**Week 4 QC Review**

1. **What is Tableau?**
2. **What is the difference between Dimensions and Measures?**

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| Dimensions | Measures |
| Dimensions contain qualitative values (such as names, dates, or geographical data)  You can use dimensions to categorize, segment, and reveal the details in your data.  Example: Category, City, Country, Customer ID, Customer Name, Order Date, Order ID | Measures contain numeric, quantitative values that you can measure (such as Sales, Profit)  Measures can be aggregated  Example: Profit, Quantity, Rank, Sales, Sales per Customer, Total Orders |

1. **What is meant by ‘discrete’ and ‘continuous’ in Tableau?**
   1. Tableau represents data depending on whether the field is discrete (blue) or continuous (green).
      1. Discrete - "individually separate and distinct."
      2. Continuous - "forming an unbroken whole without interruption."
2. **What are the different types of filters in Tableau?**
   1. Extract filters
   2. Context filters
   3. Data source filters
   4. Filters on measures
   5. Filters on dimensions
   6. Table calculation filter
3. **What is the difference between a Joins and a Union?**
   1. Join: Combines columns from different tables based on a common field or key. Used to merge data horizontally.  
        
      Union: Stacks rows from multiple tables with similar structures into a single table. Used to combine data vertically.
4. **What is the difference between a Live Connection and an Extract?**
   1. Live Connection: Connects directly to the data source in real-time. Query is executed each time a view is accessed. Suitable for frequently updated data or large data sets.  
        
      Extract: Local copy of data stored in Tableau's format. Improves performance and allows for offline access. Useful for large data sets, complex calculations, and improved query performance.
5. **What is a calculated field? How do you create one?**
   1. A calculated field in Tableau is a new field that you create based on existing fields or formulas to perform calculations or manipulate data. You can create a calculated field by right-clicking on the data source or worksheet, selecting "Create Calculated Field," and then entering the desired formula using Tableau's calculation syntax.
6. **What is a group?**
   1. In Tableau, a group is a way to combine multiple dimension members into a single category or group. It allows you to aggregate and analyze data at a higher level of granularity. To create a group, you can either select the dimension members in the view, right-click, and choose "Group," or drag and drop the dimension onto the "Group" shelf in Tableau's interface.
7. **Why might you use a bar chart vs a line chart?**
8. **How would you handle null values?**
   1. In Tableau, you can handle null values by filtering them out, using functions like IFNULL(), or creating calculated fields with custom logic. Additionally, you can treat null values as a separate category if needed.
9. **What is a dashboard?**
10. **When and why would you as a data analyst need to perform data cleaning?**
11. **What could be some potential problems you could run into when analyzing a dataset? How would you approach these?**
    1. redundant, invalid or corrupt, incomplete, or inaccurate data
12. **Why is it important to identify outliers?**
    1. Identifying outliers in Tableau is important for maintaining data accuracy, gaining valuable insights, ensuring statistical integrity, improving visualization effectiveness, and supporting informed decision-making.