

BI Manager Skills Test

Please answer the following questions. You're free to use whatever tools you have at your disposal for analysis and visualization:

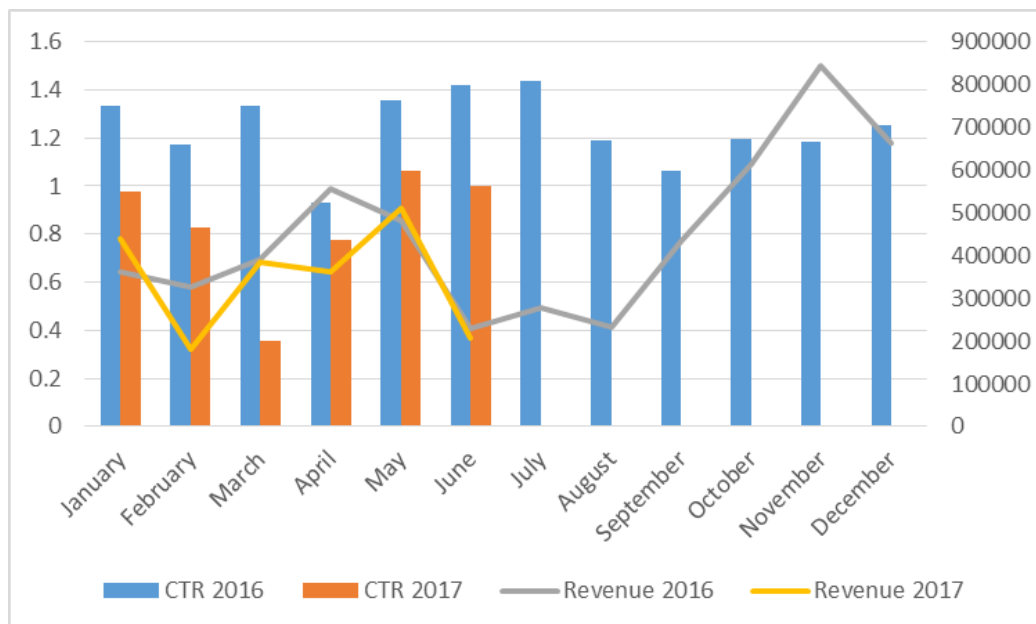
Visuals should be in a powerpoint or an equivalent presentation format. Assume that items 1, 2 & 4 would be presented to a client. Please describe the techniques and tools you used, and include that information in the presentation.

1. Our Account Manager wants to know if she should shift more money into broad match modifier campaigns. What is the historical and recent trend of BMM vs. exact campaigns?
2. Help us understand the relationship between brand/nonbrand and ROAS.
3. Roll up the sample data using SQL, R, Python, or VBA: Sum current fields and calculate aggregate conversion, ROAS and cost-per-click rates for brand spend categories (i.e. pants, dresses & skirts, tops, outerwear, etc). Provide the output as a csv, as well as the code in a plain text format.
4. Take the results from #3 and use a visualization to help us understand which is the most profitable and effective campaign group at a glance.

