Tutorial 2

MIS561 Data Visualization, Semester 1, AY2022/2023

OVERVIEW

In this session, we will through a guided exercise to use Tableau to explore a fictional music stores' online sales data from 2008 to 2012. The dataset was adapted from the Chinook database offered at codeplex (http://chinookdatabase.codeplex.com/). This data set was adjusted for purposes of visualizing using Tableau.

When you go through the exercise in this session, you will acquire skills and familiarity that you can use when visualizing other data sets.

TASK 1: Familiarize Yourself with Terminology and Interface in Tableau Again

As you go through the exercises, you will encounter terminologies that may not be familiar to you.

Below is a typical Tableau interface with some of the components labeled. You can use this image as reference as you complete the tutorial. You can also check out the Tableau Product Help for additional topics at this URL: http://onlinehelp.tableausoftware.com/current/pro/online/en-us/help.htm.
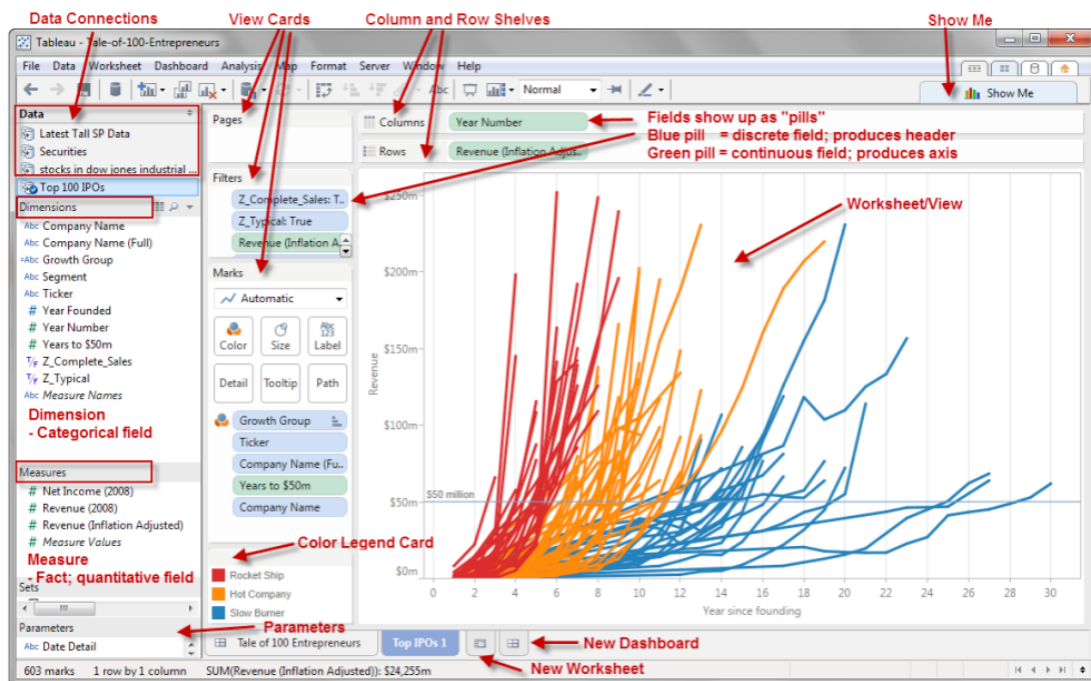
After familiarizing yourself with the Tableau terminology and interface, download the Tableau workbook from Slack: **Tutorial2_Music_Sales.twbx**.

The dataset is linked in the Tableau workbook. Familiarize yourself with the content of the dataset.

TASK 2: Create a Visual – Which Genre Sells the Most?

To help determine next year's budget, you are asked to create a visualization to determine which genre sells the most to our customers in Europe and Asia.

Follow the steps to create a visual for this question:

1. Drag the **Genre** dimension to Rows.

2. Drag the **Quantity** measure to Columns. Notice this will automatically aggregate quantity using SUM.

3. Drag the **Genre** dimension to Color. Remember that you have to use color with caution.

4. Click on the Descending bars icon on the toolbar (default location is below window option).

5. Click on the Label shelf to turn on labels by checking "Show mark labels".

6. Drag the **Region** dimension to the Filters shelf. Choose Europe and Asia.

7. Right click the **Region** pill in the Filters shelf to show the dropdown.
   Choose Apply to Worksheets > All Using This Data Source.

8. Right click the **Region** pill in the Filters shelf to show the dropdown.
   Select "Show Filter".
   Notice this will display another card that has all the **Region** values with checkboxes right beside them. Your users can use this to interact with this worksheet.

9. Right click on the bar of the top selling genre, and choose Annotate > Mark.

   Type the following in the Annotation editor. For anything in angled bracket, use the

   "Insert" dropdown menu to select the actual fields.
   > Top Selling Genre: < Genre>
   > Quantity Sold: < SUM(Quantity)>

   Click OK when you are done

   Adjust the location of the mark annotation so it's visible in the view.

TASK 3: Create a Visual – Which Artists Sell the Most?

Now that you know the most popular genres in Europe and Asia, you are asked to determine which artists sell the most. You are also asked to show if the artists produced tracks only on one genre, or if they have music across multiple genres.

