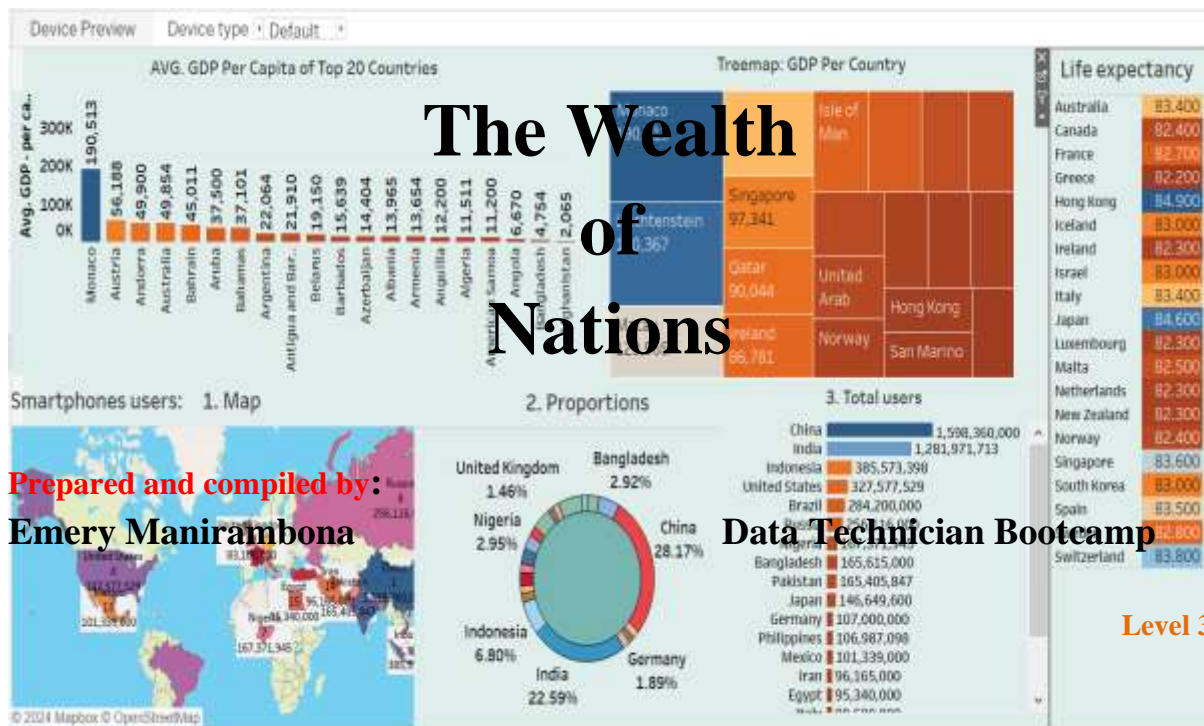




Just IT



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Assignment: The Wealth of Nations

Reflective

Data science has been a critical skill worldwide. It combines tools, methods, and technology to generate meaning from data, thereby identifying issues that need to be addressed and suggesting evidence-based solutions.

Working consistently on the given dataset has been a great opportunity to improve my skills and developed a significant insight into data. Some of the insight shown in the findings detailed below are as follows:

Monaco has the highest AVG GDP per capita and roughly tripled the second country named Austria. This can be attributed to growth of productivity which significantly increases GDP per hour worked. Equally important to consider is the population size and the land of this country.

In relevance to life expectancy, Hong Kong and Japan have a higher life expectancy with at 84 years old than other countries, while each country of the top 20 countries has at least the life expectancy of 82 years old. Many factors affect life expectancy. For instance access to and use of health care, behavioural risks to health like smoking and poor diet, income, employment, education, and housing. This means that the countries with low life expectancy may want to revise and improve those factors to increase their life expectancy.

Taking into account smartphones, China and India have by far the greater number of users than any other country. This higher number may be explained by the fact that China and India have a tremendous rate in making phones compared to other countries. In addition, it is important to consider the country's total population given that China and India have the greatest number of total populations. Therefore, a weighted analysis is needed to give conclusive data.

First task

Data protection principles

In this assignment, I will ensure that data protection principles published by the UK government are respected (1). In relevance to those principles, I declare the following:

- I promise to utilise the data in a transparent, ethical, and legal manner.
- I'll also use it for clearly defined goals.
- I'll make appropriate, pertinent use of the information, keeping it to what's absolutely necessary.
- I promise to use the information truthfully and to treat it securely, taking precautions to prevent unauthorised or unlawful processing, access, loss, destruction, or damage.

Why data protection is important and what are its benefits?

