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| A person writing on a piece of paper  Description automatically generated with medium confidence |
| **My first consolidation Project – Data Visualization**  An insight to my understanding of Data and Data structures, Development of Data sets using Excel and an Introduction to Tableau. |
| |  |  |  | | --- | --- | --- | | ***Katy*** | 2/24/23 | ***IT DATA TECNICHIAN*** | |

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# First task

## Policies and Procedures

There are many laws which have been implemented to protect users and their data from attack and misuse. I will list the ones I believe should be relevant, and why, for our provided data:

* Computer Misuse Act 1990 – This act makes it an offence to supply, adapt, make or obtain articles unwillingly by the author. Erasing or altering data without consent by gaining unlawful access is also covered under this act.
* Police and Justice Act 2006 – Within this Act, there is a data section which dictates it is an offense to gain unauthorised access to any data stored in any computer.
* Copyright, Design and Patents Act 1988 – Under the umbrella of this Act, creators of data and data visualisations are protected and have the right to control the ways their material could be used.
* The Copyright (Computer Programs) Regulations 1992 – It is illegal to make copies of material/data and then publish/sell it without permission from the owner.
* Data Protection Act 2018 – This Act applies to ANY organisation, government or person who holds personal data. Even though this data doesn’t lead to identification of individuals – the data which was used to compile this data may lead to identifying someone.

# Second task

## 1 - How to set a password to protect the workbook

* Press File > Info > Protect Workbook > Encrypt with password.
* Graphical user interface, text, application, email

  Description automatically generatedThis password is case sensitive and is set to: JustIT2023!

## 2 - Highlight column C and change the data to display in British Pound Symbol

* Left click with your mouse on the letter ‘C’ and it will highlight.
* Graphical user interface

  Description automatically generatedRight click on the highlighted cell and click ‘Format cells’.

Graphical user interface, text, application

Description automatically generated

* Once you have clicked ‘Format cells’ a new window will open
* Graphical user interface, application, table

  Description automatically generatedWhen the new window has opened, make sure you have the tab name ‘Number’ active.
* When you are on the ‘Number’ tab – click currency and make sure your currency under ‘sample’ is set to GDP. In this example it says, “Sample GDP – per capita (PPP)”.

Graphical user interface, text, application, Teams

Description automatically generated

* Ensure the decimal places are set to 2 (The same as the workbook) and then click on the downwards arrow to open a drop down menu. Click on £ English (United Kingdom).

Graphical user interface, application

Description automatically generated

* Finally, check your decimal places haven’t been changed and click ok. This is what your updated Excel spreadsheet should look like.

Graphical user interface, application, table, Excel

Description automatically generated

## 3 - Turn the GDP sheet into a table

* Make sure your tab is on ‘Home’ and click ‘Format as Table’ – then a new menu will open with choices. Choose which choice you desire.

Graphical user interface, application, table, Excel

Description automatically generated

* Once you have clicked on this – a new window will open. Excel will automatically highlight all the cells which have data inputted. For this example – we need to use all the data. (If you would like to use a certain part of the spreadsheet – you can manually manipulate this by stating the letter and number of the cells, or you can simply highlight them)

Graphical user interface, text, application, chat or text message

Description automatically generated

* Depending on which colour option you chose, your spreadsheet will now be manipulated and changed. I chose ‘light’ and blue, so it is now viewed as so:

Table

Description automatically generated

## 4 - Filter the table to display only the information for 2019

* Go to the ‘Year of Information’ column and click on the downwards arrow.

**Graphical user interface, table

Description automatically generated**

* De-select ‘Select All’ and then find just 2019. Highlight this box and press ok.

Graphical user interface

Description automatically generated

* Your table will now show solely information for the Year 2019 😊

**Table

Description automatically generated**

## 5 - Create a chart that will only display the following data ‘Country and GDP - per capita (PPP).

* Highlight the information required (In this case – just Country and GDP).
* Ensure your tab is on ‘Insert’ and click the chart you would like to use. I will choose the column/bar chart. When you hover over the options – it will sometimes give you a snippet of how it will look, as seen below:

Graphical user interface

Description automatically generated with medium confidence

* Click ok and the chart will appear in your spreadsheet. It should look like this:

Table

Description automatically generated

## 6 - Use your creative skills to edit the chart

## A – Add a title

* To add a title, right click on the ‘Chart Title’ within the chart and click ‘Edit Text’. I have named the chart ‘GDP - per capita (PPP) V Country’. This is how the named chart now looks:

Chart, bar chart

Description automatically generatedGraphical user interface, application

Description automatically generated

## B – Add X and Y axis labels

* Graphical user interface, application, table

  Description automatically generatedTo add X axis labels, click the tab Chart Design > Add Chart Element > Axis Titles > Primary Horizontal.
* Chart

  Description automatically generatedNow rename the Axis title, right click the ‘Axis Title’ and click on Edit Text. I have renamed it to ‘Country’. I have repeated the process now using the primary vertical. (Click the tab Chart Design > Add Chart Element > Axis Titles > Primary Vertical). I have renamed this as ‘GDP’, as you can see below:

## C - Make the chart visually pleasing.

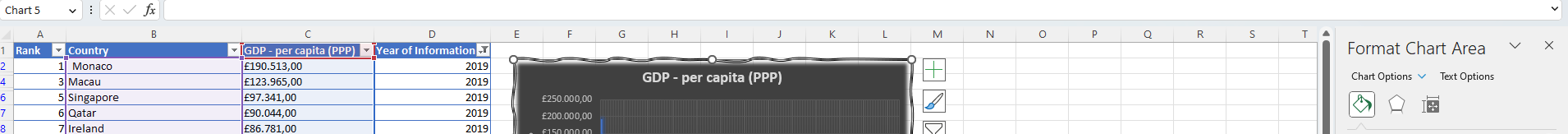
* Graphical user interface

  Description automatically generatedClick on your chart and select the ‘Chart Designs’ tab. Within this section you can change many of the visualisations of the chart.
* I expanded the ‘chart styles’ ribbon and chose a visualization I liked:

Graphical user interface, application, table

Description automatically generated

* I then went to format the chart by right clicking the chart, which allows the ‘Format chart area’ to appear. From here I have changed the edges, shadows, borders etc.



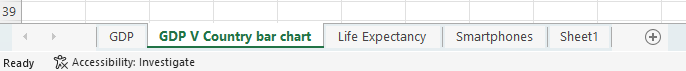
## 7 - Move the chart to a new sheet tab and label with a suitable name

* To move the chart to a new sheet – click on the chart then press CTRL+C to copy.
* Then go to the bottom of the excel sheet and press the + to add a new sheet.
* You can now paste the chart into the new sheet using CTRL+V.
* Once pasted – you can rename the sheet by right clicking and pressing rename.

Graphical user interface

Description automatically generated with medium confidence

* I have renamed my new sheet **GDP - per capita (PPP) V Country**



## 8 - Create a sort for the top 20 highest ranking counties

* Graphical user interface

  Description automatically generatedTo create a sort, I pressed on the down arrow next to Rank and pressed Number filters > Top 10.
* A new window appears, and you can manipulate this table by using the desired top. In this example, we are being asked to rank the Top 20. Amend the Top to bottom by clicking the downwards arrow and then amend middle column to 20 and press Ok.

Graphical user interface

Description automatically generated

* Table

  Description automatically generatedYour spreadsheet has now been updated and will look like this:

## 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.

* To create a new bar chart, highlight the Country and GDP. Then click the ‘Insert’ tab and hover over the charts. I have chosen a 2 – D side bar chart. When you are happy with your chart – click it and it will appear on your spreadsheet.

Graphical user interface, application, table

Description automatically generated

Shape, icon, arrow

Description automatically generated

* To move the spreadsheet – hover the mouse over the chart and you will see this symbol.
* Table

  Description automatically generatedDrag the bar chart to your desired location. The example states we need to drag it beneath our table as so:

## 10 - Colour the background by highlighting the area underneath the table. Find the add a fill colour icon and select a colour.

* To colour the background, highlight the necessary cells and right click. Chart

  Description automatically generated
* Click the paint pot symbol and choose a desired colour. I have chosen grey for this example.

Graphical user interface, application

Description automatically generated

* Then your spreadsheet will look like this:

Chart

Description automatically generated

## 11 - Create a macro button, print the sheet, Save the file and copy the sheet.

* To create a Macro button, you start by putting your tab on ‘view’ and pressing ‘Macro’ and ‘Record Macro’.

Graphical user interface, application

Description automatically generated

* When you press ‘Record Macro’, a new table will appear. Change the name of the Macro – I have chosen Copy.
* Add a Shortcut key. I have chosen ‘h’ for this example.
* Ensure ‘Store macro in’ is in ‘This Workbook.
* Add a desired description. I have explained what the Macro button will do.

