**Shilpa Amirishetti**

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Excel and tableau Assignment

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# **Assignment 1 – Data Story Telling**

## **Scenario**

Data visualisation has become an essential business capability to help transform information into insights that can drive meaningful business outcomes and improved experiences. Today, most organizations have accumulated a wealth of data from the different corners of their businesses they are then unable to see how this data can help them make better decisions, making actions, and results. You have been asked to Look at the data workbook and familiarize yourself with this data. You have also been asked to create a visual report that will show the data in the form of charts and maps using Tableau to the client’s requirements. You will also need to consider data protection and computer misuse policies.

**Story**: Creating a visual report in Tableau to showcase data effectively is a great way to transform complex information into actionable insights. Here’s a high-level approach to creating such a report:

1. **Familiarize with the Data:**
   * Review the data workbook thoroughly.
   * Identify key metrics and dimensions.
   * Understand the relationships between different data points.
2. **Define the Client’s Requirements:**
   * Clarify what insights the client is seeking.
   * Determine the type of visualizations that will best represent the data (e.g., bar charts, line graphs, heat maps).
3. **Design the Visual Report:**
   * Use Tableau to create the visualizations.
   * Ensure that the charts and maps are clear, concise, and relevant to the client’s needs.
   * Incorporate interactive elements, if necessary, to allow for deeper exploration of the data.
4. **Consider Data Protection and Computer Misuse Policies:**
   * Ensure that the data used complies with data protection laws (like GDPR).
   * Avoid displaying sensitive or personally identifiable information.
   * Secure the data against unauthorized access or misuse.
5. **Review and Iterate:**
   * Present a draft of the visual report to the client for feedback.
   * Make adjustments based on the client’s input.
   * Finalize the report ensuring accuracy and compliance with all policies.

The goal of data visualization is not just to present data but to tell a story that leads to understanding and action.

# **First Task**

## **Policies and Procedures**

The first part of your assignments will be to outline what policies need to be adhered to when working with data. You are going to be working with ‘The Wealth of nations’ data. Investigate by researching the internet or looking back at your notes to tell us what and why these policies need to be adhered to while you are using this data. Also tell us why it is important to be aware of these rules as a data analyst.

**Sol**: When working with data, it's crucial to adhere to a comprehensive set of policies to ensure data protection, privacy, and compliance with legal regulations. Here is the outline of some of the key policies that should be followed when working with data. Adhering to data policies is crucial for several reasons, especially for a data analyst:

1. **Compliance with Laws and Regulations**: Data policies often reflect legal requirements, such as the General Data Protection Regulation (GDPR) in the EU. Non-compliance can lead to significant fines and legal issues.
2. **Data Privacy and Security**: Policies help ensure that sensitive information is handled responsibly, protecting against data breaches that could compromise personal information.
3. **Ethical Use of Data**: Following policies promotes ethical standards in data usage, preventing misuse of data in ways that could harm individuals or groups.
4. **Maintaining Data Integrity**: Adherence to policies ensures that data is accurate, reliable, and used consistently, which is essential for making informed decisions.
5. **Building Trust**: When users know their data is treated according to strict guidelines, it builds trust between them and the organization.
6. **Professional Reputation**: A data analyst’s adherence to data policies reflects on their professionalism and can influence their career prospects and credibility in the industry.

Being aware of these rules allows data analysts to work effectively within the boundaries of the law and ethics, ensuring that their analyses and conclusions are sound and justifiable. It also helps in fostering a culture of transparency and accountability within the organization.

# **Second Task**

## **Excel**

**Question: GDP Tasks**

1. Set a password to protect the workbook

2. Highlight column C and change the data to display in British Pound symbol

3. Turn the GDP sheet into a table.

4. Filter the table to display only the information for 2019

5. Next create a chart that will only display the following data ‘Rank, Country and GDP - per capita (PPP). The chart can be anything as long as it is suitable.

6. Using your creative skills edit the chart a. Add a title b. Add X and Y axis labels c. Make the chart visually pleasing

7. Move the chart to a new sheet tab and label with a suitable name

8. Create a sort for the top 20 highest ranking counties

9. Next create a new Bar chart to display the 20 highest ranking countries from your sort and then move the chart to be underneath the table, as shown below

A screenshot of a data sheet

Description automatically generated

10. Colour the background by highlighting the area underneath the table as shown below.

Find the add a fill colour icon and select a colour.

A screenshot of a computer

Description automatically generated

**Sol:** Attached excel file’ Wealth of Nations’ for which the password is ‘MyExcel86’

## **The Data**

**Question**

1. The next task is to create 3 macro buttons, print the sheet, Save the file and Copy the sheet.

A screenshot of a computer

Description automatically generated

To copy the sheet in a macro you highlight the area to be copied then right click copy

then stop the macro. Next assign the macro to the copy button.

