Power BI Assignment 5

Ans.1 – DAX is a collection of functions, operators, and constants that can be used in a formula, or expression, to calculate and return one or more values. Stated more simply, DAX helps you create new information from data already in your model.

It’s easy to create a workbook and import some data into it. You can even create PivotTables or Pivot Charts that display important information without using any DAX formulas. But, what if you need to analyze critical sales data across several product categories and for different date ranges? Or, you need combine important inventory data from several tables in different data sources? DAX formulas provide this capability and many other important capabilities as well. Learning how to create effective DAX formulas will help you get the most out of your data. When you get the information you need, you can begin to solve real business problems that affect your bottom line. This is Business Intelligence, and DAX will help you get there.

Before you create your own formulas, let’s take a look at DAX formula syntax. Syntax includes the various elements that make up a formula, or more simply, how the formula is written. For example, let’s look at a simple DAX formula used to create new data (values) for each row in a calculated column, named Margin, in a Fact Sales table:

for e.g. = [SalesAmount] – [TotalCost]

It is very important your formulas have the correct syntax. In most cases, if the syntax is not correct, a syntax error will be returned. In other cases, the syntax may be correct, but the values returned might not be what you are expecting. Power Pivot (and SQL Server Data Tools) includes IntelliSense; a feature used to create syntactically correct formulas by helping you select the correct elements.

DAX includes the following categories of functions: Date and Time, Information, Logical, Mathematical, Statistical, Text, and Time Intelligence Functions. If you are familiar with functions in Excel formulas, many of the functions in DAX will appear similar to you; however, DAX functions are unique in the following ways:

* A DAX function always references a complete column or a table. If you want to use only particular values from a table or column, you can add filters to the formula.
* If you need to customize calculations on a row-by-row basis, DAX provides functions that let you use the current row value or a related value as a kind of argument, to perform calculations that vary by context. You will learn more about context later.
* DAX includes many functions that return a table rather than a value. The table is not displayed, but is used to provide input to other functions. For example, you can retrieve a table and then count the distinct values in it, or calculate dynamic sums across filtered tables or columns.

Ans.2 –

***DATASETS*** – A datasheet is a one-sheet document composed of fundamental details of a component, material, product, service, or system such as its main characteristics, performance, and many others.

Datasheets, also known as specification sheets or sell sheets, are crucial documentation tools for many people, businesses, and organizations as they are extensively used for specifying primary aspects of an item or service to guide people in selecting the right items or in utilizing the items properly.

Datasheets are sell sheets or specification sheets mainly used for commercial businesses, organizations, and professionals. Creating a clear and systematic datasheet for your product, electronic material, subsystem, software or job application is integral in providing essential and sufficient information to prospects in an orderly manner.

***REPORTS*** – Reports are static documents that contain data in text and table form. They sometimes include visuals such as basic graphs and charts but are mostly organized to highlight specific raw numbers or relevant data sets. Reports are usually delivered to various stakeholders periodically, which means data isn’t live. One of the attributes of reports is that they allow the creator to build full narratives with data and optimize its presentation. Additionally, they feature data that is already cleaned, sorted, and parsed.

For users who don’t have direct access to dashboards or analytic tools, they’re also a major source of data. However, the data they supply isn’t updated in real-time, and generally represents a slice of the available sets without the ability to manipulate them. Moreover, they can be extensive and complicated to create. For organizations with multiple departments and diverse data needs, reports can become time-consuming.

***DASHBOARDS*** – Dashboards are data visualization tools that can be customized and tailored to display specific metrics, data, and KPIs. Usually, these tools are dynamic and live, so data is being updated in real-time and visuals can show changes from minute to minute. Additionally, dashboards can be as narrow or broad as needed, letting organizations create multiple specific dashboards to better organize their analytics.

Where once dashboards were reserved for upper management, with the development of self-service analytics every department across an organization can have access to relevant data. Dashboards can be broad and overarching or can focus on more narrow aspects of an organization. For example, human resource may have several specific dashboards for payroll, bonuses, and other functions, while a marketing development  can have dashboards for advertising, website traffic, and average lead score.