Graphical user interface, text, application, email

Description automatically generated

* Once you press ‘OK’, the Macro will start recording. I highlighted the chart, right clicked and pressed copy. I then pressed paste and went back to Macro (within the view tab) and stopped the recording.
* To assign the button, I chose a shape, by pressing the Insert tab and clicking ‘Shapes’.

Graphical user interface, application

Description automatically generated

* Once I chose my shape, I drew it into my spreadsheet. Then you need to right click on the shape and ‘Assign Macro’.

Graphical user interface, application

Description automatically generated

* A new window will appear as below. Click OK and the button is now created.

Graphical user interface, application

Description automatically generated

* To add a label to your Macro button, right click the shape and click ‘Edit Text’.

Graphical user interface, application

Description automatically generated

* Edit the text to co-inside with the function. In this case, it is a copy button, so I put in ‘Copy’. You can align/centre the word to your liking, also changing the font style, size and colour. All this can be done by right clicking on the Macro button (the shape) and formatting the shape. I have kept mine minimal for the use of this example.

A picture containing text, clipart

Description automatically generated

## 12. Using the copy macro, copy the sheet and then paste it into this word document keeping the formatting.

|  |  |  |  |
| --- | --- | --- | --- |
| **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 |

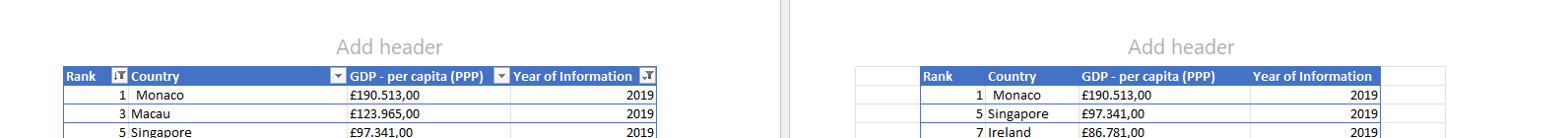
## 13 - Save your document as ‘Word Gross domestic product report 1’.

* To do this, click File > Save as > name the document > find the appropriate place to save the document depending on your computer and click OK.

## 14 - Add a header and footer to a table.

* Graphical user interface, application, Teams

  Description automatically generatedSelect the ‘View’ tab and look for workbook views.
* Select the ‘Page Layout’ icon and this will display your sheet with Header and Footers.





## 15 – Enter certain information into Headers.



## 16 – Enter certain information into Footers.



* In this example, I have added the information provided. To add text onto Headers and Footers – simply click in the box and you can edit your text.

## 17 - Return your view to normal

* Graphical user interface, application

  Description automatically generatedTo return to your normal view, click the ‘View’ tab and click Normal, as shown below.

## 18 - Save your table as ‘Excel Gross domestic product report 1’.

* File > Save as > Name the document as ‘Excel Gross domestic product report 1 > save to either your local device, the cloud, or both!

## 19 – My Tableau showcase

* I chose a map visualisation and a bar chart showing the same information, as part of my showcase, as people interpret data differently.

Map

Description automatically generated

Table

Description automatically generated

* In the next visualisation I decided on a tree map which cross-referenced the top 20 Countries life expectancy, with their GDP. I embedded the data, so if you hover in Tableau – you will be able to see ‘behind the scenes’! I have taken a screenshot, so you have an example. My mouse was hovering over Hong Kong for this example.
* I wanted to showcase a ‘Dual Combination’ visualisation, cross-referencing The Top 20 Countries life expectancy and their related GDP. Unfortunately, the only way I could show this was in the tree map.

Chart, treemap chart

Description automatically generated

* Finally, I chose to use another bar chart to visualise the top 20 countries by ranking.

Chart

Description automatically generated

* Graphical user interface

  Description automatically generatedHere is the completed dashboard:

<https://public.tableau.com/shared/Q799Y9CYH?:display_count=n&:origin=viz_share_link>

* I chose this colour scheme because my created dashboard is adapted for colour blind people.

## 20 – My reflection

I have thoroughly enjoyed making my first assignment and showcasing everything I have learnt so far. I didn’t feel so confident using Tableau at first, so I spent my self-study time familiarizing myself with this platform. I also under-estimated legislation, so learning about that aspect has really opened my eyes and I am hopeful I will continue to keep up to date with current legislations.

When we were given the assignment, I was over-whelmed with certain parts, although breaking things down and using my organisational skills has helped immensely.

With my go do attitude, my fearless confidence and amazing Tutors - I am proud to look back at this assignment. I feel as though I have really grasped the basics of both Excel and Tableau and I am looking forward to see what the future holds within this Bootcamp.