**Basics:**

1. **What is the difference between Discrete and Continuous Data?**

**Discrete Data** – Data which does not make any sense such as Country, State, City etc.; or data which has finite number of values or countable i.e. number of playing cards in a set (52), Raghu has 1 car (1).

**Continuous Data** – Data which makes sense such as sales, profits, number of records etc. or data which has infinite number of values i.e. Values between 78-79 is infinite, Height and weight of a person etc.

1. **What are the criteria for data to land into dimensions and measures?**

As soon as data is imported & dragged tables in to sheet, Tableau will automatically assign data i.e. string values in to dimensions and numeric values/data types in to measures. Dimensions pane will always have discrete data(String data types) and measures pane will always have continuous data (Numeric data types).

1. **What is Metadata, where is it present in the workbook?**

Metadata grid is present in Data source sheet. Purpose of metadata is to rename, copy, hide, create calculated fields or groups by just clicking on manage metadata in data source sheet.

1. **What happens when you aggregate or disaggregate the Data?**

Tableau by default will assign measures to aggregate. For example, sales & profits will be ‘SUM’ and Number of records as ‘COUNT’.

To disaggregate the data, Right click on any of the selected measure 🡪 Go to Default properties 🡪 Aggregation 🡪 Sum/Average/Count/Max/Min etc.

Or

Once you drag any measure on rows, right click on the measure 🡪 Go to measure 🡪 Select any one.

1. **You are working on a dataset, the client adds in more data to the dataset. What happens to the Visualization that you had created? Give the explanation for both Live and Extracted data**.

Live Data – Data gets added in to data source and visualization gets updated. For this, need to set a frequency limit (Hourly, Daily, Weekly etc.) or just refresh the dataset.

Extract Data – Visualization will not get effected as in extract option, we are creating a copy in local database (Editing/making changes).

1. **What is the file extension in Tableau and how each one is different?**

.Twb – Where your work will be stored with dashboards and visualizations

.Twbx –It contains visualizations and data source and the changes you made. It’s a packaged book where it contains all images and maps you used are available.

.tds – connecting to data source and to custom calculated fields

.tdsx—same like tds it contains .tds data in this.tdsx version

.tde- Where you are extracting data from local files through extract like excel that are saved in system. Now the .tde is hyper in 10.2 tableau version

.tbm—tableau book mark is relating to saving of Individual work sheets where you are working with multiple members you can use this

Tableau preferences - .tps –used for color palette for the company brand colors

.tms –used for creating custom maps

1. **Create relevant hierarchy and folders for Global Superstore Dataset**

As it is global superstore data, basic hierarchy can be done as follows.

Country 🡪 State 🡪 City

However, I changed the geographic role of Market and Region (Globe icon) as visualizations can be more effective. Please see below hierarchy represented in tableau.

Market🡪 Region 🡪 Country🡪State 🡪 City

**Note**: Postal code is not included as there are lots of null values in underlying database.

**Folder** – Created a folder for Category and Customer details. In Category details, created category and sub-category and in customer details, created customer id and customer name.

**Note**: Segment can also be added in category details folder i.e. Segment 🡪 Category 🡪 Sub-Category.

1. **How can we change the icons and the colour of the dimensions and measures?**

Icons in dimensions and measures can be changed by just clicking on icon option. Data type options will be reflected such as Number (Decimal), String, Number (Whole), Date & Time and Date.

Colour of any dimension and measure can be changed by just right clicking 🡪 Go to Default Properties 🡪 Click on color & select from the options.

**Text Table, Highlight Tables, Heat Maps, Tree Map:**

1. **Create a text table for the Avg (Sales) for each subcategory using Sample Superstore? List which Sub Category is got Avg (Sale) more than $1000?**

Copiers and Machines got average sales more than $1000. For copiers, average sale is $2,199 and Machines, average sale is $1,646.