Why making this statement to protect data and why it critical to be known by data analyst (1,2):

- ❖ Because it is a legal requirement
- ❖ The data contain sensitive information such as such as race, ethnic background, political opinions, religious beliefs, trade union membership, genetics, biometrics (where used for identification), health, sex life or orientation
- ❖ Because protecting data prevents fraud and cybercrimes.
- ❖ Because applying strong data protection measures protect individuals' personal data
- ❖ Because implementing safeguarding rules protect also data organisation's data.
- ❖ Because data protection avoids possible future considerable problems that can damage reputation of both data analyst and their organisations' confidential information

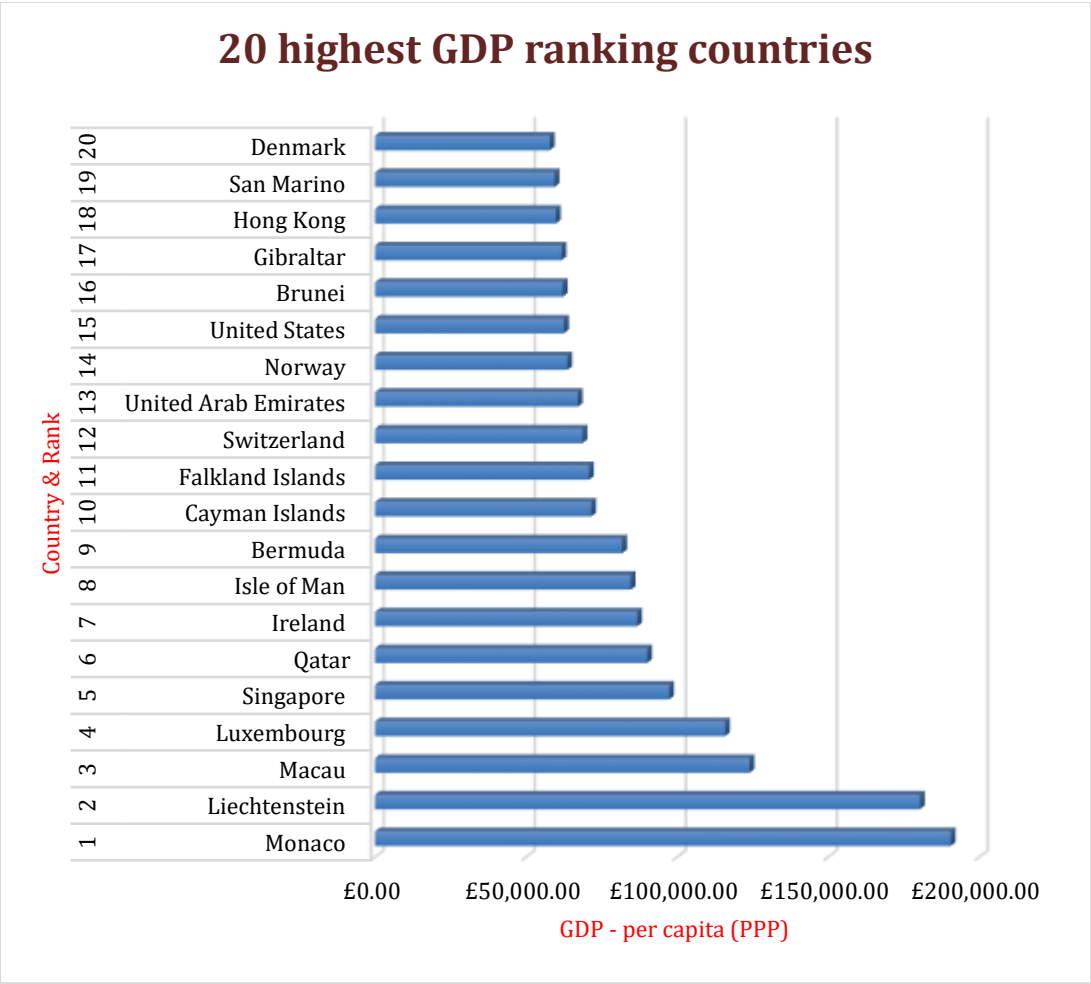
Reference:

1. Data protection. Retrieved from: <https://www.gov.uk/data-protection>
2. Data protection benefits you. Retrieved from: https://www.edpb.europa.eu/sme-data-protection-guide/data-protection-benefits-for-you_en

