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THE WEALTH OF NATIONS

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# Data Protection Policies and Procedures

When working with data, it's crucial to handle and store it ethically and securely to protect against misuse and to comply with legal standards. This approach ensures that both the company and the data analyst remain compliant with relevant laws, particularly the **UK Data Protection Act 2018** and the **General Data Protection Regulation (GDPR)**. Here’s a comprehensive guide on key policies and procedures:

**Core Principles of Data Protection**

To ensure that data is used and stored correctly, data analysts must follow the principles outlined in the **UK GDPR** (ICO, 2024). These include:

* **Lawful, Fair, and Transparent Use:** Data must be processed in a way that is lawful, fair, and transparent to the individuals concerned.
* **Purpose Limitation:** Data should only be used for the specific purposes it was collected for and not for any other reason.
* **Data Minimisation:** Only the information necessary for the intended purpose should be collected.
* **Accuracy:** Personal data must be kept accurate and up to date.
* **Storage Limitation:** Data should only be kept as long as it is necessary for the purpose it was collected for.
* **Integrity and Confidentiality:** Data must be protected and securely maintained at all times to prevent unauthorised access, breaches, or losses.
* **Accountability:** Those responsible for controlling the data must be accountable for ensuring it is processed in compliance with these principles.

**Responsibilities of Data Analysts**

As data analysts, we play a critical role in ensuring compliance with these principles. Key responsibilities include:

* **Adhering to Company Policies:** Data analysts must read, understand, and follow all company policies and procedures related to data protection.
* **Clear Role Definition:** Ensure that your role is clearly outlined in your contract, specifying what data you are responsible for and the purpose of your analysis.
* **Purpose Understanding:** Fully understand the reason for data collection and any limitations on how that data can be used.
* **Secure Data Handling:** Implement measures to securely store and regularly update the data, ensuring that access is limited to authorised personnel only.
* **Reporting Data Breaches:** Be aware of how to promptly report any data breaches or security incidents in line with company protocols.

**Legal Framework and Guidelines**

In addition to GDPR, data analysts must also be aware of other relevant regulations and codes, including:

* **The Equality Act 2010:** Ensures that data-related decisions do not result in discrimination, promoting fairness and equality in all processes.
* **Code of Practice for Data Sharing:** Guides the ethical and legal sharing of data between organisations, ensuring compliance with data protection laws.
* **Copyright and Intellectual Property Regulations:** When dealing with databases and software, it is crucial to respect copyright and intellectual property laws to avoid legal issues.
* **Code of Practice for Statistics:** Ensures the correct access, use, and sharing of public data for research and statistical purposes, promoting integrity and transparency in data handling.

**Understanding the GDPR**

The **GDPR** is the toughest privacy and security law in the world, designed to protect the data of EU citizens and residents. It applies to any organisation that processes data of EU individuals, regardless of where the organisation is located. Violations can result in severe penalties, with fines reaching up to €20 million or 4% of global revenue.

**GDPR Key Points for Data Analysts**

* **Data Protection Principles:** These include lawfulness, fairness, transparency, purpose limitation, data minimisation, accuracy, storage limitation, integrity, and confidentiality.
* **Accountability:** As data controllers or processors, analysts must demonstrate compliance with GDPR principles, which includes documenting data processing activities, securing data appropriately, and possibly appointing a Data Protection Officer.
* **Data Security:** Analysts must implement both technical and organisational measures to protect data, such as using encryption and conducting regular staff training on data protection.
* **Consent and Legal Basis:** Personal data must only be processed if there is a legal basis for doing so, such as obtaining explicit consent from the data subject.

**Conclusion**

Following these policies and procedures is essential to ensure that data is handled responsibly, legally, and ethically. By adhering to these principles, data analysts can help protect personal information, maintain trust, and avoid significant legal and financial consequences for their organisations.

