Hyperiondev

TASK

# Data Visualisation -


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# Introduction

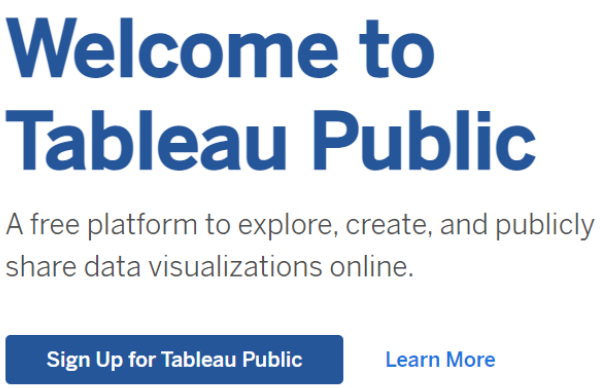
## WELCOME TO THE DATA VISUALISATION - TABLEAU TASK!

Tableau Desktop is software that allows people to connect to a database and easily create data visualisations. It has become one of the biggest and most used data visualisation tools today. Through Tableau, you can create many different and interactive visualisations and dashboards.

In this task, we will explore and learn the fundamental skills of Tableau Desktop.

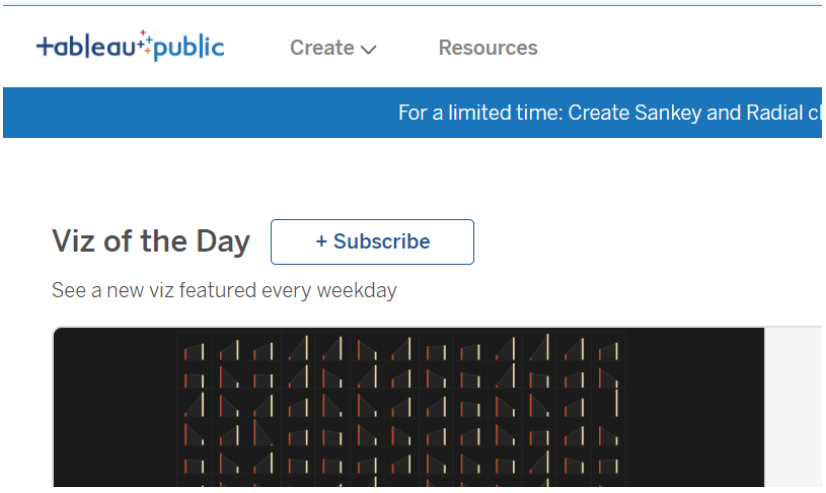
## ACCESS & INSTALL TABLEAU

1. Go to **https://public.tableau.com/app/discover** and click **Sign Up for Tableau Public** (as seen in the screenshot below).

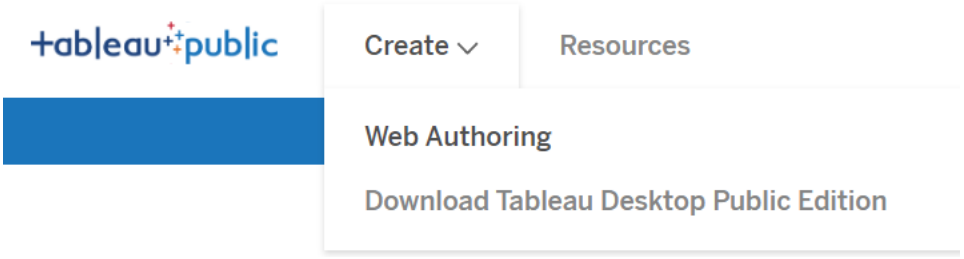



2. Click on the link provided, in the confirmation email, to confirm your registration and set a password.

3. Login with your newly created username and password. Once you've logged in, you will see a landing page something like this.