Tableau Public link - <https://public.tableau.com/profile/raghuveer.adabala7648#!/vizhome/TextTableAverageSales/TextTableAvgSales?publish=yes>

1. **Create a Highlight table for the States for the Order Date Year whose highlighting is done based on Sum of profits**

<https://public.tableau.com/profile/raghuveer.adabala7648#!/vizhome/HighlightTableStatesOrderdatebasedonSumProfit/HighlightTable?publish=yes>

1. **Create a Heat Table for the order date and Region against the Sub Category based in Count of Sales with two colours diverging that is distinguished by Sum of Profit**.

i. Selected Order date and Region on Columns & Sub-Category on rows.

ii. Dragged Sales on Size & selected measure as count.

iii. Dragged profit on to color and selected two colors (Edit Colors).

<https://public.tableau.com/profile/raghuveer.adabala7648#!/vizhome/HeatMaps_15954122179430/HeatMaps?publish=yes>

1. **How much is profit share less in Pennsylvania when compared to New York?**

Ans: **-26.6%**

1. Drag State on to Rows and also on to filter (Select NY and PA)
2. Drag profit on to Text of marks card and add quick table calculation (Percent total)

<https://public.tableau.com/profile/raghuveer.adabala7648#!/vizhome/HowmuchisprofitsharelessinPennsylvaniawhencomparedtoNewYork/ProfitSharing?publish=yes>

1. **Check for the pane wise percentages with Category, Sub- Category and quarter wise order date, also check for the Row wise grand totals and Column wise grand totals**.
2. Select Category and Order date on columns (Order date – Remove year and select only Quarter date)
3. Select Profit on rows/Text on marks card.
4. Right click on profit 🡪 Go to quick table calculation 🡪 Select percent of total
5. Go to Analysis 🡪 Totals 🡪 Show grand wise column and row totals

<https://public.tableau.com/profile/raghuveer.adabala7648#!/vizhome/CheckforthepanewisepercentageswithCategorySub-CategoryandquarterwiseorderdatealsocheckfortheRowwisegrandtotalsandColumnwisegrandtotals/PaneWisePercentages?publish=yes>

1. **Which customer is having maximum returns of sales in the year 2011?**

Sean Miller has the highest number of sales in the year 2011 i.e. $27,470.

1. Select Customer name on Columns and Sales on rows.
2. Drag order date on to filter-Select year-2011
3. Sort by descending order.

<https://public.tableau.com/profile/raghuveer.adabala7648#!/vizhome/Whichcustomerishavingmaximumreturnsofsalesintheyear2011/HighestSales>

**Filled Maps, Symbol Maps:**

1. **Use Global Superstore. Check Which Western Country in EMEA region has least profit percentage.**

Turkey has least profit percentage in EMEA region.

1. Selected Country and Profit. Go to show me and select maps.
2. Drag Region to filter and Select EMEA.
3. Drag profit to colour & Text on marks card and Right click-Quick Table calculation-Percent of total.
4. You can drag profit and sales in to detail of marks card.

<https://public.tableau.com/profile/raghuveer.adabala7648#!/vizhome/CheckWhichWesternCountryinEMEAregionhasleastprofitpercentage_/Maps?publish=yes>

1. **Which state shares boarders only profit for tables**

As per my understanding, **Minnesota** is the only state which share boarder with profit states. However, a map was formed following below steps:

1. Select state-Go to show me and select maps.
2. Drag profit to colour & Text on marks card
3. Apply filter for Sub-category and select tables.
4. Remove state from detail and put in to Text.

<https://public.tableau.com/profile/raghuveer.adabala7648#!/vizhome/Whichstatesharesboardersonlyprofitfortables/BoarderState?publish=yes>

1. **Which state has no data for Profits for Office Supplies**.

**Wyoming** has no data for profits w.r.t office supplies.

1. Select state-Go to show me and select maps.
2. Drag profit to colour & Text on marks card
3. Apply filter for Category and select office supplies.
4. Remove state from detail and put in to Text.

<https://public.tableau.com/profile/raghuveer.adabala7648#!/vizhome/WhichstatehasnodataforProfitsforOfficeSupplies/NodataState?publish=yes>

**Bar Charts, Stacked, Side by Side**

1. **Which Customer name & Year is having all the Product Categories sum of profit less than over-all Average profit?**
2. Customer Segment, Year and Category dragged on to column shelf
3. Put profit on row shelf
4. Right click on y-axis and add reference line for overall average profit.

