



Desktop Certified Professional

Exam Guide Solutions

We strongly encourage you to work through the sample questions on your own prior to reviewing the solutions.

There may be multiple correct solutions to any given questions for this exam. These solutions are examples to be used for learning and reference. A workbook containing these solutions can be [downloaded here](#).

Module 1 - Visual Best Practices

Sample Question 1

The following views use the Orders (Sample-Superstore-Subset-Excel) data connection. The goal is to compare measures within states across different regions. While each view may be correct, one might be a better choice over another.

Provide an explanation of which view you would use and why. You can point out pros and cons for each view and how those pros and cons vary by audience. Would you create something different? If so, build an alternative view and explain why you made any design decisions.

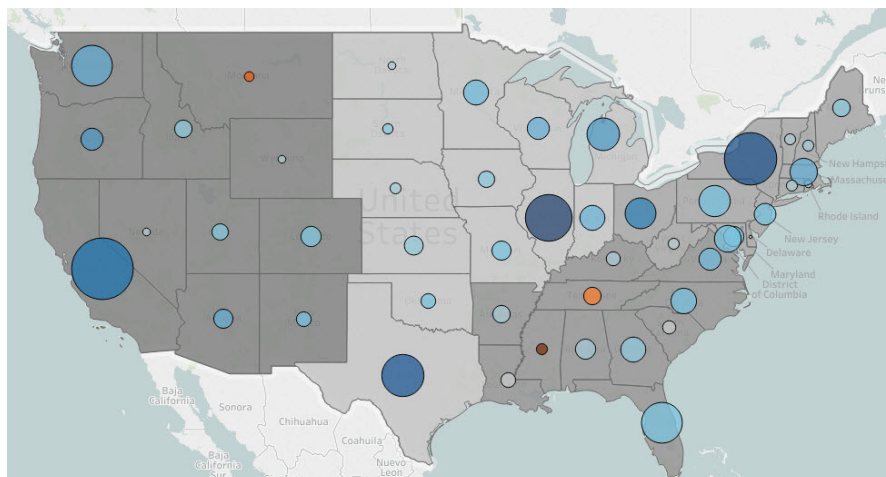
Sample Answer

The Cross Tab can be useful as a lookup table for users interested in the data for specific States. It falls short when you want to draw attention to particular components of the data. In this case, the States aren't even sorted, so there is no priority placed on either Sales or Profit.

For this kind of data, I would instead choose a map. Geospatial analysis engages the user audience draws attention to important data with the use of coloring and sizing. This particular map view draws my attention to the states that have bigger and darker circles, which is useful if I'm the manager of a region and want to see how the states within my region are doing. However, grouping the data into four maps takes up considerable space and doesn't allow my audience to compare across the whole geography.

Tree Maps are very helpful with hierarchical categories, even though they don't leverage the geographic nature of the fields. When viewing my Regions and States in this format, my eye prioritizes the upper left corners and moves down and across the areas of decreasing values. Including the Profit field as a color helps me determine where my regions are doing well and where the company is selling items at a loss. One concern I have with a tree map is that comparing the members is difficult since the size, shape, and position is relative to the marks around it.

As an alternative, I have created a more complete map for the data. By adding another axis, I can show the Regional separation in the background, and the State detail with Sales as size and Profit as color. The color is darker for Regions with the highest performance moving lighter as performance decreases. The downside is that this map requires a detailed legend to explain what the colors mean.