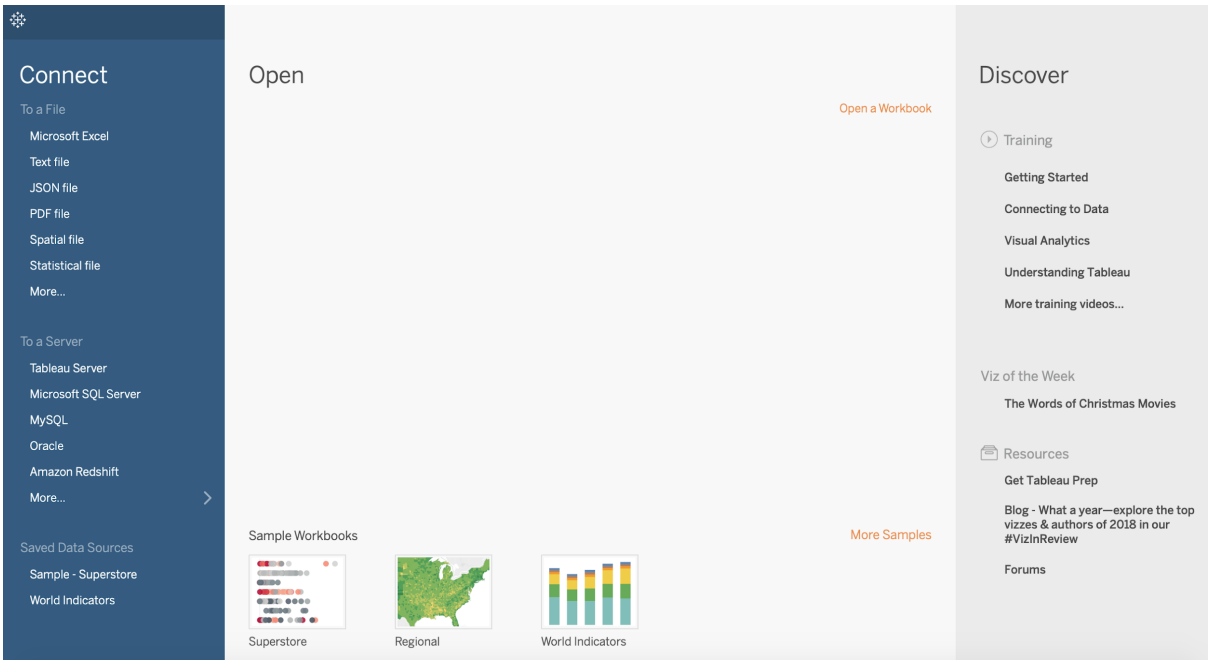


4. Click on Create and you will see two options, Web Authoring and Download Tableau Desktop Public Edition (see screenshot):



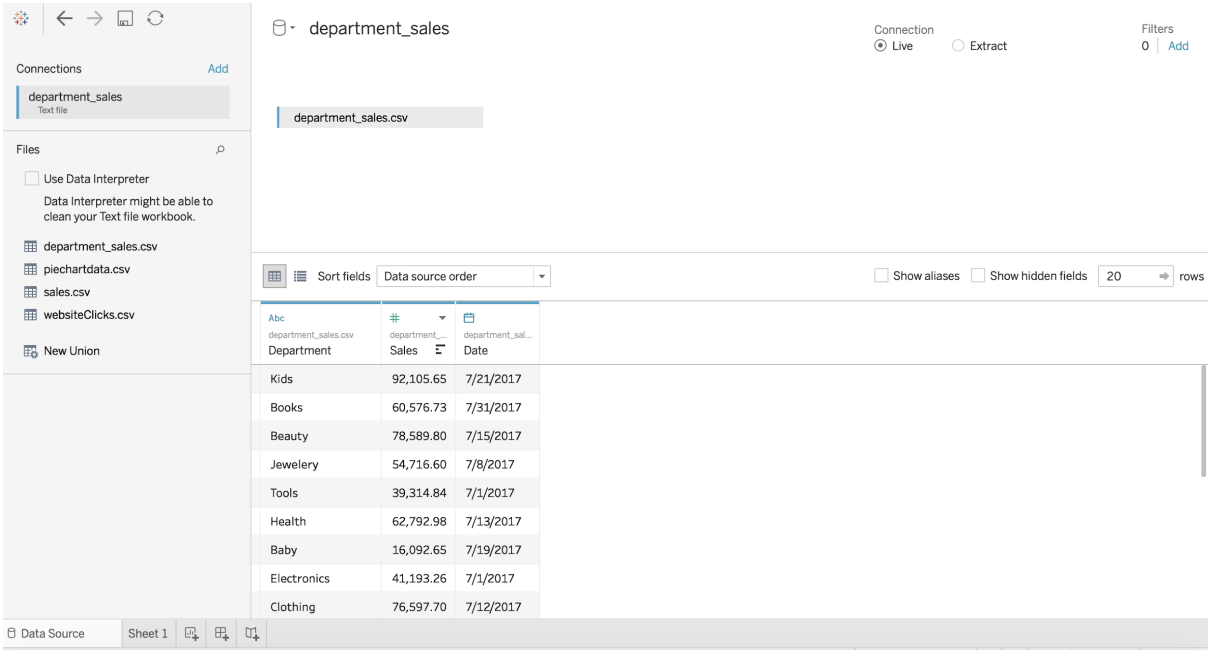

5. You can choose to use the web client or to download and install Tableau Public. If your device is low on memory or CPU power, the web client may be better for you. However, the desktop version may be more stable.

## LOAD DATA




As you can see, Tableau offers a variety of ways to connect to your data source - this can range from a simple .csv file to a server such as Google Analytics.

