



# DATA VISUALIZATION

Visual Report using Excel and Tableau

## **Abstract:**

To create a graphical representation of the given data and applying different techniques that can use with excel to highlight the data analysis results more effectively. To create a visual report in the form of charts and maps using Tableau.

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**2/16/2023**

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## Reflective Theory:

The most significant issue arising from this experience was creating Macros buttons... Alternatively, this might be due to working on 2 Laptops with different versions of Microsoft Office.

Overall I remember all the lessons learned in the Technical sessions which make my work ease.

Moreover, I need to implement more Gestalt designs in Tableau.

## Assignment 1 Data Visualisation:

### Scenario:

Business users can utilize data visualization to understand their massive data sets. They gain by being able to spot fresh patterns and data mistakes. The users can focus on locations that show red flags or progress by making sense of these patterns. This procedure then propels the company forward.

I have been asked to examine the data workbook and become acquainted with this information. I have also been tasked with utilizing Tableau to produce a visual report that would meet the needs of the client by displaying the data as maps and charts. Data protection and computer misuse policies must also be taken into account.

## First Task

### Policies and Procedures

The UK General Data Protection Regulation is referred to as GDPR. The law was passed in the UK and went into effect on January 1, 2021. Except for law enforcement and intelligence organizations, it lays down the essential guidelines, rights, and responsibilities for the majority of personal data processing in the UK.

The wealth of a Nation is determined by its **GDP**, or 'gross domestic product - the total value of everything a country produces and sells.

Data governance is a system of guidelines and procedures for managing data inside the organization. Maximizing data quality and security are the goals, along with establishing an effective and accountable management system.

The full data lifecycle—from creation to disposal to sharing and use—is covered by this governance. Every data-related procedure needs to be precisely specified and kept track of.

Setting up guidelines to be followed for the gathering, storage, and analysis of data is typically part of a data governance strategy. Mechanisms for control and observation for security and compliance may also be present.

This plan frequently also specifies everyone in the organization's jobs and duties. The Data Analyst is another important role in data governance.

## Second Task

### Excel

I'll be working with data from The Wealth of Nations that is stored in Excel.

### The Data

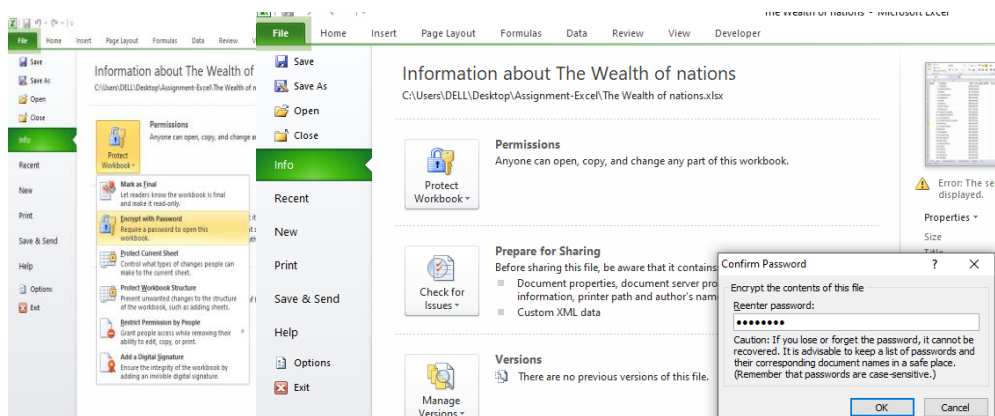
I accessed the Excel table after that to become comfortable with its contents.

The provided Excel document has three tabs, as I have discovered.

For the Excel task, I requested to work with the first Tab GDP.

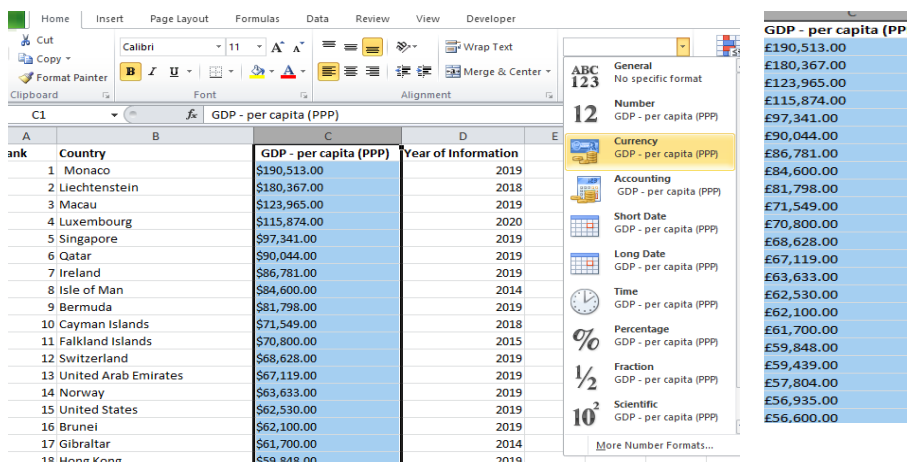
1. First, I set a password to protect the sheet. In a File menu choose Info then select Encrypt with a password and enter the password which will protect the workbook.

