2023

Assignment 1 Data Visualization

[GLA 16]
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DATE SUBMITED: 29/07/2023

Contents

Research

What policies need to be adhered to when working with data? Why do these policies need to be adhered to while you are using this data?

As an individual working with data, I must adhere to various policies to ensure responsible and ethical handling of information. These policies play a crucial role in safeguarding the privacy, security, and integrity of the data we work with. The reason why each of these policies is essential:

Data Privacy Policy: This policy guides me on how to manage personal information with utmost care. It emphasizes obtaining explicit consent before using or sharing any personal data. Respecting people's privacy is essential to build trust and maintain legal compliance.

Data Security Policy: Protecting data from unauthorized access and cyber threats is paramount. By following this policy, I can ensure that appropriate measures like encryption and access controls are in place to safeguard sensitive information from potential breaches.

Data Retention Policy: Knowing how long to retain data and when to dispose of it is vital. This policy prevents the accumulation of unnecessary data and reduces the risk of data breaches or misuse.

Data Access and Authorization Policy: By adhering to this policy, I can ensure that only authorized personnel have access to specific data based on their roles and responsibilities. This minimizes the risk of data falling into the wrong hands.

Data Sharing Policy: When data needs to be shared with third parties, following this policy ensures that it is done securely and in compliance with any legal or contractual obligations. It helps maintain confidentiality and prevents data leaks.

Data Governance Policy: This policy provides a clear framework for managing and overseeing data across the organization. Adhering to it ensures that data is meticulously organized, owned, and held accountable for.

Data Ethics Policy: Ethical considerations are crucial when working with data. Following this policy ensures that data is used responsibly, avoiding any biased or harmful decisions that could adversely impact individuals or groups.

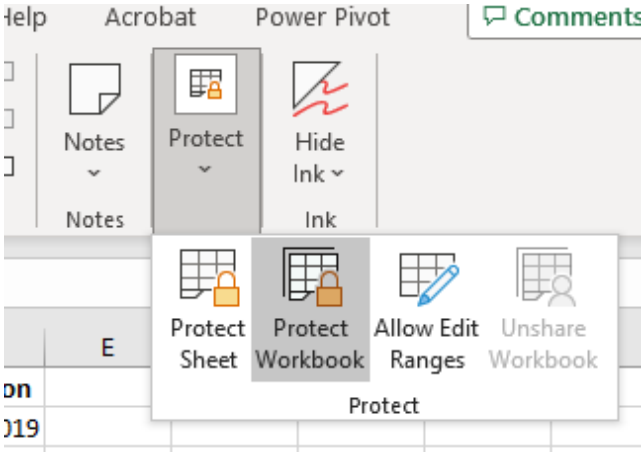
Data Breach Response Policy: Despite our best efforts, data breaches can occur. This policy outlines the steps to take in such situations, including containment, notification, and mitigation, to minimize damage and protect affected individuals.

By adhering to these policies diligently, I contribute to the overall protection of sensitive information, maintain the trust of stakeholders, and uphold the ethical standards necessary for responsible data handling. Regular training and awareness programs help me, and my colleagues always stay updated and compliant with these policies.

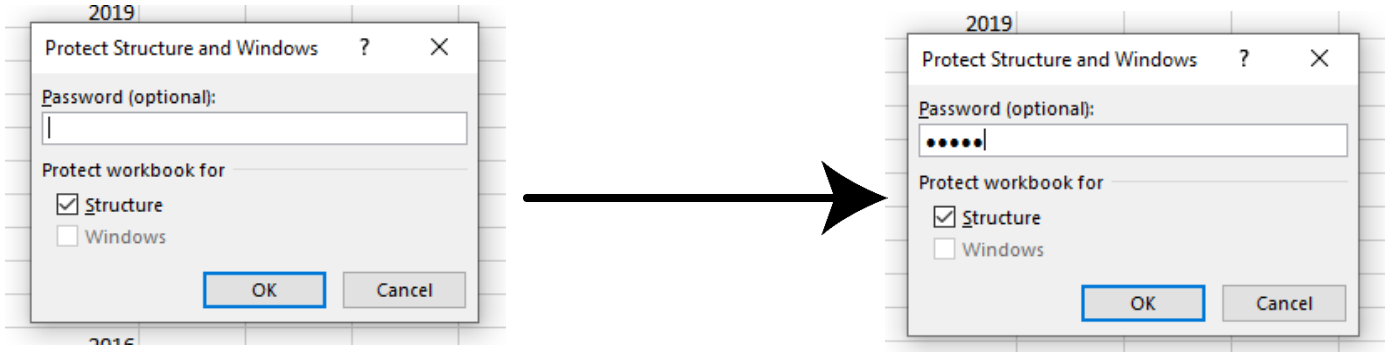
Working With Excel

Making a Workbook secure

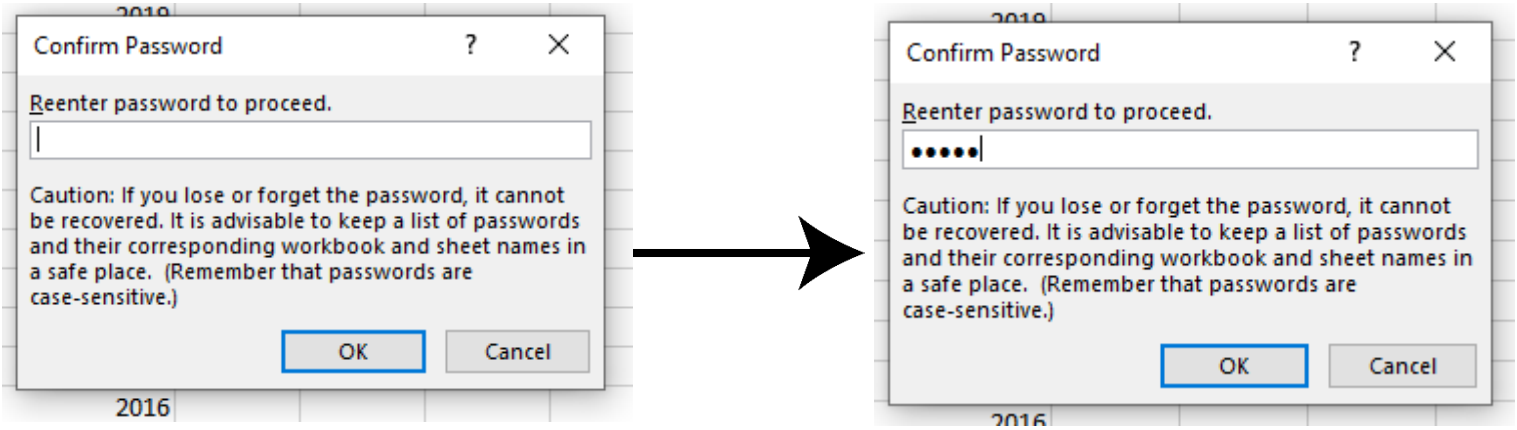
1. When opening the Excel Workbook, the first thing I did was protect the workbook by selecting the “Review” tab and then “Protect”.



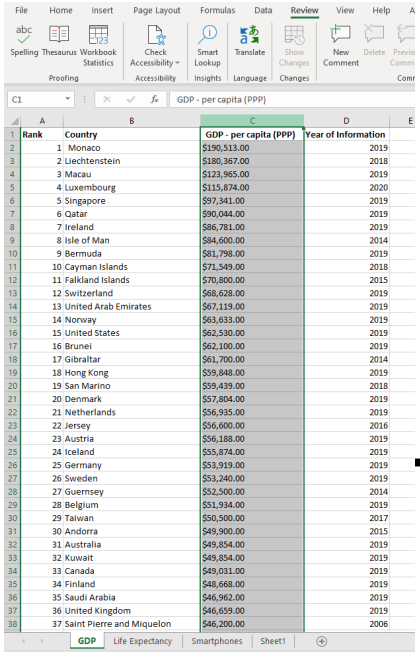
2. I set up a password that I can associate with the project



3. Then, I just have to confirm the password

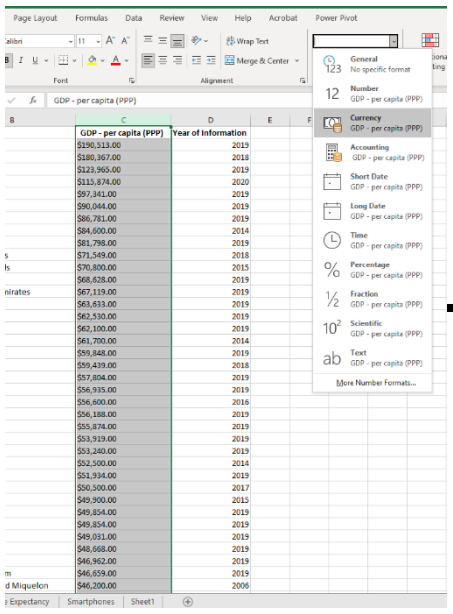


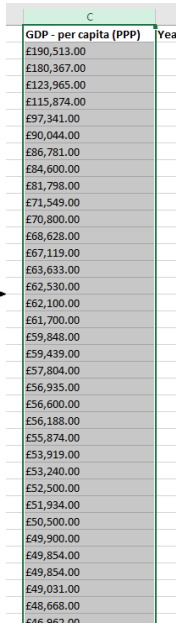
Converting $ to £



1. On the GPD Sheet, I convert the currency from American Dollars to British Pound Sterling by selecting column C (GDP - per capita (PPP)).

