a card report.

1. To add a table based on the default columns of the Product table, in the Power View Fields pane, simply click the Product table.

2. In the report canvas, notice the addition of the product table consisting of six fields.

3. In the Power View Fields pane, expand the Product table, and notice the selected fields.

   **Note:** The fields included in this table were defined by the data modeler and are included in the metadata of the data model. It is helpful for the data modeler to identify and define commonly used columns to support this quick approach to creating a table.

   The images can be sourced by URLs that retrieve images from a web site (as is the case here), or from binary data stored within the data model.

4. In the layout area, in the Fields drop zone, notice the addition of the fields also.

   **Note:** The dropdown arrow next to each field supports the removal of the field, and you can also reorder the fields by using drag and drop.

5. In the report canvas, use the scroll bar located at the right of the table to scroll through the complete list of products.

6. To format the table as a card report, ensure the table is selected (you will see corners and edges around the table), and then on the Design ribbon tab, from inside the Switch Visualization group, select Table | Card.

   **Note:** If the Design ribbon tab does not appear, save the workbook and then close Excel. Open Excel, and then reopen the workbook. If prompted with security warnings, click Enable Content for each warning.

7. Notice that the table has been transformed to visualize each product in card layout.

   **Note:** It is one of the core tenets of Power View is to transform the look of data easily and quickly with a single click.
8. To reduce the width of the data region, ensure the data region is selected, and then hover the mouse pointer over the small bar located at the middle of the right edge.

![Figure 8](image1.png)

*Figure 8*
*Locating the Right Edge*

9. Notice the mouse pointer changes to a double-headed arrow (↔), and then click and drag to resize the width to half the report canvas width.

![Figure 9](image2.png)

*Figure 9*
*Resizing the Width of the Card Visualization*
10. Resize the data region again to fill the available vertical space, as indicated on the following diagram.

![Figure 10](image)

*Figure 10*

Resizing the Visualization

**Task 3 – Creating the Sum of Revenue by Demographic Chart**

In this task, you will create a column chart to sum revenue by demographics.

1. To commence the design of a new table, click anywhere in a blank area of the report canvas.

2. In the **Power View Fields** pane, in the **Product** table, check the **Demographic** field.

3. In the report canvas, notice the addition of a new table consisting of a single column.

4. In the layout area, in the **Fields** drop zone, also notice the addition of the **Demographic** field.

5. In the **Power View Fields** pane, expand the **Sales** table, and then check the **Revenue** field.

6. In the report canvas, notice the addition of the **Revenue** column to the table.
7. Resize the table to fill the available horizontal space, and resize the table to fill half of the available vertical space, as indicated on the following diagram.

![Figure 11](image)

**Figure 11**
*Resizing the Visualization*

8. Ensure that the new table is selected, and then on the **Design** ribbon tab, from inside the **Switch Visualizations** group, select **Column Chart | Stacked Column**.

9. Notice that the column chart is automatically formatted to include a title, a vertical axis label, and with the axis values formatted in groups of millions.

10. To sort the columns by revenue, hover over the new data region.

11. At the top left corner, notice the caption **Sort by Demographic** that appears.

12. Click the word **Demographic** to change the sort field to **Revenue**.

13. Ensure the chart looks like the following.

![Figure 12](image)

**Figure 12**
*Reviewing the Column Chart*

14. Hover over the **Intermediate** bar to reveal the tooltip with details about revenue generated for this demographic. Notice the revenue amount of **$12,324,284.00**.
Task 4 – Filtering the View

In this task, you will filter the view to display data for the year 2012.

1. In the Power View Fields pane, expand the Date table, expand the Calendar hierarchy, and then drag the Year field into the Filters pane (located at the right of the report canvas).

2. To filter the entire view by a single year, check CY2012.

3. Hover over the Intermediate bar to reveal the tooltip with details about revenue generated for this demographic. Note the revenue amount of $6,230,730.00.

   **Note:** Filters can be applied to the entire view (as is the case with this configuration). It is also possible to apply filters at data visualization level. As you will discover in a later task, it is also possible to filter data visualizations based on the selections made in other data visualizations in the same sheet.

4. To collapse the pane, in the top right corner of the Filters pane, click the < symbol.

   ![Filters pane](Collapsing the Filters Area)

Task 5 – Creating the Sum of Quantity by Category Chart

In this task, you will create a bar chart to visualize quantities sold by category.

1. To commence the design of a new table, click inside the blank area of the report canvas.

2. In the Power View Fields pane, in the Product table, expand the Products hierarchy, and then check the Category level.

3. In the Sales table, check the Quantity field.
4. Resize the data visualization to fill the available vertical space, as indicated on the following diagram.

![Figure 14](image)

*Figure 14*

*Resizing the Visualization*

5. Ensure the new table is selected, and then on the **Design** ribbon tab, from inside the **Switch Visualizations** group, and then select **Bar Chart | Stacked Bar**.

![Chart](chart)

*Figure 15*

*Reviewing the Bar Chart*

**Task 6 – Interacting with the Data Regions**

In this task, you will interact with the report data visualizations.

1. In the **Quantity by Category** bar chart, hover over the **Trainer** bar to reveal its details.
2. To filter the entire report, select the **Trainer** bar.
3. Notice that the other bars in the chart are de-emphasized, and that the column chart above now highlights revenue by demographic, filtered by products from the Trainer product category. Also, notice that the card report only displays trainer products.

4. In the Revenue by Demographic column chart, hover over the highlighted portion of the Intermediate column to reveal total revenue for intermediate products (for year 2012).

![Figure 16](image)

*Reviewing the Column Details*

5. Hover over the de-emphasized portion of the Intermediate column to reveal details for all product categories except the Trainer category (for year 2012).