Figure I: Protect the sheet



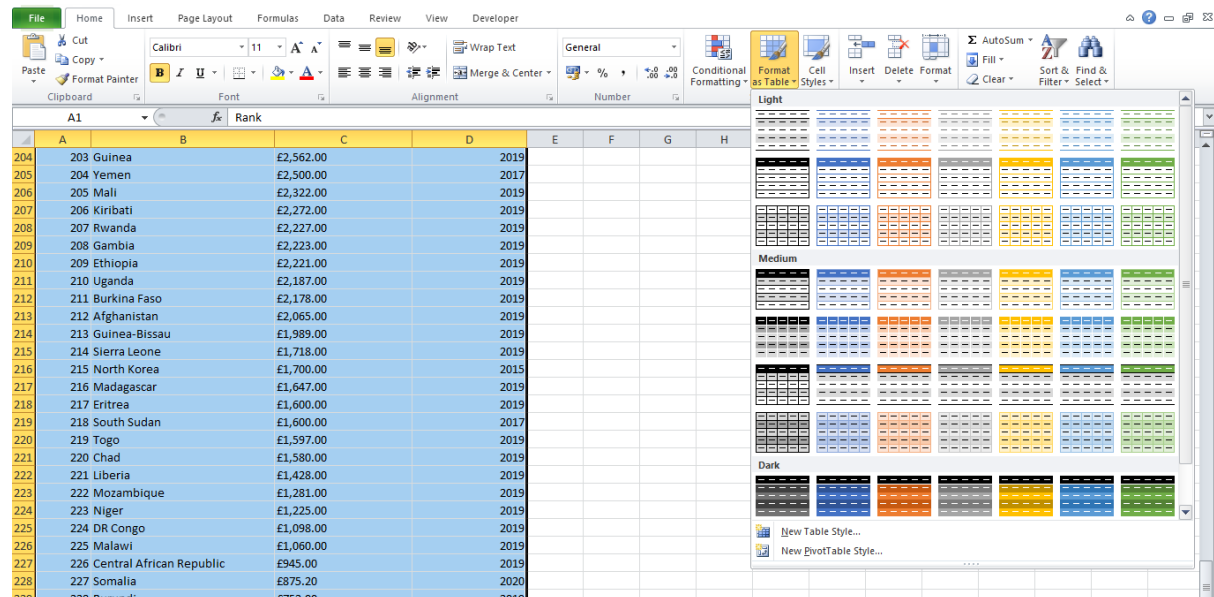
2. Then highlighted column C and changed the data to display in the British Pound symbol by clicking the **currency** option in the Home menu bar.

Figure II: Currency



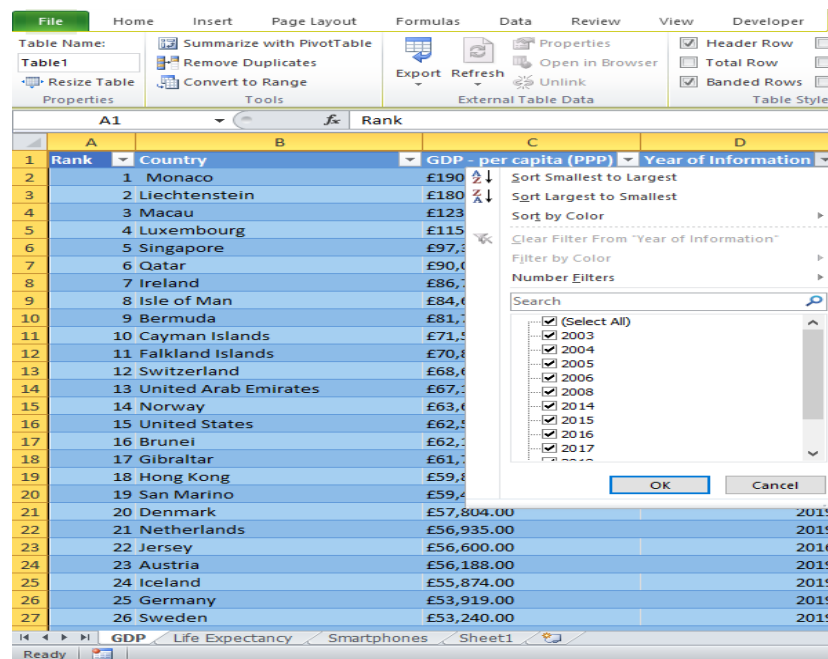
3. Then turn the GDP sheet into a table. To achieve this highlight all the columns then select **Format as Table** in the Home menu.