* <https://www.gov.uk/data-protection>
* <https://gdpr.eu/what-is-gdpr/>

# Excel Task

Highlight Column C and Change the Data to Display in British Pound Symbol

A screenshot of a computer

Description automatically generated

Turn the GDP sheet into a table.A table with numbers and numbers

Description automatically generated

Filter the table to display only the information for 2019A screenshot of a computer

Description automatically generated

Next create a chart that will only display the following data ‘Rank, Country and GDP – per capita (PPP). The chart can be anything as long as it is suitable.

A graph of a graph

Description automatically generated

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, as shown below.

A graph of the top 20 countries/regions

Description automatically generated

Finally, to make macros you need to first create the shape and then separately create the different macros. Then you assign the macro with the action with your shape.

A diagram of a copy and save

Description automatically generated

# Tableau Task

**1. Top 20 Countries by GDP per capita**

Use a colour-blind-friendly palette when appropriate. For example, blue/orange is a common colour-blind-friendly palette.

In Tableau, I’ve worked on displaying the Top 20 Countries by GDP per capita (PPP). I started by selecting the GDPtable and focusing on the "Country" and "GDP - per capita (PPP)" fields. I filtered the data to show only the top 20 countries.

I organised the data by placing Country in the Rows section and the relevant Measure Names in the Columns section, which helped me display the GDP per capita alongside each country's rank.

For the visualisation, I created a table that lists the countries along with their GDP per capita and rank, and I titled it "Top 20 Countries GDP". I used the Marks card to adjust how the data is visually represented, incorporating colours and text for clarity.

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**A screenshot of a computer

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I changed the colour.

**A screenshot of a computer

Description automatically generated**

**2. Top 20 countries Smartphone User**

To create the map of the top 20 countries with the highest number of smartphone users in Tableau, I started by importing the relevant dataset and opening a new worksheet. I then used the Country field to create a geographic map by dragging the Longitude and Latitude fields to the appropriate shelves. I added the SUM(Smartphone Users) measure to the Size section, which adjusted the size of the circles on the map based on the number of users. To make the map more informative, I added country names and the number of users as labels. I filtered the data to display only the top 20 countries and customised the map's appearance and title. This process allowed me to create a clear visual representation of smartphone user distribution across these countries.

**A screenshot of a computer

Description automatically generated**

**A screenshot of a computer

Description automatically generated**

- I used larger bubbles that more clearly represent the number of smartphone users in each country, making it easy to identify the top countries like China, India, and the United States.

I changed the map type to make it more appealing, and put the ranking numbers

A screenshot of a computer

Description automatically generated

3. **Top 20 countries life expectancy**

I also tried this type of graph and put each country in a different colour.

A screenshot of a computer

Description automatically generated

# Reflective Account

In my experience, both Excel and Tableau have been crucial tools for data analysis, each with its own strengths and challenges.

With Excel, I’ve found its flexibility for calculations and data management to be very useful, especially when I need to perform detailed analyses or create customised spreadsheets. The familiar interface and ability to generate basic charts also make it an accessible and user-friendly tool for everyday tasks. However, as data sizes and complexities increase, Excel can become slow and prone to errors. Manual data entry and formula review can be tedious, and real-time collaboration can be tricky due to version management and editing conflicts.

On the other hand, Tableau has changed the way I visualise and explore data. The ability to create interactive dashboards and dynamic visualisations has allowed me to identify patterns and trends more intuitively and effectively. Tableau handles large volumes of data with ease and makes it simple to integrate multiple data sources. Collaboration is much smoother thanks to the capability to share dashboards online. Additionally, while Tableau excels at visualisation, it may not be as suitable for very detailed calculations.

In summary, Excel and Tableau serve complementary roles. Excel is great for detailed analyses and specific calculations, while Tableau provides a more dynamic and visual perspective. Using both tools according to the project’s needs has allowed me to tackle data analysis challenges more comprehensively.

Link

https://public.tableau.com/app/profile/yaiza.garcia/vizzes?classId=f982c298-3664-454e-bcd0-b802f1b7b7ce&assignmentId=33ac1a1c-023d-4594-bc3d-45ad0b77b4e9&submissionId=25a6091c-798f-1c97-de10-50f5d9b513d1