Task 2: Data Visualization Dashboard

Task Overview

What you'll learn

- The four common types of analysis: Descriptive, Diagnostic, Predictive, and Prescriptive

- The importance of being able to communicate insights visually

What you'll do

- Create a dashboard in Tableau effectively communicate your insights

- Build a visualization dashboard from the dataset in Task 1 using Tableau.

Here is the background information on your task

So you have been asked to analyze data to support some kind of business decision. Great! But what kind of analysis are you being asked to perform? Generally, there are four types of analysis that you will work on:

- **Descriptive Analysis** - The most common type of analysis, descriptive analysis answers the historical "what happened" and "what is the current state or situation" questions by summarizing the data in various ways. Tracking performance against key performance indicators (KPIs), determining month over month revenue trends, and measuring actuals against budget are all examples of descriptive analysis.

- **Diagnostic Analysis** - This takes your descriptive analysis to the next level to answer "why did it happen?" Here you dig into the data to find root causes, drivers, and sensitivities.

- **Predictive Analysis** - Utilize models created from the descriptive and diagnostic analysis to forecast what might happen in the future. Such models are used to predict future cash flows and profits or losses, predict operational requirements, and other business needs.

- **Prescriptive Analysis** - This analysis builds on predictive models to answer the question "what should we do?" This kind of analysis usually involves very large datasets and increasingly machine learning or artificial intelligence techniques to draw insight from complex data to make recommendations for data-driven business decisions.

As you go from descriptive to diagnostic to predictive and prescriptive analysis, the available tools become increasingly more complex and sophisticated. If you are on track for a career as a data scientist, you will learn many of those sophisticated tools including the powerful tools in machine learning and

artificial intelligence. As a business or financial analyst you won't be called upon to be an expert in data science, but you must still build your knowledge and skills in the everyday kinds of analysis and data visualization that are critical for success at JPMorgan Chase & Co. or anywhere in the financial services industry. One of those key skills is the ability to create data dashboards in a tool called Tableau.

In this task, you will continue the descriptive analysis you did in the first task by building a dashboard in Tableau to visually communicate insights from the dataset.

Here is your task

Your task is to familiarize yourself with the use of Tableau for basic data visualizations, and construct a simple dashboard showing your analysis of the project budget to actuals in the project dataset from Task 1. If you have used Tableau before, this task should be relatively easy; if not, now is the time to dig into Tableau and learn the basics.

First, if you do not already have an account with Tableau, create a free account at **www.tableau.com**. This will give you access to the free version of Tableau which is all you need for this task. You can use either the online version or download the desktop version.

Then, spend some time watching some training videos to become familiar with the basics of Tableau, and how to create a simple dashboard. There are links in Additional Resources below to a few short training videos, but feel free to find more online.

Then, import the spreadsheet of data used in Task 1 into Tableau, either the original version or the one you made as you modified it. To do this, create a new workbook and then connect that workbook to your Excel file as the data source. After importing the Excel file, make sure to check the box that says "Use Data Interpreter" on the Data Source tab to have Tableau clean the data for you (which will get rid of rows that are not part of the dataset in the spreadsheet).

Once you have your data in Tableau, use Tableau to re-create the analysis you did in Task 1, or find other ways to analyze the data using Tableau. You can use the "bin" functionality in Tableau to create ranges for different columns in the spreadsheet, and also create calculated fields for simple kinds of data aggregation or combinations. For this task, the specific analysis you do is not nearly as important as practicing using the tool and creating dashboards with it.

Finally, use Tableau's dashboard features to create a simple dashboard combining the analysis you have done to visualize on one screen the most important analyses of the data to show insights about the projects and personnel in the dataset. Keep your dashboard simple, with just 2- 4 charts that collectively tell the story of your data analysis.