**TABLEAU ASSIGNMENT 2**

**1. What is Tableau Data Engine?**

**A.** Hyper is [Tableau's](https://prwatech.com/course/tableau-certification-course-online) in-memory Data Engine technology optimized for fast data ingests and analytical query processing on large or complex data sets. Starting in Tableau 10.5 release, Hyper powers the Data Engine in Tableau Server, Tableau Desktop, Tableau Online, and Tableau Public. The Data Engine is used when creating, refreshing or querying extracts. It is also used for cross-database joins to support federated data sources with multiple connections.

**2. How to create a calculated field in Tableau?**

**A.** Calculated fields allow you to create new data from data that already exists in your data source. When you create a calculated field, you are essentially creating a new field (or column) in your data source, the values or members of which are determined by a calculation that you control. This new calculated field is saved to your data source in Tableau, and can be used to create more robust visualizations.

You can use calculated fields for many, many reasons. Some examples might include:

* To segment data
* To convert the data type of a field, such as converting a string to a date.
* To aggregate data
* To filter results
* To calculate ratios

The calculated fields are created using calculations. There are three main types of calculations one can use to create calculated fields in Tableau:

* **Basic calculations** - Basic calculations allow you to transform values or members at the data source level of detail (a row-level calculation) or at the visualization level of detail (an aggregate calculation).
* **Level of Detail (LOD) expressions** - Just like basic calculations, LOD calculations allow you to compute values at the data source level and the visualization level. However, LOD calculations give you even more control on the level of granularity you want to compute. They can be performed at a more granular level (INCLUDE), a less granular level (EXCLUDE), or an entirely independent level (FIXED) with respect to the granularity of the visualization.
* **Table calculations** - Table calculations allow you to transform values at the level of detail of the visualization only.

The type of calculation you choose depends on the needs of your analysis and the question you want to answer.

## Create a calculated field

1. In Tableau, select **Analysis** > **Create Calculated Field**.
2. In the Calculation Editor that opens, do the following:
   1. Enter a name for the calculated field.
   2. Enter a formula.
   3. When finished, click **OK**.

**3. Can you tell the differences between TreeMap and Heat Map?**

**A.** A two-dimensional representation of information with the help of colors is known as the Heatmap. These maps are used to visualize both simple and complex data. Heatmaps are frequently used in analyzing the patterns of consumer purchases.

In a nutshell, Tableau Heat Maps are used to study consumer behavior. In the case of a website, distinct colors can describe the frequent and infrequent clicks on the website. Heatmaps can also be used for other purposes like understanding election results in a region, the intensity of storms in a region, etc.

If you have a large amount of highly structured data, then the best option for visualization is a Treemap. The space in the visualization is split up into rectangles, sized and ordered according to the quantitative measures. The levels in the hierarchy are displayed as nested rectangles.

A column or an expression is represented by the rectangles on the same level in Treemap. The category of each column is represented by each rectangle in the level. For example, if each rectangle represents countries, then the rectangles nested within them represent states and cities respectively.

**4. What are the components of a dashboard?**

**A.** Tableau essentially has three parts to it — the **worksheet**, the **dashboard** and the **layout containers**. Tableau dashboard is the consolidated display of all worksheets. Each worksheet contains visualizations flowing from different data sources or different kinds of data itself. Layout containers allow you to change the relationships between dashboard components (such as graphs or charts). These components can be arranged horizontally or vertically.

**5. Based on the given data, analyse and answer the following questions**

**a. How much sales have come from customers from the previous in the**

**current year in terms of Sales Value?**

**b. How much sales have come from customers from the previous in the**

**current year in terms of Sales Percentage?**

**c. Find the orders placed by each customer.**

**A.**

a. 88,21,867

b. 98.5%

c.