Second Task

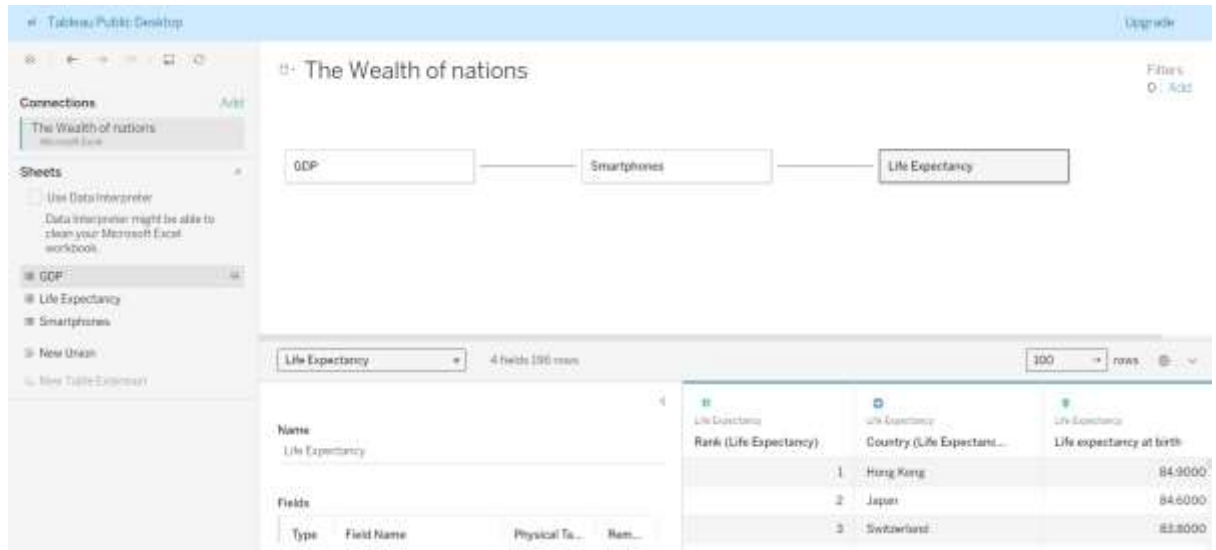
- ❖ I first opened a dataset and set a password to protect the workbook
- ❖ I highlighted column C and change the data which displayed in British Pound symbol, then turned the GDP sheet into a table.
- ❖ I Filtered the table to display only the information for 2019
- ❖ I created a chart with Rank, Country and GDP - per capita (PPP).
- ❖ I Added a title, X and Y axis labels
- ❖ Below are the visualisations as a result:

| Rank | Country | GDP - per capita (PPP) |
|------|----------------------|------------------------|
| 1 | Monaco | £190,513.00 |
| 2 | Liechtenstein | £180,367.00 |
| 3 | Macau | £123,965.00 |
| 4 | Luxembourg | £115,874.00 |
| 5 | Singapore | £97,341.00 |
| 6 | Qatar | £90,044.00 |
| 7 | Ireland | £86,781.00 |
| 8 | Isle of Man | £ 84,600.00 |
| 9 | Bermuda | £81,798.00 |
| 10 | Cayman Islands | £71,549.00 |
| 11 | Falkland Islands | £70,800.00 |
| 12 | Switzerland | £68,628.00 |
| 13 | United Arab Emirates | £67,119.00 |
| 14 | Norway | £63,633.00 |
| 15 | United States | £62,530.00 |
| 16 | Brunei | £62,100.00 |
| 17 | Gibraltar | £61,700.00 |
| 18 | Hong Kong | £59,848.00 |
| 19 | San Marino | £59,439.00 |
| 20 | Denmark | £57,804.00 |



Third task

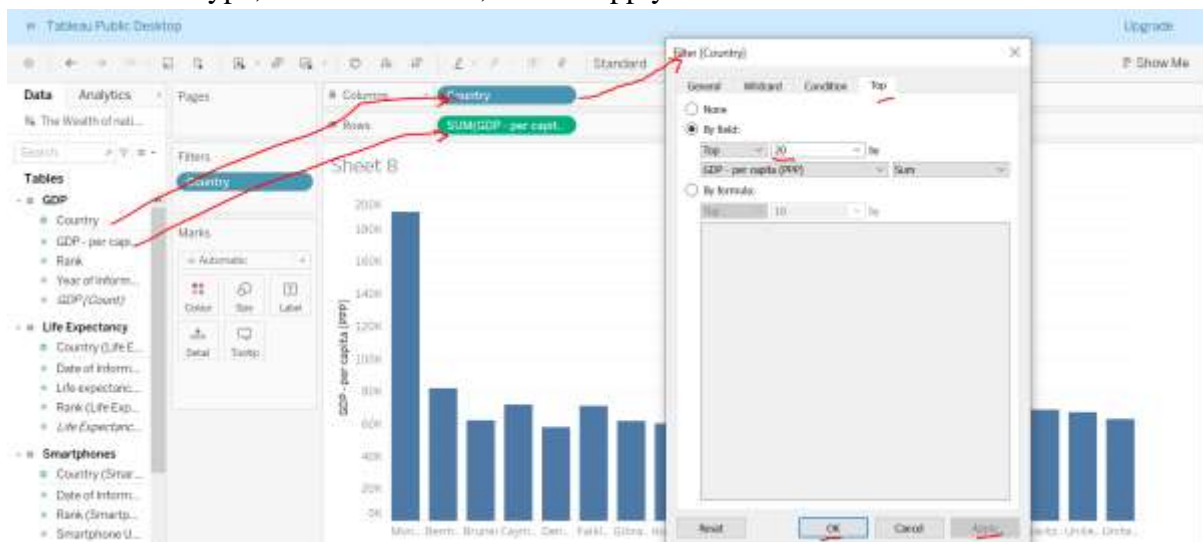
- ❖ First, I imported datafile named “The Wealth of nations” from excel to tableau and set relationships



- ❖ I familiarized myself with data imported in tableau and ensured its completeness.
- ❖ I checked data types and started to build the below six visualisations.