Sum of profit for Home office segment in the year 2014 & 2015 is less than over-all average profit.

<https://public.tableau.com/profile/raghuveer.adabala7648#!/vizhome/WhichCustomersegmentYearishavingalltheProductCategoriessumofprofitlessthanover-allAverageprofit/Side-By-Side?publish=yes>

1. **What is the share of the top 20 customers based on the sales amount compared to the customers based on profit amounts**
2. Plot Customer name on columns and Sales on rows.
3. Drag Customer name on filter-Select ‘TOP’ filter-Select field as sales and enter value as 20.
4. Drag sales on to label-Go to quick table calculation-Percent total
5. Drag Customer name on to color shelf and profit on to detail (Repeat step C)

<https://public.tableau.com/profile/raghuveer.adabala7648#!/vizhome/Whatistheshareofthetop20customersbasedonthesalesamountcomparedtothecustomersbasedonprofitamounts/Top20Cust?publish=yes>

1. **What is the Maximum of Life Expectancy Female for the region Africa & year 2012**?
2. Drag Life Expectancy Female on to Rows-Select aggregate measure as Maximum
3. Drag Region on to columns and Year on to filter (Select 2012)
4. Drag Color to Region and click on Marks label.

Maximum life expectancy – 78 years

<https://public.tableau.com/profile/raghuveer.adabala7648#!/vizhome/WhatistheMaximumofLifeExpectancyFemalefortheregionAfricayear2012/Sheet3?publish=yes>

**Line Graphs, Dual Line, dual axis:**

1. **How can you show two different graphs in one view**?
2. Drag Profit on to rows and Region on to columns
3. Drag Sales on to rows and select line graph
4. Right click on sales & select dual axis.
5. Right click on y-axis and select synchronize axis.

<https://public.tableau.com/profile/raghuveer.adabala7648#!/vizhome/Howcanyoushowtwodifferentgraphsinoneview/DualAxis?publish=yes>

1. **Which Region is having Average of Energy Usage>1000000 and average of Population 65+>10**?

**Ans**: No region has average energy usage>1M and average of population 65+>10.

1. Drag Region on to columns and energy usage to rows (Select aggregate measure as Average)
2. Drag population on to detail and select aggregate measure as Average.
3. Drag Region on to color.

<https://public.tableau.com/profile/raghuveer.adabala7648#!/vizhome/WhichRegionishavingAverageofEnergyUsage1000000andaverageofPopulation6510/Sheet5?publish=yes>

**Trendlines, Cluster, scatter Plot, boxplot, Word Cloud (Packed Bubbles), Histogram:**

1. **Draw a trend line for profit as a linear function of sales only for product technology**?
2. Select Profit and Sales & click on scatter plot.
3. Drag Category on to filter and select technology
4. Go to analysis-Uncheck aggregate measures
5. Right click on both the axis-Edit axis-Select fixed & axis starting from ‘0’
6. Right click on trend line and check whether model type is linear/logarithmic/Exponential etc.

<https://public.tableau.com/profile/raghuveer.adabala7648#!/vizhome/Drawatrendlineforprofitasalinearfunctionofsalesonlyforproducttechnology/Trendline?publish=yes>

1. **Create a histogram showing the number of Sales using Sales Bins of $1000. Which bins have profit ratios (profit as a percentage of sales) of more than 25%?**
2. Firstly create a sales bin of 1000. Right click on sales-Create bin
3. Plot sales vs sales bin.
4. Create Calculated field of sum(profit)/sum(sales) and format as percentage
5. Drag calculated field on to Label shelf and filter for % atleast 0.25

<https://public.tableau.com/profile/raghuveer.adabala7648#!/vizhome/CreateahistogramshowingthenumberofSalesusingSalesBinsof1000_Whichbinshaveprofitratiosprofitasapercentageofsalesofmorethan25/SalesBin-1000?publish=yes>

1. **Using “Sample Superstore”, use order sheet create a histogram showing the number of orders using sales bins of $1000. Which bin has the highest Customer**?
2. Create a sales bin of 1000. Right click on sales-Create bin
3. Plot sales bin vs Orders (Count)

<https://public.tableau.com/profile/raghuveer.adabala7648#!/vizhome/Createahistogramshowingthenumberofordersusingsalesbinsof1000_WhichbinhasthehighestCustomer/HighestCust?publish=yes>

1. Using **“Global Superstore**”, use the orders sheet, build a scatter plot showing the sum of sales on the x-axis and sum of profits on the y axis for all products (Product name). What is the equation for linear regression for products in Technology?