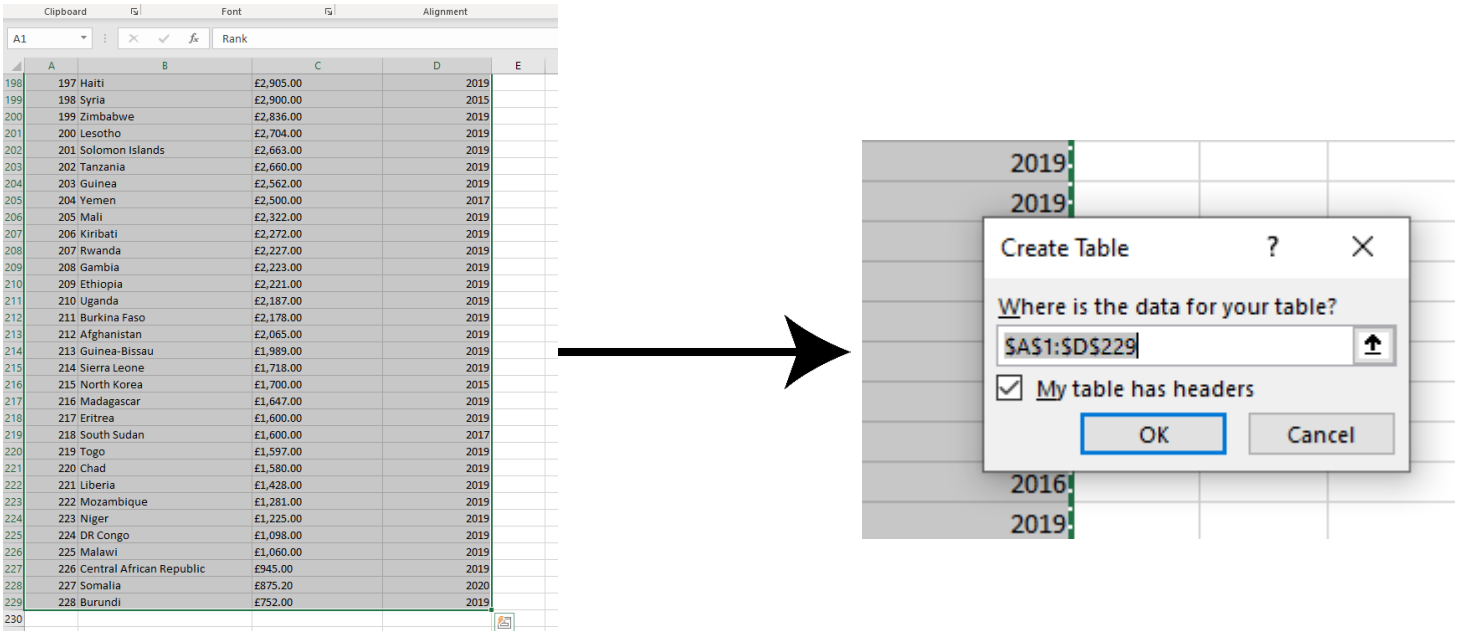
2. Then, in the “Home” tab, under the “Number” section in the drop down menu, I select “Currency”. For me, it showed GBP, which is the currency that I needed.





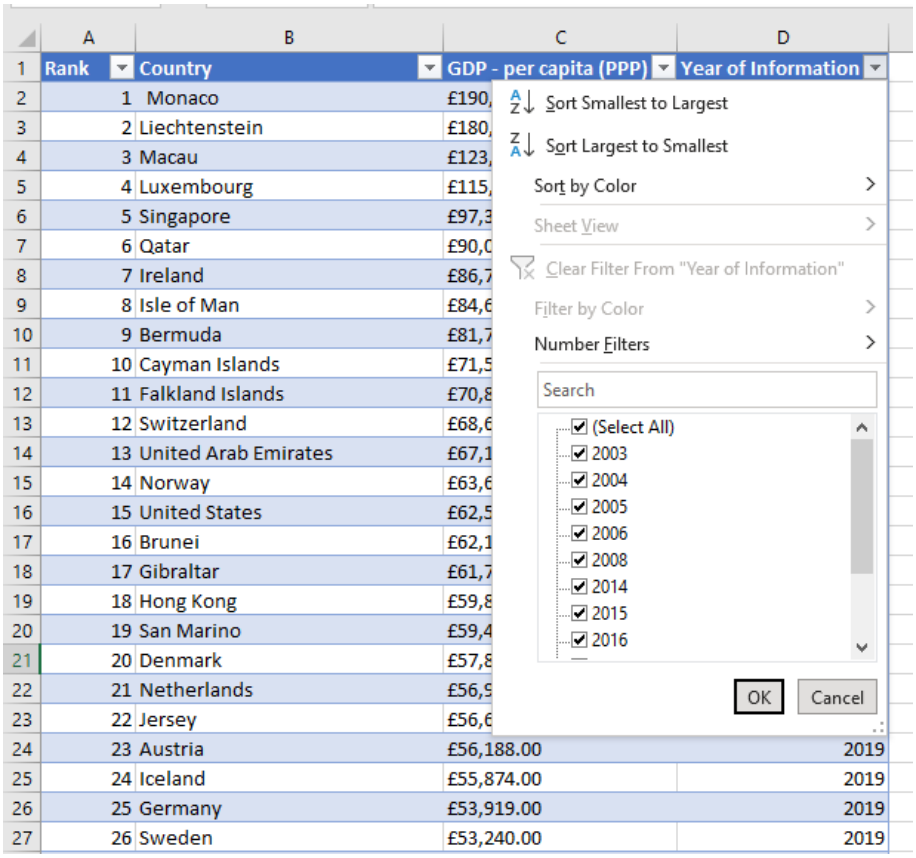
Converting the Data into a Table

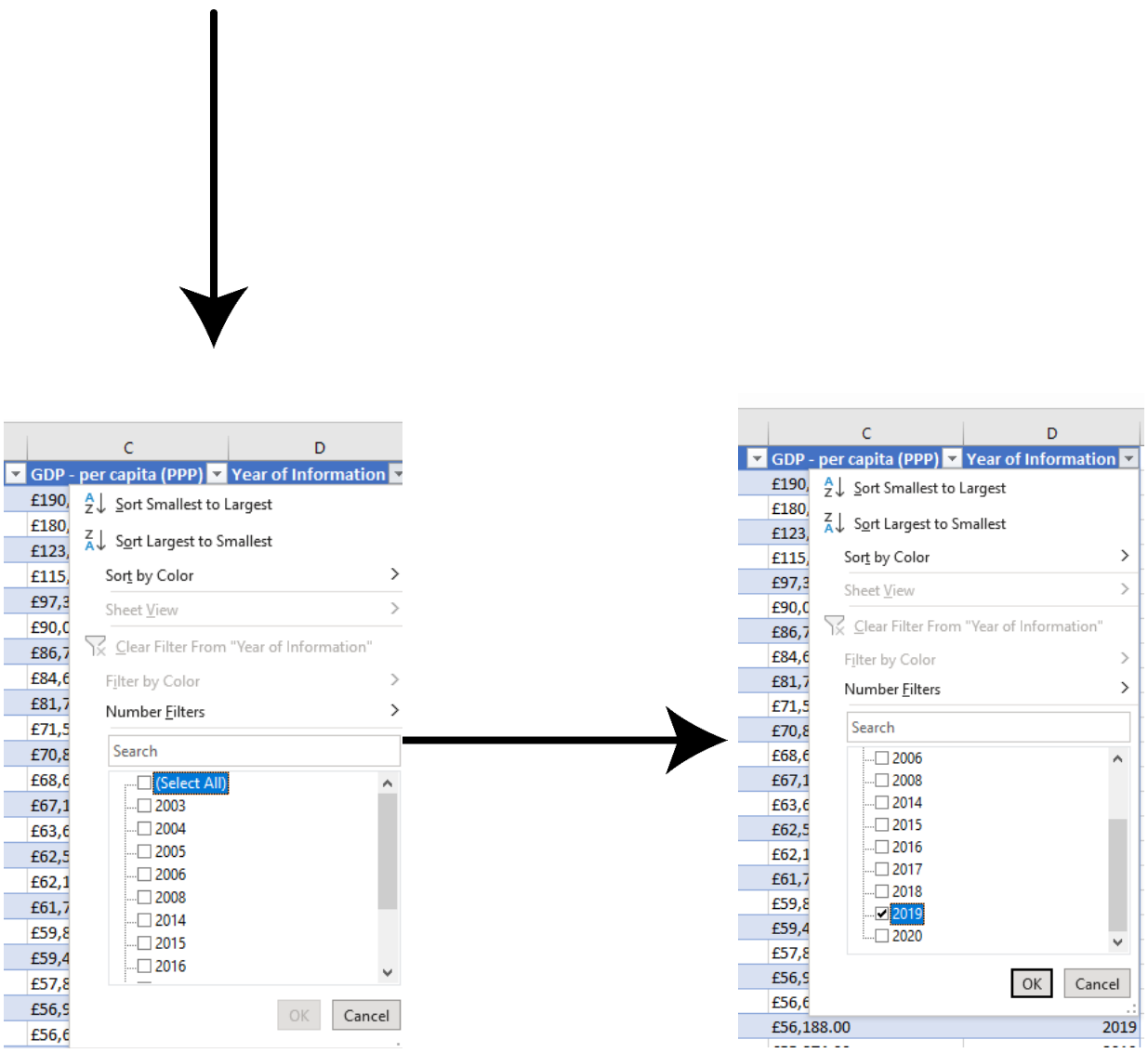
1. The next step was converting the GPD sheet into a table. I used **ctrl + A** to select all the information and then **ctrl + T** , to create a table.



