Tableau

Lesson-Data Visualisation

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1. Introduction

This week's tutorial provides an introduction to the basics of building a Tableau Story and Publishing to Tableau's on-line gallery (to enable sharing with other people). Using the using a sample of Journalist Deaths data this tutorial will explain, how to represent multiple dimensions of a dataset, how to build a visual story, and how to publish the visualisation to a public gallery. You will also practice overlaying data on a Global map.

Specifically, the aims of this tutorial are to:

- understand additional methods for visualising dimensions of data
- understand the basics of visual stories
- and explore how to publish a visualisation to a public gallery

2. Scenario

This week we will explore a sample data set relating to Journalist Deaths spanning the period from 1992-2014, including indications of Country of Death, Gender, Job Description, along with a detailed Description of events and a URL link to a profile.

The Journalist Deaths data set (Journalist_Deaths_Tut04.xls) provides details on more than 1,580 individual deaths, and spans 1992 and 2013. Each record in the data set represents a specific event and consists of some 24 attributes ranging from, a unique Journalist Name, the Year Killed, the Location of the event, and the Type of Death (murder, cross-fire, etc). The data set has been source from the publically available information provided by the "The Committee to Protect Journalists", from the website https://cpj.org/killed/.

The main aim of today's tutorial is to see how adding geographical data to your analysis can provide additional insight using maps as a visual aid, and how we can build stories using the data, and share our insights with others.

3. Open the data file in Excel

First we need to download our sample data set for this Tutorial and open the data in Excel.

a) Download the file Journalist_Deaths_Tut04.xls from the Unit Resources on Cloud Deakin. Save it to your hard drive (or your working disk if working on one of the Deakin lab computers).
b) Open the Journalist_Deaths_Tut04.xls file in Excel.

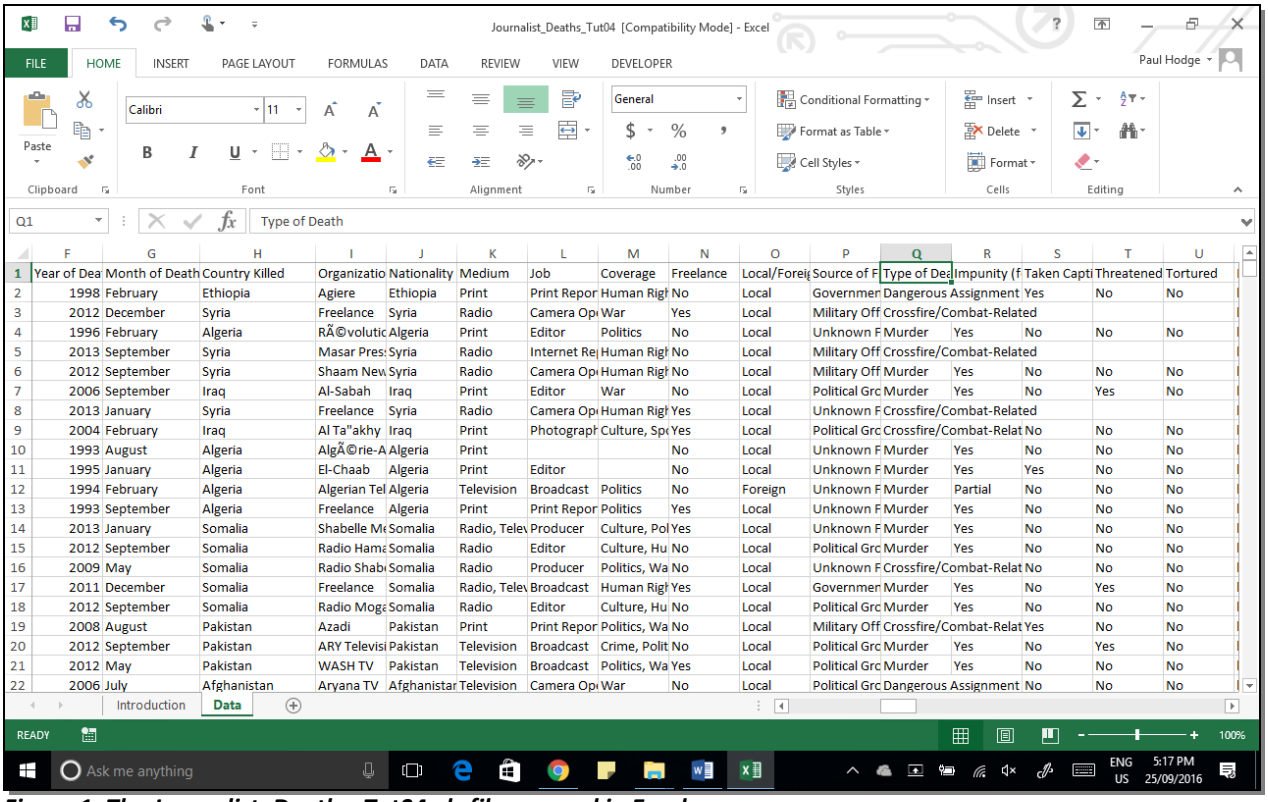

Figure 1: The Journalist_Deaths_Tut04.xls file, opened in Excel

4. What structure can you see in that data?

As we did in our previous tutorial, before we can begin any type of analysis on the Journalist data we first need to understand the basic structure of the data and understand how the data is organised.

In previous tutorials you have been shown the difference between Categorical and Continuous data. In this step we will first identify the different types of Categorical and Continuous data available in the tutorial data set.

a) What different groups of data are there in the Data Set, and what are the labels/names for each of the Categorical data?
b) What are the labels/names for the Continuous data?
c) How many records are there in the Data Set?
d) Can you identify any Location data / columns?
e) Can you see any Date attributes (as discussed a Date is both Ordinal and an Interval)?

Hint: Categorical Data usually can take on one of a limited, and usually fixed, number of possible

values, and is typically used to describe or group related data. Continuous data is usually Numeric and many take on any value with a range.

5. Launch Tableau and connect to our data.

As we have done before, we will begin by starting Tableau and connecting to the Sales data set using the Tableau Software. These are the same basic steps you took at the beginning of the last Tutorial, only this time we will connect to the Journalist_Deaths_Tut04.xls file and to the 'Data' excel worksheet.

a) First start the Tableau software, just like any other software (access from the Windows Start menu)… Note: If you haven't already you can download a trail version of Tableau from http://www.tableau.com/ and use the Product Activation Key provided on Cloud Deakin.

