

## Assignment

### Introduction to Power BI - Reflection

**1. What were your main challenges while using Power BI? How did you overcome them?**

Knowing how to use the Power Query Editor to efficiently transform and clean data was one of the biggest obstacles I encountered when utilizing Power BI. At first, I had trouble applying field aggregations, handling missing values, and correctly formatting columns. I had to learn how to use applied steps effectively in Power BI, as opposed to Excel, where transformations are more manual. At first, it was difficult to understand cardinality and the interactions between several tables. By working with various datasets and going over DataCamp's guided activities, I was able to overcome these obstacles. Using Power BI's "Applied Steps" tool and experimenting with different transformations also made it easier for me to comprehend the effects of each change. Over time, I became more comfortable with Power Query and data modeling, which significantly improved my ability to prepare data for analysis.

**2. How does Power BI simplify data analysis compared to Excel? Provide examples.**

I am not very familiar with Excel so I need to say that I did some research while comparing these two tools. Compared to Excel, Power BI streamlines data processing in a number of areas, most notably automation, visualization, and managing huge datasets. Power BI reduces repetitive effort by automatically refreshing reports when new data is entered, in contrast to Excel, which frequently calls for manual updates and static charts. For instance, whereas I would have to manually update pivot tables and charts in Excel, I could connect to a live data source in Power BI and construct interactive dashboards that update in real-time. Its capacity to effectively manage huge datasets is an additional benefit. While Power BI's data model enables effective querying and transformation without appreciable speed loss, Excel has row restrictions and can lag when using

sophisticated calculations. Additionally, Power BI's data analysis expressions make it easier to create calculated fields and measures, enabling deeper insights with less effort. These features make Power BI a more powerful tool for business intelligence and reporting.

### **3. Which visualization did you find most insightful, and why?**

While continuing the course, I was also watching some tutorials on YouTube to learn different techniques to explain a problem and visualizing it. The lecturer didn't mention it but one technique I saw on Youtube was Tree Map. The Tree Map image struck me as one of the most illuminating. Finding patterns and proportions within categories is made simple by its clear, hierarchical data structure. I examined sales performance across various product categories during my course using a Tree Map, which promptly indicated which categories generated the highest revenue. Comparing numerous variables at once was made visually intuitive by the ability to color-code and size various portions. Due to its efficient use of space and avoidance of cluttering labels, a Tree Map is particularly helpful when working with huge datasets that have several categories, as opposed to a typical bar or pie chart. The "Slicer," another useful display that enabled interactive data filtering, was another example. This was particularly useful in dynamic reports where users could drill down into specific time periods, regions, or product lines. The interactivity made the analysis more flexible and user-friendly.

### **4. How would you use Power BI in your future projects or work?**

In my next projects and work, Power BI would be a useful tool, especially for data-driven reporting and decision-making. Power BI could assist in visualizing trends and patterns in datasets prior to implementing machine learning models, which is relevant to the data science and machine learning projects I am working on. For instance, I could utilize Power BI to make dynamic dashboards that display player statistics, performance patterns, and comparisons between other prospects for our NBA prospect performance prediction project. Furthermore, Power BI can be utilized to automate reporting in a business context, which minimizes manual labor while maintaining data accuracy. Real-time analytics and business intelligence would be made possible in software

engineering and data science professions by connecting Power BI with cloud platforms or SQL databases. Moreover, its ability to handle large datasets and provide meaningful insights through data analysis expressions calculations and custom measures makes it an essential tool for making data-driven decisions efficiently.