Sorting the table to show only 2019 data.

1. Once the table has been generated, I want to filter out any year that is not 2019. I do that by clicking on the dropdown arrow next to “Year of Information” in cell D1 and deselecting all the years by clicking on the tick box next to “(Select All)”. Then, I only tick the box next to 2019 and click on “OK”.




C
D
GDP - per capita (PPP)
Year of Information
Sort Smallest to Largest
Sort Largest to Smallest
Sort by Color
Sheet View
Clear Filter From "Year of Information"
Filter by Color
Number Filters
Search
(Select All)
2003
2004
2005
2006
2008
2014
2015
2016
2017
2018
2019
2020
OK
Cancel
£56,188.00
2019

Creating a chart

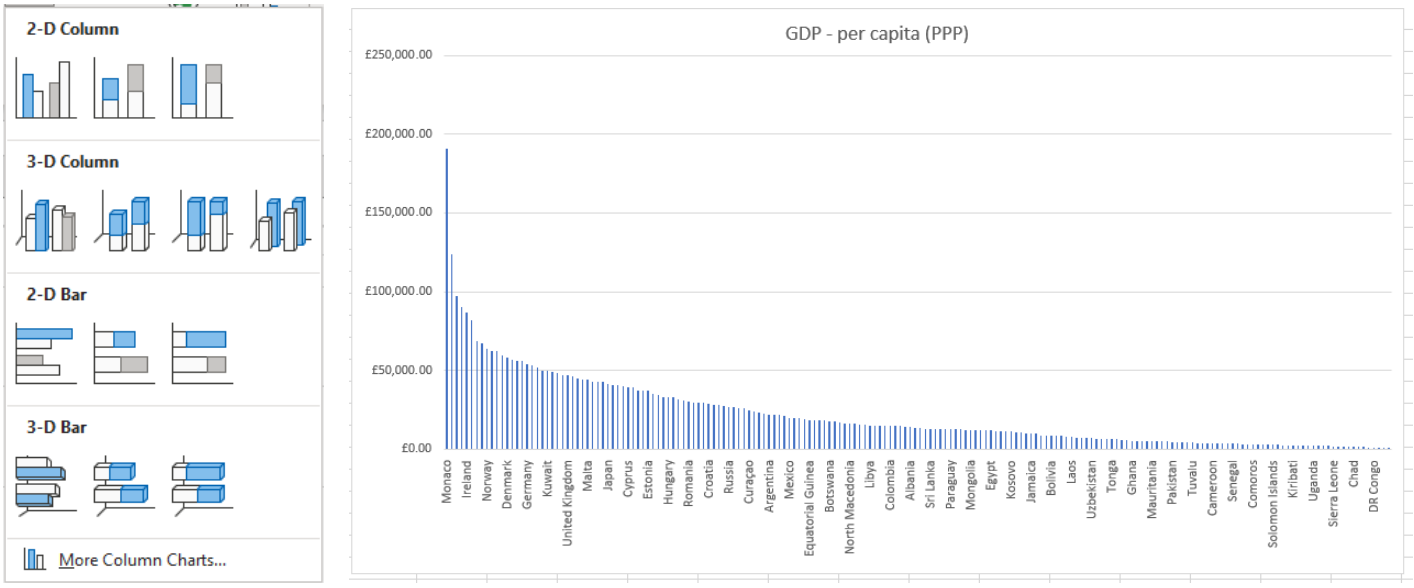
1. I started off with selecting the data we would like to use, which, in this case is columns A, B and C.

Rank	Country	GDP - per capita (PPP)	Year of Information
1	Monaco	£190,513.00	2019
3	Macau	£123,965.00	2019
5	Singapore	£97,341.00	2019
6	Qatar	£90,044.00	2019
7	Ireland	£86,781.00	2019
9	Bermuda	£81,798.00	2019
12	Switzerland	£68,628.00	2019
13	United Arab Emirates	£67,119.00	2019
14	Norway	£63,633.00	2019
15	United States	£62,530.00	2019
16	Brunei	£62,100.00	2019
18	Hong Kong	£59,848.00	2019
20	Denmark	£57,804.00	2019
21	Netherlands	£56,935.00	2019
23	Austria	£56,188.00	2019
24	Iceland	£55,874.00	2019
25	Germany	£53,919.00	2019
26	Sweden	£53,240.00	2019
28	Belgium	£51,934.00	2019
31	Australia	£49,854.00	2019
32	Kuwait	£49,854.00	2019
33	Canada	£49,031.00	2019
34	Finland	£48,668.00	2019
35	Saudi Arabia	£46,962.00	2019
36	United Kingdom	£46,659.00	2019
38	France	£46,184.00	2019
39	Bahrain	£45,011.00	2019
40	EU	£44,436.00	2019
41	Malta	£44,032.00	2019
42	New Zealand	£42,888.00	2019
43	South Korea	£42,765.00	2019
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

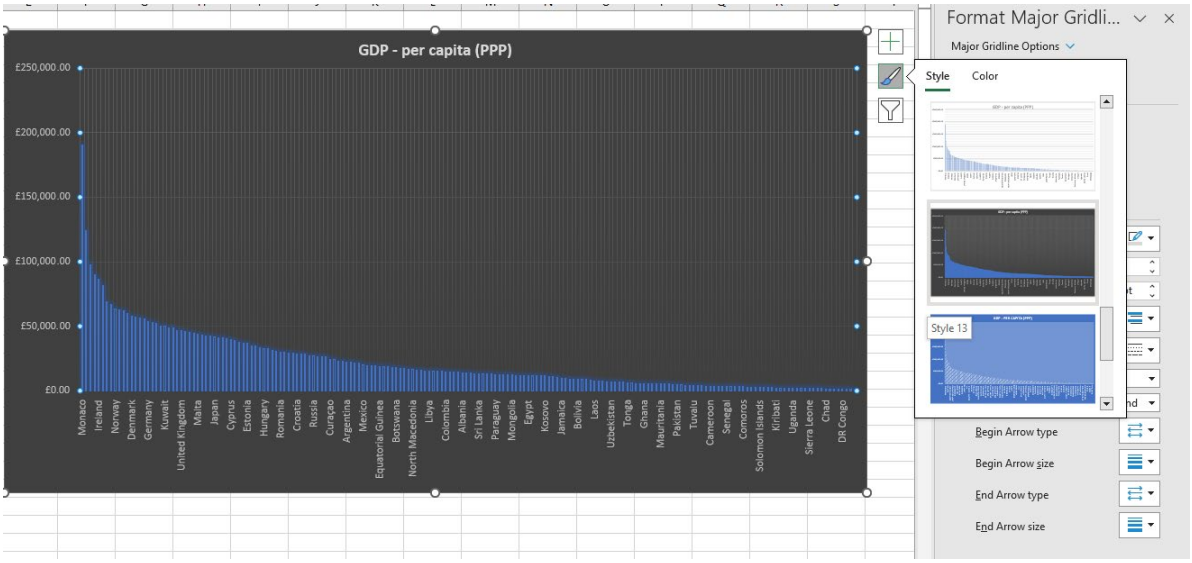
GDP | Life Expectancy | Smartphones | Sheet1