**Figure III: Format a Table**



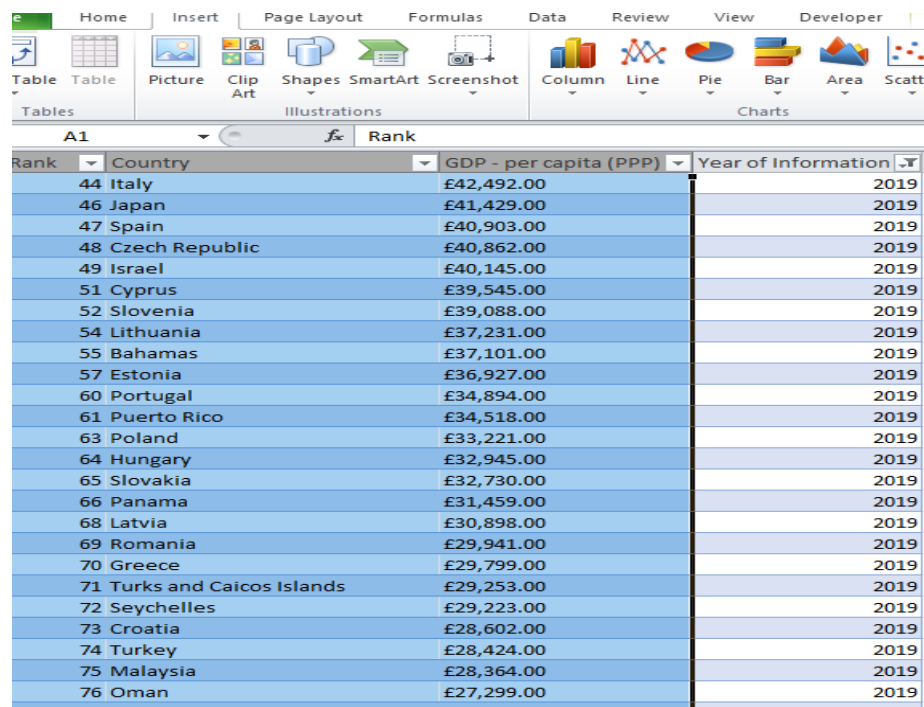
4. After turning the sheet into a table apply filters that display only the information for the year 2019. To attain this highlight the year column and select the **Data** menu bar then click the filter option in it

**Figure IV: Applying Filters for the year 2019**

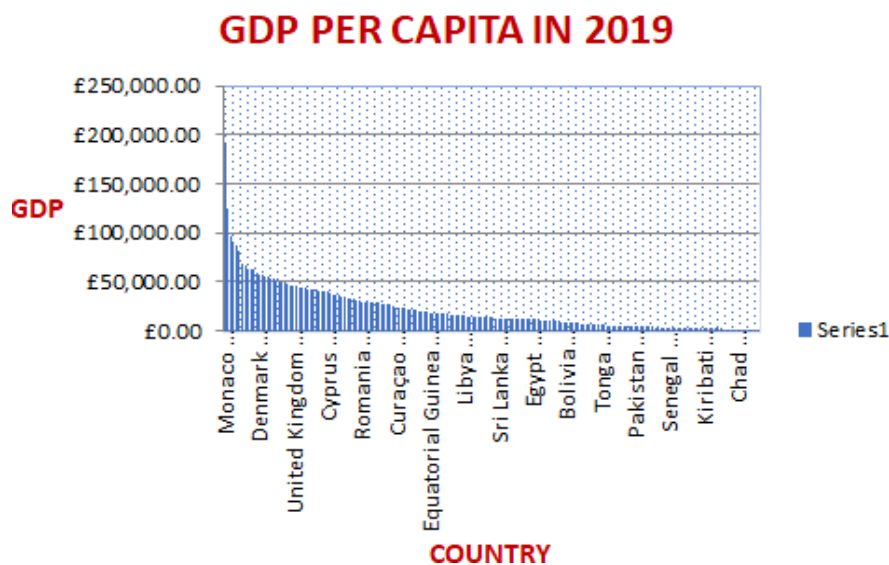


5. Then created a chart by excluding the year column, to get this highlighted the other 3 columns and select the **chart** in the insert menu

**Figure V: Creating a Table**



Rank	Country	GDP - per capita (PPP)	Year of Information
44	Italy	£42,492.00	2019
46	Japan	£41,429.00	2019
47	Spain	£40,903.00	2019
48	Czech Republic	£40,862.00	2019
49	Israel	£40,145.00	2019
51	Cyprus	£39,545.00	2019
52	Slovenia	£39,088.00	2019
54	Lithuania	£37,231.00	2019
55	Bahamas	£37,101.00	2019
57	Estonia	£36,927.00	2019
60	Portugal	£34,894.00	2019
61	Puerto Rico	£34,518.00	2019
63	Poland	£33,221.00	2019
64	Hungary	£32,945.00	2019
65	Slovakia	£32,730.00	2019
66	Panama	£31,459.00	2019
68	Latvia	£30,898.00	2019
69	Romania	£29,941.00	2019
70	Greece	£29,799.00	2019
71	Turks and Caicos Islands	£29,253.00	2019
72	Seychelles	£29,223.00	2019
73	Croatia	£28,602.00	2019
74	Turkey	£28,424.00	2019
75	Malaysia	£28,364.00	2019
76	Oman	£27,299.00	2019

