

**Data Technician**

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| Course Date: 16/12/24 |
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# Day 1: Task 1

Please complete the below boxes on commons laws and regulations that must be followed when working with customers data, use the below bulleted list to support your answers.

* What is it
* Why is it important
* Provide a real-world example of how you can follow it
* How does it impact working with data
* What could happen if you breached it

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| Data Protection Act | * What is it – It is a law that governs how personal data is collected, sorted, and used by organizations, businesses, and the government. * Why is it important – It is important because it safeguards individual’s personal information, ensuring it is used responsibly and securely. * Provide a real-world example of how you can follow it – In an e-commerce company that collects customer data for processing orders, marketing and customer service. It must inform customers through a privacy policy and as well as obtain explicit consent from the customer to store and process the data. * How does it impact working with data – The company must ensure collecting minimum required data for clearly identified purpose and analysis * What could happen if you breached it – Fines, reputation damage and legal action. |
| GDPR | * What is it - General data protection regulation is a European law also adopted in the UK as UK GDPR * Why is it important - It protects personal data, gives individuals control over information and ensure business handles them responsibly. * Provide a real-world example of how you can follow it -   An online clothing store collecting information about customer, must get explicit consent from customers and provide them with the right to access and delete data, and inform customers if their data is shared to payment processing systems like PayPal or any other service   * How does it impact working with data - It ensures that data is collected legally with strong security measures and prevents unauthorized data sharing * What could happen if you breached it - Legal Action, Fines, Reputation Damage |
| Freedom of Information Act | * What is it - The Freedom Information Act (FOIA), is a UK law that gives the public the right to access information held by public authorities. * Why is it important - It promotes transparency, accountability & public trust * Provide a real - World example of how you can follow it   A citizen uses FOIA to check local council spending on road repairs   * How does it impact working with data - It ensures transparency of data * What could happen if you breached it - Legal, Financial and Reputational damage |
| Computer Misuse Act | * What is it - The computer misuse Act is a UK law that protects computer systems and data from unauthorised access, hacking and cybercrimes. It makes it illegal to access or modify computer systems without permission. * Why is it important - It protect Computer Systems, Networks and data from Cybercrime. * Provide a real - world example of how you can follow it - A company scans all incoming emails for malware to prevent cyberattacks. * How does it impact working with data - Access to data must be authorized, use secure login credentials. not misuse data for personal gain. * What could happen if you breached it - Legal, Financial and Personal Consequences including jail term for hackers / cyberattacks. |

# Day 2: Task 1

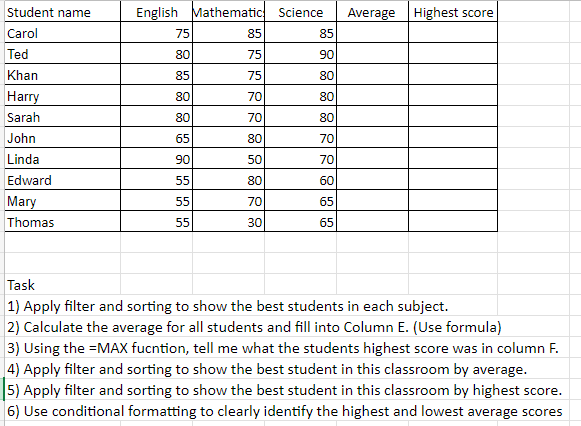
Please research and complete the following tasks within the retail-sales\_dataset.xlsx document, paste a print screen into the provided boxes below:

1. In the sheet ‘retail\_sales\_dataset’ add all available data between columns A –J into a ‘table’
2. Using the ‘filter’ function, filter ‘Age’ to ‘largest to smallest’
3. Using the ‘SUM’ function, show me the commission total in cell ‘L10’
4. Using the ‘AVERAGE’ function, show me the average commission in cell ‘L11’

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| Print screen 1 |  |
| Print screen 2 |  |
| Print screen 3 |  |
| Print screen 4 |  |

# Day 2: Task 2

Please research and complete the following tasks within the retail-sales\_dataset.xlsx document, paste print screens into the provided box below:



|  |  |
| --- | --- |
| 1) Apply filter and sorting to show the best students in each subject. |  |
| 2) Calculate the average for all students and fill into Column E. (Use formula) |  |
| 3) Using the =MAX function, tell me what the students highest score was in column F. |  |
| 4)Apply filter and sorting to show the best student in this classroom by average. |  |
| 5) Apply filter and sorting to show the best student in this classroom by highest score. |  |
| 6) Use conditional formatting to clearly identify the highest and lowest average scores |  |

# Day 2: Task 3

Using the skills developed today, have some fun with the data set you have imported. Paste your work below and enjoy!

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| Print screen 1 |  |

# Day 3: Task 1

Please download the dataset ‘Day\_3\_Task\_1\_Bike\_Sales\_Pivot\_Lab.xlsx’ from [here](https://justit831-my.sharepoint.com/:x:/g/personal/danpe_justit_co_uk/Eb73L6LixCJHtafDJ4AOh-ABR9CVF0n9sdEgB4foSh261g?e=jh493A).

The lab instructions can be found [here](https://justit831-my.sharepoint.com/:b:/g/personal/danpe_justit_co_uk/EVySAtWQiEVDmrtCufrqTgwBuLVxX6mEKYqEAe0Mgl6b9Q?e=i05yOa). Do not worry if you do not complete the lab, just working with data and playing with the pivot table will be good experience.