2. In the “Insert” tab, in the “charts” area, I can choose an appropriate style of chart to use.

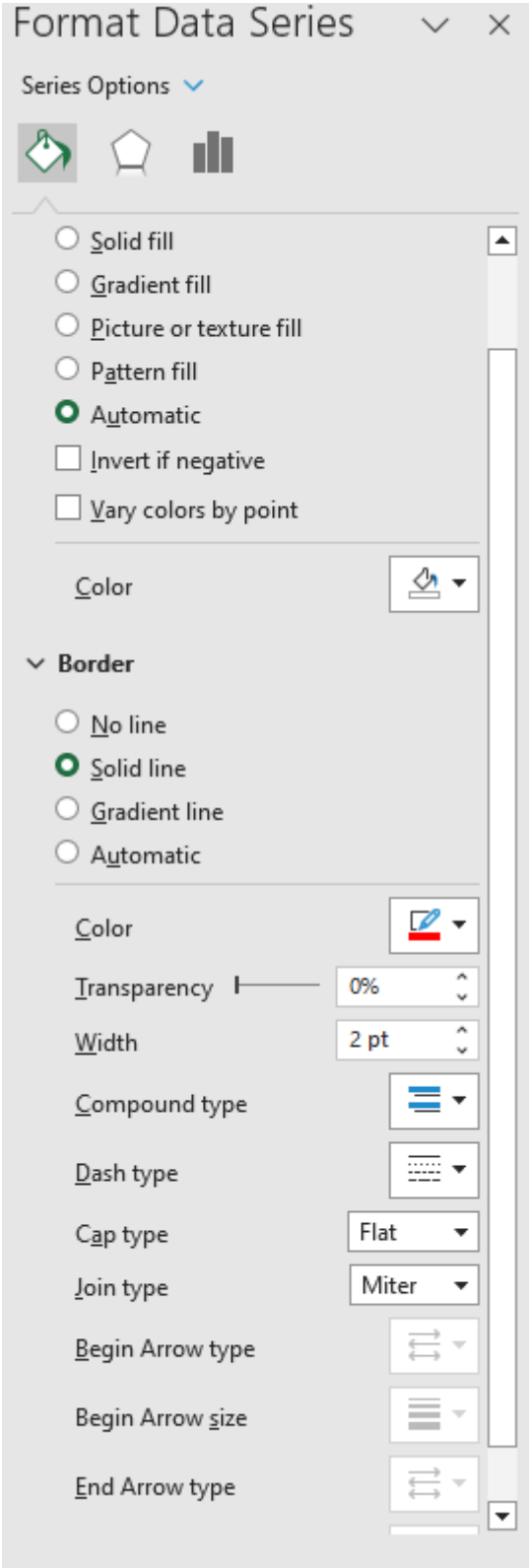
3. The chart I wanted to use for this visualisation was a 2D Column chart.

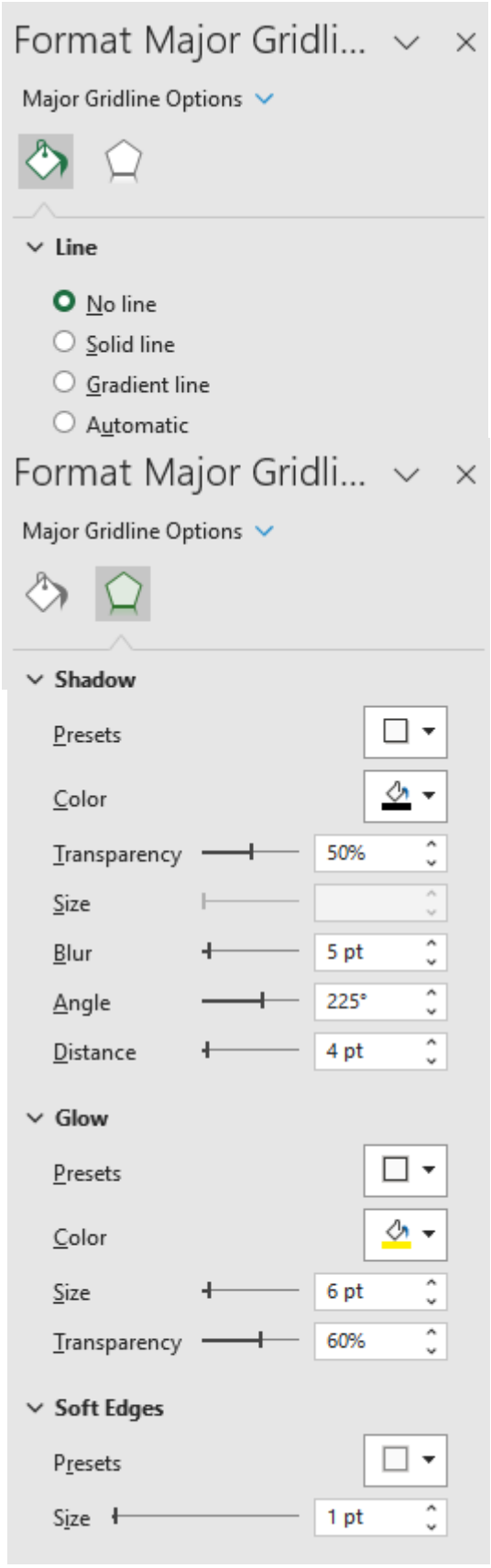


4. I then chose a basic style that I am comfortable working with.

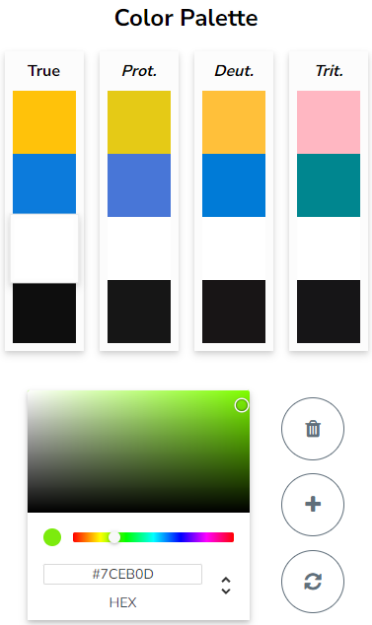


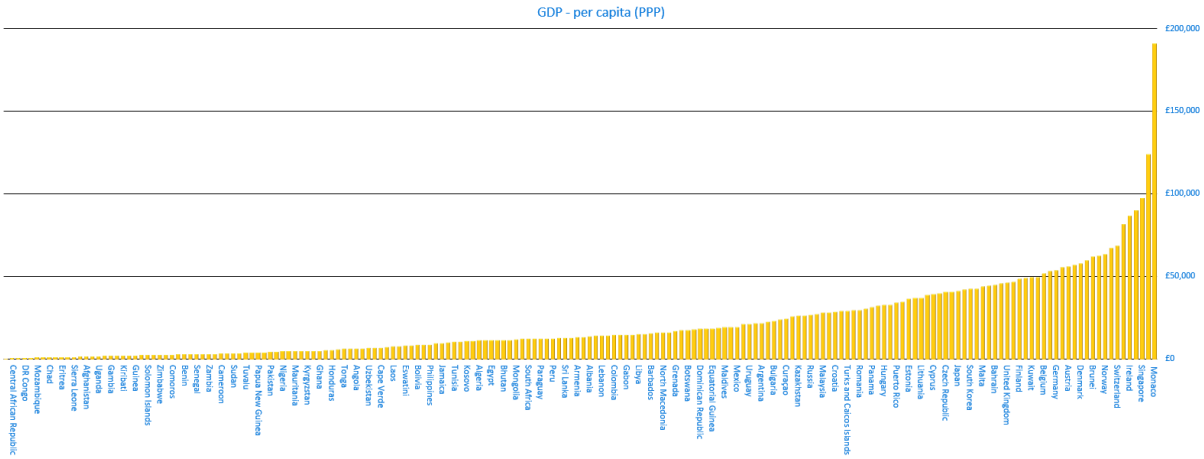
5. The next thing I did was change a few of the settings on the chart until I was happy with the look of the 2D Column Chart.


Format Data Series
Series Options
Solid fill
Gradient fill
Picture or texture fill
Pattern fill
Automatic
Invert if negative
Vary colors by point
Color
Border
No line
Solid line
Gradient line
Automatic
Color
Transparency
0%
Width
2 pt
Compound type
Dash type
Cap type
Flat
Join type
Miter
Begin Arrow type
Begin Arrow size
End Arrow type


Format Major Gridli...
Major Gridline Options
Line
No line
Solid line
Gradient line
Automatic
Format Major Gridli...
Major Gridline Options
Shadow
Presets
Color
Transparency
50%
Size
Blur
5 pt
Angle
225°
Distance
4 pt
Glow
Presets
Color
Size
6 pt
Transparency
60%
Soft Edges
Presets
Size
1 pt

Even though this data would not be shown to the stakeholder, I was keeping in mind that the stakeholder is colourblind. Therefore, I used a tool to create a colour palette which would be appropriate for this client.
I used THIS website for this colour palette.