6. To filter the report by the Intermediate demographic, in the Revenue by Demographic column chart, select the Advanced column.

7. Again, notice that the Quantity by Category chart filters by this selection, and that the card report displays only advanced products.

8. In the Quantity by Category bar chart, select the Collective Pitch bar, and, in the Revenue by Demographic column chart, learn that the two products in this category are sold exclusively to customers in the professional demographic.

**Task 7 – Transforming the Sum of Quantity by Category Chart to a Scatter Chart**

In this task, you will transform the Quantity by Category chart to a scatter chart, and configure it to animate over months.

1. To clear the report filter, click inside the grid area of the Quantity by Category bar chart.

2. On the Design ribbon tab, from inside the Switch Visualization group, select Other Chart | Scatter.
3. To compare category sales by quantity and revenue, in the **Power View Fields** pane, in the **Sales** table, check the **Revenue** field, and then check the **Product Count** field.

4. In the layout area, ensure that the drop zones are configured as follows.

![Chart Fields Configuration](image)

**Figure 17**
*Reviewing the Scatter Chart Fields*

**Note:** The location of the bubbles in this chart will be determined by quantity sold and revenue generated, while the bubble size will be determined by the number of products sold.

5. Hover over the **Trainer** bubble to reveal its details. Then hover over the **Fixed Pitch** bubble to reveal its details also. You can learn that while many trainer products are sold, they do not generate a lot of revenue. In contrast, fewer collective pitch products are sold, and yet they generate more than twice the revenue of the trainer products.
6. To observe trends over time, in the **Power View Fields** pane, inside the **Date** table, select (do not check) the **Month** field, click the dropdown arrow, and then select **Add As Play Axis**.

![Figure 18](image)

**Figure 18**

*Adding the Month Field to the Play Axis*

7. In the scatter chart, notice the addition of the time scale beneath the horizontal axis.

8. To maximize the bubble chart, ensure the scatter chart is selected, hover the mouse pointer over the top right corner, and then click the pop out icon.

![Figure 19](image)

**Figure 19**

*Locating the Pop Out Icon*
9. Click the animate button.

![Figure 20](image)

*Figure 20*

*Locating the Scatter Chart Animate Button*

*Tip:* You can also drag the slider to any location along the axis.

10. As the chart animates, while watching the change in position and size of the bubbles, notice also the progression of the year-month labels located at the top right corner of the chart.

11. To track position over time, select the **Trainer** bubble. Then hover over several of the historic bubbles to reveal details at that particular month.

12. To reset the filter, click inside the grid area of the scatter chart.

13. To minimize the scatter chart, hover the mouse pointer over the top right corner, and then click the pop in icon.

**Task 8 – Introducing Tiling to the Card Report**

In this task, you will add tiling to the card report, and then embed a sub report into the data region.

1. Select the card visualization developed first in this exercise.

2. On the **Design** ribbon tab, click **Tiles**.

![Figure 21](image)

*Figure 21*

*Locating the Tiles Command*
3. Notice the tiles across the top of the data region.

Figure 22
Reviewing the Tiles

4. Select several different images, and notice that the details of the selected product appear in the card beneath. Notice also that the selection does not filter the other visualizations in the report.

5. To add a table beneath the card (within the tiled region), click the blank area inside the visualization.

6. In the **Power View Fields** pane, to display all tables, click **All**.

Figure 23
Locating the All Command

7. Expand the **State** table, expand the **States** hierarchy, and then check the **Region** field.

8. In the **Sales** table, check the **Revenue** and **Profit** fields.

9. Expand the **Profitability** KPI, and then check the **Status** field.

10. In the card report, select other produce images to review details, and its revenue grouped by region.

**Task 9 – Adding a Slicer and Map**

In this task, you will add a second report and configure a slicer and map.

1. On the **Insert** ribbon tab, click **Power View**.

2. Rename the report tab to **Sales per Capita**.

3. Enter the report title **Sales per Capita**.

4. In the **Power View Fields** pane, in the **Date** table, check the **Year** field.
5. To convert the table to a slicer, on the Design ribbon tab, click Slicer.

![Slicer](image)

**Figure 24**
*Locating the Slicer Command*

**Note:** A single-column table can be converted to a slicer. Slicers allow users to interact directly with the view and filter all data regions. Users can select multiple items by pressing the Control or Shift key. To select all items, hover over the slicer and click the eraser icon that appears in the top right corner.

6. In the slicer, select CY2012.

7. To increase the font size, on the Design ribbon tab, from inside the Text group, click the Increase Font Size command four times.

8. Resize the height of the slicer to display all items in the slicer.

9. To create a new table, click inside a blank area of the report canvas.

10. In the Power View Fields pane, in the State table, check the State field.

11. In the Sales table, check the Sales per Capita field.

12. Resize the table to fill the remaining report canvas space.


14. If prompted with the privacy warning, click Enable Content.

15. To display values by item group, in the Power View Fields pane, in the Product table, check the Item Group field.

16. In the top right corner of the map, notice the zoom and pan controls.

![Zoom and Pan Controls](image)

**Figure 25**
*Locating the Zoom and Pan Controls*
17. Interact with the map by zooming and panning.
18. Zoom out to ensure the map of the entire United States (including Hawaii) is visible.
19. In the slicer, change the year to **CY2013**.
20. Hover over the bubbles to reveal a tooltip to describe item type and the sales per capita statistic.

**Task 10 – Finishing Up**

In this task, you will finish up by closing all opened applications.

1. To save the workbook, on the **File** ribbon tab, click **Save**.
2. To close Excel, click the X button in the top right corner.

**Summary**

In this lab, you have created two Power View reports and explored the different visualizations, filtering and interactivity capabilities.