**Similarities between reports and dashboards**

Both reports and dashboards offer key benefits, and each is accompanied by their own limitations. The first major area where each offers a different advantage is in scope. Dashboards can really include any number of data points and sets, though they are best employed when they focus on specific aspects of an organization. Some *dashboard* example include tools that track help desk tickets, relative market share, investment portfolios, and other specific metrics.

Reports, on the other hand, have the benefit of a broader scope. Because they’re not live and can be curated, reports can offer a better high-level view of an organization. A manager or CEO may not need to see specific dashboards for customer support, but he would benefit from understanding how the whole customer service department is operating.

The second key difference in each is data timeliness. Reports tend to be broader and feature historic data. Because they must be delivered periodically, they represent a snapshot of a specific area or organization rather than its real-time situation. Dashboards, on the other hand, are built to visualize and organize data in real-time. They can be modified to alert users when specific metrics change, or thresholds are met.

Finally, dashboards also allow users to manipulate and interact with data dynamically, whereas reports show a static picture of the existing data. Generally, dashboards are optimal for everyday analytics and BI needs, while reports are useful to capture static data. Furthermore, dashboards are ideal for compartmentalization and better monitoring of specific metrics and functions.

Ans.3 – Using Power BI, anyone in your organization can uncover actionable, hidden insights in any data source.

Now, we’ll take a closer look at creating reports and dashboards with Power BI Service, a cloud-based solution. You’ll see how to import data, create and edit reports, and build dashboards.

Power BI service is aimed at users, rather than report designers. However, it’s a very useful way to build reports and dashboards for project reporting.

We’ll also take a brief tour of Power BI Desktop, the primary authoring tool for Power BI reports.

A full exploration of Power BI Desktop is beyond the scope of this article! As such, you’ll find additional training resources and videos listed at the end of the article if you’d like to learn more. To illustrate, let’s move through each of these steps.

First, we create a data source. That connects to a file, like a .csv, or a database , next, you have the option to run a transformation. In our example, we use financial data.

We will :Apply a filter to select only negative values (payments) , Drop and rename columns , Optionally apply a function, such as an aggregation.

Step 3 is the natural result of step 2, because you have built up a query in stages.

Alternatively, at this point, you could create a data model. For example, if you have sales and inventory movements in two data sources you can model that. You would create a model to show the common element between tables: product number. (But in the example we’re using, we only have a single data source.)

In step 4, you create a visualization. In this example, we will have a table of transactions. A table is a row and column display. We will also have a single card (like a text box) to show a single number, the maximum transaction amount.

Next, we’ll pick fields from step 4. Finally, in the last step, we’ll position the visualizations on the dashboard.

Ans.4 – Connect to data

With Power BI Desktop, you can connect to many different types of data. These sources include basic data sources, such as a Microsoft Excel file. You can connect to online services that contain all sorts of data, such as Salesforce, Microsoft Dynamics, Azure Blob Storage, and many more.

To connect to data, from the Home ribbon select Get data.

The Get Data window appears. You can choose from the many different data sources to which Power BI Desktop can connect. In this quick start, use the Excel workbook that you downloaded in Prerequisites.

Since this data source is an Excel file, select Excel from the Get Data window, then select the Connect button.

Power BI prompts you to provide the location of the Excel file to which to connect. The downloaded file is called Financial Sample. Select that file, and then select Open.

Power BI Desktop then loads the workbook and reads its contents, and shows you the available data in the file using the **Navigator** window. In that window, you can choose which data you would like to load into Power BI Desktop. Select the tables by marking the checkboxes beside each table you want to import. Import both available tables.

Google Analytics is a powerful tool that tracks website usage and tracks for free. In order to utilize the tool, you must have an account and add the tracking code to your website. Learn how to do this in this tutorial here , some use cases for Google Analytics include measuring website traffic, measuring social media pages, measuring Eventbrite pages, and more.

Power BI will now prompt you to sign in to your Google Analytics account as :

Step 1. Select the account that is attached to the Google Analytics account that has the data you wish to access , you then must allow Power BI to access your Google Account.

Step 2. Once you have allowed access, return to your Power BI file and you will see that you are now signed in. Click Connect to continue.

Step 3. Connecting will open the Navigator box. This is where you will select which data you would like to be loaded into Power BI. The options are set up the same way that the Google Analytics account hierarchy is set up.