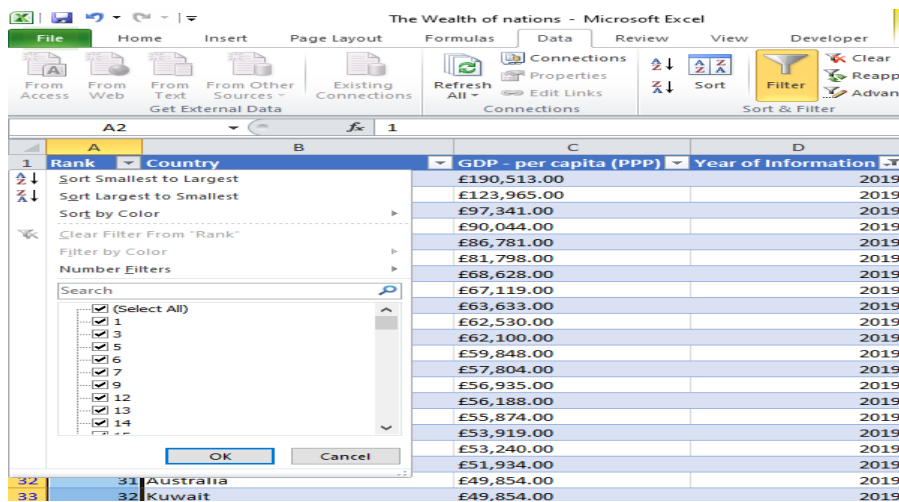


**VI. Bar chart 1**

7. After that moved the chart to a new sheet tab and labeled it with a new name

8. Then created a sort for the top 20 highest-ranking countries, to get this apply **filters** which is in the **Data** menu

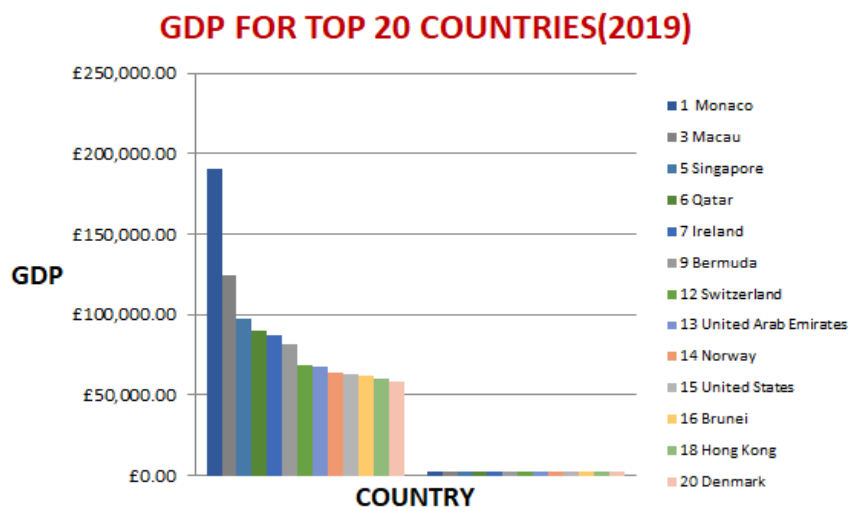
**Figure VII: Applying Sort for the Top 20 highest-ranking countries**



9. New Bar chart has been created to display the 20 highest-ranking countries from the sort. To attain this chart highlighted the table and select the **chart** from the **insert** option

**Figure VIII: Table for 20 highest-ranking countries**

1	Rank	Country	GDP - per capita (PPP)	Year of Information
2	1	Monaco	£190,513.00	2019
4	3	Macau	£123,965.00	2019
6	5	Singapore	£97,341.00	2019
7	6	Qatar	£90,044.00	2019
8	7	Ireland	£86,781.00	2019
10	9	Bermuda	£81,798.00	2019
13	12	Switzerland	£68,628.00	2019
14	13	United Arab Emirates	£67,119.00	2019
15	14	Norway	£63,633.00	2019
16	15	United States	£62,530.00	2019
17	16	Brunei	£62,100.00	2019
19	18	Hong Kong	£59,848.00	2019
21	20	Denmark	£57,804.00	2019

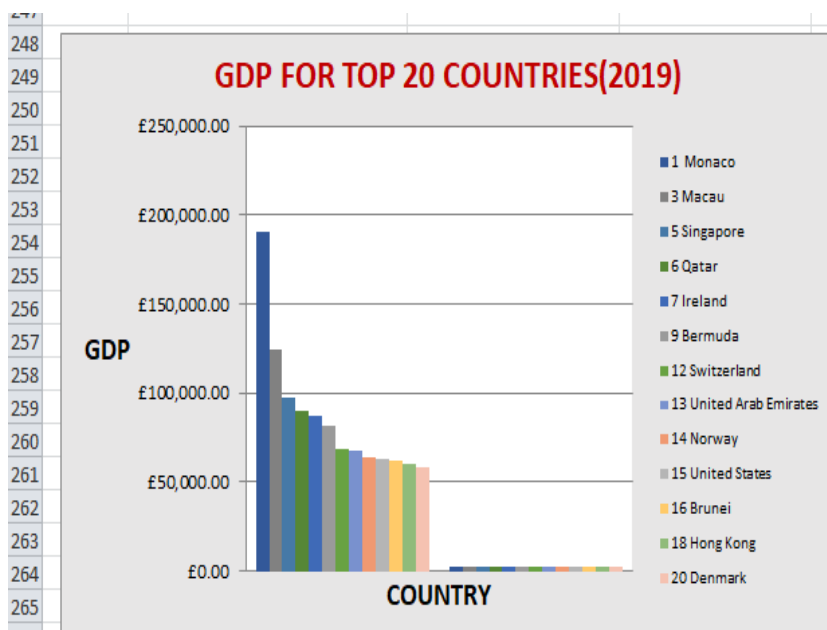
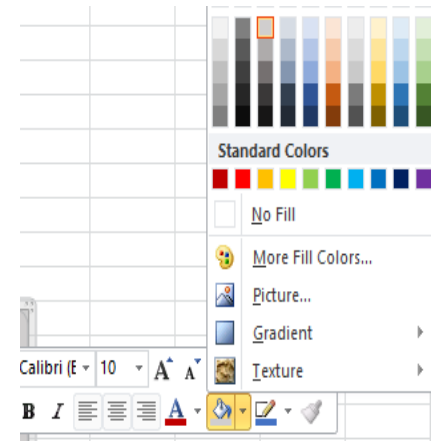


