Assignment: Using Calculated Fields

General Note: Unlike previous assignments, Sheets for creating visualizations have not been pre-created or assigned to specific questions. You will need to decide for yourself what the best way of answering each question is!

1. Using the Star Wars Characters dataset, what is the most common first letter for male characters with yellow eyes?

2. Using the TransactionData:
    a. Create a field called “Tax Due” that calculates the tax due to the government, assuming a 7.25% tax on the gross sales amount
    b. What is the product category with the highest sales tax due in 2017? How much is the tax due on that category?
    c. What is the tax due on all of the women’s products?

For the following questions we’ll be using visitor data logs for The White House in 2016.

3. If you look at the Namefirst, Namemid, and Namelast fields, you’ll see some inconsistencies whether the names are uppercase, lowercase, or capitalized.

    Make these columns consistent by creating three new fields that fully uppercase each person’s name. (e.g. “sherman” should become “SHERMAN”.) Name the calculated fields FirstName, MiddleName, and LastName, respectively.

4. Use the three fields you created to create a new calculated field, FullName, that contains the full name of each visitor.

    CAUTION: If a visitor has a NULL middle name, make sure that the result has only one space between their first name and last name instead of two, e.g. “John Doe” (incorrect) vs “John Doe” (correct). To do this correctly you will need a logical statement that looks like the following:

    ```
    IF ISNULL(field)
    THEN result1
    ELSE result2
    END
    ```

    TIP: To combine strings in Tableau you can use the plus sign: "John" + " " + "Doe" = "John Doe"

5. Create a calculated field Meeting Duration that calculates how long each visit was *in hours*.
    a. To do this, you'll first want to compute the difference between the time of departure and time of arrival in the TOD (departure) and TOA (arrival) fields. Use the DATEDIFF function to compute this difference in terms of *minutes*.
    b. Then, divide the result by an appropriate number in order to convert minutes into hours. Note: The reason we need to do this is because if we computed part a in terms of hours, Tableau would truncate the results. For example a visitor who stayed for 0.75 hours would appear as 0 hours instead.

6. Explore various statistics regarding specific people who visited the White House.
    a. Who visited the White House most frequently?
    b. Who spent the most total time visiting the White House?

7. Now, explore statistics for when people visited in terms of the day of the week. Use the "Week Day Name" and not the "Week Day" field in your visualization.
    a. What day of the week has the most visits?
    b. What day of the week has the longest average meeting time?
    c. To answer these questions, what makes the most sense: to order values from largest (or longest) to smallest (or shortest), or to order values by the day of the week? Why?