We can import sample .csv data by importing from “text files”. Once you do so, you will see a preview of your uploaded data:




**Take note:**

*When working with .csv files you may have to split the data before you can proceed. If once you have imported the .csv file the data is listed in one column separated by commas (as shown below), you can right-click on the column and select 'Split', setting a comma as the separator and selecting to split "All" rather than "First" or "Last". This should put all the data into separate columns. Be sure to rename the columns (Right-click > Rename).*

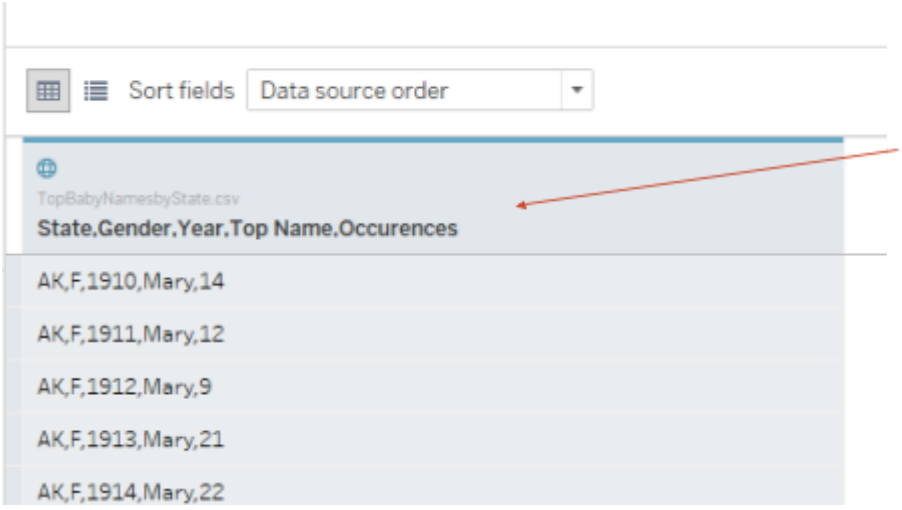
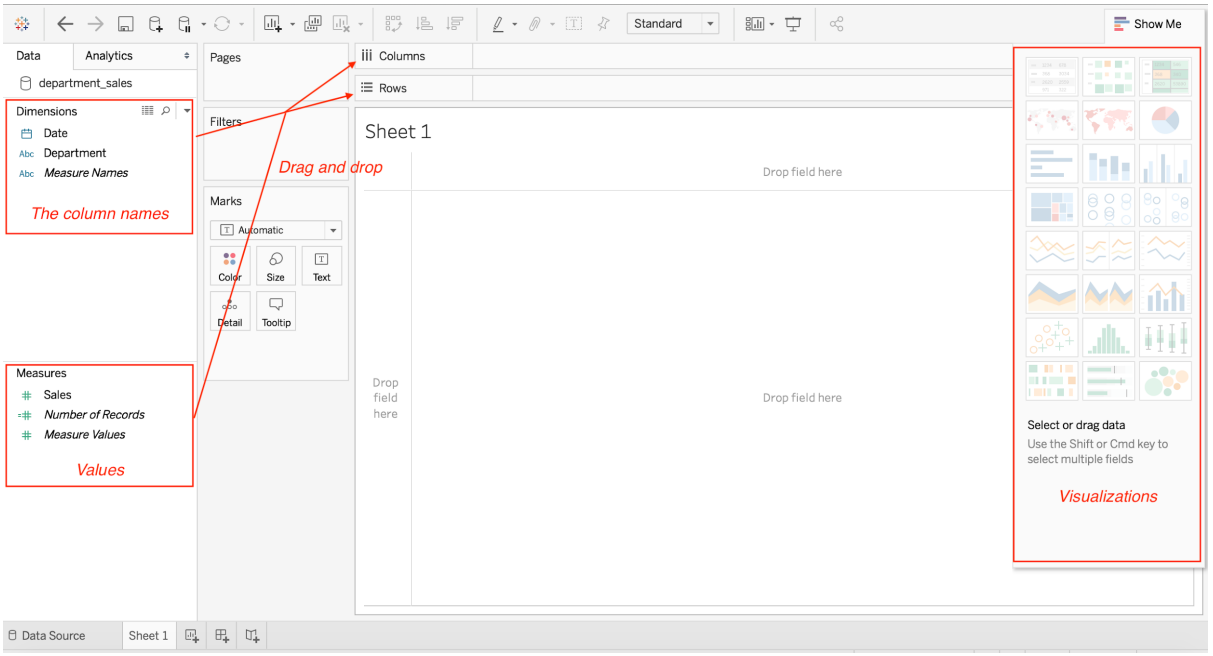


