

COMP 1100 In-Class Assignment 10 – Power BI

Name

Date

For this assignment you will work through the following step-by-step tutorial based on a guide published by Microsoft. It will allow you to explore and learn the fundamental features of Power BI in a short amount of time.

Motivation

Your manager wants to see a report on your latest sales figures. She's requested an executive summary of:

- Which month and year had the most profit?
- Where is the company seeing the most success (by country/region)?
- Which product and segment should the company continue to invest in?

Using our sample finance workbook, we can build this report in no time. Here's what the final report will look like. Let's get started!

In this tutorial, you'll learn how to:

- Download sample data two different ways
- Prepare your data with a few transformations
- Build a report with a title, three visuals, and a slicer

Tasks

1. **Get the data:** There are two ways you can get the data set. From the Power BI Desktop you can click on **Try a sample dataset**, or you can download the Financial Sample Excel file from the course web page.
 2. **Prepare the data:** In **Navigator**, you have the option to transform or load the data. The Navigator provides a preview of your data so you can verify that you have the correct range of data. Numeric data types are italicized. If you need to make changes, transform your data before loading. To make the visualizations easier to read later, we do want to transform the data now. As you do each transformation, you see it added to the list under **Query Settings** in **Applied Steps**.
 - a) Select the **Financials** table, and choose **Transform Data**.
 - b) Select the Units Sold column. On the Transform tab, select Data Type, then select Whole Number. Choose Replace current to change the column type.
 - c) The top data cleaning step users do most often is changing data types. In this case, the units sold are in decimal form. It doesn't make sense to have 0.2 or 0.5 of a unit sold, does it? So let's change that to whole number.
 - d) Select the Segment column. We want to make the segments easier to see in the chart later, so let's format the Segment column. On the Transform tab, select Format, then select UPPERCASE.
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e) Let's shorten the column name from Month Name to just Month. Double-click the Month Name column, and rename to just Month.

f) In the Product column, select the dropdown and clear the box next to Montana.

We know the Montana product was discontinued last month, so we want to filter this data from our report to avoid confusion.

g) You see that each transformation has been added to the list under Query Settings in Applied Steps.

h) Back on the Home tab, select Close & Apply. Our data is almost ready for building a report.

You see the Sigma symbol in the Fields list? Power BI has detected that those fields are numeric. Power BI also indicates the date field with a calendar symbol.

3. **Write an expression in DAX:** Writing *measures* and creating *tables* in the DAX formula language is super powerful for data modeling. There's lots to learn about DAX in the Power BI documentation. For now, let's write a basic expression and join two tables.

a) On the **Home** ribbon, select **New measure**.

b) Type this expression to add all the numbers in the Units Sold column.

```
Total Units Sold = SUM(financials[Units Sold])
```

c) Select the check mark to commit.

d) Now select the **Data** view on the left.

e) On the **Home** ribbon, select **New table**.

f) Type this expression to generate a Calendar table of all dates between January 1, 2013, and December 31, 2014.

```
Calendar = CALENDAR (DATE (2013, 01, 01), DATE (2014, 12, 31))
```

g) Select the check mark to commit.

h) Now select **Model** view on the left.

i) Drag the **Date** field from the financials table to the **Date** field in the Calendar table to join the tables, and create a relationship between them.

4. **Build your report:** Now that you've transformed and loaded your data, it's time to create your report. In the Fields pane on the right, you see the fields in the data model you created. Let's build the final report, one visual at a time.

a) On the **Insert** ribbon, select **Text Box**. Type "Executive Summary – Finance Report".

b) Select the text you typed. Set the **Font Size** to 20 and **Bold**.

c) Resize the box to fit on one line.

d) From the Fields pane, drag the **Profit** field to a blank area on the report canvas. By default, Power BI displays a column chart with one column, Profit.

e) Drag the **Date** field from your Calendar table to the same visual.

Power BI updates the column chart to show profit by the two years.

f) In the **Fields** section of the Visualizations pane, select the drop-down in the **X-axis** value. Change **Date** from **Date Hierarchy** to **Date**.

Power BI updates the column chart to show profit for each month.

g) In the Visualizations pane, change the visualization type to **Line chart**.

Now you can easily see that December 2014 had the most profit.

- h) From the Fields pane, drag the **Country** field to a blank area on your report canvas to create a map.
- i) Drag the **Profit** field to the map.

Power BI creates a map visual with bubbles representing the relative profit of each location. Europe seems to be performing better than North America.

- j) Drag the two charts you've created to be side by side in the top half of the canvas. Save some room on the left side of the canvas.
- k) Select a blank area in the lower half of your report canvas.
- l) In the Fields pane, select the **Sales**, **Product**, and **Segment** fields.

Power BI automatically creates a clustered column chart.

- m) Drag the chart so it's wide enough to fill the space under the two upper charts.

Looks like the company should continue to invest in the Paseo product and target the Small Business and Government segments.

- n) In the Fields pane, select the **Date** field in the Calendar table. Drag it to the blank area on the left of the canvas.
- o) In the Visualizations pane, choose **Slicer**.
- p) In the Fields section of the Visualizations pane, select the drop-down in **Fields**. Remove Quarter and Day so only Year and Month are left.
- q) Expand each year and resize the visual, so all months are visible.

5. **Format the report:** You may explore the formatting options and spend a little time making the report look close to the image below.

6. Save the report as a .pbix file and email it to prof. stucki...