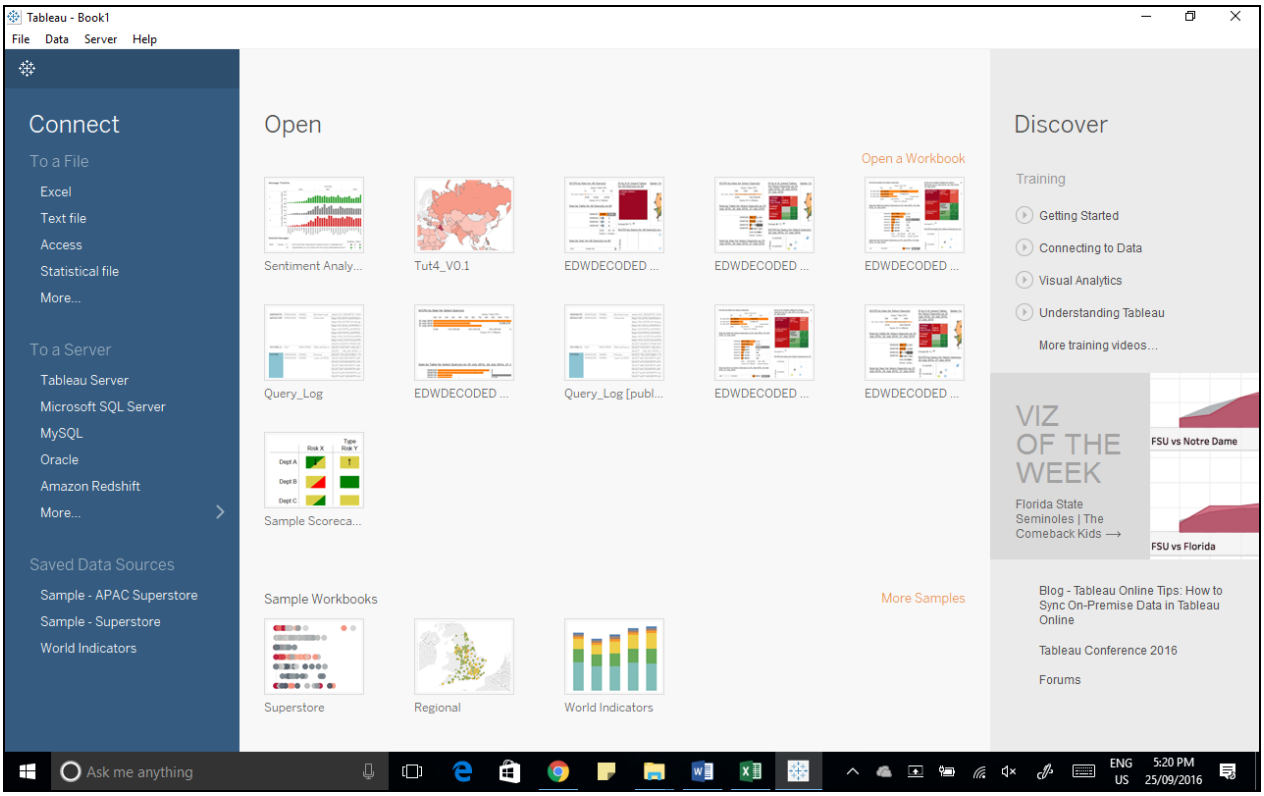

Figure 2: The Tableau software opening screen (note: this is for version 10.0 of tableau, but previous versions should look similar. You might also have a different set of recently opened files)

Hint: If you are using the Deakin Lab computers the Tableau software will already be installed. If you are working through the tutorial on your personal computer you will need to first install the Tableau using the instructions and software key provided in the MIS771 discussion forum.

b) Next use the 'Connect' feature to open the Journalist_Deaths_Tut04.xls in Tableau.

Step 1. 'Select Excel'

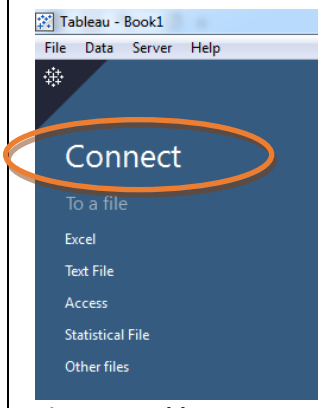

Figure 3: Tableau Connect to Data

Step 2. Locate and Select 'Journalist_Deaths_Tut04.xls' and click 'Open'

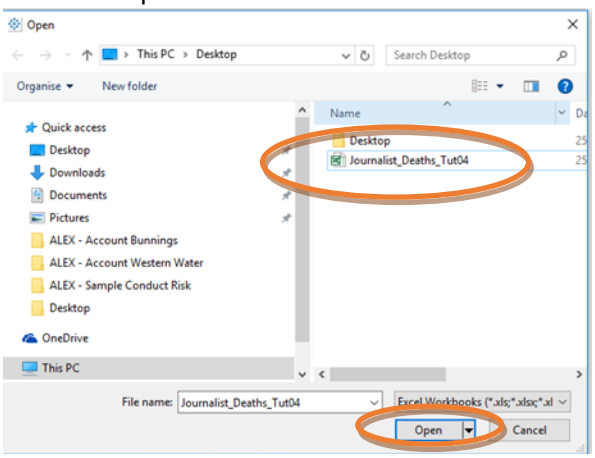

Figure 4: Select the Journalist_Deaths_Tut04.xls Tutorial file

Step 3. 'Connect live'. Ensure the 'Live' Connection option is selected, and drag the 'Data' worksheet in to the Preview (so that the data is shown), then click the 'Sheet 1' tab at the bottom of the screen.