The top-level is the Account, the second level is the Property, and the bottom level is the View. Select which account, property, and view that contains the data you are looking for. In order to load in the data, you must ensure that you have the proper permissions in Google Analytics. The last step is to select the tables and load the data.

Here you have two choices. If you select Load, the data will come into Power BI and the dialogue box will close. If you choose Transform Data, this will load the data into Power BI and open the Power Query Editor so that you may transform and clean the data as necessary.

If you are new to Power BI and are wanting to learn how to transform your data, check out our Introduction to Power BI 2-day training. This is an instructor-led course that will get you on the right track with Power BI.

Finally , There you have it! You have now successfully connected your Google Analytics data to Power BI. From here you can now create your calculations and measure to answer your website analytics questions.

Next, you can build a beautiful dashboard with visualizations that present the information you want at your fingertips.

Ans.5 – Power BI has a powerful feature, it enables you to get data from a folder that contains multiple files. In this article, you will learn how to import data from multiple files located in the folder.

To do so, I have three Excel files in a folder with the same structure.

**Step 1**

 To import data, go to the ‘Home’ tab click on ‘Get data’ select the ‘Folder’ source then click ‘OK’ , then Paste the path of the folder and click OK.

Here you can see the metadata information of all three files also you can see the four options ‘Combine’, ‘Load’, ‘transform Data’ and ‘Cancel’.

**Step 2**

Once you click on ‘Combine & Load’ you get the option sample file, choose the file you want to load here. Your file has loaded now you can see the file on the left side of the tool.

**Step 3**

 Our third step is to create a report. In the first report, I am showing the department-wise salary. Here I am selecting table visualization and three columns i.e. ‘DPT\_NAME’, ‘DPT\_ID’ and ‘SALARY’. I have changed the background color and filed a color using format.

If you want to import data manually through Power BI, follow these instructions.

1. In Power BI, click **Get Data** in the lower left screen.
2. Under **Import or Connect to Data** > **Files**, click **Get**.
3. Click Local File.
4. Choose which file to upload and click Open.
5. Click Upload under Upload your Excel file to Power BI.
6. The message “Your file has been uploaded” should appear.

Ans.6 – Visualizations are used to effectively present your data and are the basic building blocks of any Business Intelligence tool. Power BI contains various default data visualization components that include simple bar charts to pie charts to maps, and also complex models such as waterfalls, funnels, gauges, and many other components.

It's important to make the distinction between report designers and report consumers. If you're the person building or modifying the report, then you're a designer. Designers have edit permissions to the report and its underlying dataset. In Power BI Desktop, you can open the dataset in Data view and create visuals in Report view. In Power BI service, you can open the data set or report in the report editor in Editing view. If a report or dashboard has been shared with you, you're a report consumer. You'll be able to view and interact with the report and its visuals but you won't be able to make as many changes as a designer can.

There are two modes for interacting with reports in the Power BI service: *Editing view and Reading view*.

* If you are a business user, then you are more likely to use Reading view to consume reports created by others

Even in Reading view, the content isn't static. You can dig in, looking for trends, insights, and other business intelligence. Slice and dice the content, and even ask it questions using your own words. Or, sit back and let your data discover interesting insights for you; send you alerts when data changes, and email reports to you on a schedule you set. All your data, any time, in the cloud or on-premises, from any device.

* *Editing view* is used by report designers, who create the reports and share them with you. Reading view is your way to explore and interact with reports created by colleagues.

You can create and edit reports in both the Power BI service and Power BI Desktop. In the Power BI service, you create and edit reports in **Editing view**. And in Power BI Desktop, you create and edit reports in reports view.

It's a long list and many of the articles cover functionality only available if you have editing permissions for a report. To help you navigate the Table of Contents, Editing view is required for the following actions:

Creating, editing, renaming, sharing, and deleting reports and adding, renaming, rearranging, and deleting report pages, formatting reports.

Adding visualizations, text boxes, shapes, and buttons to a report ,adding visual-level, page-level, and report-level filters and setting visual interactions , creating refresh schedules moreover using Q&A functionality to create visuals in reports.

Showing data used to create the visualization , setting up drill through ,duplicating a report page furthermore , Using report settings to control your readers' interactions with reports.