BAN 5733 Exercise 5 (10 points)

Working with Social Media Data

This explores several ways in which social media data can be visualized with Power BI to support business decisions. You will use the Excel file **Twitter Activity Metrics – Bakery Brand**, which is a full month of tweets (December 2015) for a fictitious company for this exercise. This Excel dataset is in the exact format that the data comes in when downloaded from analytics.twitter.com.

Variable Name
Tweet id
Tweet permalink
Tweet text
time
impressions
engagements
engagement rate
retweets
replies
likes
user profile clicks
url clicks
hashtag clicks
detail expands
permalink clicks
app opens
app installs
follows
email tweet
dial phone

Variable Name
media views
media engagements
promoted impressions
promoted engagements
promoted engagement rate
promoted retweets
promoted replies
promoted likes
promoted user profile clicks
promoted url clicks
promoted hashtag clicks
promoted detail expands
promoted permalink clicks
promoted app opens
promoted app installs
promoted follows
promoted email tweet
promoted dial phone
promoted media views
promoted media engagements

Instructions:

- Open Power BI, select the Excel file to import and select "Load data"
- Go to the "DATA" tab on the left and create the following new variables:
  1. Create **Day of Week** by using the "Weekday" function in a new column
     a. `Day of Week = format(WEEKDAY('tweet_activity_metrics_bakery_'[time].[Date],1),"dddd")`
     b. Make sure to change the summarization method to "Don't Summarize"
  2. Create **Hour** by using the "Hour" function in a new column
     a. `Hour = hour('tweet_activity_metrics_bakery_'[time])`
     b. Make sure to change the summarization method to "Don't Summarize"
  3. Create **Organic Tweet** by using the if/then function
     a. `Organic Tweet = IF('tweet_activity_metrics_bakery_'[promoted impressions] = "-", "Organic Tweet", "Paid Tweet")`

b. Make sure the summarization method reads “Don’t Summarize”

4. Create **Reply** by using the if/then function:
   a. `Reply = if(LEFT('tweet_activity_metrics_bakery_'[Tweet text],1) = "@","True","False")`
   b. Make sure the summarization method reads “Don’t Summarize”
5. Create **Type of Tweet** by using the if/then function:
   a. `Type of Tweet = IF('tweet_activity_metrics_bakery_ (3)'[promoted impressions] <> "-","Promoted Tweet",IF('tweet_activity_metrics_bakery_ (3)'[Reply] = "True","@Reply","Organic Tweet"))`
   b. Make sure the summarization method reads “Don’t Summarize”
6. The bakery tracks three Key Performance Indicators for marketing campaigns. You need to create the 3 KPIs as below
   a. KPI 1 = SUM([Retweets])/SUM([Number of Records])
   b. KPI 2 = SUM([Url Clicks])/SUM([Number of Records])
   c. KPI 3 = SUM([Follows])/SUM([Number of Records])

