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| Close up photo of colorful graph data |
| Data Visualisation  Lozarta V |
| |  |  |  | | --- | --- | --- | | 05/04/2024 |  |  | |

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***Policies and Procedures***

Data protection strategies within organisations often involve three key points: **data security**, **data availability** and **access control** – ensuring data is only available to those who need it. Data protection safeguards sensitive information from damage, corruption or loss.

An organisation’s data protection policy sets out how it ensures compliance with data protection laws and GDPR.

**GDPR**

In 2018, the **General Data Protection Regulation (GDPR)** was put into effect, applying to any organisation across the world that processes the personal data of EU citizens. Violation of its privacy and security standards is subject to very heavy fines.

The seven key principles of GDPR:

1. **Lawfulness, fairness and transparency** in processing data of individuals.
2. **Purpose Limitation**: data is processed for legitimate purposes and this has been explicitly stated to the individuals concerned.
3. **Data Minimisation** by processing only what is necessary in relation to the purpose.
4. **Accuracy:** personal data kept accurate and up to date.
5. **Storage Limitation:** personal data is only stored for as long as necessary for the legitimate purpose.
6. **Integrity and confidentiality**: processing ensures appropriate security of personal data, protecting against malicious and accidental damage or loss.
7. **Accountability:** the data controller is responsible for demonstrating GDPR compliance with all seven principles.

It is important for data analysts to adhere to the data protection policies of their organisation and data laws where they are based, such as GDPR.

Failure to comply could lead to a data breach or loss, with negative impacts to an organisation. This could include a loss of reputation and trust. There is also possibility of legal liability and significant fines to any organisation that is not GDPR compliant.

A data analyst can ensure security and privacy when working with personal data, by encrypting and anonymising data before it is processed, and minimising data sharing as necessary. It is also important to use secure analytics platforms, such as those with encryption and authentication features.

Data analysts must also follow **The Computer Misuse Act of 1990** which protects the personal data organisations hold. It makes it illegal to access and modify unauthorised data material and unauthorised access with intent to commit a further crime.

***Excel: The Data***

Password set to protect ‘The Wealth of Nations’ workbook

*A screenshot of a computer

Description automatically generated*

Updated **data type** in column C to currency (British pound) as GDP measure

*A screenshot of a computer

Description automatically generated*

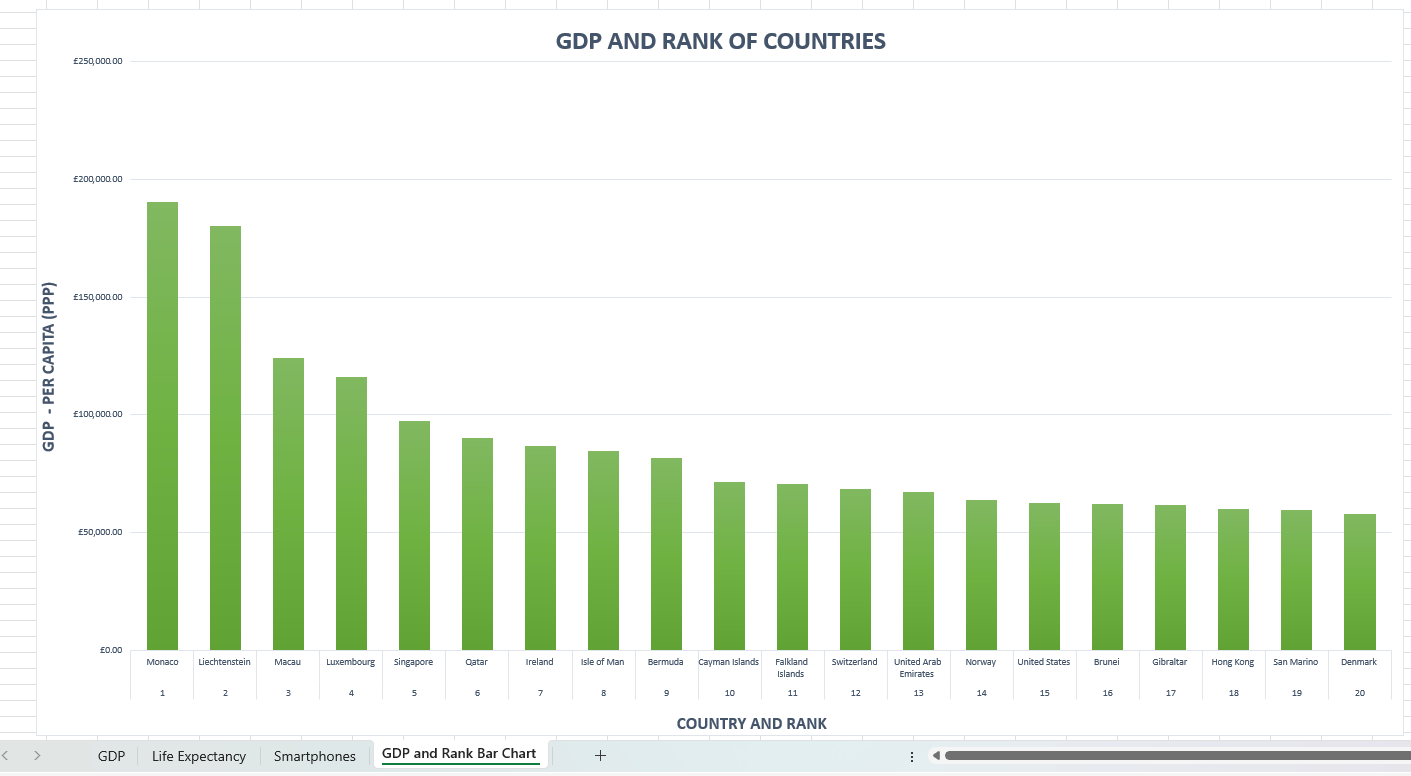
Table **filtered** by year (2019) and **sorted** in descending order of GDP