**Bar Chart 2**

10. As seen below, you may add colour to the background by highlighting the space under the table. Locate the "add a fill colour" icon, then choose a colour.

**Figure IX: Table for 20 highest-ranking countries with background colour**

	A	B	C	D
1	Rank	Country	GDP - per capita (PPP)	Year of Information
2	1	Monaco	£190,513.00	2019
4	3	Macau	£123,965.00	2019
6	5	Singapore	£97,341.00	2019
7	6	Qatar	£90,044.00	2019
8	7	Ireland	£86,781.00	2019
10	9	Bermuda	£81,798.00	2019
13	12	Switzerland	£68,628.00	2019
14	13	United Arab Emirates	£67,119.00	2019
15	14	Norway	£63,633.00	2019
16	15	United States	£62,530.00	2019
17	16	Brunei	£62,100.00	2019
19	18	Hong Kong	£59,848.00	2019
21	20	Denmark	£57,804.00	2019

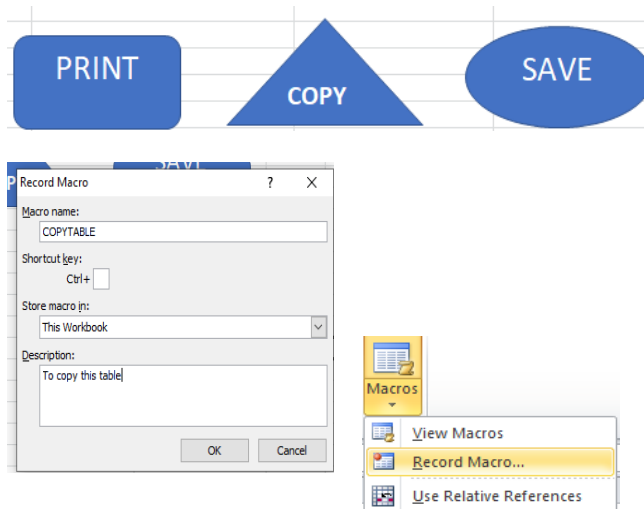


**Bar Chart 3**



11. The following step is to make three macro buttons, print the sheet, Copy the sheet, and save the file.

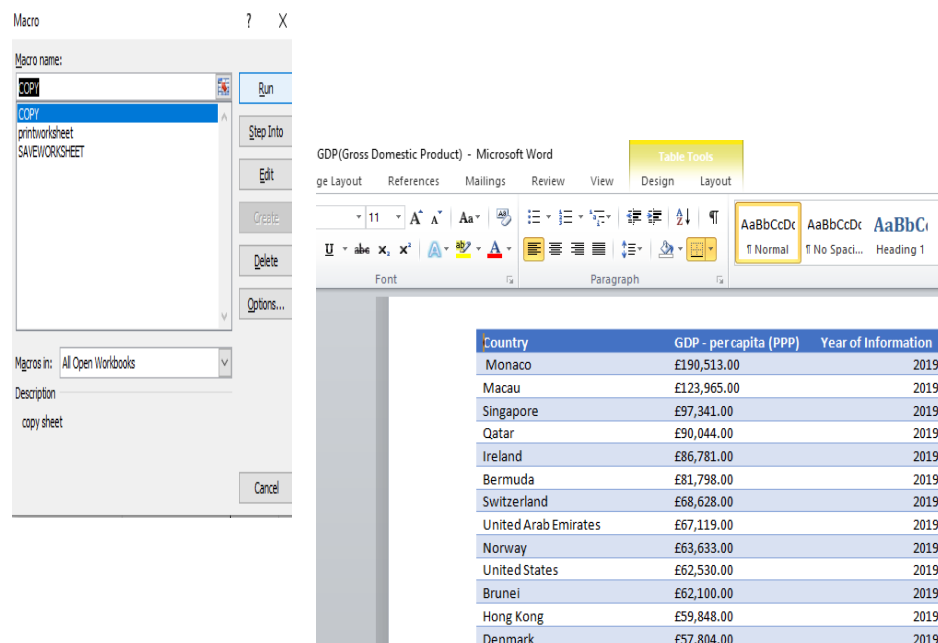
**Figure x : Macro Buttons**



You must highlight the desired section of the sheet, choose Copy from the context menu, and then stop the macro to copy it. Assign the macro to the copy button after that.

12. Copy the table using the copy macro, and then paste it into a new Word document while preserving the formatting. Put "GDP (Gross Domestic Product)" as the page's title.