Equation for linear regression is Profit = 0.23\*Sales+(-29.86)

1. Select Profit and Sales & click on scatter plot.
2. Drag Category on to filter and select technology
3. Go to analysis-Uncheck aggregate measures
4. Right click on both the axis-Edit axis-Select fixed & axis starting from ‘0’
5. Right click on trend line and check whether model type is linear/logarithmic/Exponential etc.

<https://public.tableau.com/profile/raghuveer.adabala7648#!/vizhome/Buildascatterplotshowingthesumofsalesonthex-axisandsumofprofitsontheyaxisforallproductsProductname_WhatistheequationforlinearregressionforproductsinTechnology/ScatterPlot?publish=yes>

1. **Use “World Indicators”. Take Health Exp% GDP, Health Exp/Capita, Life Expectancy Male, Female. What are the variables that are considered to create the clusters by default?**
2. Select Health Exp% GDP, Health Exp/Capita, Life Expectancy Male and Female & select scatter plot.
3. Go to Analysis 🡪 Uncheck aggregate measures

<https://public.tableau.com/profile/raghuveer.adabala7648#!/vizhome/TakeHealthExpGDPHealthExpCapitaLifeExpectancyMaleFemale_Whatarethevariablesthatareconsideredtocreatetheclustersbydefault/Scatterplot-Clusters?publish=yes>

**Calculate Fields, Quick table calculations, LOD:**

1. **How do you create a profit ratio using the calculated fields**?
2. Go to Analysis 🡪 Calculated field = Sum([Profit])/ Sum([Sales])
3. Profit ratio measure will be created.

Refer example link below using sample superstore data set.

<https://public.tableau.com/profile/raghuveer.adabala7648#!/vizhome/1_Howdoyoucreateaprofitratiousingthecalculatedfields/ProfitRatio?publish=yes>

1. **Global Superstore data set; Region wise year wise sales are ranked. What is the rank of some country when compared to last year**?
2. Drag Region on to rows, Order date on to columns and sales on to label of marks card
3. Drag country on to rows
4. Right click on sales on marks card-select quick table-Rank

<https://public.tableau.com/profile/raghuveer.adabala7648#!/vizhome/GlobalSuperstoredatasetRegionwiseyearwisesalesareranked_Whatistherankofsomecountrywhencomparedtolastyear/Rank?publish=yes>

1. **What percent of total profits do the top 10 customers by Sales represent**?
2. Plot Customer name vs Sales
3. Drag Profit on to detail of marks card-Right click-Quick table calculation-Percent total
4. Sort by descending for top 10 customers or apply filter ‘Top’ for sales.

<https://public.tableau.com/profile/raghuveer.adabala7648#!/vizhome/SampleSuperstore-Whatpercentoftotalprofitsdothetop10customersbySalesrepresent/Top10Cust?publish=yes>

1. **Find the customer with the lowest overall profit. What is his/her profit ratio**?

**Ans** – Cindy Stewart with the lowest profit and profit ratio is -116.46%

1. Plot Profit vs Customer name
2. Drag Customer name on to filter and apply ‘Bottom’ filter for profit (1)
3. Create calculated field for profit ratio - Sum([Profit])/ Sum([Sales])
4. Drag profit ratio on to detail of marks card

<https://public.tableau.com/profile/raghuveer.adabala7648#!/vizhome/SampleSuperstore-Findthecustomerwiththelowestoverallprofit_Whatishisherprofitratio/Lowestprofit-Cust?publish=yes>

1. **The rank of the Machine subcategory is “4” in the Central region, is the subcategory rank is increased, decreased or remaining the same in West region**.