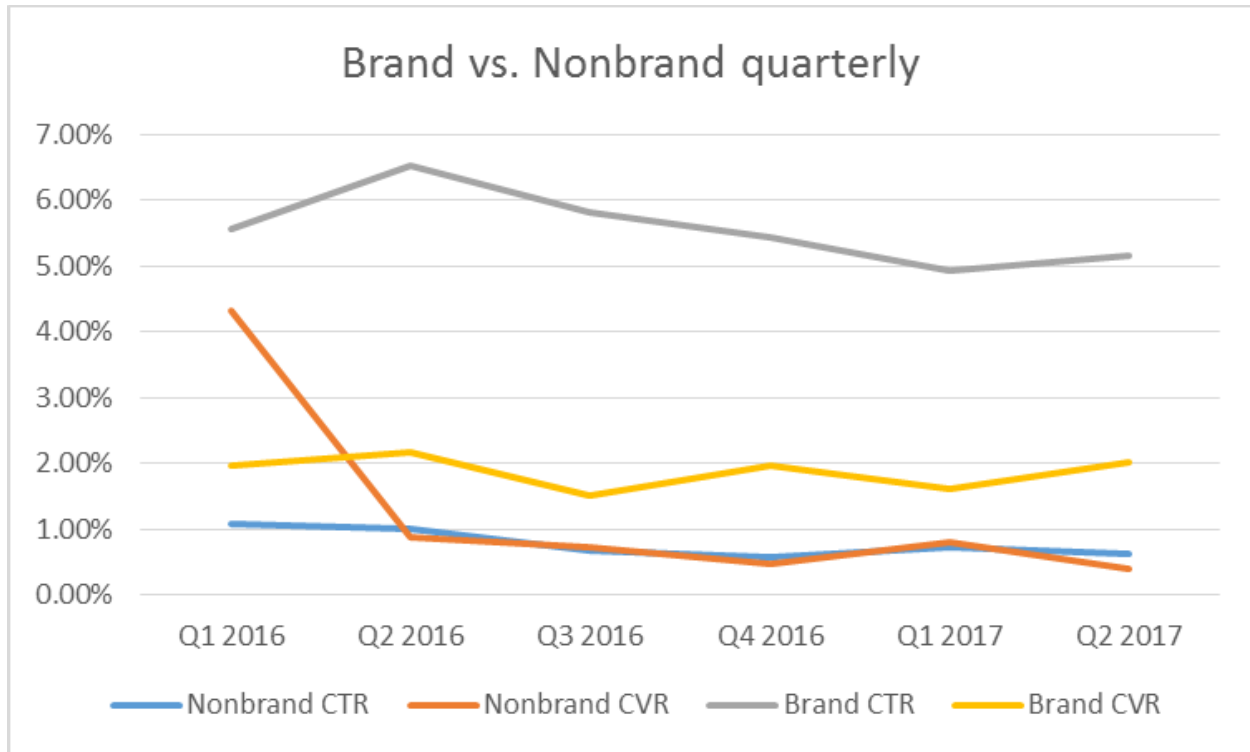
Assess the following visualizations:

Take a look at the following visuals and critique them on format, layout, ability to effectively convey data, and the "story" each one is able to tell. What would you do differently? Note that these are all from the same dataset as the questions above. You can also include these answers in the presentation from the first section.

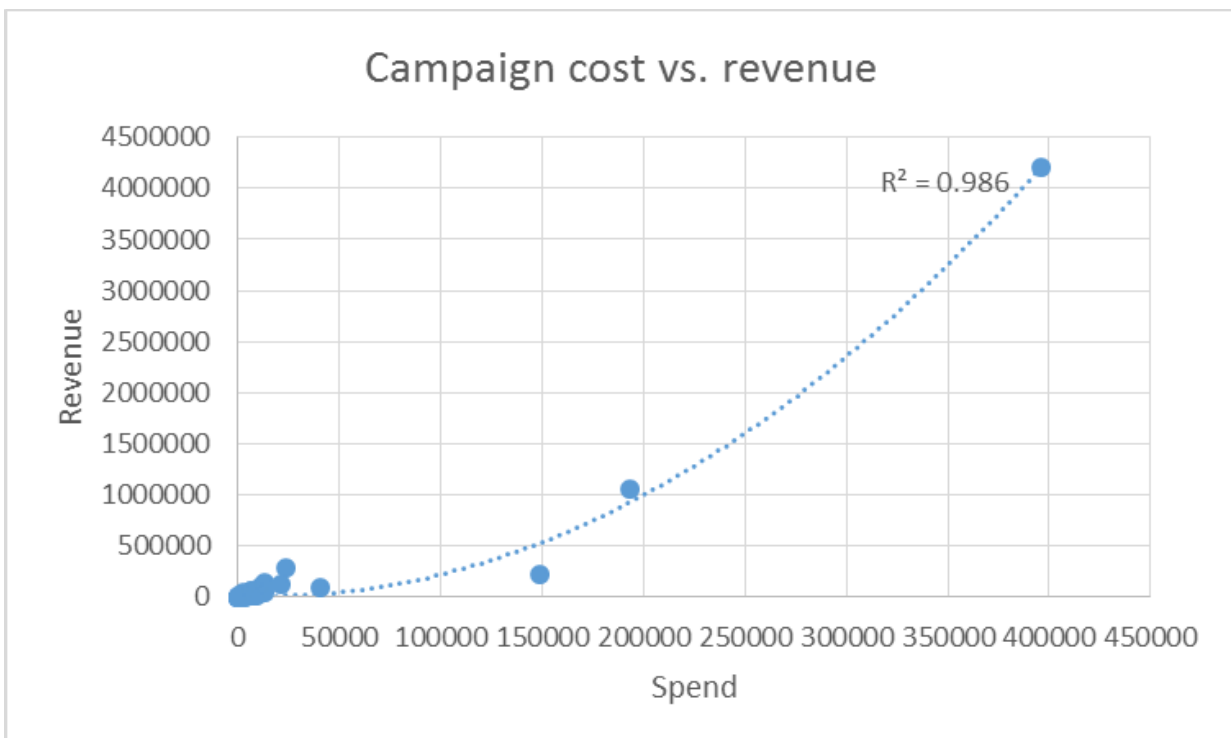
1.