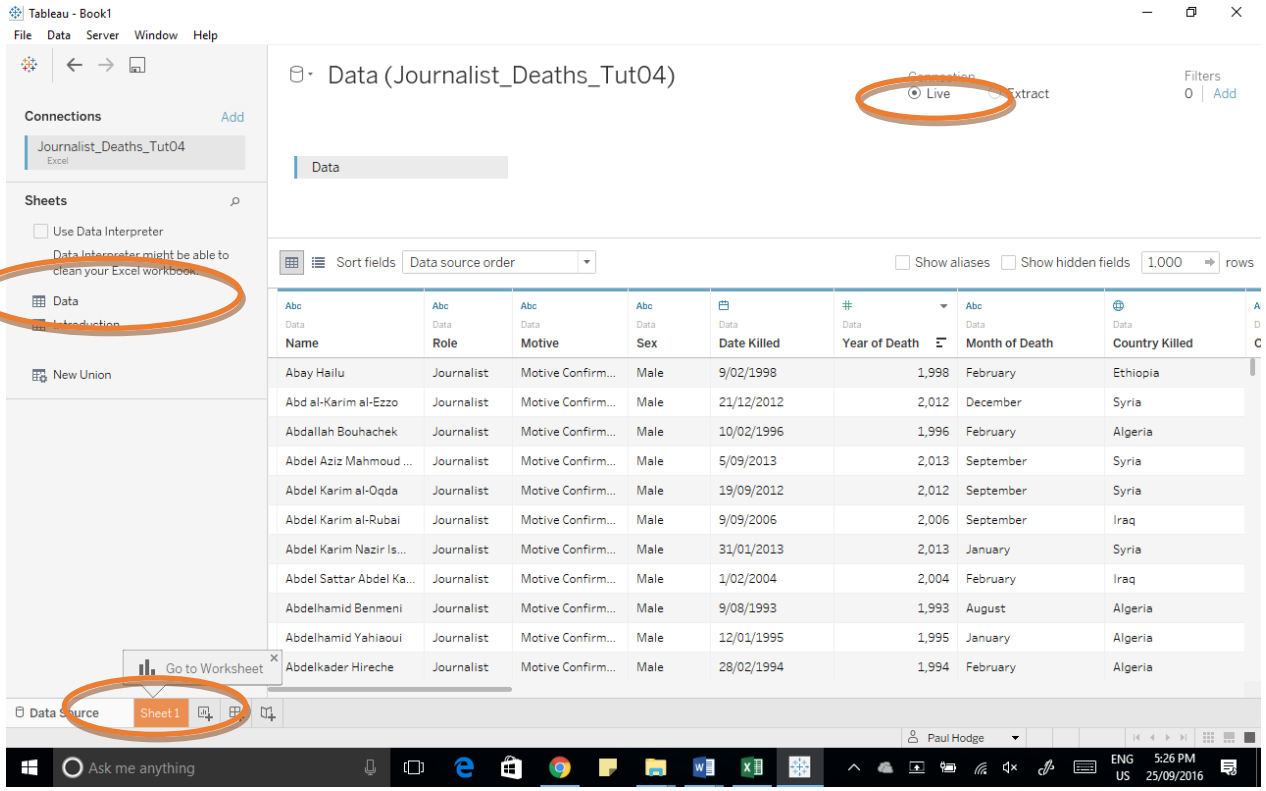

Figure 5: Tableau Connect live to the Excel file

c) Can you identify the labels for the Categorical data and the Continuous data?

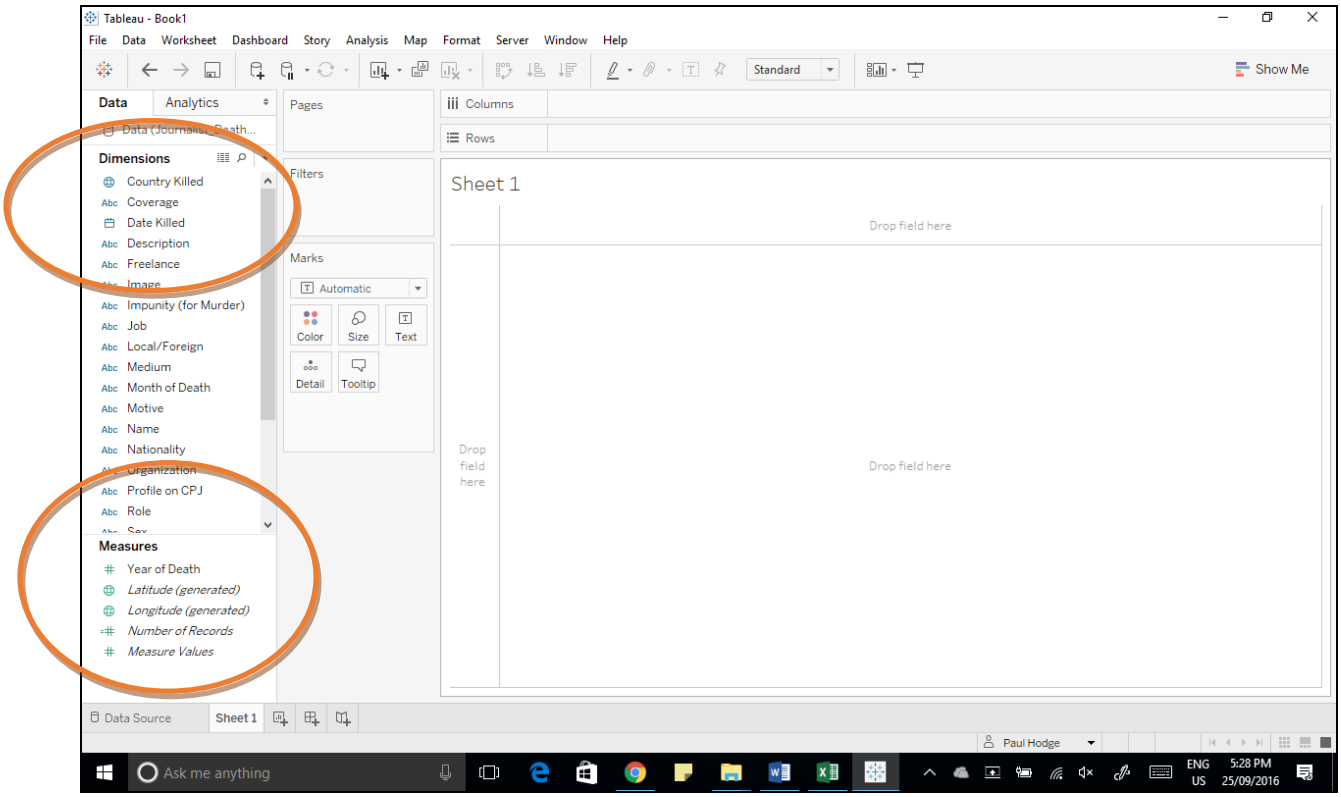

Figure 8: Tableau Work Sheet

Hint: Tableau calls Categorical data 'Dimensions', and calls Continuous data 'Measures'. Also if you saved the Journalist_Deaths_Tut04.xls with your additional Data Analysis there might be some additional unnecessary Dimensions (these can be hidden in Tableau, using the 'Hide' option on each unwanted Dimension).

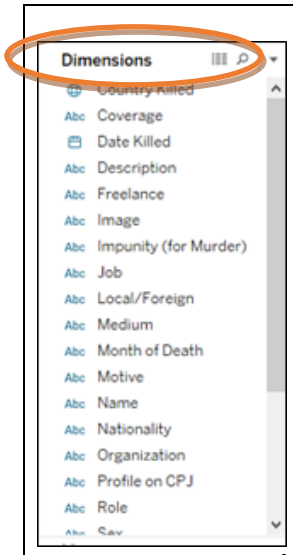

Figure 9: Dimensions/Categorical Data

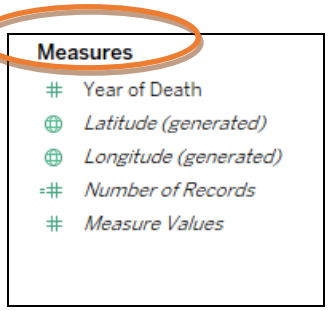

Figure 10: Measures/Continuous Data

6. Configuring a set of Tableau Workspaces.

In this section we will configure 3 Tableau worksheets in preparation for placing them on to a Dashboard.