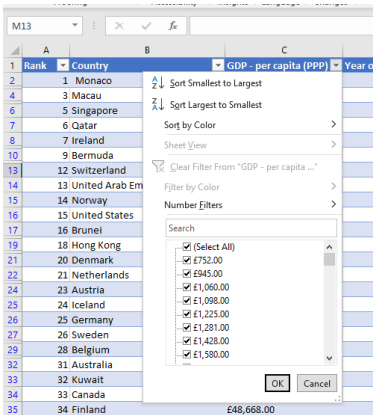


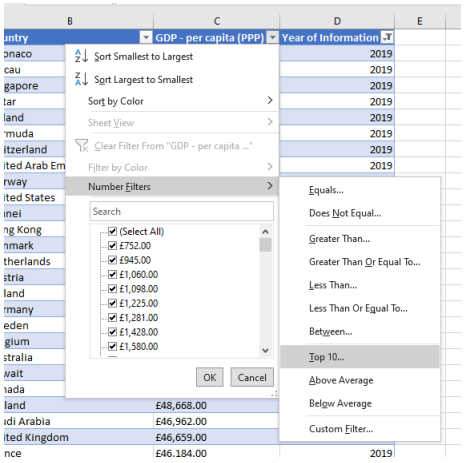


In the end, I settled on this as the style of my 2D Column chart.
I then moved the chart to its own sheet, which I called “GDP chart all data”.

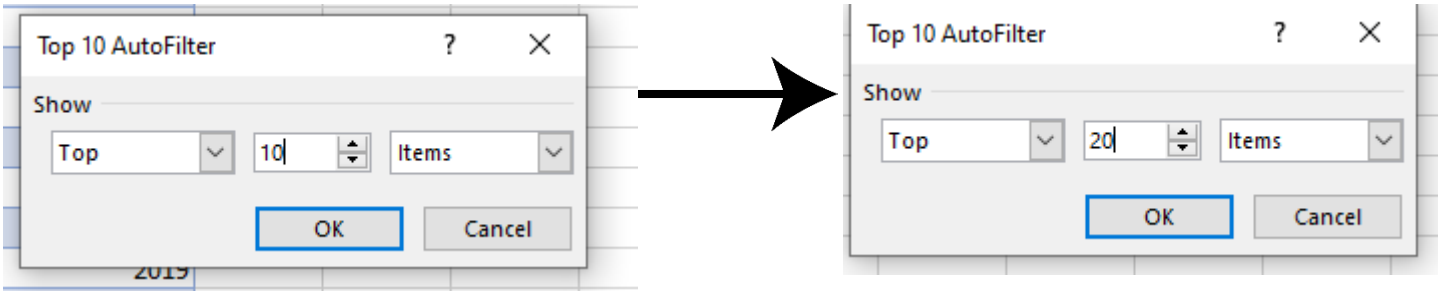
Sorting the table to shown only the Top 20

1. By clicking on the dropdown next to “GDP - per capita (PPP)” in cell C1 I selected





"Number Filters" and then "Top 10". Here, I just changed it from 10 to 20.

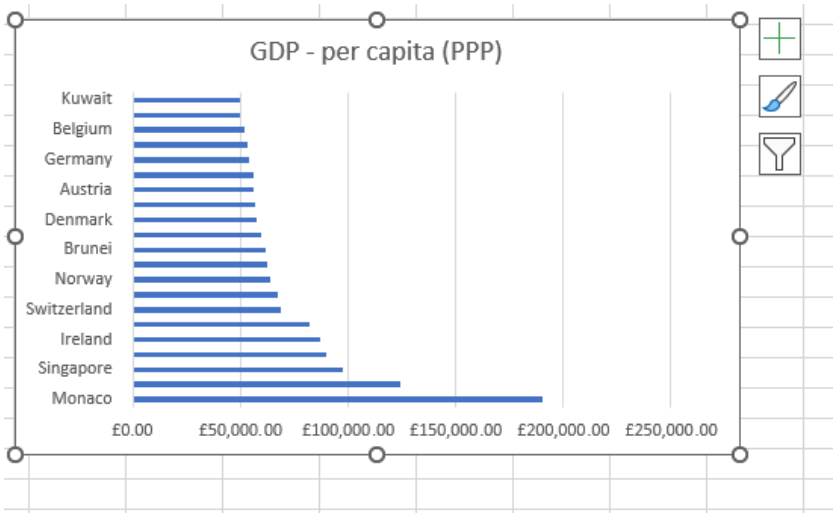


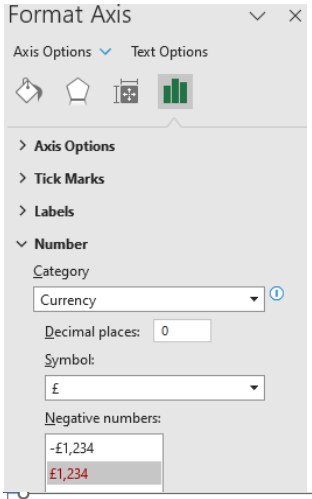
1	Monaco	£190,513.00	2019
3	Macau	£123,965.00	2019
5	Singapore	£97,341.00	2019
6	Qatar	£90,044.00	2019
7	Ireland	£86,781.00	2019
9	Bermuda	£81,798.00	2019
12	Switzerlanc	£68,628.00	2019
13	United Aral	£67,119.00	2019
14	Norway	£63,633.00	2019
15	United Stat	£62,530.00	2019
16	Brunei	£62,100.00	2019
18	Hong Kong	£59,848.00	2019
20	Denmark	£57,804.00	2019
21	Netherlanc	£56,935.00	2019
23	Austria	£56,188.00	2019
24	Iceland	£55,874.00	2019
25	Germany	£53,919.00	2019
26	Sweden	£53,240.00	2019
28	Belgium	£51,934.00	2019
31	Australia	£49,854.00	2019
32	Kuwait	£49,854.00	2019

This gave me a list of 21 countries as Australia and Kuwait have the same GDP, therefore, they are on the same level. The only reason they do not have the same rank is because ranks are assigned in this database by sorting by GDP and then alphabetically.