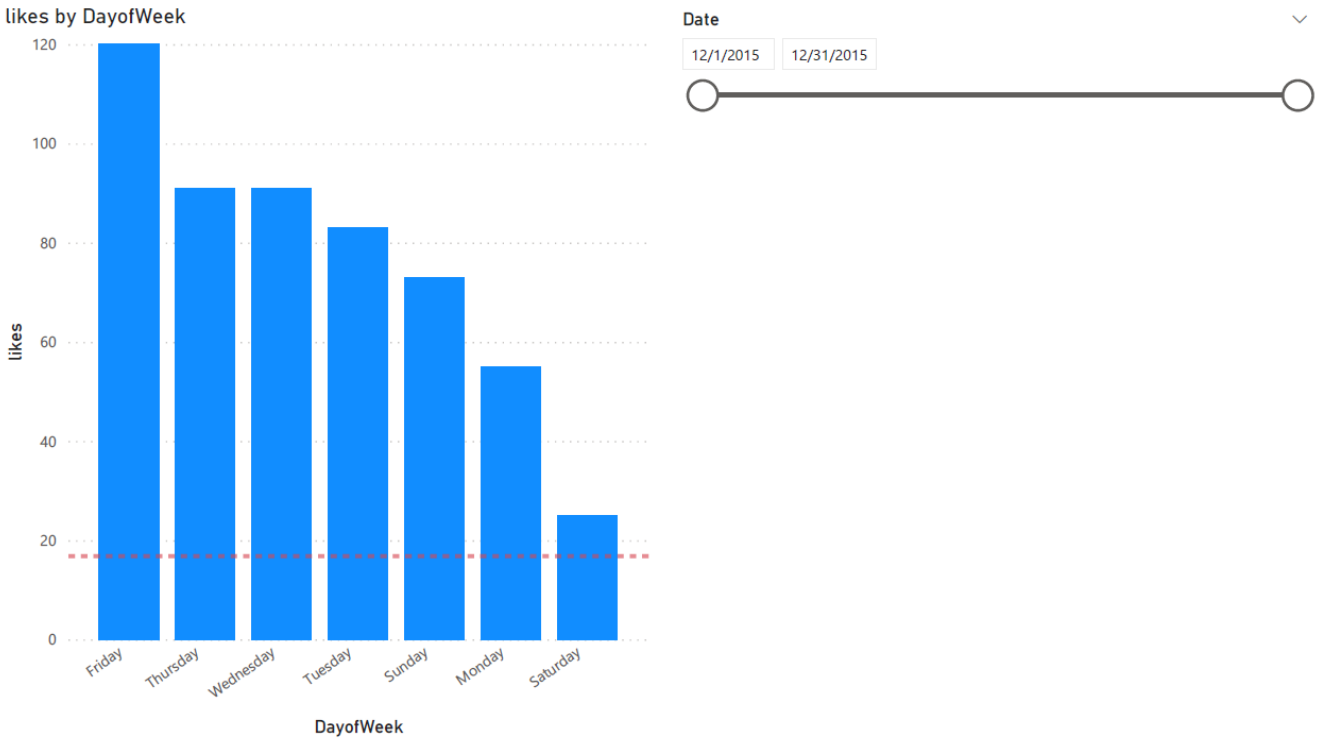
Twitter Visualizations:

1. The bakery staff would like to know if they receive more likes on certain days of the week. What can you tell them about the Twitter activity?

(2 points)

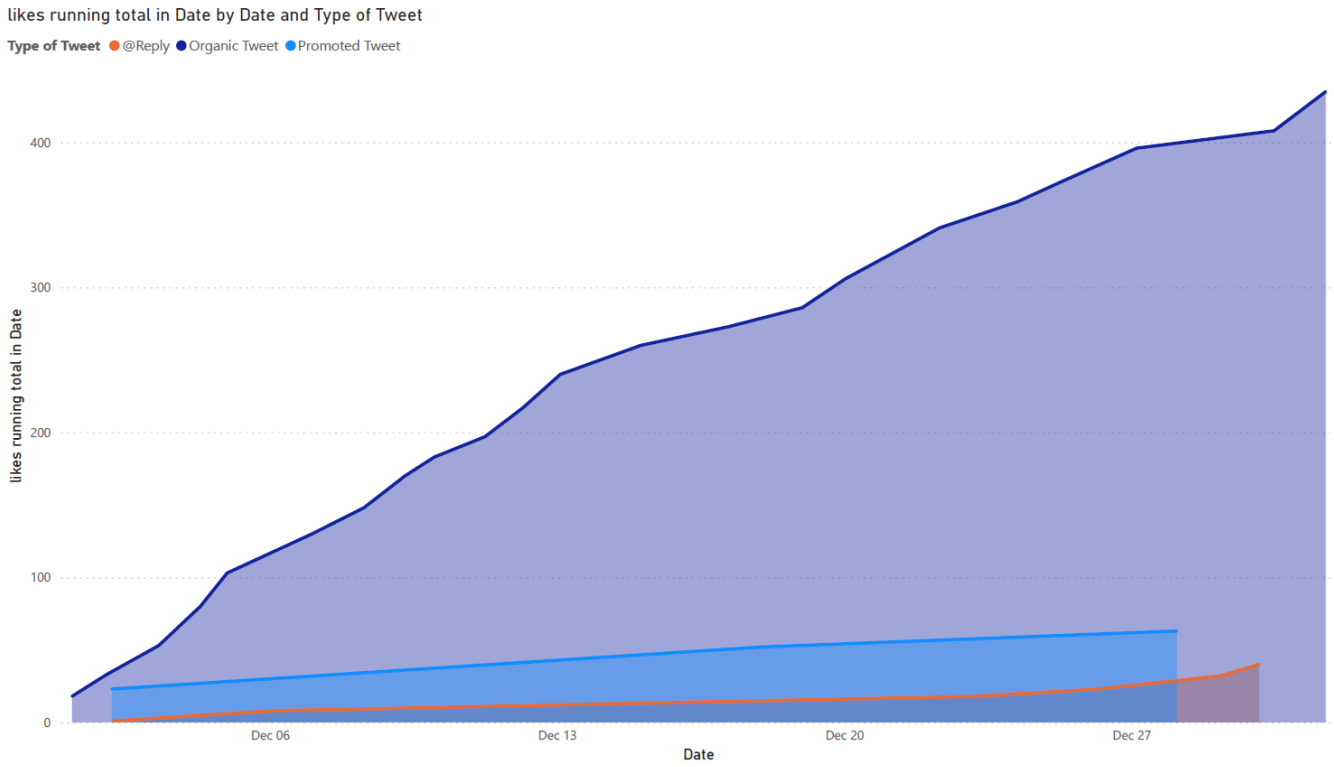
   a. Create a bar chart using **Likes** as the value field and **Day of Week** as the axis
   b. Include an **Average** line from Analytics tab
   c. Show Slicer(charts) for **Date/Time** (Select **Range of Dates**)
   d. Show Filter for **Type of Tweet**