1. Location – A graphical representation of Country of Death, using Color to illustrate numbers of deaths
2. Year – A Bar chart showing Deaths per Year
3. Detail – A text detail related to the individuals killed, with a Hyper link to a detailed URL

a) Using the drop-and-drag techniques you learnt in the previous Tableau tutorial, configure the Location Worksheet shown in Figure 11 (see Hints below). Make sure you rename the workspace to 'Location'.

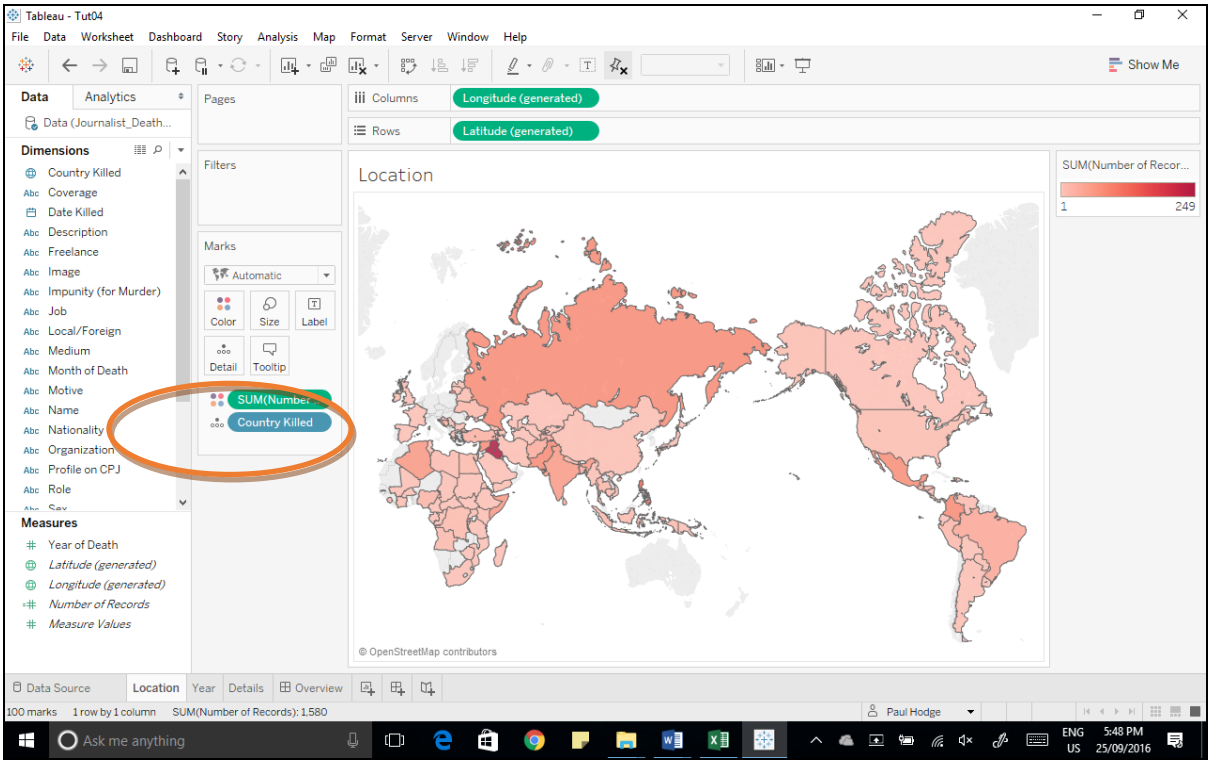

Figure 11: Drag-and-drop the 'Dimensions' and 'Measures' to the various Workspace Panels

Hint: Dropping-and-dragging the 'Country Killed' Dimension on top of the 'Detail' panel will make the chart show a data point/dot for every Country Location.

Hint: Dropping-and-dragging the 'Number of Records' Measure on top of the 'Color' panel will make the chart show color on each Country.

Hint: Click on the 'Color' Marks option to Edit the Colors and choose the Red Palette.

Question: What does using the Map tell you about the concertation of Journalist Deaths over the period?

b) Next, click on the 'Add New Workspace' icon at the bottom of the screen and add a new worksheet. Then configure the new worksheet as shown in Figure 12 (see Hints below). Make sure you rename the worksheet to 'Year'.

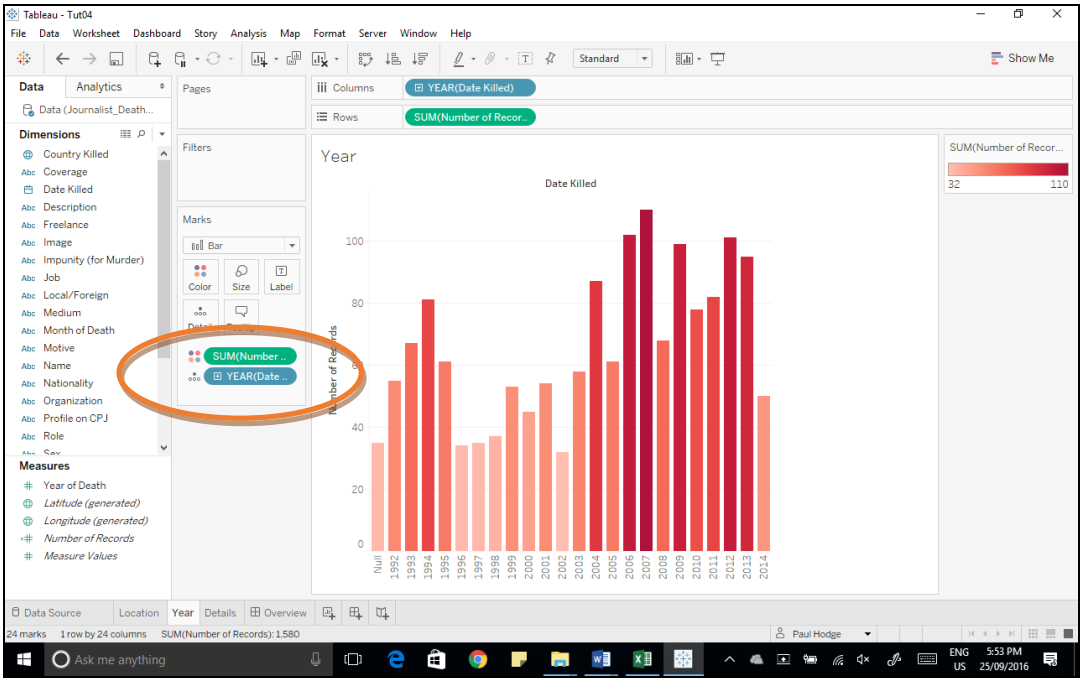

Figure 12: Drag-and-drop the 'Dimensions' and 'Measures' to the various Workspace Panels