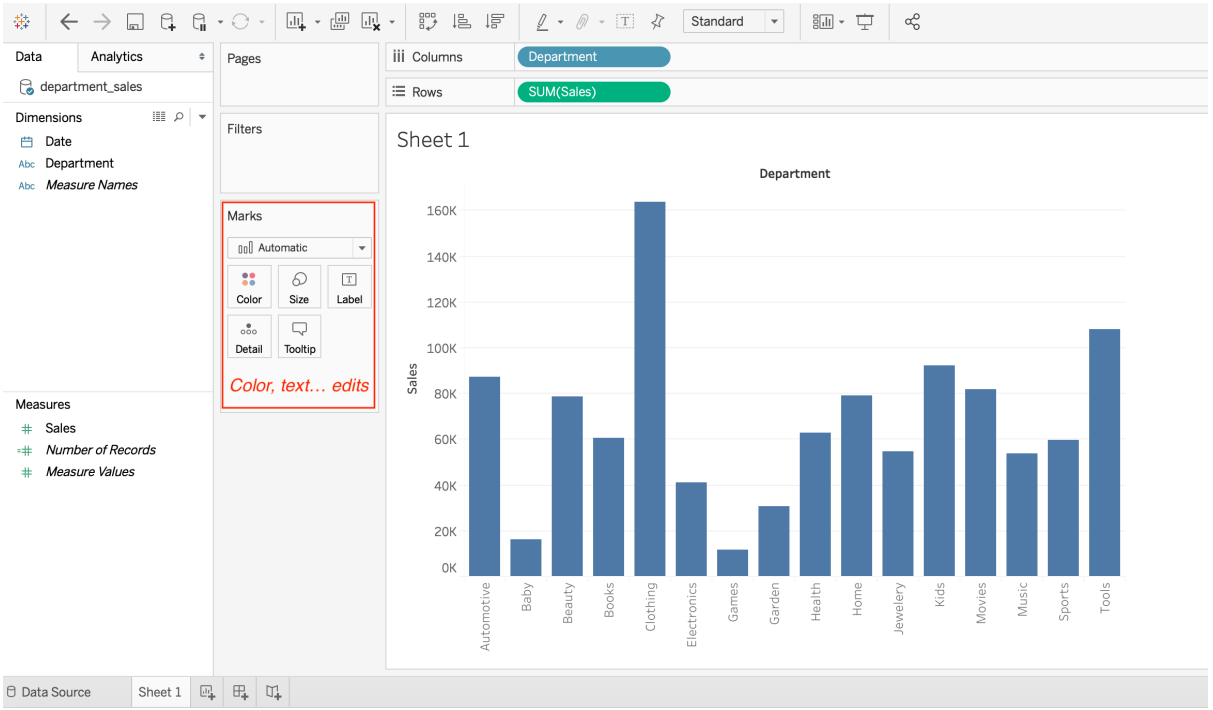

*Tableau may sometimes have difficulty with .csv files. If you don't succeed in allocating fields to columns appropriately using the 'Split' method, a* ***workaround*** *is to save the .csv file as an Excel (.xlsx) file first. This can be achieved with either Excel itself or Google Sheets. Then, instead of opening the .csv file from within Tableau, open the .xlsx file. Tableau should now be able to identify the fields accurately.*

When you are ready, you can click on “Sheet 1” at the bottom to create a new visualisation sheet.