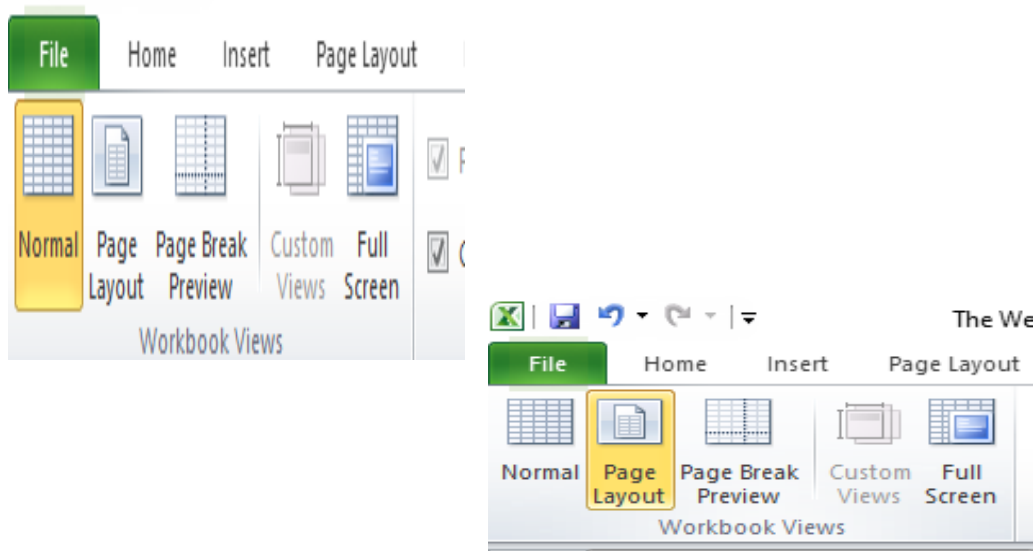
**Figure XI: Run Copy Macro Button**



13. The above document should be saved as "Word Gross domestic product report 1."

14. Before we are done, we will add a header and footer to our Excel table titled "Gross Domestic Product." The "workbook views" section can be found by selecting the "View" tab at the top, as seen below:

**Figure XII: Adding Header and Footer**



- choosing the "Page Layout" icon will cause the screen to appear with the header and footer that are seen below. You can enter information into three boxes, as you can see.

15. Fill out the three boxes in the header with the name and GLA DATA 1.

Header		
Sowmya	Senthil	GLA DATA1

16. Add the current date to the footer, followed by Assignment 1, and then Data Visualization.

12/02/23	Assignment 1	Data Visualisation
Footer		

## THIRD TASK

Keeping with "The Wealth of Nations" from the Excel table

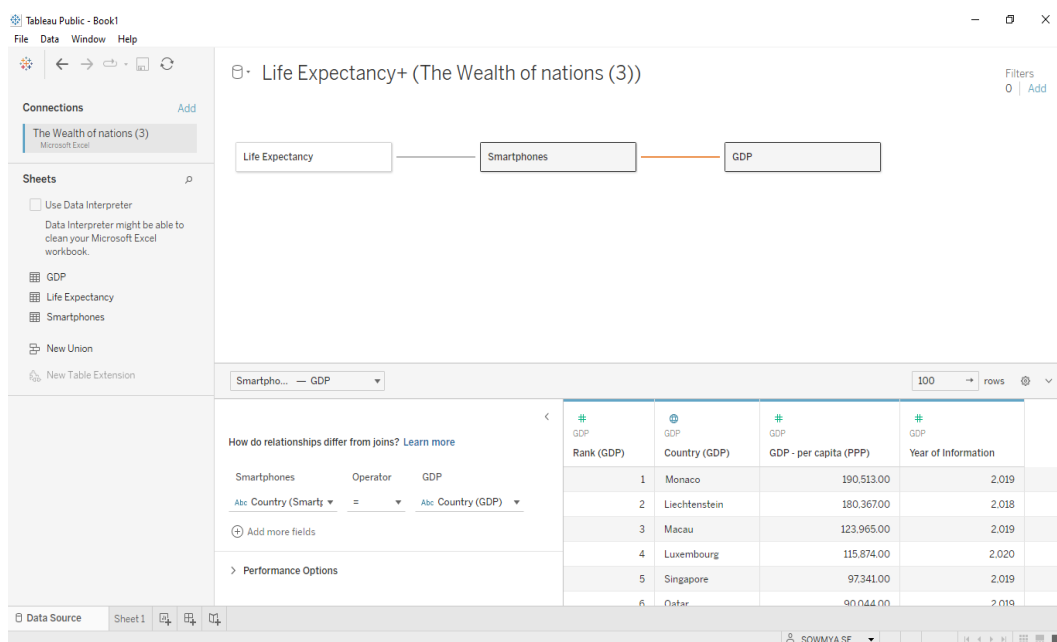
## Tableau

Keep in mind to adhere to the workshop's workflow:

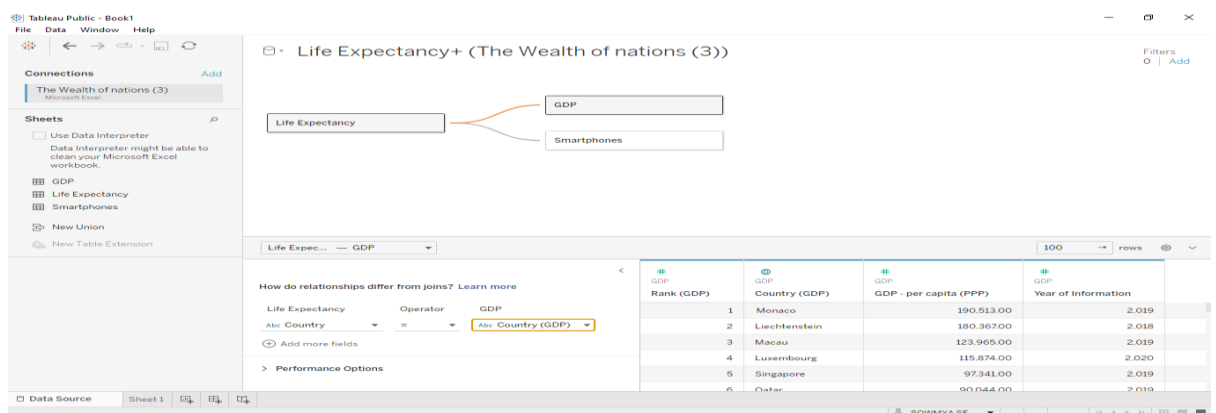
1) Bring in data

2) Establish connections:

The aesthetic arrangement of the sheets is irrelevant because Country is the common column on all three of the pages. The only columns that matter while building a relationship are the ones we use. The sheets can be arranged as shown below, in a straight line:



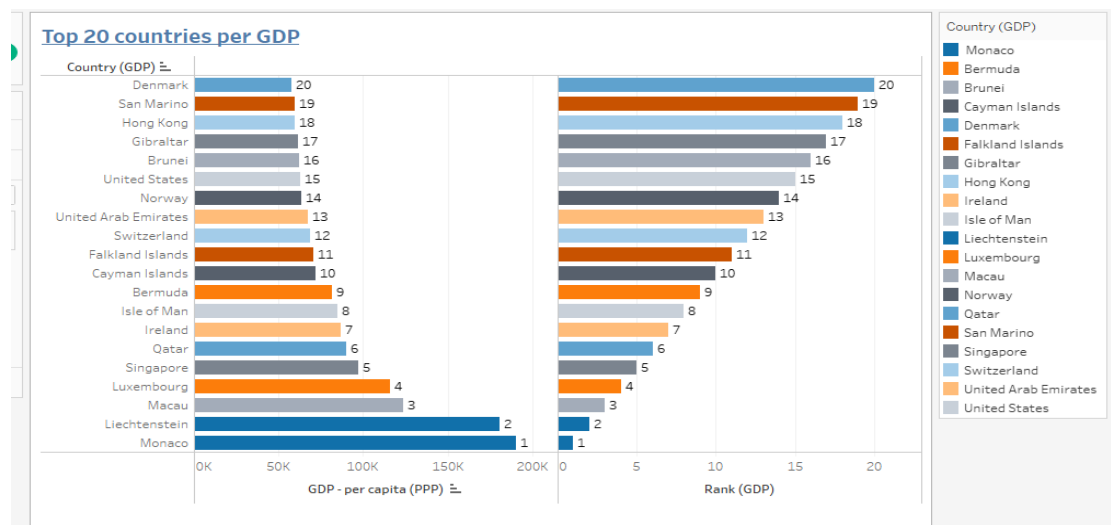
Alternately, set it up like this:



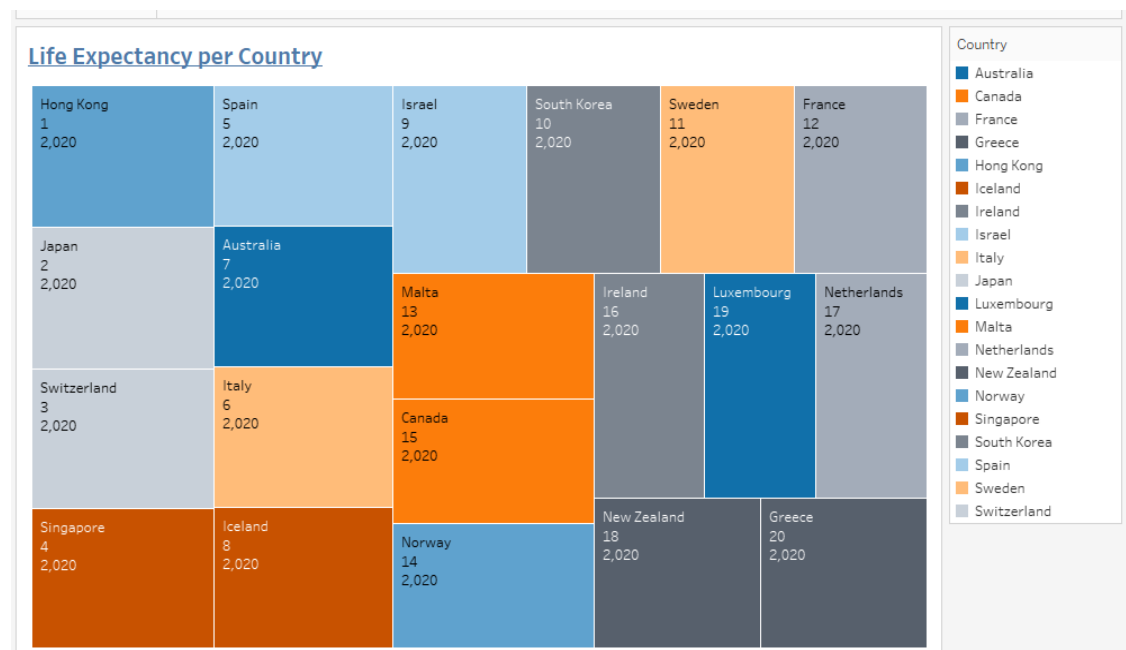
Now we can start making charts.