Hint: Click on the 'Color' Marks option to Edit the Colors and choose the Red Palette.

c) Finally, click on the 'Add New Worksheet' icon one more time and add a new worksheet. Then configure the new workspace as shown in Figure 13. Note: Make sure you rename the workspace to 'Detail' (Hint: Use the 'Ctrl' to select more than on Dimension before dragging)

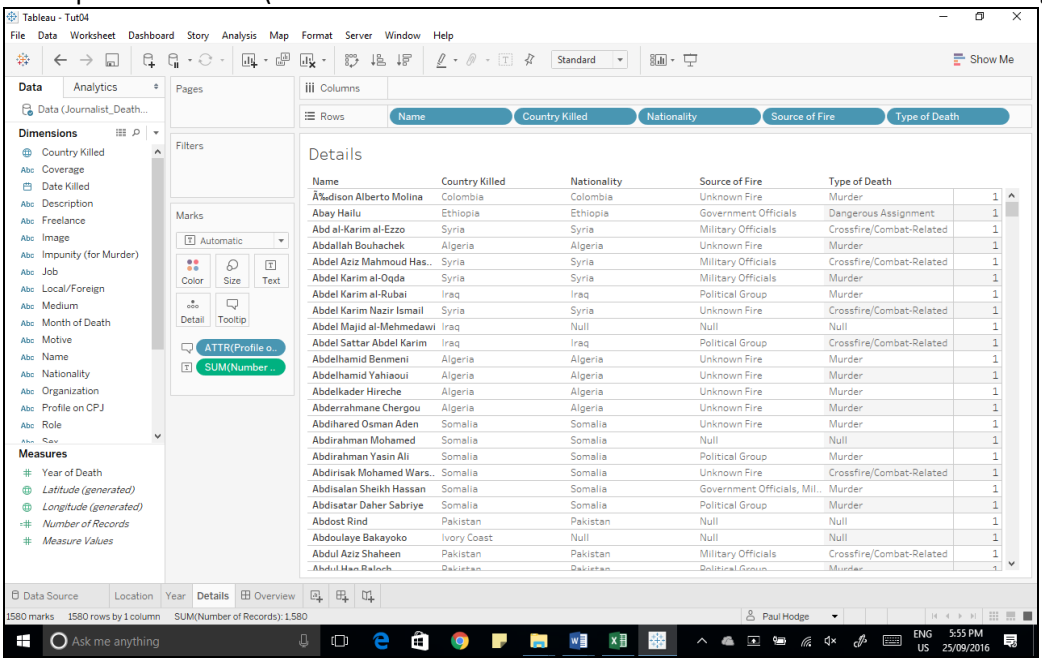

Figure 13: Drag-and-drop the 'Dimensions' and 'Measures' to the various Workspace Panels

7. Configuring a Tableau Dashboard.

a) Click on the 'Add New Dashboard' icon  at the bottom of the screen and add a new Dashboard. Note: Make sure you rename the workspace to 'Overview' and set the Dashboard Size to 'Laptop'.

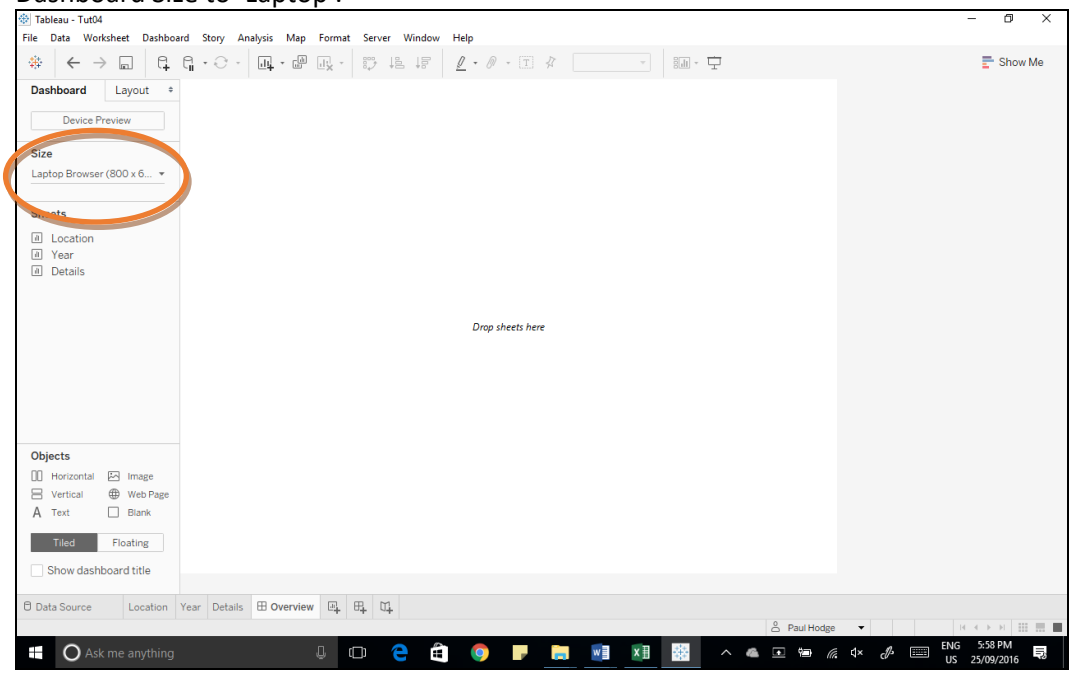

Figure 14: Add a new Dashboard

b) Next, drop-and-drag the 'Location', 'Year', and 'Detail' worksheets on to the Dashboard workspace and resize them to show relative importance.