Follow the steps to create a visual for this question.

1. Drag the **Artist** dimension to Rows.

2. Drag the **Quantity** measure to Columns. Notice this will automatically aggregate quantity using SUM.

3. Drag the **Genre** dimension to the Color shelf. Notice this places a **Genre** pill in the Marks shelf with a color icon right beside it.

4. Drag the **Quantity** measure to the Label shelf. Notice this places a **Quantity** pill in the Marks shelf.

5. Click on the **SUM(Quantity)** pill in the Marks shelf to show the dropdown and choose Format.
   In the Default section, click on the Numbers dropdown.
   Choose Number (Standard).

6. Click on the right side of the **Artist** pill in the Rows shelf. This will show the dropdown. Choose Filter.
   In the Filters window, choose the Top tab (4th tab).
   Choose By Field: Top 20 by Quantity Sum.

   Click OK when done.

TASK 4: Create a Visual – How do Our Region Sales Compare to Each Other?

We are then asked to assess which regions in Europe and Asia sell the most records, but we quickly find that we aren't able to answer this information given the fields already defined in our data set.

Follow the steps to create a visual for this question.

1. Click on the dropdown icon beside the magnifying lens in the Dimensions window and select "Create Calculated Field".
    Name your calculated field **Sales.**
    In the Formula, use the following. Note you can also double click the field names from the Fields pane.
    > [Quantity] * [UnitPrice]

    Click OK when done. This new **Sales** field will show up under Measures, and will have an icon that starts with an equal (=) sign.

2. Drag the **Sales** calculated field from Measures to the Size shelf. Notice this places a **Sales** pill in the Marks shelf with circle icon left beside it.

3. Drag **Region** dimension to the Color shelf. Notice this places a **Region** pill in the Marks shelf with color icon left beside it.

4. Drag **Country** dimension to the Detail shelf. Notice this places a **Country** pill in the Marks shelf with detail icon left beside it.

5. Click on the space beside the **Country** dimension you just added to the Detail shelf and select the color icon.

6. Right click the **Country** dimension you added to the Detail shelf and select Sort.
    In Sort order, choose Descending.
    In Sort by, choose Field: Quantity and Aggregation: Sum.
    Click OK when done.

7. Drag the **Country** dimension to the Label shelf (beside the Size shelf in the Marks card).

8. Drag the **Sales** calculated field from Measures to the Label shelf.

9. Click on the **Sales** pill in the Marks shelf to show the dropdown, and choose Quick Table Calculation > Percent of Total.

TASK 5: Create a Visual – What does Our Geographic Sales Distribution Look Like?

You want to expand sales to more countries. To do this, you need to know first how our sales looks like in the countries we are currently catering.

Follow the steps to create a visual for this question.

1. Double click the **Country** dimension pill. This creates a geospatial map in the view. You should also notice that latitude and longitude are automatically placed in the rows and columns shelves respectively.

2. In the Marks shelf, change the type from Automatic to Map.

3. Drag the **Sales** measure to Color. This adds a **SUM(Sales)** pill in the Marks card with a color icon beside it.

4. Drag the **Sales** measure again to Label. This adds a **SUM(Sales)** pill in the Marks card with an label icon beside it.

5. Click the **SUM(Sales)** pill in the Marks card to show the dropdown. Choose Format. Under the Default group, choose Currency (Custom), with zero (0) decimal places. Keep the thousands separator checked.

6. Drag the **Country** dimension to Label.

7. Click on the Label shelf to open the Label editor (three dot menu on the text option). Format the label so that **Country** is
    - placed above Sales
    - a slightly bigger font than Sales
    - is Bold

8. Edit the color legend by clicking on the top right side of the legend border. Choose the Red Green Diverging color palette. Click OK when done.

TASK 6: Create a Visual – How does the sales trend of Rock tracks compare against Alternative and Heavy Metal tracks?

One of your market researchers needs to find out the sales trend of Rock, Alternative and Heavy Metal tracks. You offered to help her out.

Follow the steps to create a visual for this question.

1. Right click drag **InvoiceDate** dimension to the Columns shelf. A right click drag opens a menu as soon as the field is placed on the shelf.
   Choose the continuous (green) **MONTH(InvoiceDate)** from the dropdown. This has a green calendar icon beside it.
   Continuous (green) fields produce axes, which is what we want. Discrete (blue) fields produce headers.

2. Drag the **Sales** measure to the Rows shelf. This produces a line graph for you.

3. Drag the **Genre** dimension to Color to keep the color theme consistent with other worksheets.

4. We have too much information on our view to be able to answer our original question. Drag the **Genre** dimension to Filters, and choose Rock, Alternative and Punk, and Heavy Metal.

5. Go to the Analysis menu and select Trend Lines > Show Trend Lines.

TASK 7: Create a Dashboard

Now it's time to put all your worksheets together into a single dashboard. You have freedom to design the dashboard and add components as you see fit. The "Music Sales Dashboard" is set up as a blank dashboard for you to be able to work with. Once you are finished with your dashboard, upload it to Tableau Public (instructions are on "Dashboarding Instructions P2").

After that, please share the link of your visual in the discussion channel on D2L.