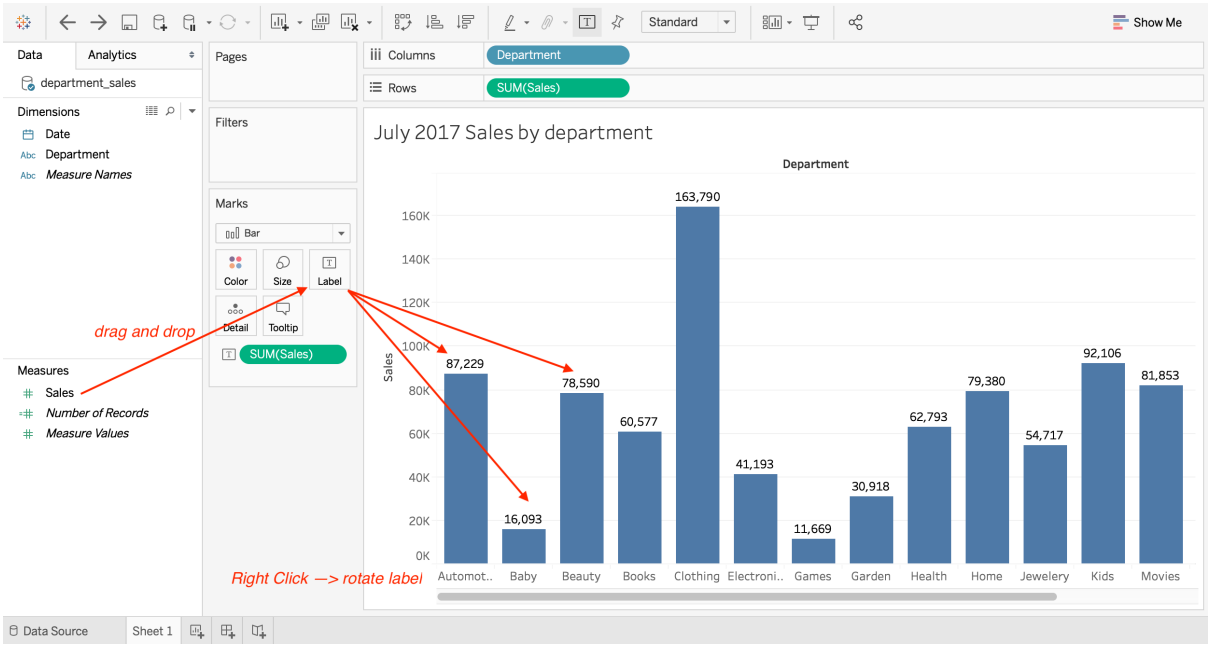
## CREATE VISUALISATIONS



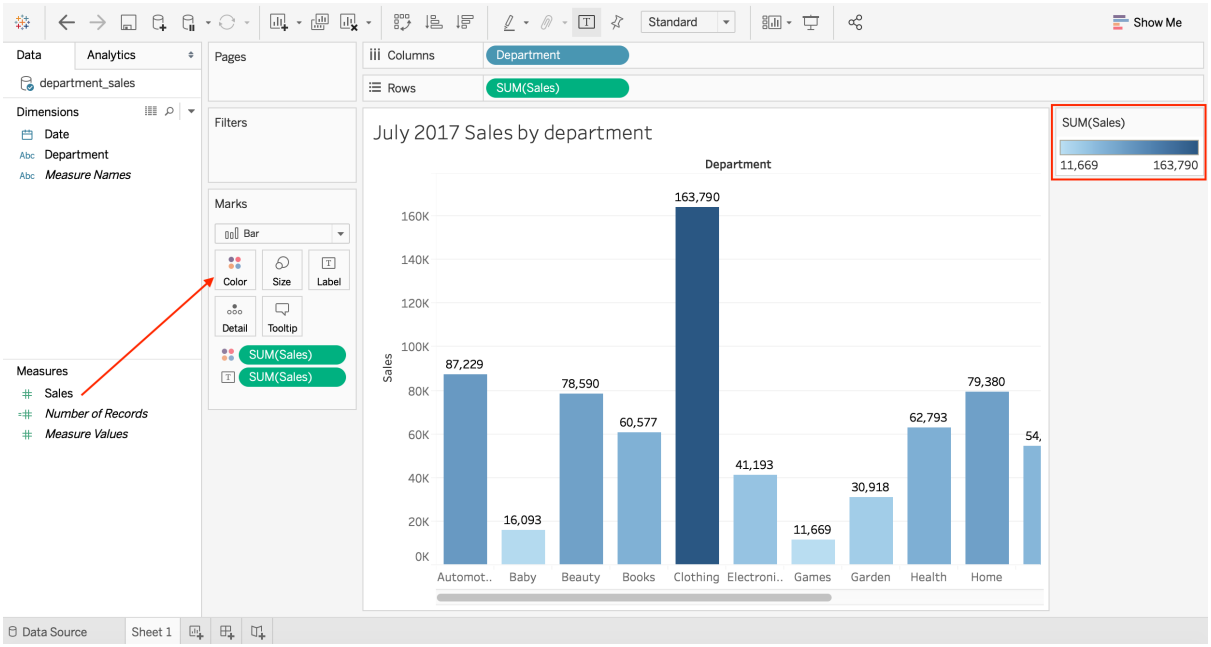

On the left side, the data file has been extracted and sorted. You can simply do a drag and drop onto the “columns” and “rows” depending on how you want your visualisation to look.