2.

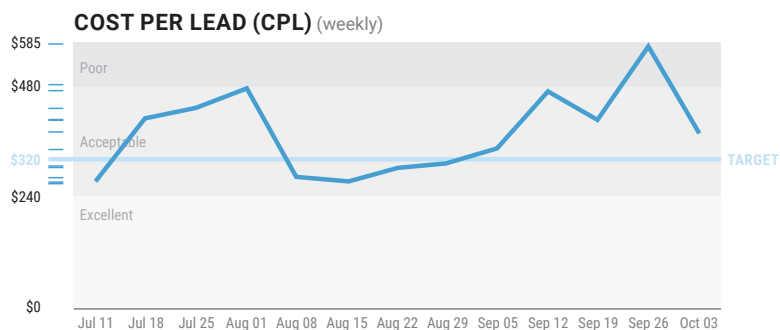
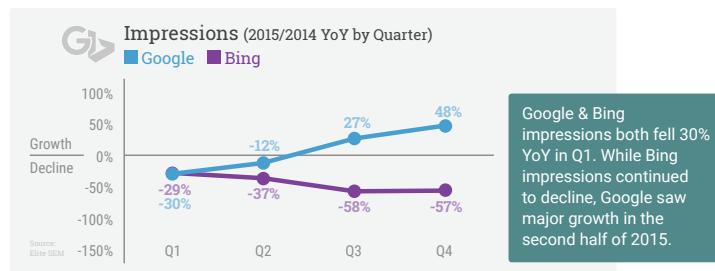


3.



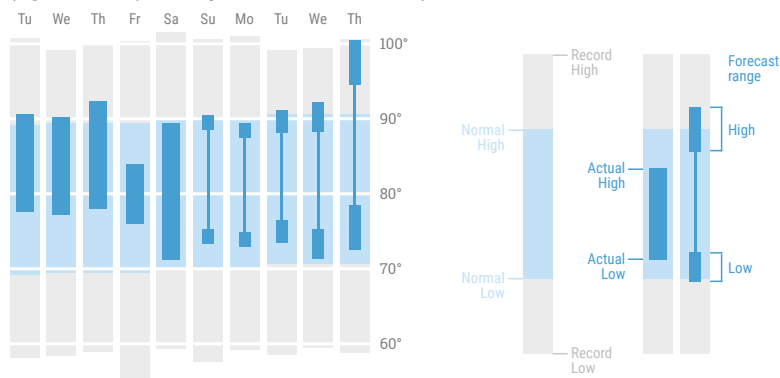
Critique the following visualizations:

Provide feedback as to why these are effective visualizations and include those remarks in your presentation. Is there any room for improvement?



TEMPERATURE TRENDS: PHILADELPHIA

(highs/lows for past 5 days and forecasts for next 5)



Technical skills test

The following questions can be completed in the language of your choice, but a SQL dialect will probably be the most appropriate. Please **include your code** along with your answers. Do not worry about formatting or "prettiness" of the code or results.

If you are unable to solve a problem, **please show your best attempt or describe the approach you would take**, even if this is just describing in paragraph form how you would go about solving the problem.

1. Show total conversions, impressions, cost and revenue by channel.
2. Show total revenue by month.
 - a. Bonus: Show total revenue by fiscal quarter.
3. When a campaign name ends in '[B]' it is a branded campaign, otherwise it is non-branded. Show total clicks for branded and non-branded campaigns.