A screenshot of a computer

Description automatically generated

1. Using the copy macro, copy the sheet and then paste it into a new word document keeping the formatting. Give the page a title ‘GDP (Gross domestic product)’.
2. Save your document as ‘Word Gross domestic product report 1’
3. Before we finish with our excel table ‘Gross domestic product’ sheet, we will add a header and footer to our table. Select the ‘View’ tab from the top and find the ‘workbook views’ area, as seen below:

A screenshot of a computer

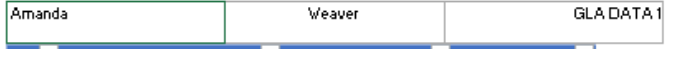
Description automatically generated

* Select the ‘Page Layout’ icon . This will then display the screen with a header and footer as seen below. Note that ther are three boxes for you to enter information in to.

A screenshot of a computer

Description automatically generated

1. In the headder enter your name and GLA DATA 1 in the three boxes



1. In the footer add todays date then Assignment 1 and lastly Data Visualisation.

A close-up of a sign

Description automatically generated

1. Return your view to normal

A screenshot of a computer

Description automatically generated

1. Save your table as ‘Excel Gross domestic product report 1’
2. Close your word document only.

**Sol:** Attached excel file ‘Gross domestic product report 1’.

# **Third Task**

## **Tableau**

Importing ‘Wealth of Nation’ excel file into Tableau public using Connect-> Microsoft Excel.

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

Now that the file is imported, we are creating relationship between the sheets GDP, Life Expectancy and Smartphones using the common column Country by dragging the sheets on to empty space towards the right.

A screenshot of a computer

Description automatically generated

Next we need to check for datatypes and correct them if necessary.

Our main task is to build charts using this data.

We are creating a stacked bar chart to find the GDP per capita for the top 20 highest ranking countries. We are selecting Year of information for column and GDP per capita for rows and change it to Dimension. Now we are using filter on Country field to filter the top 20 highest ranking countries and assign it to colours to differentiate countries. We are adding a Measure Rank(GDP) to the tool tip to identify the rank of different countries in the bar chart. When we hover the cursor on the stacked bar chart it will show the values for Country(GDP),GDP per Capita, Year of information and Rank(GDP) as these are included in the tooltip.

We are assigning a title as GDP per Capita-Top 20 Countries rank wise

A screenshot of a computer

Description automatically generated

Now we have renamed the tableau sheet to GDP per Capita-top 20 countries.

Our next task is to build a chart using the Life Expectancy sheet to find the top 20 countries with highest average life expectancy at birth.

Inorder to build a chart drag the Country field to the Rows section and Life Expectancy at birth to Column section and change the measure value of life expectancy to average. Then use the filter on Rank with measure as sum and filter top 20 countries by using Top field in Filter section. Drag country to colour in Marks sections to identify each country with different colour.

Then sort the result using Sum(Rank) either in ascending or descending order. The output is shown below.

A screenshot of a computer

Description automatically generated

Assign a title Life Expectancy Rank wise and rename the sheet as Life Expectancy Rank Wise .

Now we are building a line chart using the Smartphones sheet. First drag the Smartphone Users field to the Rows section and Country(smartphones) to the column section and add measure sum to the smartphone users to get the total number of smart phone users pertaining to each country. A line chart will be created and now we filter the chart to find the top 20 countries with highest smartphone users. Apply filter on Country(smartphone) using the Top field in the Filter section to find top 20 countries.

A screenshot of a computer

Description automatically generated

Assign a title Smartphone users-Top 20 Countries. Next drag country (smartphone) to the colour filed in Marks card, Date of information and Rank(smartphones) to the tooltip with sum as measure. When we hover the cursor on the line chart it displays the information for field that are given in tooltip. Save the sheet as Smartphone users- Top 20 countries.

We are creating a Map chart for the Life Expectancy sheet by dragging Country field to Rows section and Life Expectancy at birth to Column section and select the Map chart from Show me toolbar. It will automatically change the fields in Rows and Columns section to Latitude(generated) and Longitude generated. Now filter the top 20 countries by dragging Rank field to Filter Section and filter top 20 records using top field.

Next drag Country field to colour section to assign different colours to countries and Rank filed to tooltip with measure as sum. Change the map background to streets using the Map in the menu bar. Change the countries outline to black by using the effects in colour card by selecting halo to black and border to automatic.

Assign a title Life Expectancy of top 20 countries and save the sheet as Life Expectancy-Top 20 countries The result is as shown below.

A screenshot of a computer

Description automatically generated

Now our final task is to create a dashboard using the charts created. In the Tableau public select new dashboard from the bottom of the pane. It shows a blank page on the right with option drop sheets here and on the left it shows the 4 fields which we created earlier.

Now drag all the four fields on the blank sheet on the new dashboard as shown below by selecting floating option for each sheet and adjust the charts accordingly. Save the dashboard as My Dashboard.

A screenshot of a computer

Description automatically generated

Now that the dashboard is complete we will save the dashboard to Tableau public.

# **Link to Tableau Public**

[Profile - shilpa.amirishetti | Tableau Public](https://public.tableau.com/app/profile/shilpa.amirishetti/vizzes)