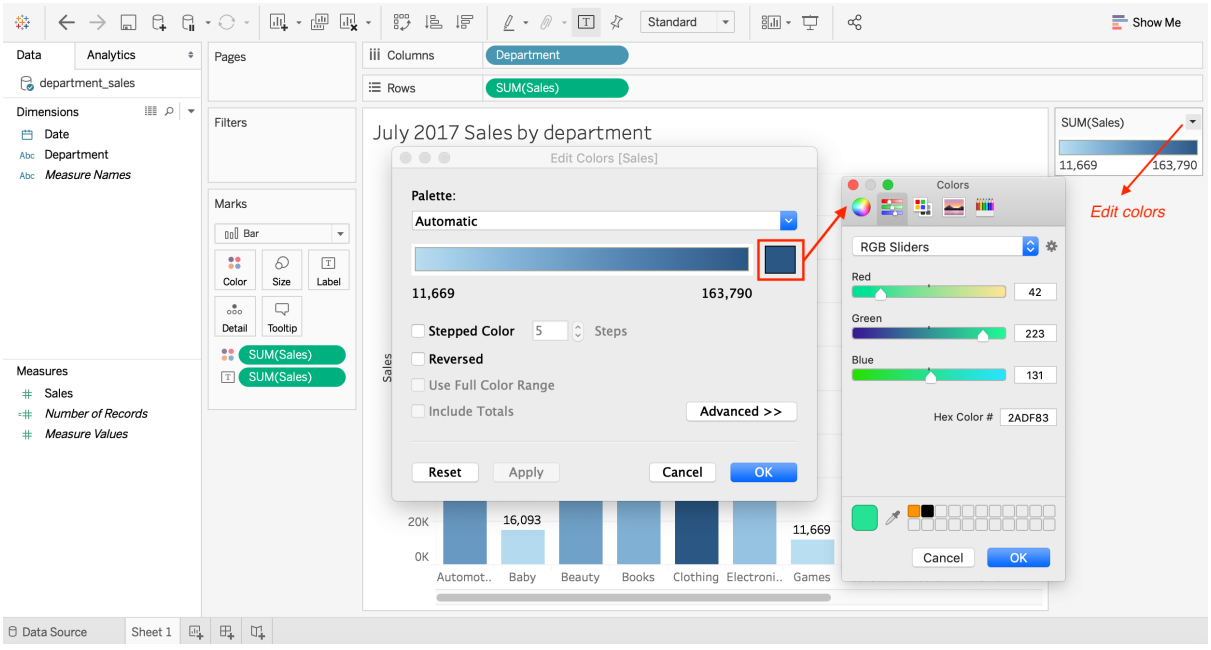

Then change the look of your visualisation by modifying elements such as labels and titles.



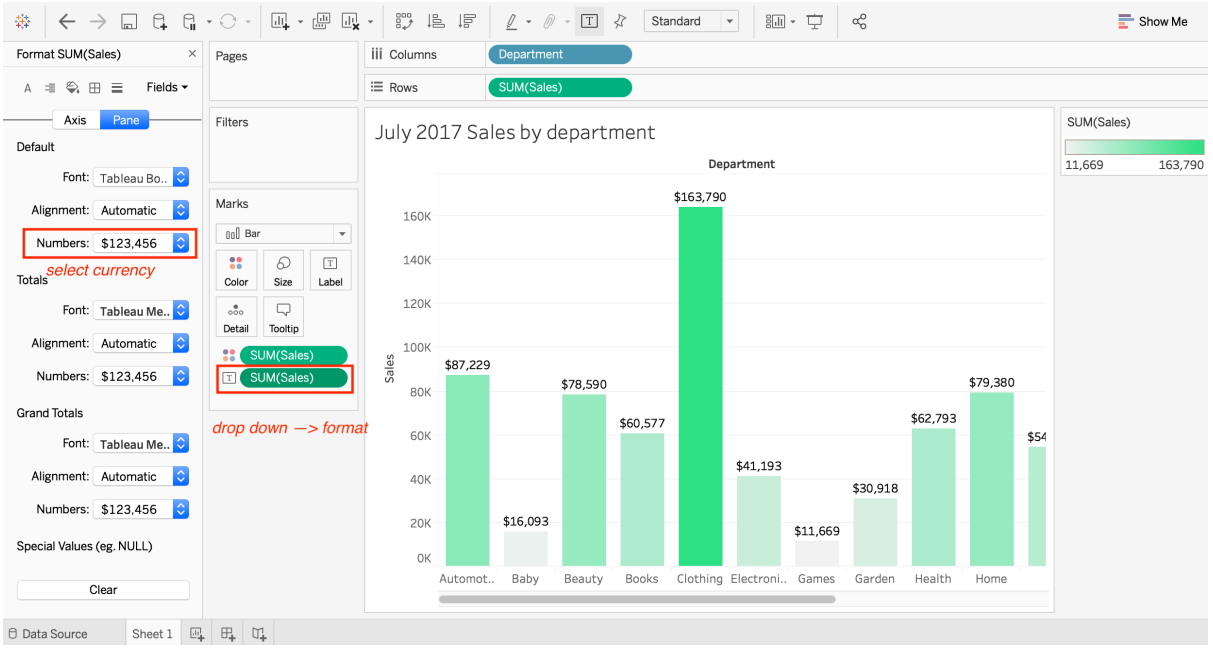

You can even colour your visualisation by the number of sales, and Tableau will automatically calculate the range of colour based on the data values.




You can change this too - perhaps make the bars green to represent money.

