Visualizations with Tableau Part 3 Live Examples

# Data Prep

Only rename the ones in the Day csv since we won’t use the duplicate values in the hour.csv. Can actually hide all of those values.

* Rename Dteday to Date
* Rename Mnth to Month
* Rename Hum to Humidity
* Rename Casual to Number of Casual Users
* Rename Registered to Number of Registered Users
* Rename Cnt as Total Rentals
* Rename Holiday to Is Holiday
* Rename Weekday to Is Weekday
* Rename WorkingDay to Is Workingday
* Rename Weathersit to Weather
* Convert Hr, Holiday, Month, Season, Weather, Weekday, and WorkingDay to Dimensions

# Basic Calculation Using Literal Expressions

We can use Calculations to make some of the fields more human readable. Having 1’s and 0’s as values is a bit opaque and when we put it into a chart Tableau will try to aggregate it if we haven’t changed it to a dimension.

* Make WorkingDay more understandable
  + Go to Analysis tab and choose ‘Make Calculated Field’
  + Name it ‘Working Day Status’
  + Use calculation:

Graphical user interface, text, application

Description automatically generated

* + Walk through each part of this calculation
  + To show how the result work, build this graph:
    - Number of Casual Users and Number of Registered Users in Columns
    - WorkingDay in Rows – See how Tableau tried to aggregate?
    - Change to Working Day Status in Rows
    - It’s interesting that casual users use the bikes more on non-working days while registered users use it much more on working days (must use for commute)
* We can do the same for making Holiday, Seasons, and Weather more understandable (that’s was in the Exercise for this week)

# Basic Calculation Using Math

* Here in the US we use Fahrenheit, so if we created a dashboard for our stakeholders that used Celsius it would probably cause confusion. So let’s convert the Celsius to Fahrenheit
  + Analysis > Create Calculated Field
  + Fill in as follows:

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* Show usage with this scatter chart:
  + AVG(Temp in Fahreneheit) in Columns
  + SUM(Total Rentals) in Rows
  + Date as a Detail
  + Drill down to the day level on the date
  + Show how the usage increases during nice temps (60-75 degrees)

# Quick Table Calculation

* What if we are just trying to explore and don’t want to have to create a whole calculated field? We can use calculations that just apply to the info in our current visualization, and Tableau even has short-cuts for the most common ones
* For instance, what if we wanted to see the running total of the number of rentals that have occurred?
* Create chart:
  + SUM(Total Rentals) in Rows
  + Date in Columns
  + Drill down to the Month level
* Drop-down arrow on SUM(Total Rentals) > Quick Table Calculation
* Choose Running Total

# Parameter Used in a Calculation

What if we wanted to change whether a visualization used one field or another? For instance, what if we wanted to create a single visualization that could either use data from Registered Users or use data from Casual Users (instead of them being stacked)?

We can’t do that with a filter, because if the field isn’t already in the visualization we can’t filter on it. But with Parameters, we can dynamically change what field is used in a certain part of the viz.

* Create a Parameter:
  + Data pane drop-down > Create Parameter
  + Fill in as shown below:

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* Create a Calculated Field
  + Analysis > Create Calculated Field
  + Call it Number of Users
  + Fill in Calculation as follows:

Graphical user interface, text, application, email

Description automatically generated

* Create Chart of the number of users in each season
  + SUM(Registered or Casual Users) in Columns
  + Season in Rows
* Show Parameter Control
  + Parameter pill drop-down
* Switch between the different user types

Kind of feels like a filter, but instead of filtering the values of a single field you are changing which field is being used.