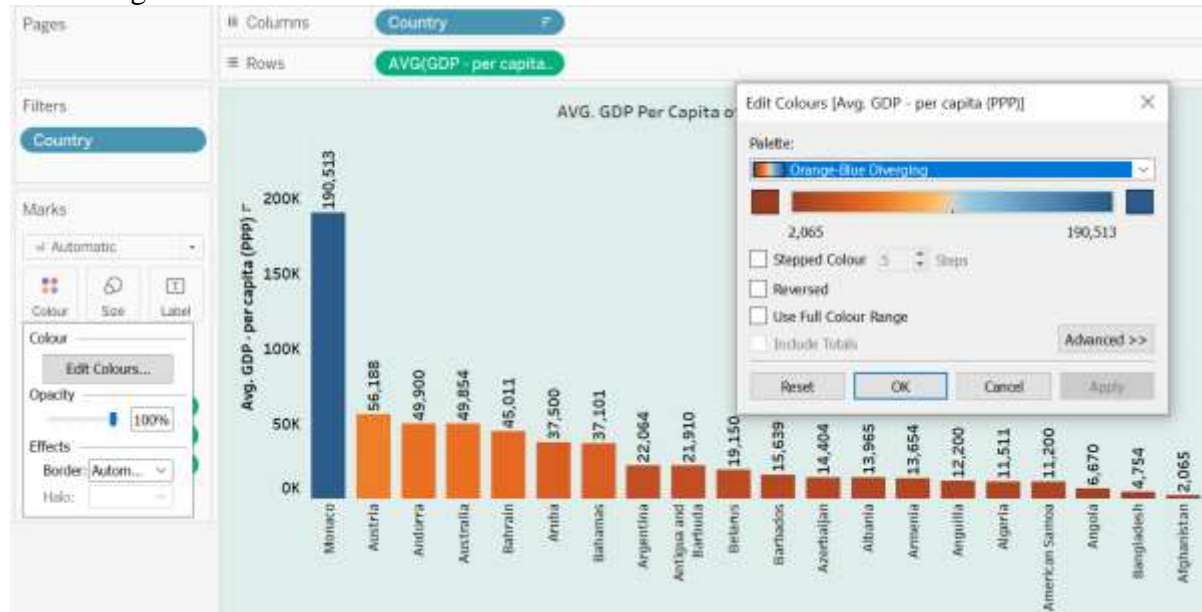
Visualisation 1: Bar chart

- ❖ Using the GDP sheet, I dragged the country into columns and GDP per capita in rows.
- ❖ Selected bar chart
- ❖ I used filter using country to select the top 20 countries by selecting field by type, I edited 10 to 20, clicked apply and ok



- ❖ I then sorted by descending average of GDP per capita within country

- ❖ I dragged average of GDP per capita in label and colour by choosing orange - blue diverging to create visualisation, formatted by selecting shading the sheet and the figure was finalized as follow:



Visualisation 2: Treemap: GDP per country

- ❖ Using the GDP sheet, I dragged the country in rows and GDP per capita in text,
- ❖ Selected treemap

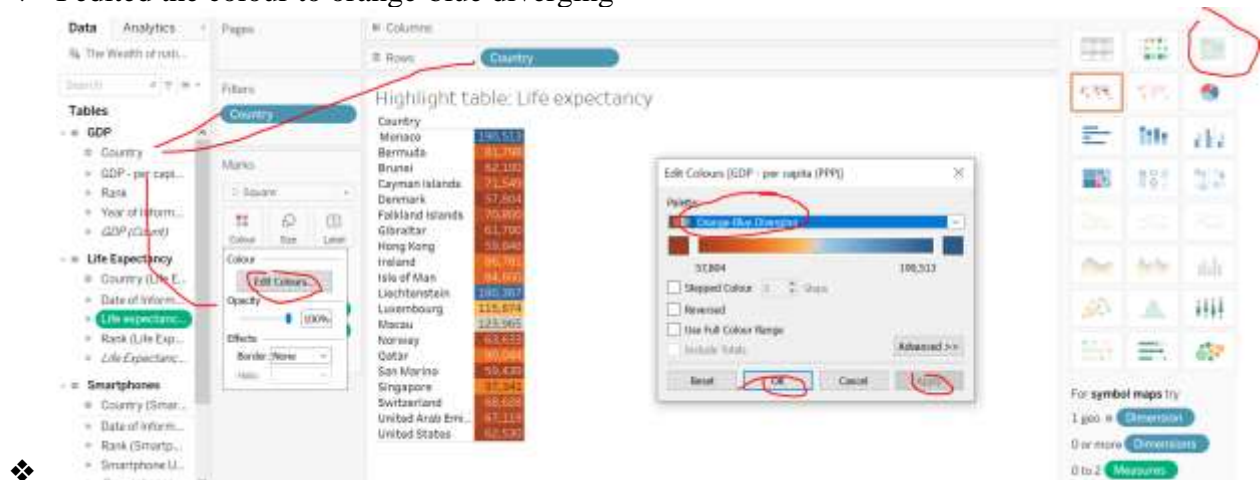


- ❖ I used filter using country to select the top 20 countries by selecting field by type, I edited 10 to 20, clicked apply and ok
- ❖ I edited the colour to orange-blue diverging