Solution:

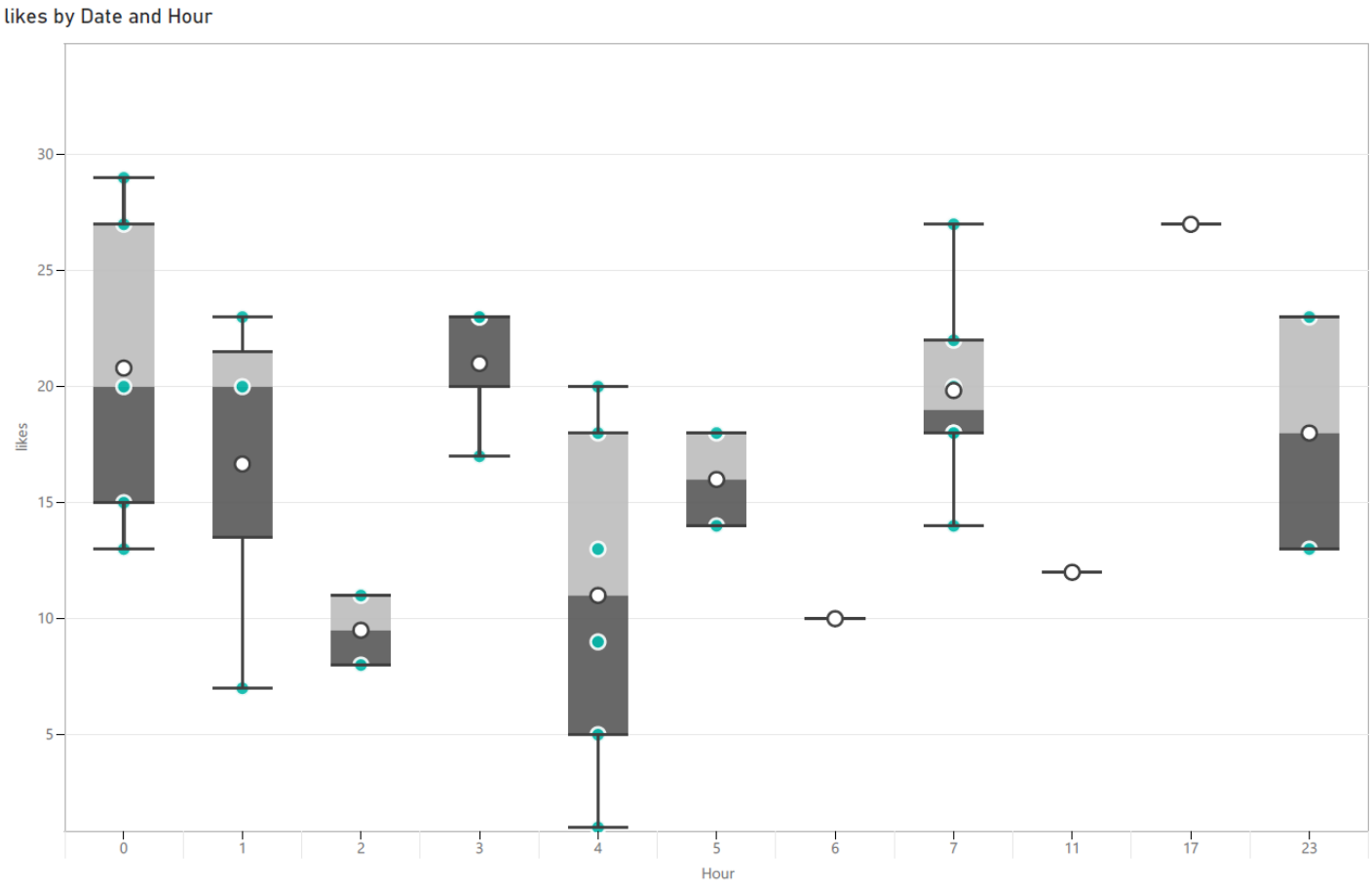


2. Summarize the number of tweets they sent throughout the month based on the visualization created. **(2 points)**
    a. Create an **area chart** with **Date** in the axis as a continuous variable with a count of records for the Values
    b. Creating a running total column using the "Quick Measure" may be helpful
    a. Drag **Type of Tweet** to Legend

Solution:

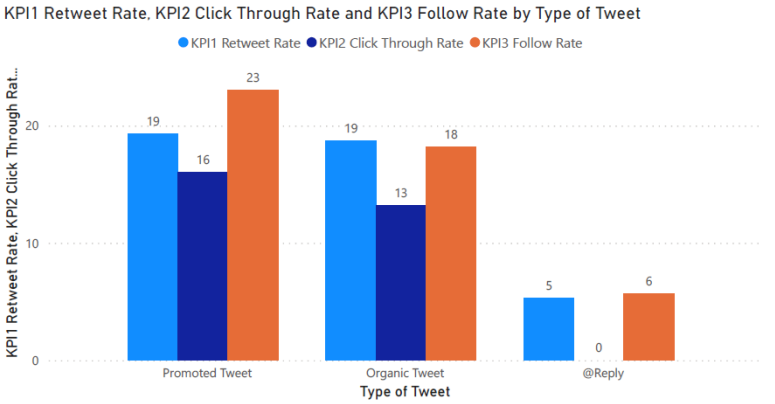


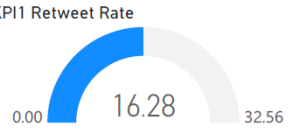
3. Determine if there are certain times of day in which people like the tweets. Discuss what you find when exploring the visualization. **(2 points)**
    a. Create a **box plot** (Get more visuals -> Filter for Advanced Analytics -> Box and Whisker plot by MAQ software)
    b. Move **Date** to axis and **Hour** axis category 1
    c. Move likes to value and right click on like, select 'not summarized'
    d. Drag right edge of viz out to widen the viz
    e. Drag **Day of Week** to **Filter** to have checkboxes for days

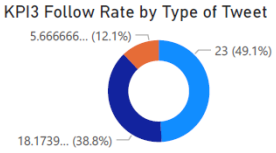


4. According to the **KPI**s, which tweet performed the best? Does this differ by **Type of Tweet**? **(4 points)**
    a. Create visualizations that discuss these questions
    b. Explain your answer and provide your visualization/s for reference.

Solution:







At 19.33, Promoted Tweet had the highest KPI1 and was 262.50% higher than @Reply, which had the lowest KPI1 at 5.33.

KPI1 and total KPI2 are positively correlated with each other.

Promoted Tweet had 19.33 KPI1, 16 KPI2, and 23 KPI3. Organic Tweet had 18.74 KPI1, 13.22 KPI2, and 18.17 KPI3. @Reply had 5.33 KPI1, 0 KPI2, and 5.67 KPI3.