## Tableau Charts

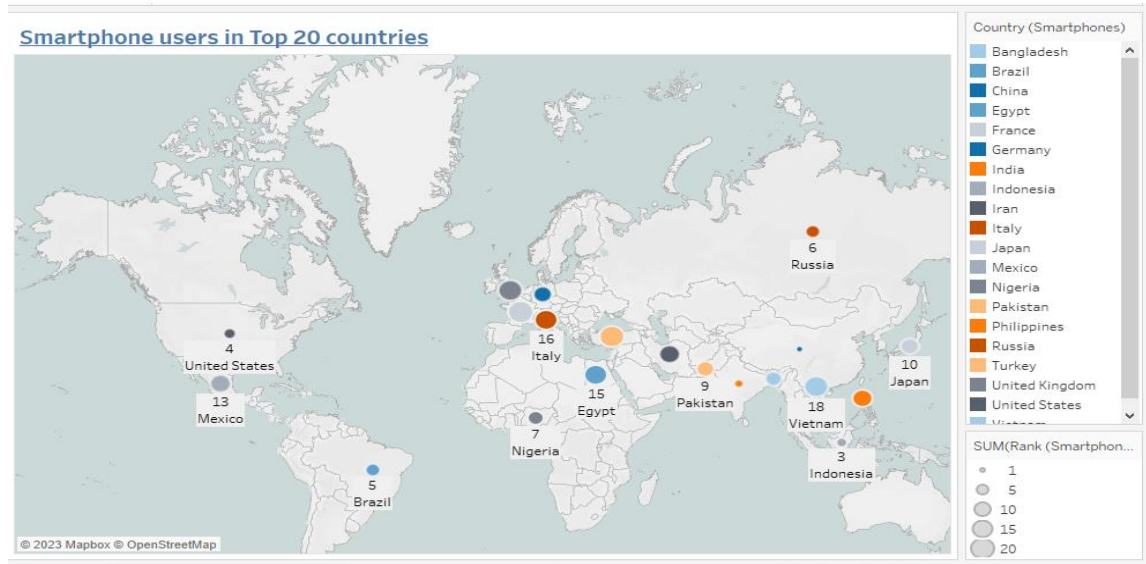
### Horizontal Bars



### Tree Map

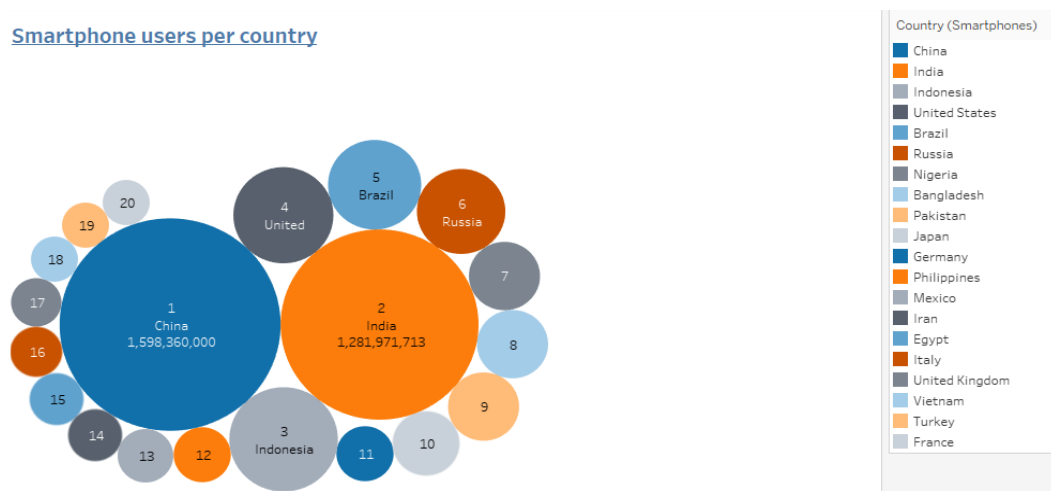


## Symbol Maps



## Packed Bubbles

**Smartphone users per country**



## Link To view the Dashboard in Tableau Public

[https://public.tableau.com/views/Analysisofthewealthofnations/Analysisofthewealthofnations?:language=en-GB&publish=yes&:display\\_count=n&:origin=viz\\_share\\_link](https://public.tableau.com/views/Analysisofthewealthofnations/Analysisofthewealthofnations?:language=en-GB&publish=yes&:display_count=n&:origin=viz_share_link)

**THANK YOU**