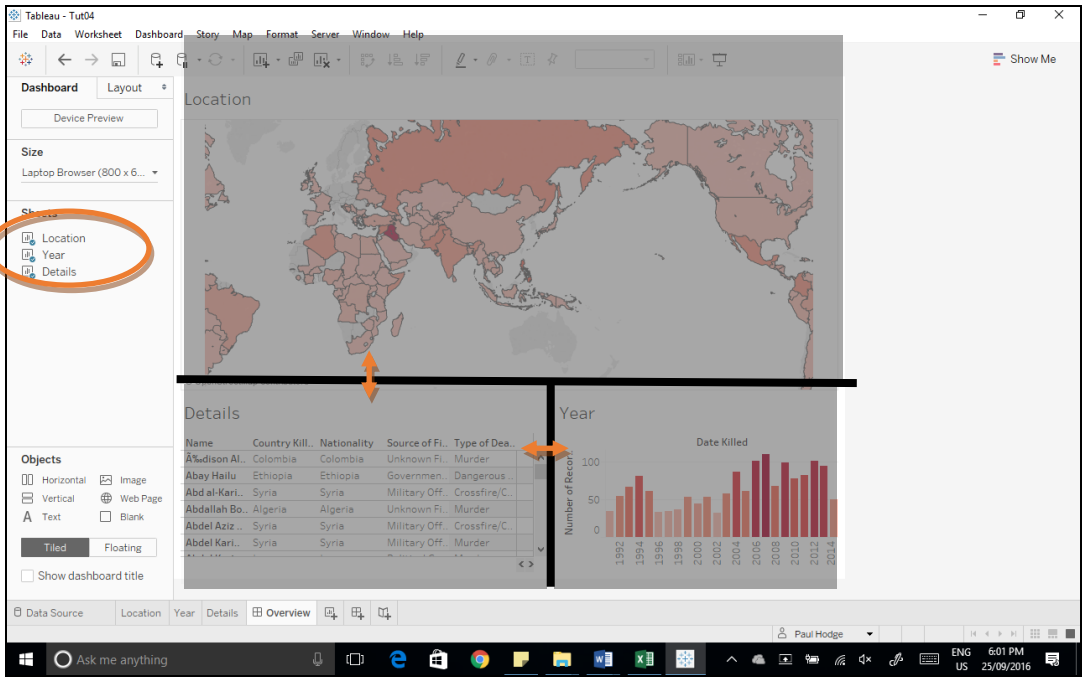

Figure 15: Place the Workspaces on the Dashboard, and resize the Windows

c) Next, we will select a 'Use as Filter' function on both the 'Location' and 'Year' worksheets (on the Dashboard).

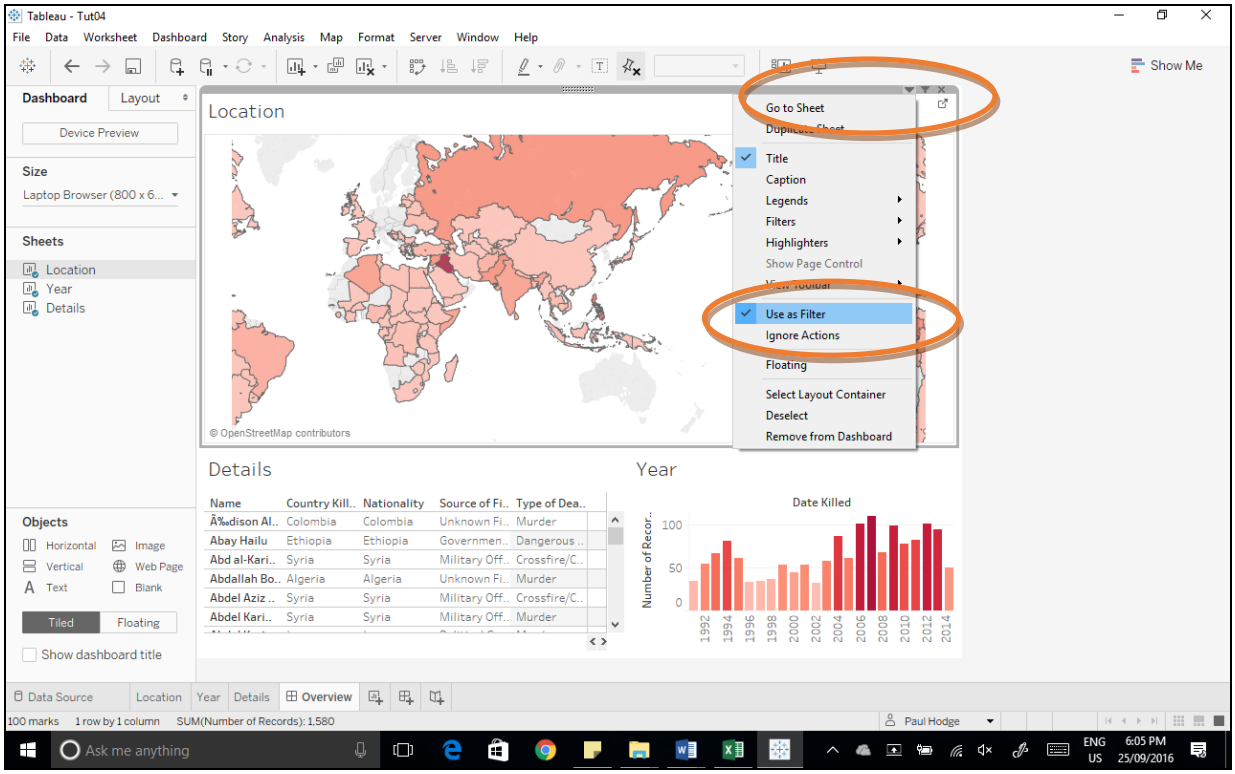

Figure 16: Set the 'Use as Filter' feature on the Location and Product workspaces

8. Now you're ready to begin exploring the Dashboard

Try bringing the Dashboard up in full-screen mode:

Then try selecting a Year (clicking on a bar in the Year Chart), you can de-select by clicking on the same Bar again. Or try selecting a Single Country (you can use the Mouse + the Shift key if you'd like to move about the map).

Can you see any interesting Insights as you explore the Dashboard (hint: look at years before 2002 and after)?

9. Adding a URL for drill-down

Next, using the 'Worksheet -> Actions…' techniques you learnt in an earlier Tutorial try adding an 'Add Action -> URL' on the Details Visualisation so that it opens an Internet URL for a specific CPJ Profile when a user of the Data Visualisation 'Selects' a specific person from the details.

> Hint: You will need to add the 'CPJ Profile' to the Details on the Details Worksheet, so that the CPJ Profile can be used in the Action feature. If you don't you will get the ⚠ Missing fields on Details error on the Edit URL Action screen.