*A screenshot of a computer

Description automatically generated*

Bar Chart displaying only: **Rank, Country and GDP**.

Chart title added, x and y axis labelled. Bar Chart moved to new sheet with label.

**

Data **sorted** by **20 highest ranking** countries (GDP per capita)

*A screenshot of a computer

Description automatically generated*

***Tableau***

‘Wealth of Nations’ file uploaded into Tableau and relationships set.

*A screenshot of a computer

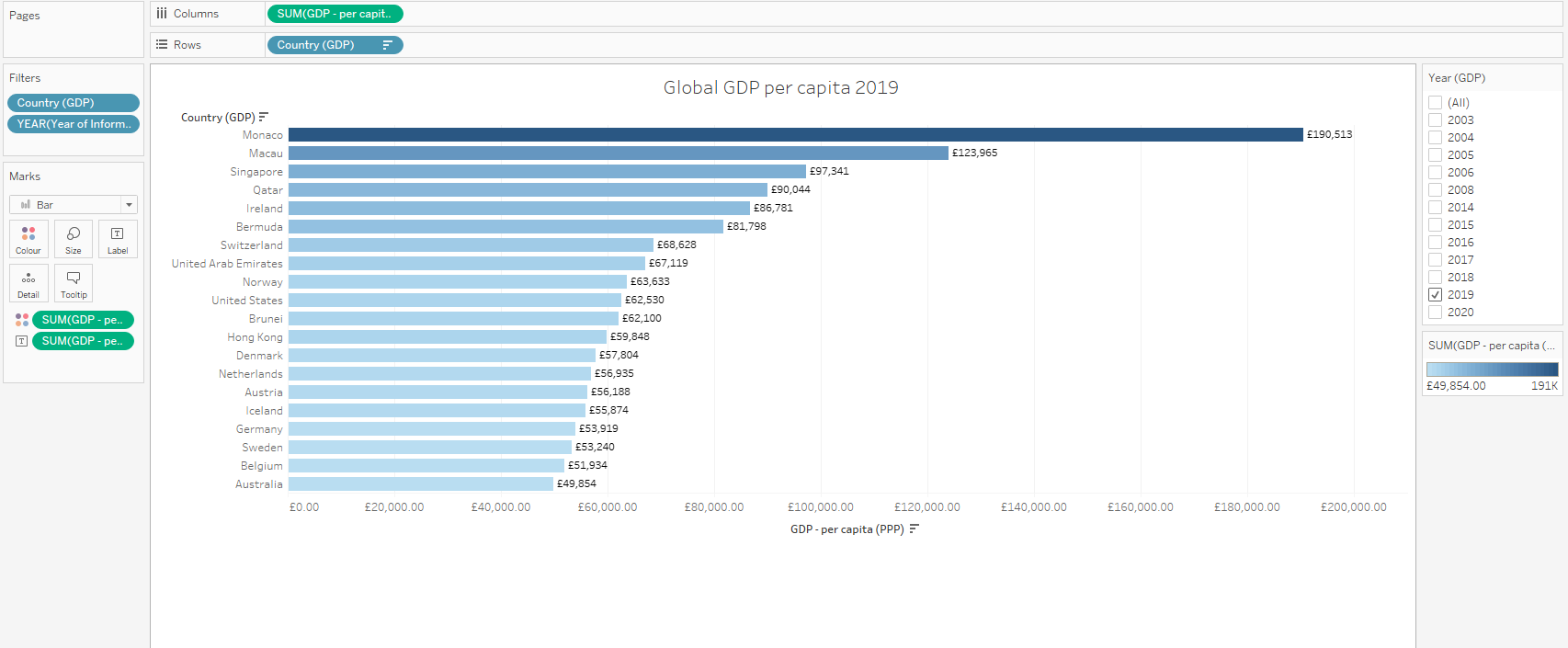
Description automatically generated*

A **relationship** is when data from different tables is connected through a common field, in this case it is country, making data preparation and analysis easier.