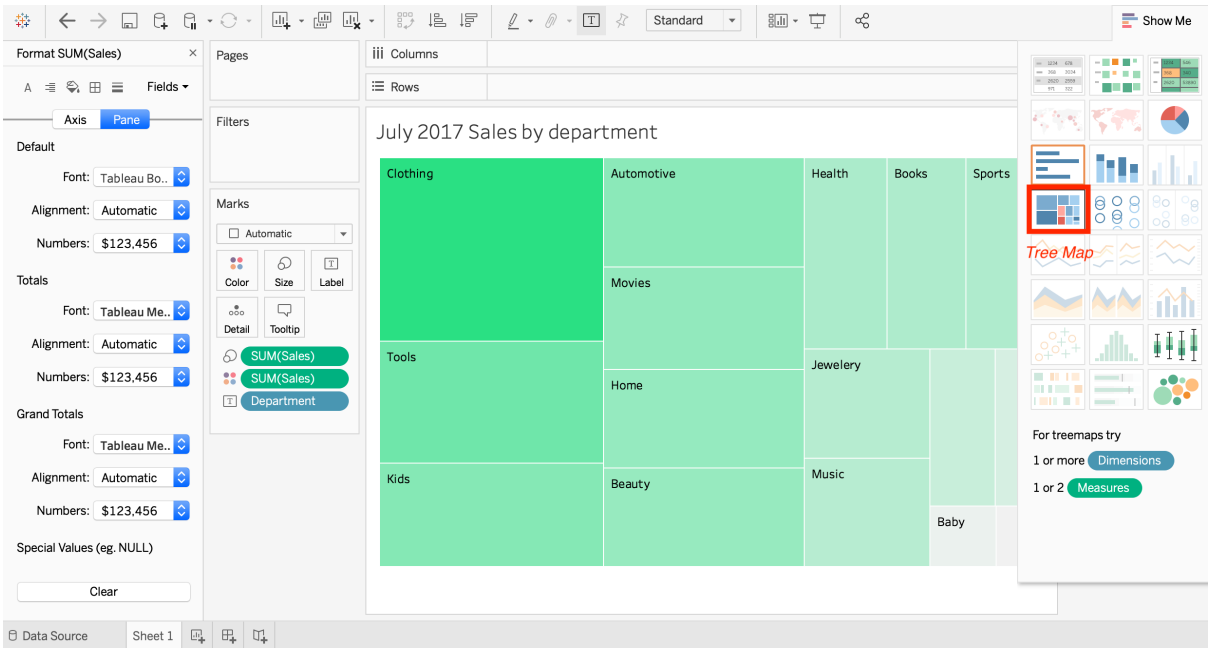


Put a dollar sign on labels on top of the bars.




You can also choose different visualisations under “Show Me”. Below is an example of a tree map of the same data selected.

## Tree Map

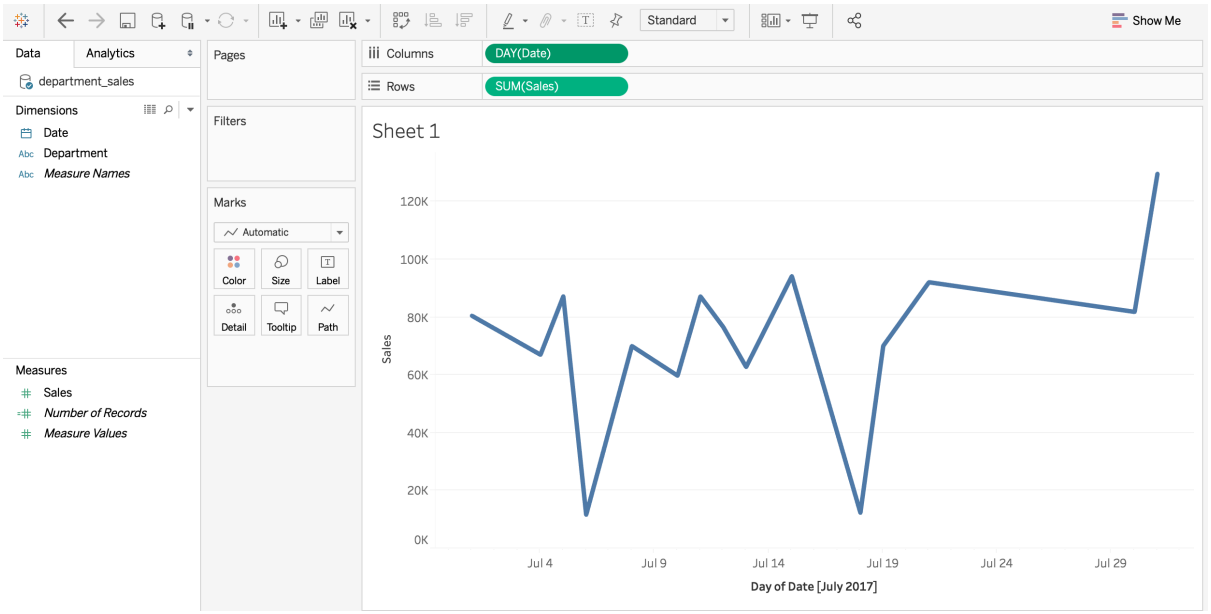



Keep in mind that the visualisations from which you can choose are based on the values you’ve dragged into columns and rows. For example, “Department” shown

in *columns* and “Sales” displayed in *rows*. You cannot create a line graph, because a line graph visualises a period of time and thus requires “time” value data.