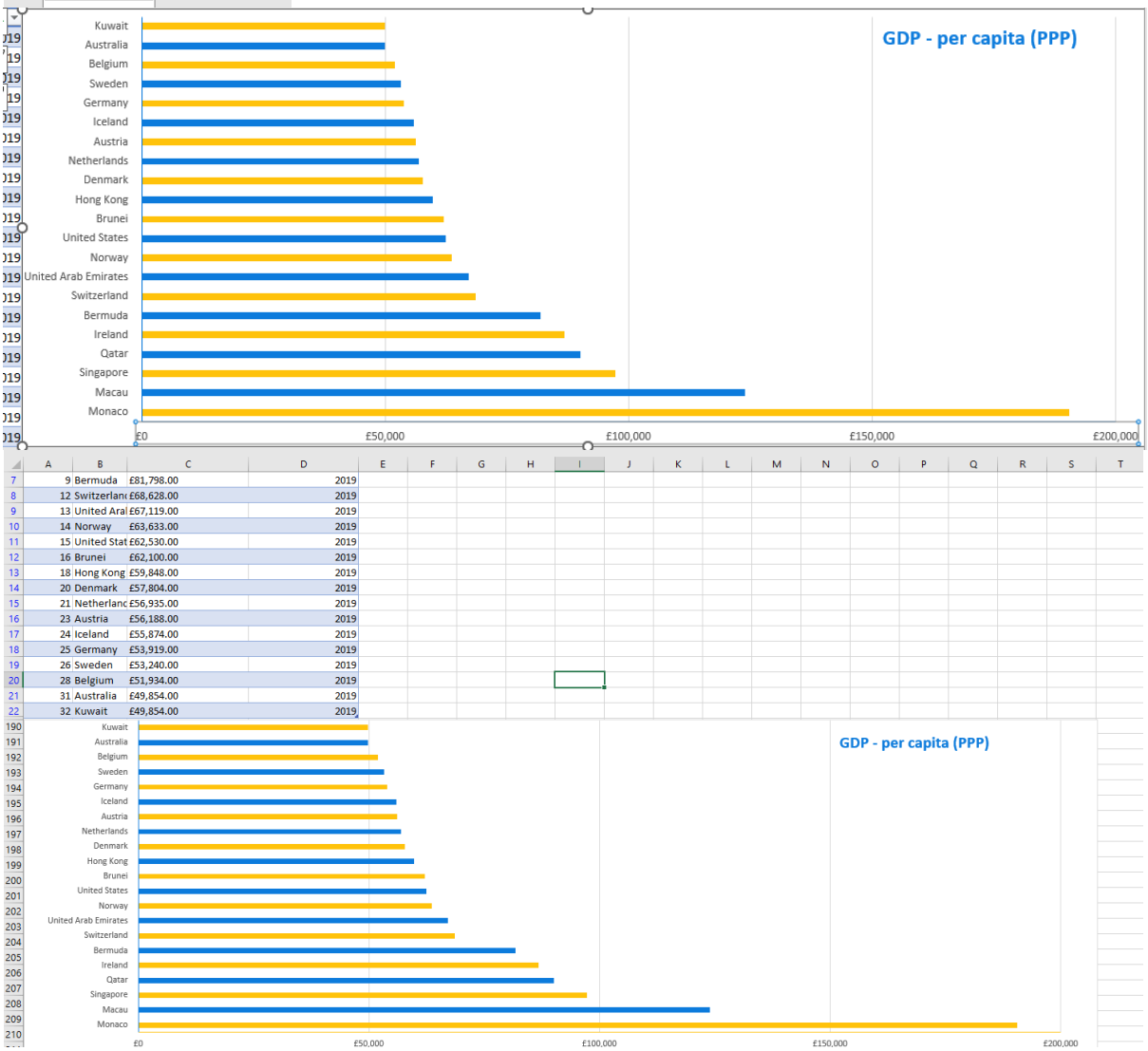
Bar chart

1. From this database. I made a Bar chart the same way I created the Column chart earlier.



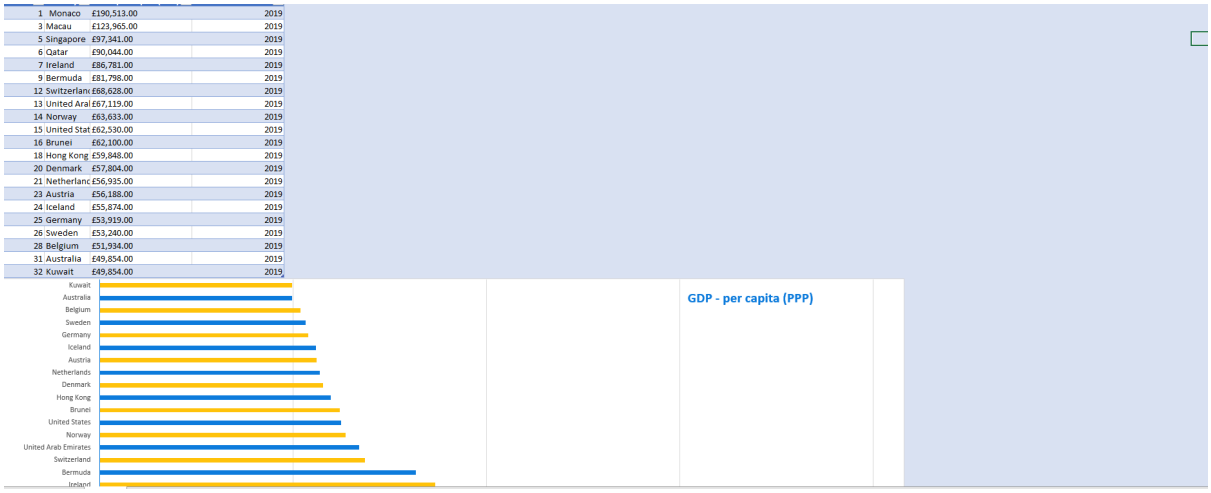


I then customised my bar chart until I was happy with the layout and colours, the same way I had already done with the Column chart. Then, I moved my chart from next to my table to underneath it, as instructed in the assignment document.

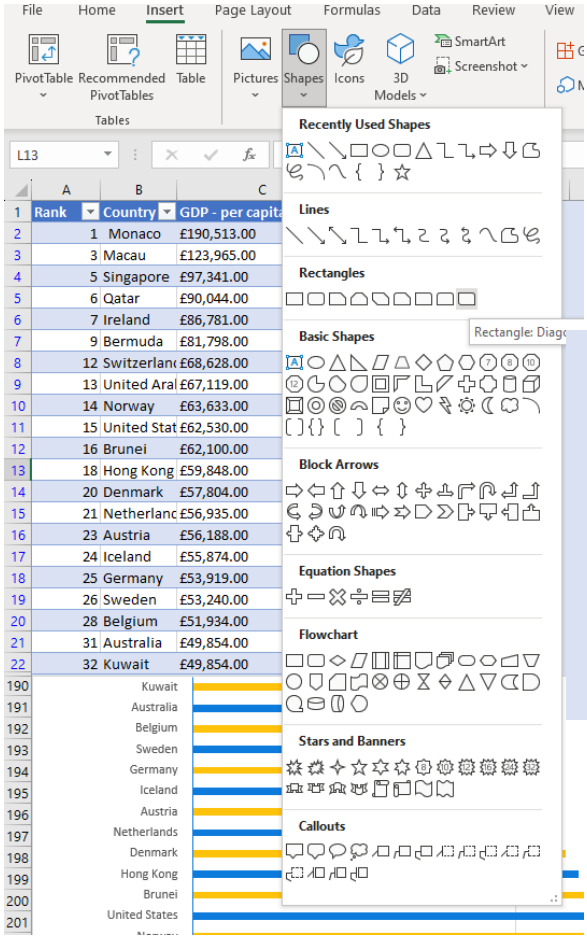


	A	B	C	D
7	9	Bermuda	£81,798.00	2019
8	12	Switzerlan	£68,628.00	2019
9	13	United Ara	£67,119.00	2019
10	14	Norway	£63,633.00	2019
11	15	United Stat	£62,530.00	2019
12	16	Brunei	£62,100.00	2019
13	18	Hong Kong	£59,848.00	2019
14	20	Denmark	£57,804.00	2019
15	21	Netherlanc	£56,935.00	2019
16	23	Austria	£56,188.00	2019
17	24	Iceland	£55,874.00	2019
18	25	Germany	£53,919.00	2019
19	26	Sweden	£53,240.00	2019
20	28	Belgium	£51,934.00	2019
21	31	Australia	£49,854.00	2019
22	32	Kuwait	£49,854.00	2019

As I wanted a nice base for the buttons, I coloured my full sheet instead of just underneath the table as requested in the assignment document.



Macros

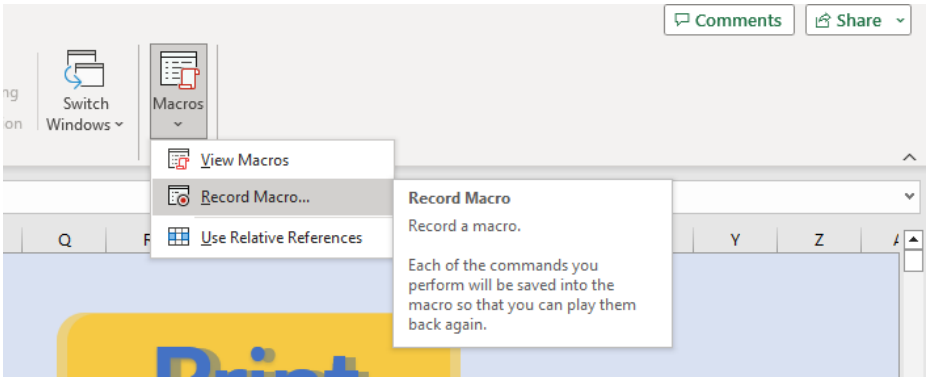


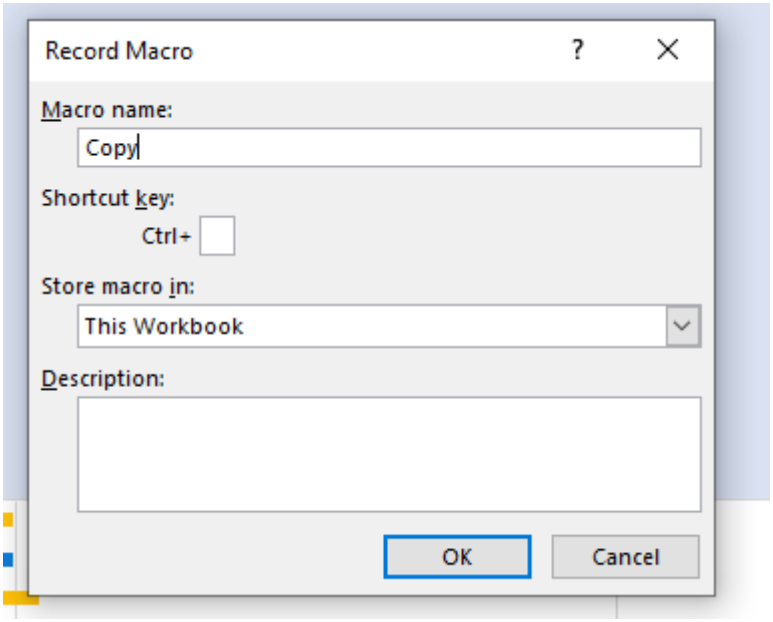
1. From the “Shapes” tab in “Insert”, I selected a shape I wanted my buttons to be. Then, I coloured them using a colour from my colour-blind palette and I added text to them. Once I was happy with the look of the button, I duplicated it twice and changed the text on the new ones to Save and Print as those were the functions I will be giving them.