**Ans** - Decreased. Rank of machine sub-category in west region is 3.

1. Drag Region & sub-category on to rows, Sales on to columns/label on marks card
2. Drag Sub-category on to filter and select machines.
3. Right click on sales on marks card-select quick table calculation-Rank

<https://public.tableau.com/profile/raghuveer.adabala7648#!/vizhome/SampleSuperstore-TherankoftheMachinesubcategoryis4intheCentralregionisthesubcategoryrankisincreaseddecreasedorremainingthesameinWestregion/Rank-Region>

1. **Ranking States based on Sales what is the rank of coastal state which has sales crossed $20000**

**Ans** – Except states **Arizona, Colorado, Missouri, Tennesse and Kentucky** on Maps, all other states are in coastal region which has sales more than $20,000.

a. Select sales on rows & State on column and click on maps

b. Select State on filter & condition for sales>20k

c. Drag sales on to detail-Right click & select Quick table-Rank

d. Go to Map-Map layers-Select coastal region and verify.

<https://public.tableau.com/profile/raghuveer.adabala7648#!/vizhome/SampleSuperstore-RankingStatesbasedonSaleswhatistherankofcoastalstatewhichhassalescrossed20000/Rankofsales20k?publish=yes>

1. **What is the percent of orders which took more than 7 days on an average to deliver**.
2. Drag Orders on to rows and Order date on to columns (Select Day)
3. Drag orders on to filter – Select days – Filter by atleast 8
4. Drag order on to detail – Quick Table calculation – Percent of total
5. Drag order on to label shelf.

<https://public.tableau.com/profile/raghuveer.adabala7648#!/vizhome/7_Whatisthepercentoforderswhichtookmorethan7daysonanaveragetodeliver_/Avgtodeliver>

1. Use **“World Indicators”.** Without using table calculations what is the proper syntax to build a calculated field which will display overall total GDP on this view?

**Ans** – Sum([GDP])

**Filters:**

1. **What are the different types of filters and give their working order**?

**There are different types of filter** –

1. Dimension filter - Manual filtering, Wildcard filter, Condition filter and Top filter.
2. Measure filters (Say by sales, profit etc.) – Range, At least, At most and Special.
3. Date filter – Year, Quarter, Month, Days, and Weeks etc.
4. Hierarchical filter
5. **Create a list of Top 10 Products based on Profits whose sale value is more than $5000**?

Applied both Condition and Top filter on get the result.

1. Drag Profit on to rows and Product name on to columns
2. Drag product name on to filter-Select Condition filter (Sum[sales]>5000)-Select Top filter-(Top 10 by Sum[Profit])
3. Drag product name on to colors.

<https://public.tableau.com/profile/raghuveer.adabala7648#!/vizhome/GlobalSuperstore-CreatealistofTop10ProductsbasedonProfitswhosesalevalueismorethan5000/Top10Products?publish=yes>

1. **Create a Chart with Customer Name and Profit and check for the Sale Value for top 15 Customers**?

Applied Top filter.

1. Drag profit on to rows and customer name on to columns
2. Drag Customer name on to filter-Select Top filter-Top 15 by Sum[Sales].
3. Drag sales on to detail or label of marks card for sales value.

<https://public.tableau.com/profile/raghuveer.adabala7648#!/vizhome/GlobalSuperstore-CreateaChartwithCustomerNameandProfitandcheckfortheSaleValuefortop15Customers/Top15Customers?publish=yes>

1. **Apply filter to all the worksheet, filter by year 2011, then find the sum(sales) for the highest subcategory**
2. Drag Sales on to rows and Sub-category on to columns
3. Drag Order date on to filter-Select Year-Select 2011.
4. Sort by descending order (Phones has the highest number of sales)

<https://public.tableau.com/profile/raghuveer.adabala7648#!/vizhome/GlobalSuperstore-Applyfiltertoalltheworksheetfilterbyyear2011thenfindthesumsalesforthehighestsubcategory/HighestSales?publish=yes>

1. **What is the name of 375th top most customer by sum of profits?**

Patrick Ryan who has profit of $248.