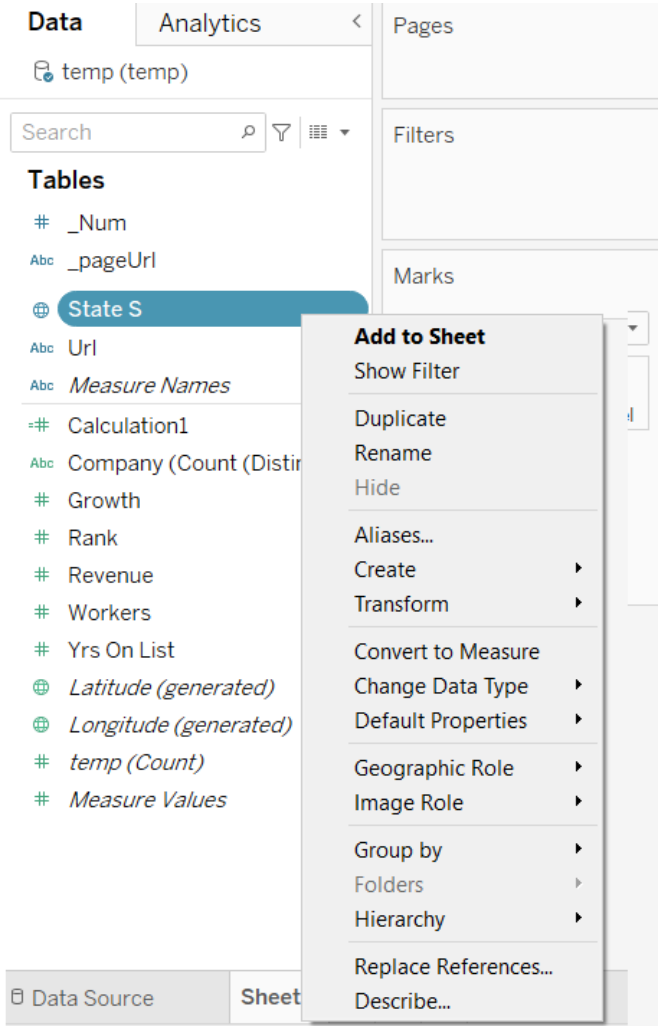
### Line Graph

If we drag “Date” into columns and “Sales” into rows, we can create a line graph.




## CONTEXT-MENUS

A lot of Tableau’s functionality is accessible via context-menus. For example, in Sheet view, if you right-click on any of the fields listed (down the left-hand side) in your Data table, as pictured below, you’ll find a number of different options (see screenshot). Play around with these in Tableau and see what you can do with them.

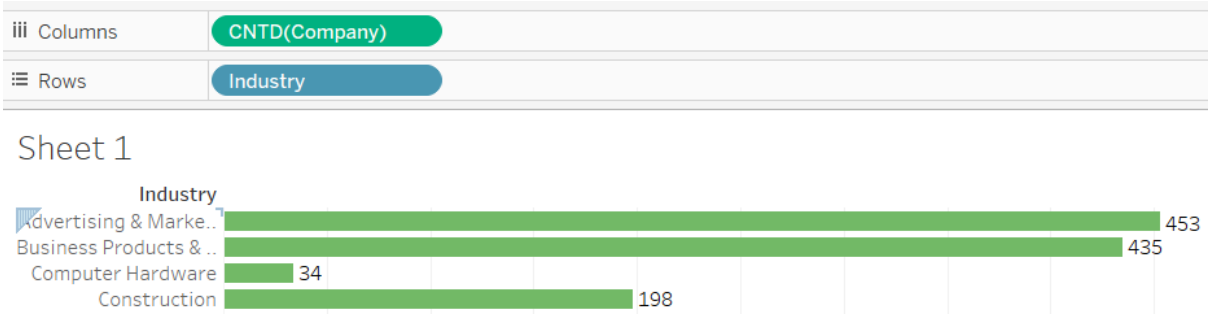



**Convert to Measure**

One of the most useful options pictured above is 'Convert to Measure'. Let's look at an example to see how this works.

The data table used for the above screenshot lists the industry for all records (so each company is associated with an industry). To get a distinct count of how many companies are associated with each industry, all we'd need to do is right-click on Company and select 'Convert to Measure' as shown above.

This would create a new metric in your field list, which you could select to graph as columns, with the Industry field selected for rows. This would give a result something like the following, making it easy to see at a glance how many companies are part of each industry:




## FURTHER LEARNING WITH TABLEAU

Tableau is really popular because it is really powerful. However, there is a lot more to using it well than we have covered in this brief introductory task. Tableau can be challenging to learn by just playing around without guidance and can turn out to be very simple if explained or demonstrated. We strongly recommend sourcing and using online resources such as the videos mentioned in the Extra Resource inset below, as well as resources like the Tableau user **forums** if you wish to gain further expertise in data visualisation with this tool. You can source datasets to play around with from the **resources** Tableau provides (**make sure that the "Sample Data" tab is selected** instead of the "How-to Videos" tab).

**Extra resource**

*Tableau's official website also has its own training videos; these **videos** are very detailed and in-depth. They are updated when Tableau releases new versions. Feel free to check them out!*

# Compulsory Task 1

Follow these steps:

- Open Tableau and make sure it is working.
- Download the **2014 Inc. 5000 dataset**. (Or, alternatively, search for it **here**.)
- Answer the following questions by using a graph (to be included in your submission):
    - Which industries saw the most growth?
    - Do companies that have been on this list longer have a higher chance of appearing again in this list?
    - Does the number of workers in the company affect the growth of the company?
    - Which state can you find most of the IT companies in?
    - Which cities have seen the most growth?

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