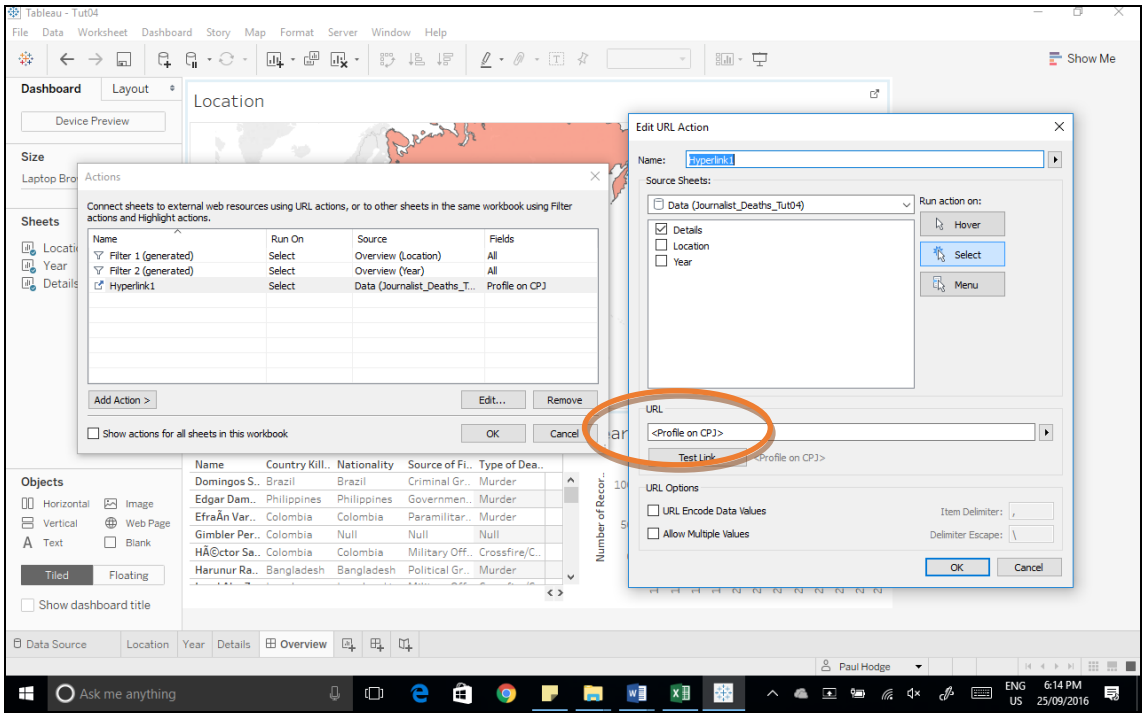

Figure 17: Add a URL Action to the Details Worksheet.

10. Building a Story

a) Next, add New Story icon at the bottom of the page () add a new Story sheet and drag a copy of the Overview dashboard in to the Story area. Then Select the 2002 Year and add a comment 'Global Map prior to 2003' to the story page.

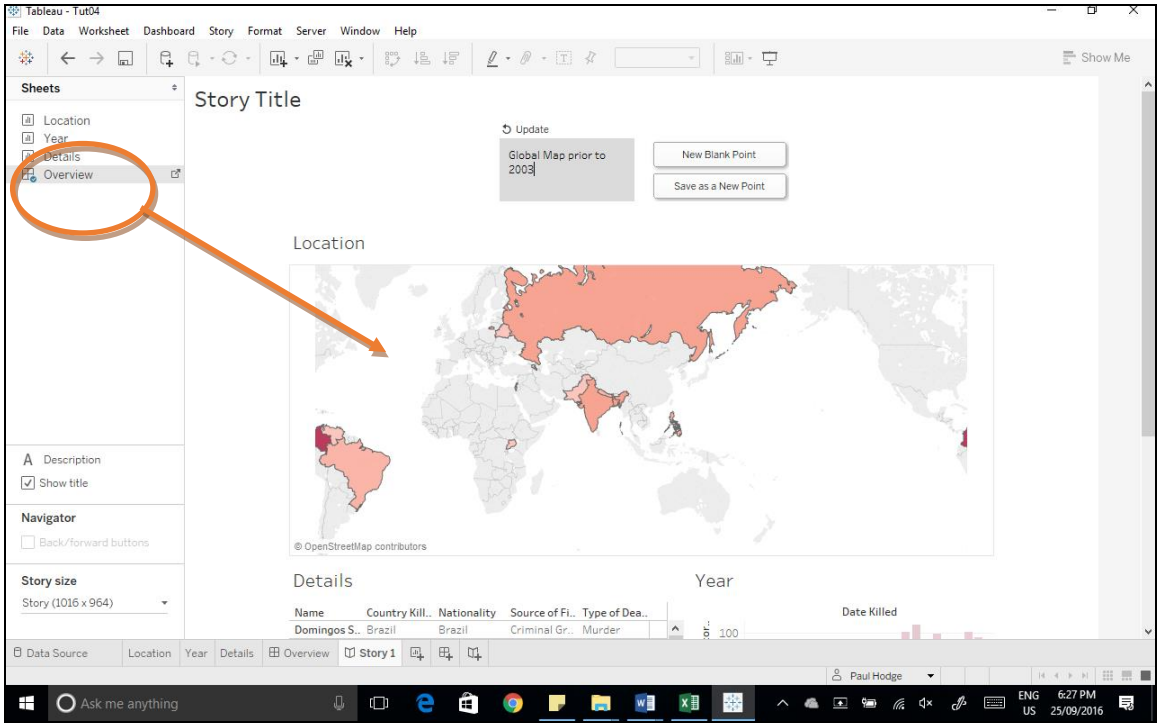

Figure 18: Add a new Story Page.

b) Now, using the ‘Save as a New Point’ feature. Then Select the 2003 Year and add a comment ‘Global Map after 2003’ to the story page. Then use the right-click feature to add a comment ‘Note: Commencement of Iraq war’ and point it to the country of Iraq.

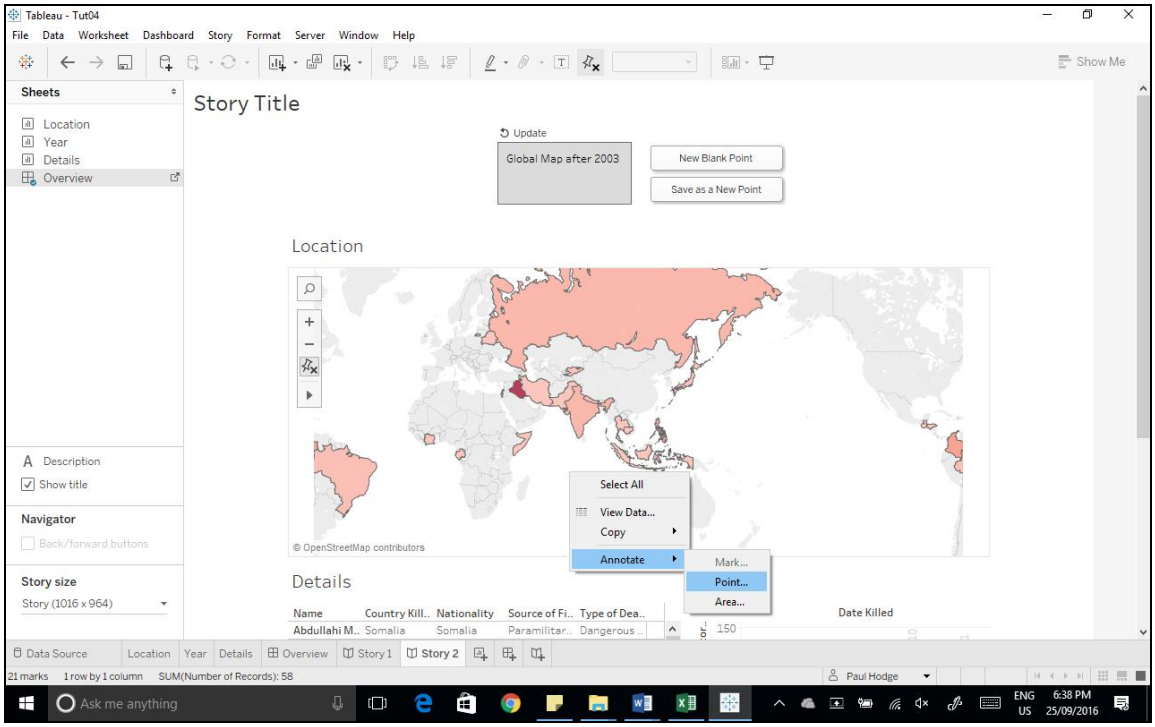

Figure 19: Add another new Story Page, with an Annotation.