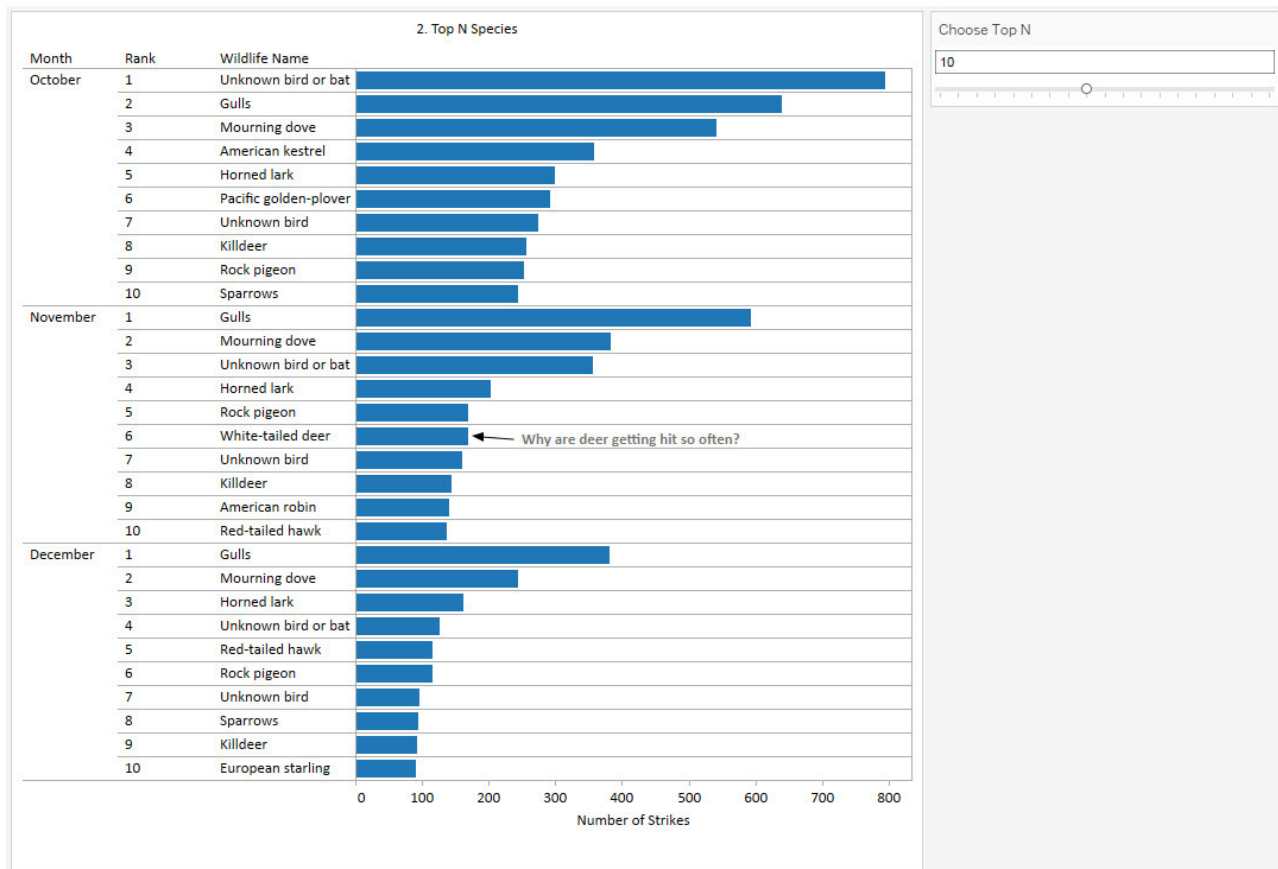
Module 2 - Advanced Technical Skills

Sample Question 2

Use the FAA Bird Strikes data connection to determine which species have the most strikes within each month. Do some species have more strikes in some months over others? Are there any species appearing in the top that are surprising? Note that you should not be confined to a specific number of species per month and should use a parameter to make a dynamic Top N.

Sample Answer

The Index function is used to help rank Species within each Month(Date) by the Number of Strikes. The species consistently experiencing the highest number of strikes is 'Unknown birds', but the Top N does vary from month to month. A parameter was used to change the Top N from 2 to 20 species. The surprising component is that White-tailed deer show up in November in the Top 7, and in other months in the Top 20 (February, September, October, and December).