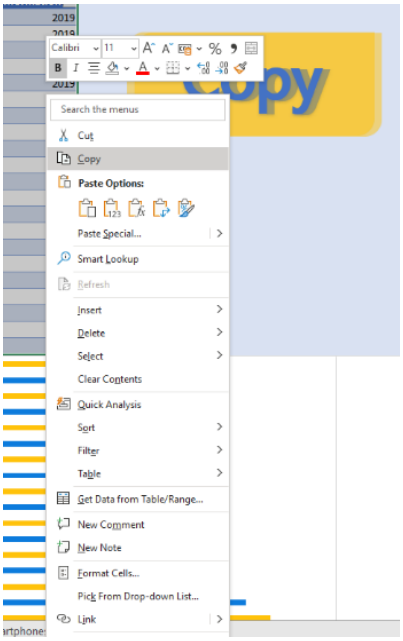
2. This is the macro script that was generated by recording the macros:

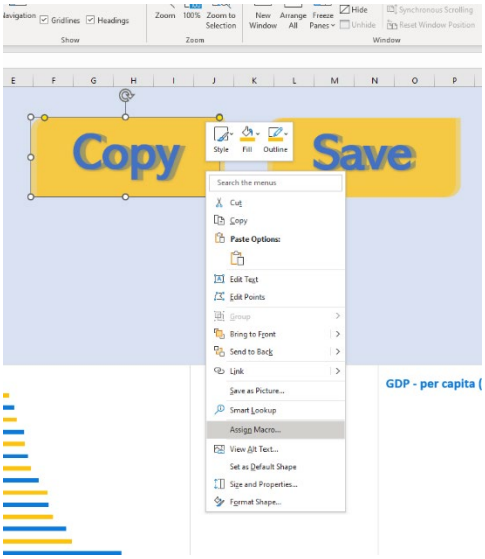
```
Sub Copy()
'
' Copy Macro
'

'
    Range("B1:D22").Select
    Selection.Copy
End Sub
Sub Save()
'
' Save Macro
'

'
    ChDir "C:\Users[redacted]Desktop"
    ActiveWorkbook.SaveAs Filename:= _
        "C:\Users[redacted]\Desktop\The Wealth of nations.xlsm", FileFormat:= _
        xlOpenXMLWorkbookMacroEnabled, CreateBackup:=False
End Sub
Sub Print()
'
' Print Macro
'

'
    ActiveWindow.SelectedSheets.PrintOut Copies:=1, Collate:=True, _
        IgnorePrintAreas:=False
End Sub
```

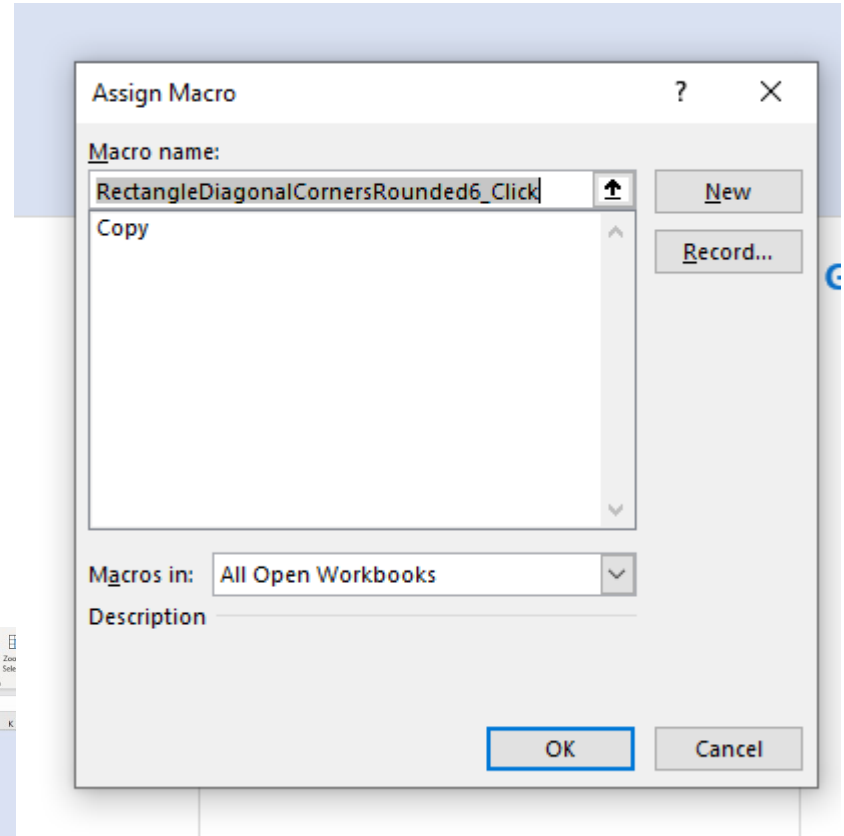
3. This was acheved by selecting “Macro” from the “View” tab and then “Record Macro” for each function. Then, every Macro was named according to what its function would be (Save, Print and Copy).
4. Once a Macro has been saved, I assigned it to the corresponding button by right-clicking on the shape and selecting “Assign Macro” and then selecting the correctly coresponding one.

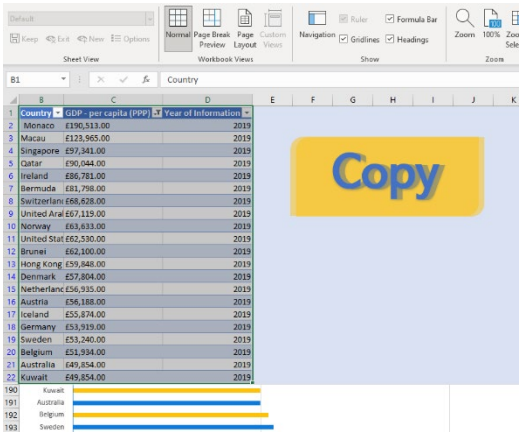


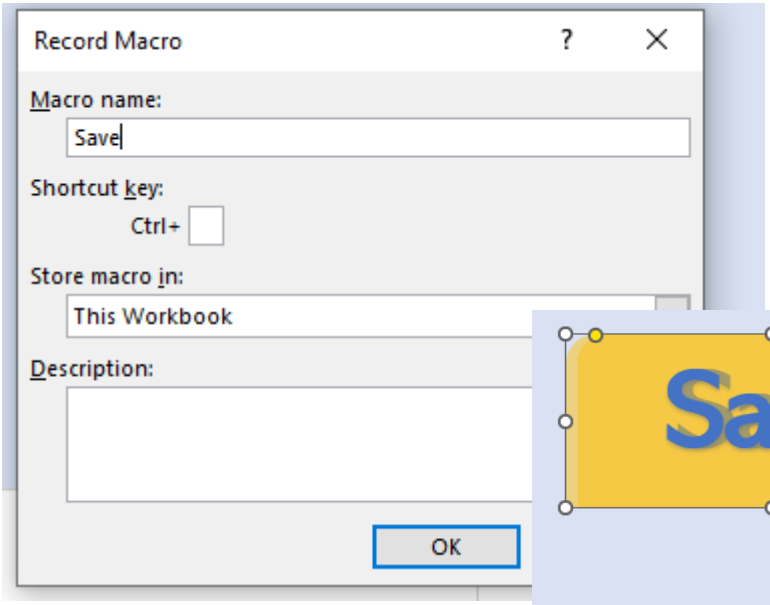

Record Macro
Macro name:
Copy
Shortcut key:
Ctrl+
Store macro in:
This Workbook
Description:
OK
Cancel