11. Sharing your Story

Finally, use the ‘Save to Tableau Public As…” function from the Server menu to Save your dashboard to the Tableau Public gallery.

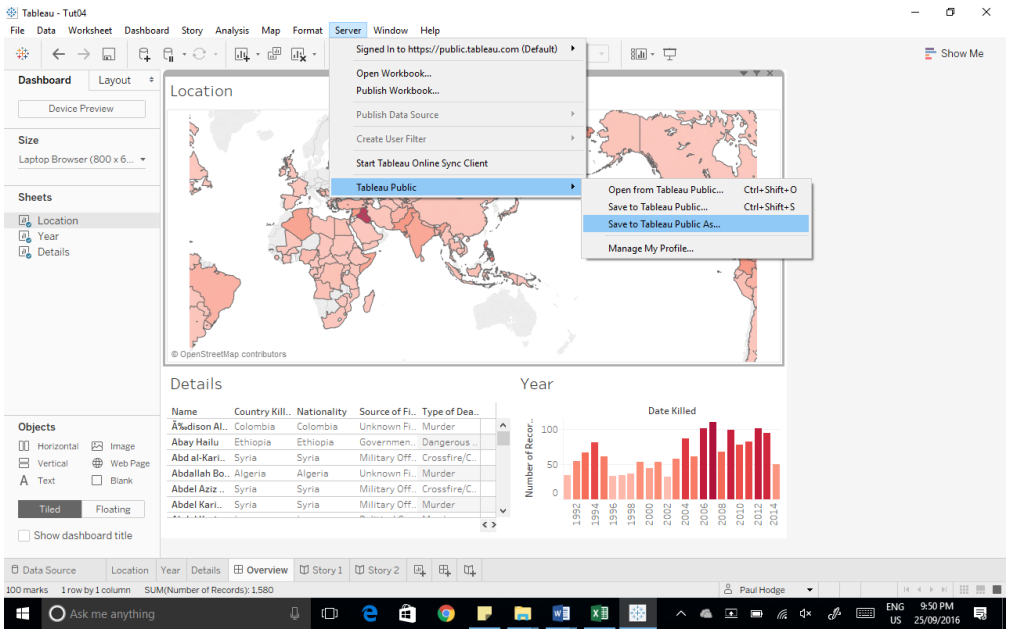

Figure 20: Save to Tableau Public.

Note: If you don't already have a Tableau Public userid you will need to create a new Profile to publish to the Tableau Public gallery.

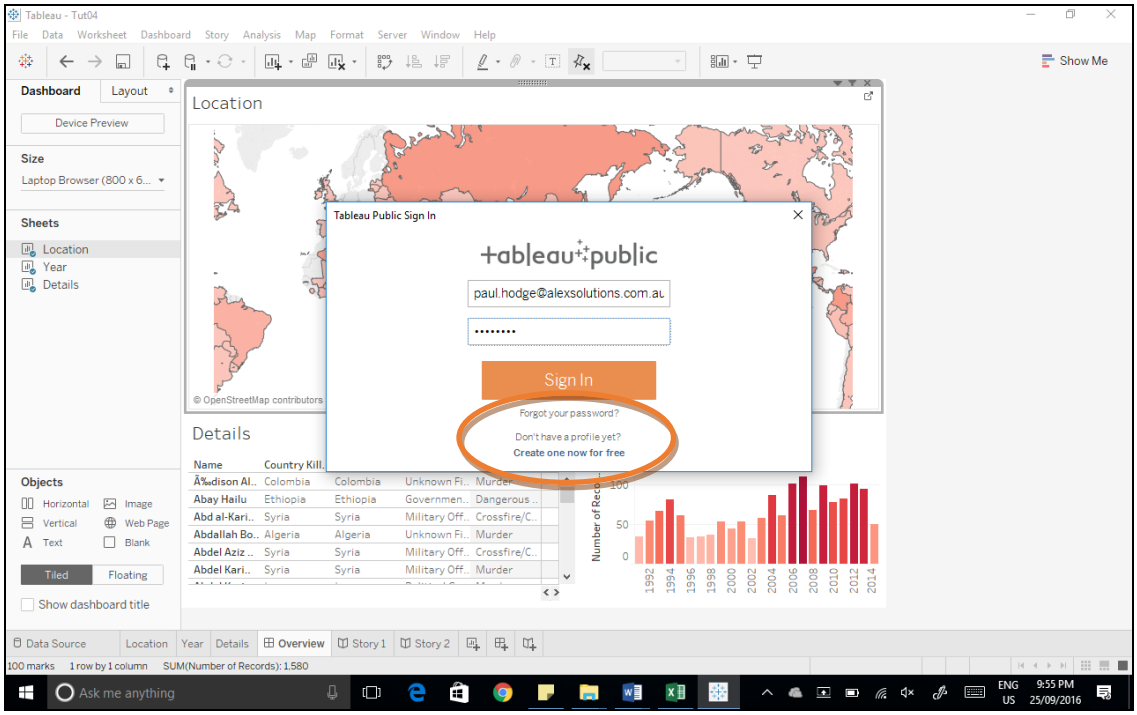

Figure 21: Login to your Tableau Public profile.

Hint: When publishing to the Tableau Public gallery you may need to set the Data Source to 'Extract' the data, rather that the live connection we initially established.

Once you have published to the Tableau Public gallery you can use the 'Share' function either to obtain an 'Embed Code', which can be added to a website or blog, or you can get a Link that you can share with people via email or include in a document (for example, https://public.tableau.com/profile/paul.hodge4345#!/vizhome/Tut04_Sample/Overview)

References

Data Source: The Journalist Deaths data set (Journalist_Deaths_Tut04.xls) has been source from the publically available information provided by the "The Committee to Protect Journalists", from the website https://cpj.org/killed/.

Tool: Tableau Version 10.0 http://www.tableausoftware.com/