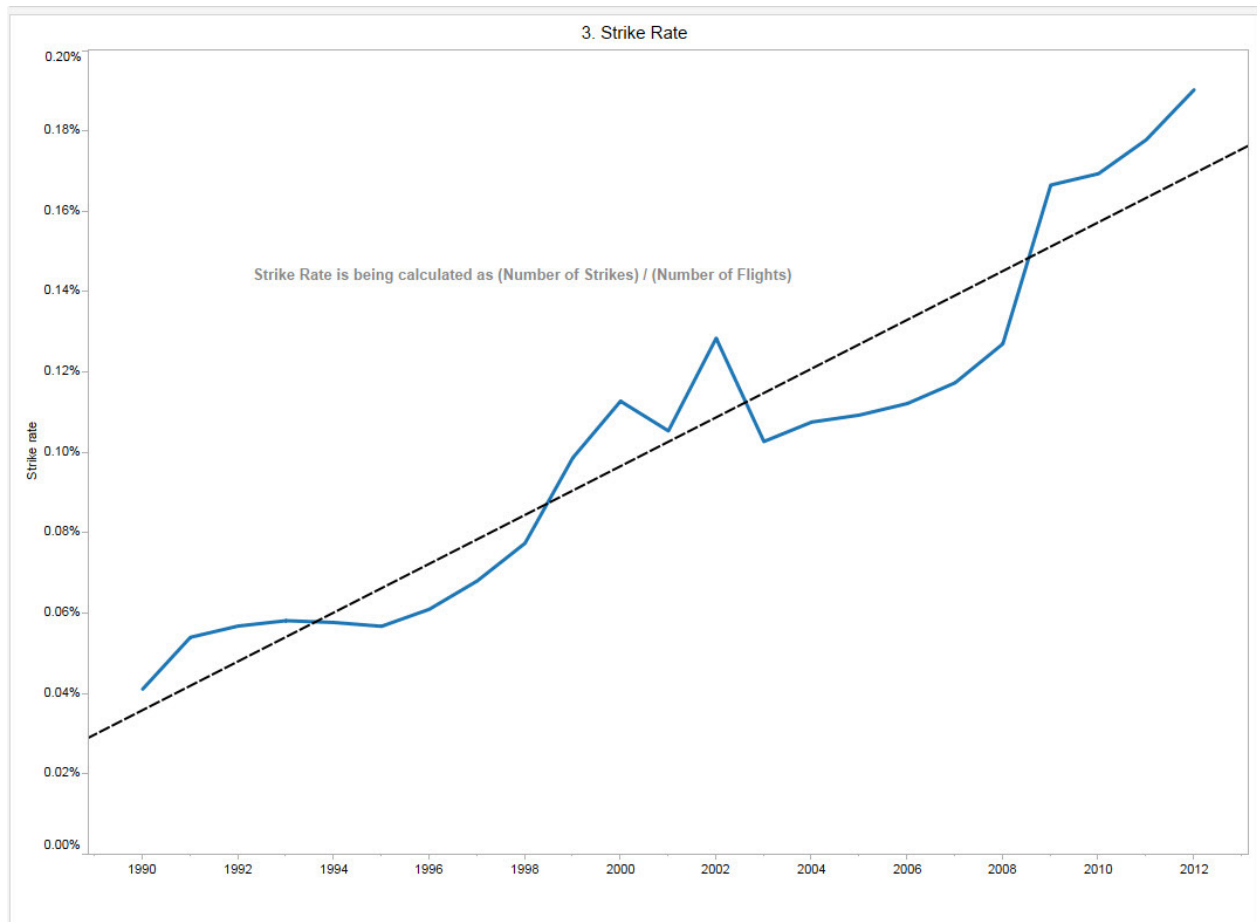
Module 2 - Advanced Technical Skills

Sample Question 3

Using both the FAA Bird Strikes and Flights data connections, calculate the strike rate (number of strikes divided by number of total flights) to see if the rate of wildlife strikes is increasing or decreasing over time.

Sample Answer

By calculating Strike Rate, we can normalize the data and see the rate is trending upwards over time.



Module 2 - Advanced Technical Skills

Sample Question 4

Using the Orders (Sample-Superstore-Subset-Excel) data connection, for each of our four Yearly Customer Cohorts, we would like to see how many customers have purchased X amount of orders. Could we create bins to show this type of data?