1. Drag profit on to rows and Customer name on to columns
2. Drag customer name on to filter and filter by Top 375 customers
3. Sort by ascending order.

<https://public.tableau.com/profile/raghuveer.adabala7648#!/vizhome/SampleSuperstore-Whatisthenameof375thtopmostcustomerbysumofprofits/375thCust?publish=yes>

1. **What is the various Forecast length that Tableau cannot recognizes**?

If forecasting was done with the length of Minutes or Seconds, Tableau may not recognize.

**Dashboards & story:**

1. **What are the different device type previews that Dashboards can use**?

Ans – Default, Desktop, Phone and Tablet view.

1. **Create a dashboard using World Indicators showing the all the Actions that can be performed in Tableau**

<https://public.tableau.com/profile/raghuveer.adabala7648#!/vizhome/Dashboard_15958781591180/DashboardWI?publish=yes>

**Time Series:**

1. **Use Order date and drill down the information for Quarter and Month level separately and show the line Chart in a Continuous Form**.
2. Drag Order date on to rows-Click on ‘+’ sign to reflect Quarterly and Monthly level.
3. Drag profit on to rows.
4. Right click on both Quarter and Monthly date & select Continuous (2nd Shelf)

<https://public.tableau.com/profile/raghuveer.adabala7648#!/vizhome/GlobalSuperstore-UseOrderdateanddrilldowntheinformationforQuarterandMonthlevelseparatelyandshowthelineChartinaContinuousForm/TimeSeries?publish=yes>

**Sets, Parameters, Groups:**

1. **Parameters can be used in**?

Parameters are used to replace constants/fixed with user input or variable.

1. **What are the different ways to create a Parameter**?

Parameters can be created by Right clicking on any dimension or measure – Select Create – Parameter. Parameters are of 3 options – **a**. All **b**. List **c**. Range

**Forecast:**

1. **You are provided with the dataset for the past 10yrs. How can you forecast the data for next 4 years, Quarter wise**?

**Ans** – Forecasting can be done quarter wise on continuous data. Considered example of sample-superstore and forecasted for next 4 years.

1. Plot Order data vs Profit/Sales
2. Click on order date(Quarter date) & select continuous from discrete.
3. Right click on the graph and select Forecast
4. Right click on the forecast estimate and select on forecast options
5. Select forecast length (Automatic, Exactly and Until), Source Data (Aggregate by & Ignore last) and Confidence interval by default is 95%.

<https://public.tableau.com/profile/raghuveer.adabala7648#!/vizhome/Youareprovidedwiththedatasetforthepast10yrs_Howcanyouforecastthedatafornext4yearsQuarterwise/Forecast?publish=yes>

1. **Use “Sample Superstore”. What is the Sales Forecast Estimate for the month of September 2018?**

**Ans** – Sales forecast estimate for September 2018 is $97,705.00

1. Plot Order data vs Sales
2. Click on order date (Month (Order date)) & select continuous from discrete.
3. Right click on the graph and select Forecast
4. Right click on the forecast estimate and select on forecast options
5. Select forecast length (Automatic – Next 12 months), Source Data (Aggregate by Month & Ignore last) and Confidence interval by default is 95%.

<https://public.tableau.com/profile/raghuveer.adabala7648#!/vizhome/UseSampleSuperstore_WhatistheSalesForecastEstimateforthemonthofSeptember2018/Forecast-Sept2018?publish=yes>

**Pie Chart:**

1. **Create a Pie Chart using regions and sum of sales, sort the pie in ascending order, increase the size in the view and label them with Count of Quantity and Sum of Profits**- **Sample superstore**
2. Select Region and Sales-Go to Show me- Select Pie Graph
3. Sort by ascending order and drag values inside the graph.
4. Drag Region, Profit and quantity count on to Label.

<https://public.tableau.com/profile/raghuveer.adabala7648#!/vizhome/SampleSuperstore-CreateaPieChartusingregionsandsumofsalessortthepieinascendingorderincreasethesizeintheviewandlabelthemwithCountofQuantityandSumofProfits/PieChart?publish=yes>