The **data type** for the ‘Date’ column has been changed from **Number (whole)** to **Date**. Data types should be checked and changed as necessary at this stage.

1. **Bar Chart of 20 highest** **ranking countries globally by GDP – per capita (PPP).**

* The ‘Year’ dimension has been **filtered** to display only 2019.
* The ‘Country’ dimension has been **filtered** to display the top 20 countries.

**

* **‘Numbers’** is changed to **Currency (Custom)** and to 0 decimal places – to make the GDP figures shorter, easier to read and reduce clutter on the chart/dashboard.
* GDP is moved into **‘Label’** under **Marks**, to display the GDP figures on the corresponding bars, making them stand out and easily seen.

*A screenshot of a graph

Description automatically generated*

1. **Bar Chart of 20 highest ranking countries in Europe by GDP – per capita (PPP)**

* Dimensions contain **qualitative** values such as Country or Year and they are coded **blue**.
* Measures contain **quantitative**, numeric values such as GDP, life expectancy and smartphone users and are coded **green**.

*A graph of a number of blue and white bars

Description automatically generated with medium confidence*

1. **Map of 20 highest ranking countries globally by life expectancy 2020**

*A map of the world

Description automatically generated*

*A screenshot of a cell phone

Description automatically generated*

Using a map can be a strong way to visualise geographical data such as global life expectancy, and the type of map can be selected from the ‘Show Me’ menu or from the drop-down in the Marks menu.

1. **Map of 20 highest ranking countries globally by smartphone users 2020**

On this global map, the name of the countries are labelled and the size of the circles are proportional to the number of smartphone users. The size and type of shape used can be changed in the Marks menu.

*A map of the world

Description automatically generated*

*![A black rectangle with red lines

Description automatically generated](data:image/png;base64,iVBORw0KGgoAAAANSUhEUgAAAE4AAAA2CAYAAABp26+xAAAAAXNSR0IArs4c6QAAAARnQU1BAACxjwv8YQUAAAAJcEhZcwAADsMAAA7DAcdvqGQAAADJSURBVHhe7dLBaUJBGEbRvyRLyNIyLCWdpARLsAQrimYSRBQJPu76XPiYN7M8vLnOfKx92ubt5rfb5WqbdwDX9gr3PXO83e1hy+W8zv/h7o96asF9vRitD3BvAhcDFwMXAxcDFwMXAxcDFwMXAxcDFwMXAxcDFwMXAxcDFwMXAxcDFwMXAxcDFwMXAxcDFwMXAxcDFwMXAxcDFwMXAxcDFwMXAxcDFwMXAxcDFwMXAxcDF9sCZ+8HLu4Od1i/4sm27TKz/4NTaeYHQ0dJ7q+YSMkAAAAASUVORK5CYII=)*

1. **Treemap of 20 highest ranking countries in Europe by smartphone users 2020**

A treemap is a basic visualisation type for displaying hierarchies of values and can be used to compare dimensions across one or two measures.

*A blue and white color scheme

Description automatically generated*

***Wealth of Nations Dashboard***

***A screenshot of a computer screen

Description automatically generated***

***Reflective Account***

Overall, I enjoyed creating my charts and putting them together to form a dashboard. I used two maps that were similar, but with different visuals, and tried to use different types of charts and arrangements in my dashboard. I displayed the top 20 countries globally and in Europe and labelled numeric values. I decided to choose a blue colour theme with a gradient, after researching Tableau online regarding colour blindness. Blue was one of the recommended colours, and using a single colour was suggested.

Areas for development would be that I think I spent a lot of time trying to decide on and changing the types of charts that I used. I learnt that during the Excel task it is important to read each step carefully to ensure the final charts are represented accurately.

By putting this into practice, I feel more confident using Tableau and understanding the steps in the process – from uploading the data, to creating the dashboard.

Dashboard: [Wealth of Nations | Tableau Public](https://public.tableau.com/app/profile/lozarta.veizaj/viz/WealthofNations_17118415290690/WealthofNations?publish=yes)

*Website References for ‘Policies and Procedures’*

1. [*https://gdpr.eu/what-is-gdpr/*](https://gdpr.eu/what-is-gdpr/)
2. [*https://ico.org.uk/for-organisations/uk-gdpr-guidance-and-resources/data-protection-principles/a-guide-to-the-data-protection-principles/#why\_are\_the\_principles\_important*](https://ico.org.uk/for-organisations/uk-gdpr-guidance-and-resources/data-protection-principles/a-guide-to-the-data-protection-principles/#why_are_the_principles_important)
3. [*https://www.linkedin.com/advice/1/how-do-you-protect-sensitive-data-your-analytics*](https://www.linkedin.com/advice/1/how-do-you-protect-sensitive-data-your-analytics)
4. [*https://www.imperva.com/learn/data-security/data-protection/*](https://www.imperva.com/learn/data-security/data-protection/)