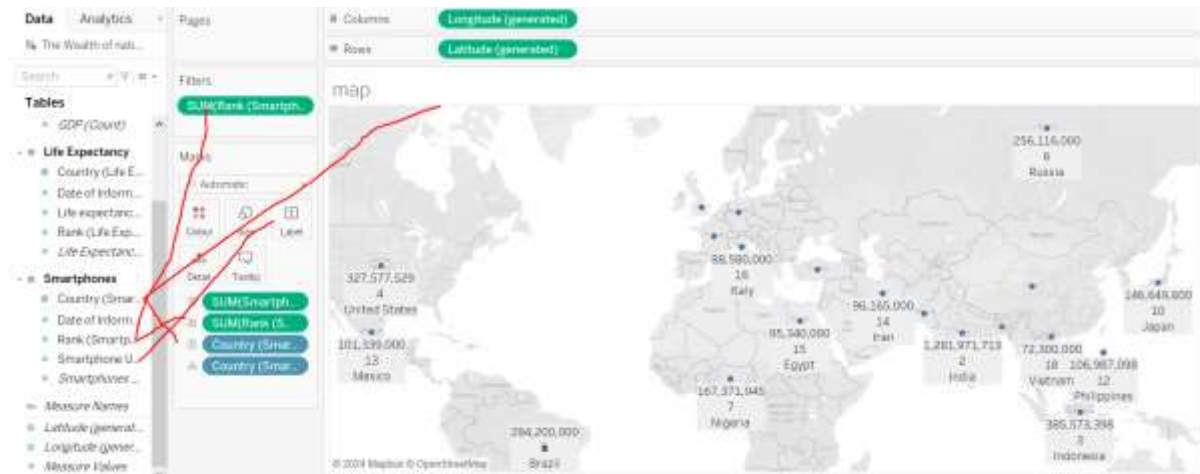
Visualisation 3: Highlight table: Life expectancy

- ❖ Using life expectancy sheet, I dragged the country in rows and life expectancy at birth in text,
- ❖ Then Selected Highlight table
- ❖ I used filter using country to select the top 20 countries by selecting field by type, I entered a value of 20, clicked apply and ok
- ❖ I edited the colour to orange-blue diverging



Visualisation 4: Map of top 20 countries with smartphone users

- ❖ Using smartphones sheet, I dragged the country in the field,
- ❖ Then Selected symbol map and dragged country (smartphones) into label and details
- ❖ After, I dragged smartphone users and rank (smartphones) in label, measured in SUM.
- ❖ I used filter using rank (smartphones) to select the range of value from 1 to 20, clicked apply and ok, resulting in the following initial map:

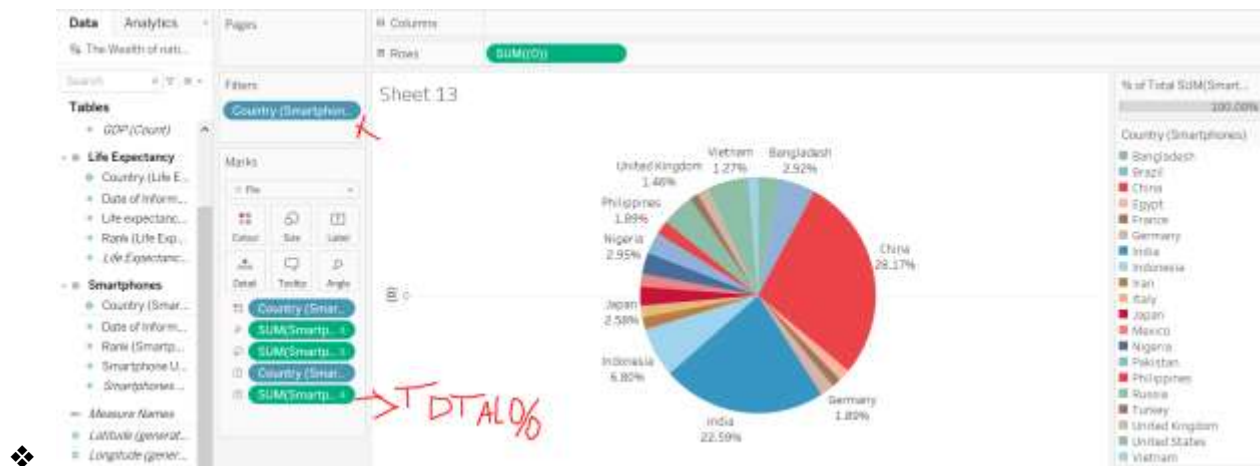


- ❖ I dragged rank (smartphones) into colour, edited the colour to sunrise-sunset diverging
- ❖ I then selected background, and clicked street as my favourite background
- ❖ These resulted in the final map as follows:

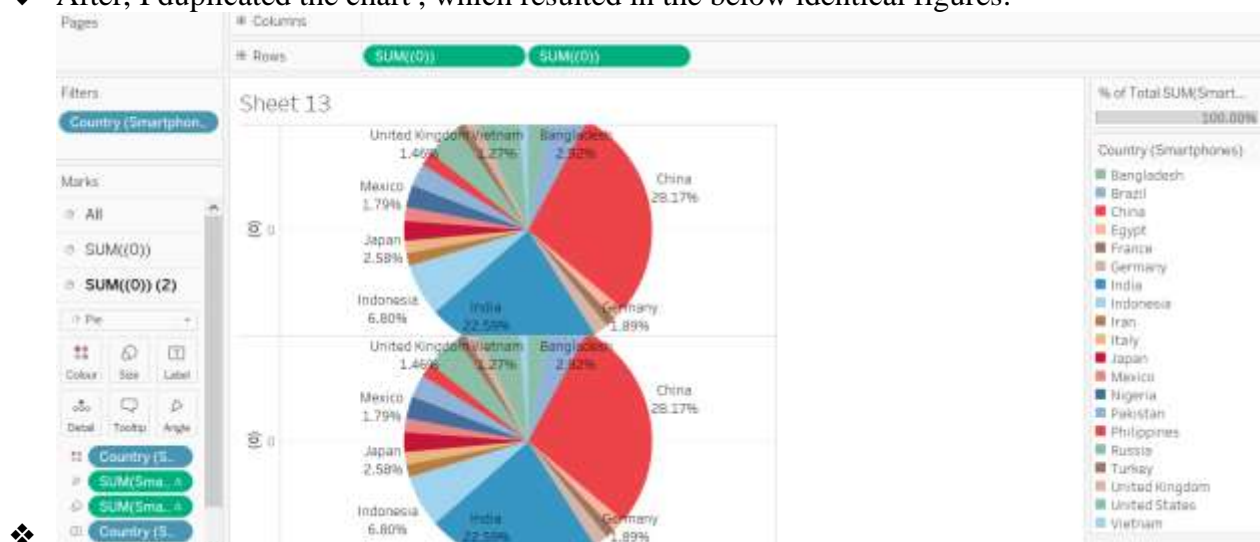


Visualisation 5: Pie Chart showing proportions of top 20 countries with smartphones users

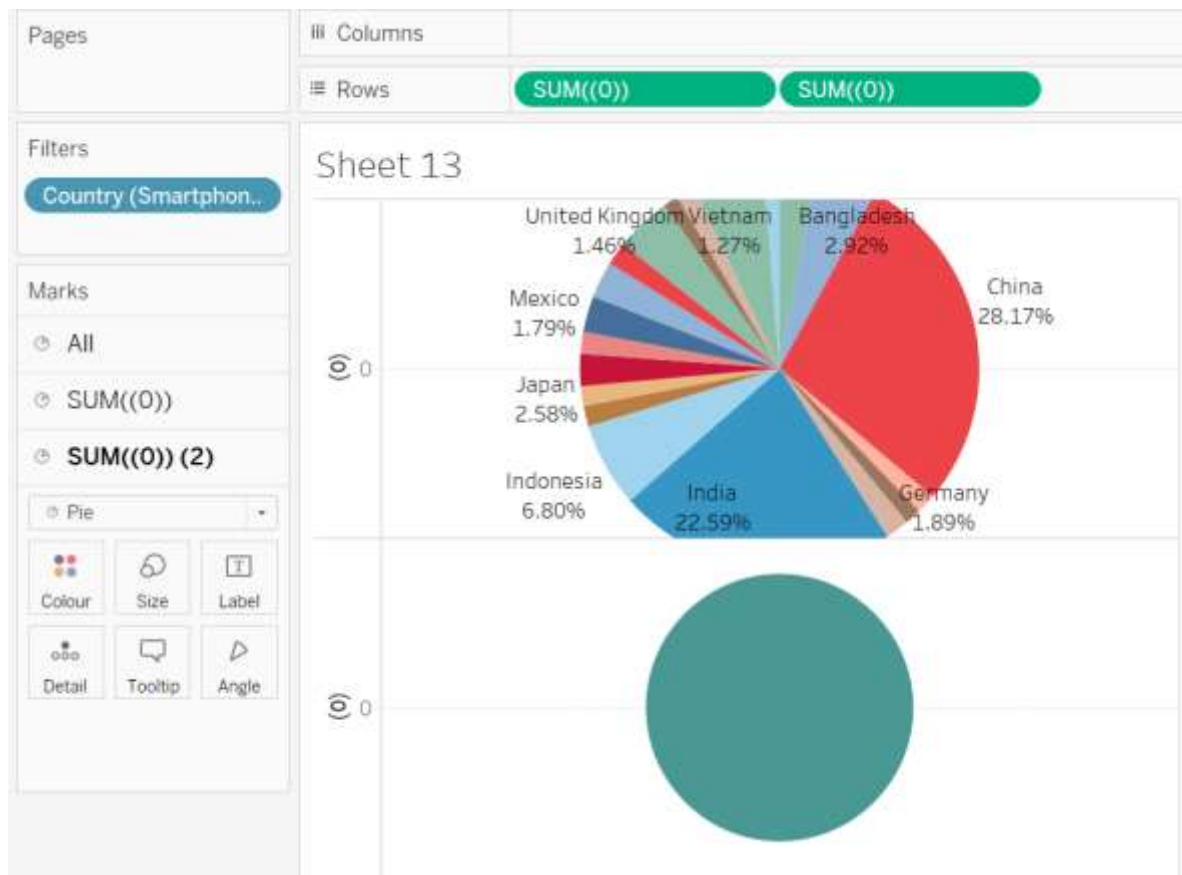
- ❖ Using smartphones sheet, I dragged the country (smartphones) into rows and smartphone users into label,
- ❖ I used the filter option to select the top 20 countries with smartphone users using the country (smartphones).
- ❖ I then selected pie chart, increased its size to make it more clear
- ❖ I calculated total percentage of smartphone users, resulting in below initial pie chart:



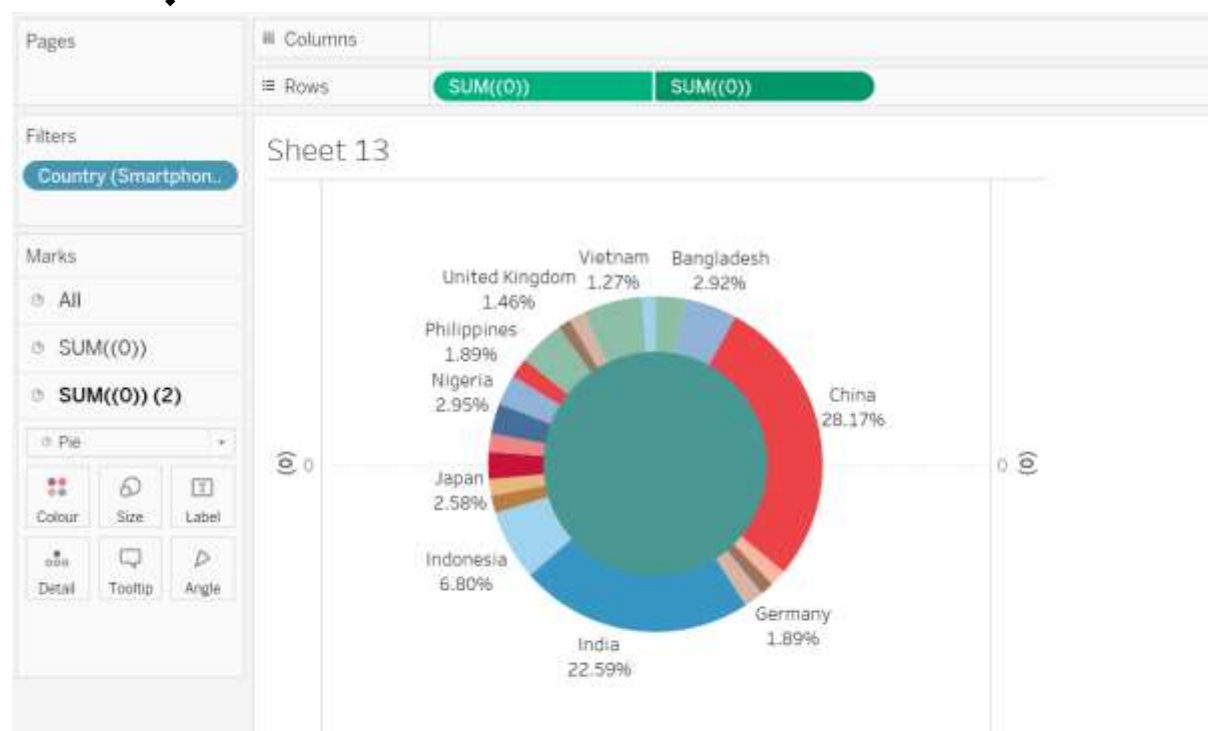
- ❖ After, I duplicated the chart , which resulted in the below identical figures:



- ❖ I Selected second chart and decreased its size
- ❖ By removing: country (smartphones) in colour and label, smartphone users in label and angle, I remained with empty circle and I changed its colour as follows:

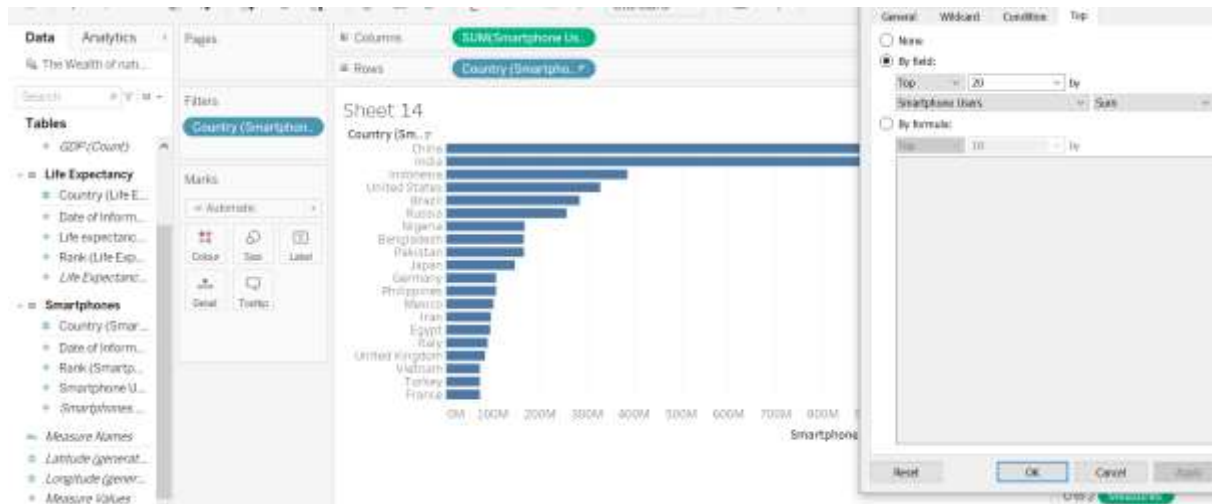


- ❖
- ❖ I finally clicked in rows the second chart and selected dual axis, resulting in the below final visualisation
- ❖

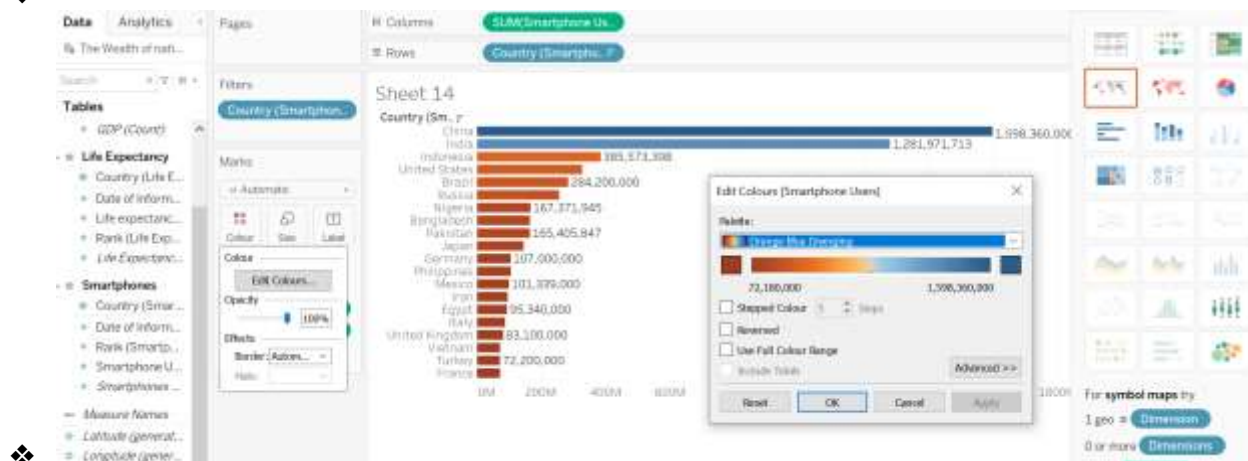


Visualisation 6: Bar chart showing total smartphone users per country among 20 first countries

- ❖ Using the smartphone sheet, I dragged the country into columns and smartphone users in rows.
- ❖ Selected horizontal bars and sorted descending by sum of smartphone users per country
- ❖ I used filter using country (smartphones) to select the top 20 countries by selecting field by type, I entered the value of 20, clicked apply and ok
- ❖ Below is the initial chart:



- ❖ After, I dragged smartphone users into label and in colour
- ❖ Selected orange-blue diverging colour as my favourite for this visualisation
- ❖



- ❖ I gave it the title of total users, and here is the final chart:



Dashboard

- ❖ I created a dashboard, selected floating and increased its width to 1620 px and height to 960 Px,
- ❖ Then I dragged all visualisations I made that include:
 1. Bar chart of AVG GDP per capita of top 20 countries,
 2. Treemap of GDP per country among top 20 countries,
 3. Highlight Table for life expectancy for top 20 countries per country,
 4. Map of top 20 countries with smartphones users
 5. Pie chart showing proportions of smartphone users
 6. bar chart of total smartphone users in top 20 countries.
- ❖ The dashboard and background of figures were formatted and shaded as follows