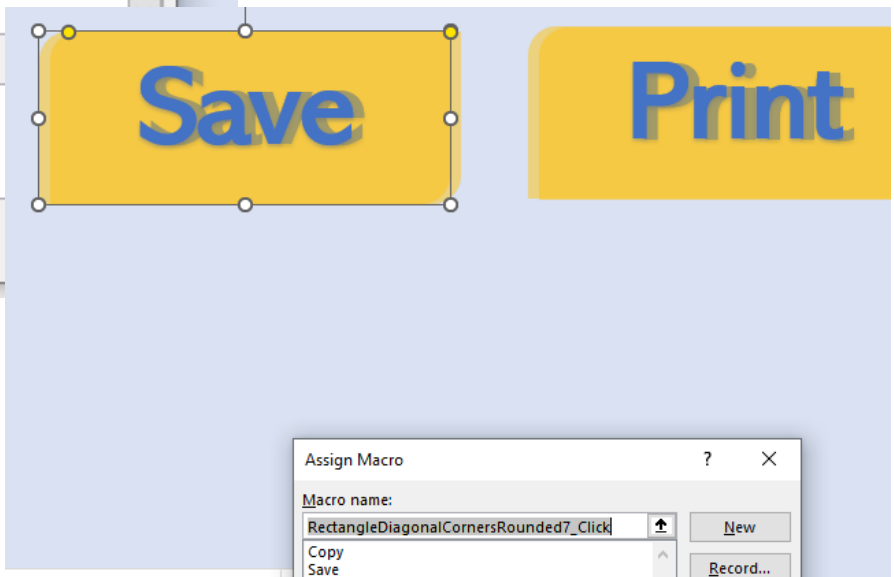

Copy
Cut
Copy
Paste Options:
Paste Special...
Smart Lookup
Refresh
Insert
Delete
Select
Clear Contents
Quick Analysis
Sort
Filter
Table
Get Data from Table/Range...
New Comment
New Note
Format Cells...
Pick From Drop-down List...
Link

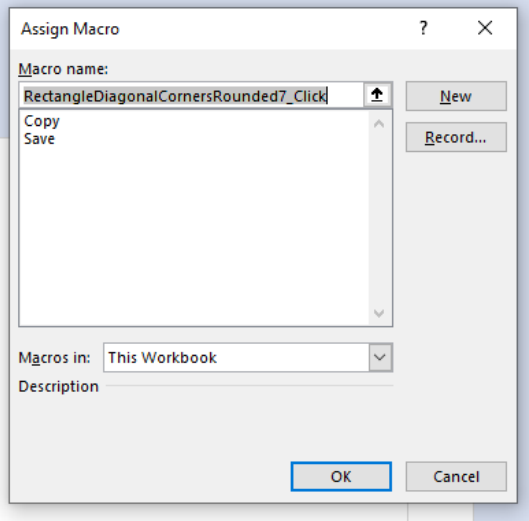

Copy
Save
Edit Text
Edit Points
Bring to Front
Send to Back
Save as Picture...
Smart Lookup
Assign Macro...
View Alt Text...
Set as Default Shape
Size and Properties...
Format Shape...
GDP - per capita (

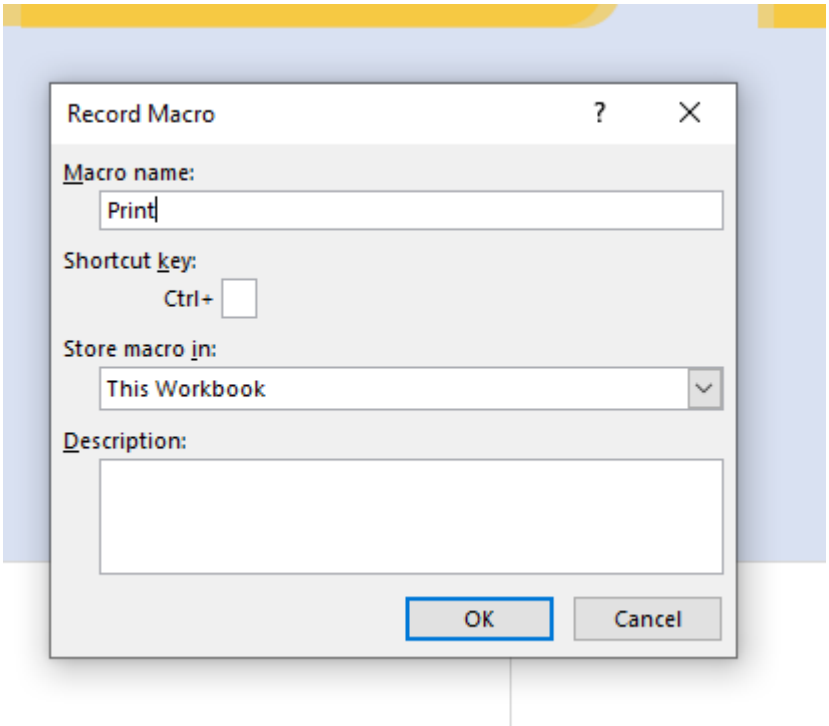

Assign Macro
Macro name:
RectangleDiagonalCornersRounded6_Click
Copy
New
Record...
Macros in:
All Open Workbooks
Description
OK
Cancel


Copy


Record Macro
Macro name:
Save
Shortcut key:
Ctrl+
Store macro in:
This Workbook
Description:
OK


Save
Print


Assign Macro
Macro name:
RectangleDiagonalCornersRounded7_Click
Copy
Save
New
Record...
Macros in:
This Workbook
Description
OK
Cancel

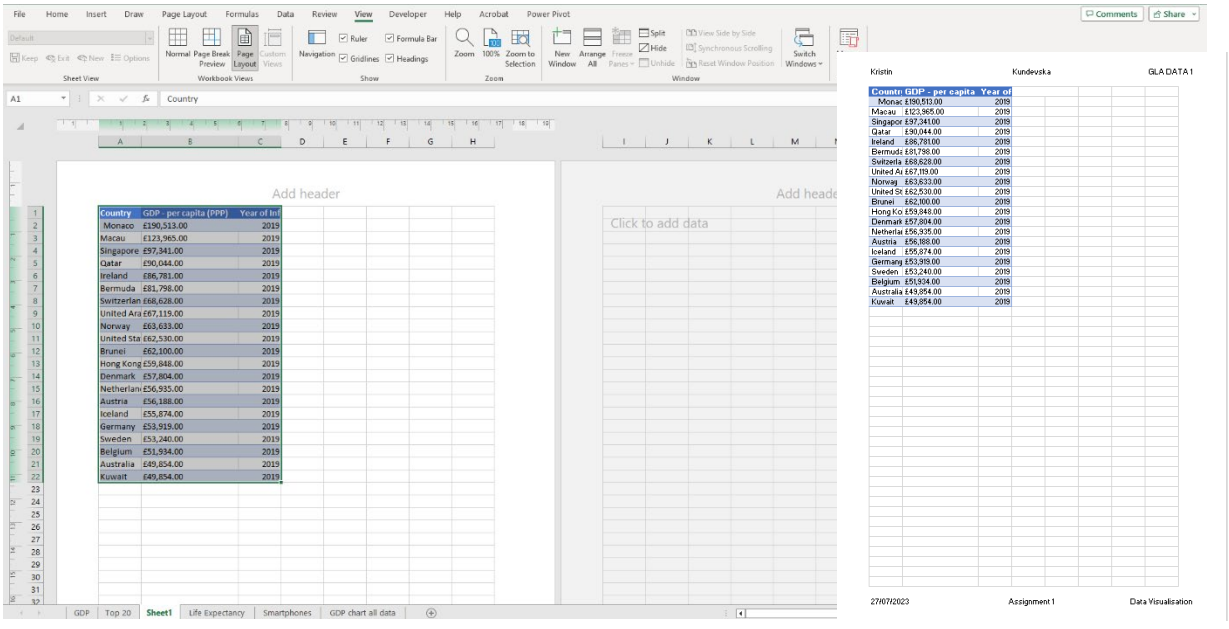

Record Macro
Macro name:
Print
Shortcut key:
Ctrl+
Store macro in:
This Workbook
Description:
OK
Cancel

The Table

1. This is the Information that the “Copy” macro copies.

Country	GDP - per capita (PPP)	Year of Information
Monaco	£190,513.00	2019
Macau	£123,965.00	2019
Singapore	£97,341.00	2019
Qatar	£90,044.00	2019
Ireland	£86,781.00	2019
Bermuda	£81,798.00	2019
Switzerland	£68,628.00	2019
United Arab Emirates	£67,119.00	2019
Norway	£63,633.00	2019
United States	£62,530.00	2019
Brunei	£62,100.00	2019
Hong Kong	£59,848.00	2019
Denmark	£57,804.00	2019
Netherlands	£56,935.00	2019
Austria	£56,188.00	2019
Iceland	£55,874.00	2019
Germany	£53,919.00	2019
Sweden	£53,240.00	2019
Belgium	£51,934.00	2019
Australia	£49,854.00	2019
Kuwait	£49,854.00	2019

2. Next, I create a new Sheet and paste this same information in it. Then, from the “View” tab, I select “Page Layout” and then I add the requested header and footer. After that, I changed the formatting to make the sheet more visually appealing.



Kristin Kundevska GLA DATA 16

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27/07/2023 Assignment 1 Data Visualisation

This is my final result.

Tableau

Based on the data the stakeholder had provided me with and their request to look at the top 20 ranked countries, I have managed to create a report highlighting the top five countries they should invest in for the smartphone market. This is based off the number of potential users and the potential highest returns financially. I used my Adobe Illustrator skills to make my own, custom title. For the backgrounds, I used containers. I did this to show all of my abilities I can use to improve my visuals.