Sample Answer

The first step is to find the customer cohorts:

[Cohort] -

```
{ fixed [Customer Name] :  
  MIN(YEAR([Order Date])) }
```

The next step is create a custom date level of Year so we can reference this in our second calculation.

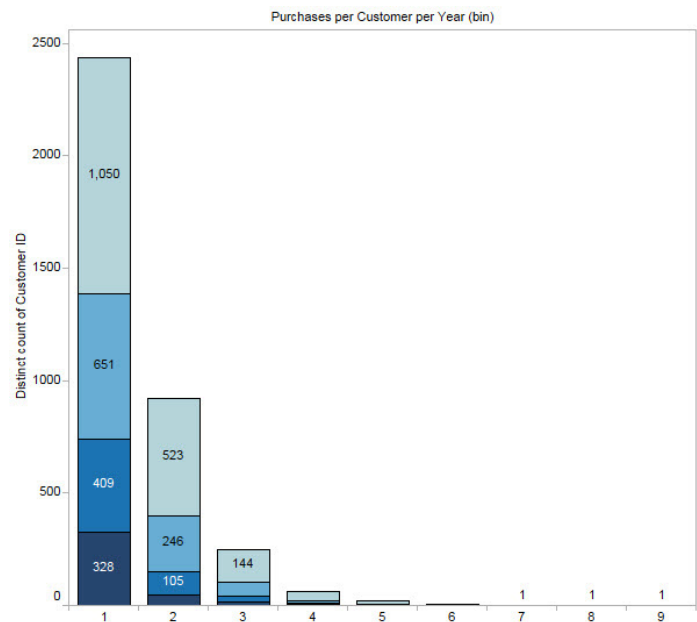
Next we will need to create our bins:

[Purchases per Customer per Year] -

```
{ fixed [Customer Name], [Order Date (Years)] :  
  COUNTD([Order ID]) }
```

From here the user can either drag [Purchases per Customer per Year] from Measure up to Dimensions then drag it onto Columns, or they can right-click the field in Measure and select Create > Bin, and set the bin size to 1. Both will give the same results with this data.

This difference between creating the bin or not creating the bin is that bins are range aware. This means that if we have any “empty bins”, or rather, if we were to say, have a customer that bought 12 orders but no customer that bought 10 or 11 orders, by using bins we will show those empty columns for 10 and 11. If the user just drags [Purchases per Customer per Year] to Dimensions then uses this field as a dimension on Columns, the field is NOT range aware, so our chart would go “1, 2, 3, 4, 5, 6, 7, 8, 9, 12”, skipping 10 and 11.



Module 3 - Story Telling

Sample Question 5

You have been asked to look for trends and seasonality to determine the likelihood of a plane coming in contact with wildlife. Using the FAA Bird Strikes and Flights data connections, create visualizations to help you answer the following questions:

- Where are these strikes most likely to occur?
- Are there certain months when wildlife strikes become more likely?
- Have the number of strikes per year been changing over time?
- Does the number of flights have any effect on seasonal trends?
- Combine views into a dashboard allowing users to explore the data themselves.

Sample Answer

Wildlife strikes seem to occur most often in California and Texas. This could be because California and Texas also have the highest number of flights.

The months of July through October have the highest likelihood of a strike, so it seems there is seasonality related to the strikes. This could be due to migratory patterns of birds as they fly south to warmer weather in the winter. It also appears that, although the number of strikes seems to vary by season, the number of flights stays fairly consistent, which indicates the seasonal number of plane flights must not have an impact on likelihood of a wildlife strike.

At a yearly level, the data indicates the number of flights has been increasing (despite the dip in 2001–2002 due to 9/11) up until 2007. From 2007 onward, the number of flights decreased, while the number of bird strikes continued to increase. This raises the question: are bird strikes actually increasing, or, has bird strike reporting improved? This dashboard allows users to drill into specific states to evaluate seasonality.