Please paste your final pivot table below and complete the reflection questions:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sum of Order\_Quantity** | **Column Labels** |  |  |  |  |  |  |  |  |
| **Row Labels** | **Australia** | **Canada** | **France** | **Germany** | **United States** | **United Kingdom** | **United States** | **United States** | **Grand Total** |
| **Youth (<25)** | **11** | **0** | **10** | **0** | **0** | **6** | **0** | **0** | **27** |
| **Young Adults (25-34)** | **20** | **11** | **10** | **0** | **0** | **4** | **16** | **0** | **61** |
| **Adults (35-64)** | **32** | **0** | **0** | **13** | **2** | **4** | **47** | **1** | **99** |
| **Grand Total** | **63** | **11** | **20** | **13** | **2** | **14** | **63** | **1** | **187** |

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| Print screen 1 |  |
| In which markets does Germany have customers? | Germany have more customers in the Adults ( 35 -64) group |
| What country has sales in all markets? | Australia has sales in all markets |
| What are the most profitable markets by country, age group, and gender? | |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | **Sum of Revenue** | **Column Labels** |  |  |  |  |  |  | | **Row Labels** | **Australia** | **Canada** | **France** | **Germany** | **United Kingdom** | **United States** | **Grand Total** | | **Adults (35-64)** | **$63,668.00** |  |  | **$30,010.00** | **$9,230.00** | **$103,348.00** | **$206,256.00** | | **Young Adults (25-34)** | **$41,773.00** | **$20,080.00** | **$23,050.00** |  | **$4,602.00** | **$30,141.00** | **$119,646.00** | | **Youth (<25)** | **$6,065.00** |  | **$23,125.00** |  | **$6,140.00** |  | **$35,330.00** | | **Grand Total** | **$111,506.00** | **$20,080.00** | **$46,175.00** | **$30,010.00** | **$19,972.00** | **$133,489.00** | **$361,232.00** |   United States is the most profitable market across Age groups Adults (35-64) and Young Adults (25-34) and Gender |
| Any other findings? | Australia is the next profitable market after united states for bike sales across all Age groups  As per the dataset, Canada doesn’t have any market for Age Group Adults ( 35-64) and Youth (<25)  Germany doesn’t have market for bike sales for the Age Group – Young Adults (25-34) and Youth (<25)  The finding shows that United Kingdom has the lowest revenue across all Age groups |

# Day 3: Task 2

The dataset below tracks the sales performance of different products in various counties in England. Please paste the dataset into a blank Excel workbook. Your task is to:

* **Create a Pivot Table** to summarise the data by county and product.
* **Use the SWITCH function** to categorise products based on their sales volume.

#### **Dataset:**

|  |  |  |
| --- | --- | --- |
| **County** | **Product** | **Sales Volume** |
| Yorkshire | Laptops | 500 |
| Yorkshire | Smartphones | 200 |
| Cornwall | Laptops | 700 |
| Cornwall | Printers | 400 |
| Lancashire | Smartphones | 150 |
| Lancashire | Laptops | 600 |
| Essex | Printers | 800 |
| Essex | Smartphones | 300 |
| Durham | Laptops | 250 |
| Durham | Printers | 300 |
| Greater Manchester | Smartphones | 600 |
| Greater Manchester | Laptops | 400 |

#### **Dataset****Step 1: Create a Pivot Table**

* Select the dataset (columns A to C).
* Insert a Pivot Table to summarise the data by **County** in the rows and **Products** in the columns. Use **Sales Volume** as the value to be summarised.

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| **Sum of Sales Volume** | **Column Labels** |  |  |  |
| **Row Labels** | **Laptops** | **Printers** | **Smartphones** | **Grand Total** |
| Cornwall | £700.00 | £400.00 |  | £1,100.00 |
| Durham | £250.00 | £300.00 |  | £550.00 |
| Essex |  | £800.00 | £300.00 | £1,100.00 |
| Greater Manchester | £400.00 |  | £600.00 | £1,000.00 |
| Lancashire | £600.00 |  | £150.00 | £750.00 |
| Yorkshire | £500.00 |  | £200.00 | £700.00 |
| **Grand Total** | **£2,450.00** | **£1,500.00** | **£1,250.00** | **£5,200.00** |

#### **Step 2: Use the SWITCH Function**

In a new column next to your data, use the SWITCH function to categorise products based on **Sales Volume** as follows:

* + For sales greater than 600: **"High"**
  + For sales between 300 and 600: **"Medium"**
  + For sales less than 300: **"Low"**

**SWITCH Function Example**:

=SWITCH(TRUE, C2 > 600, "High", C2 >= 300, "Medium", "Low")

* Apply this formula to each row, and check if the products are categorised correctly.

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| **County** | **Product** | **Sales Volume** | **Switch** |
| Yorkshire | Laptops | £500.00 | Medium |
| Yorkshire | Smartphones | £200.00 | Low |
| Cornwall | Laptops | £700.00 | High |
| Cornwall | Printers | £400.00 | Medium |
| Lancashire | Smartphones | £150.00 | Low |
| Lancashire | Laptops | £600.00 | Medium |
| Essex | Printers | £800.00 | High |
| Essex | Smartphones | £300.00 | Medium |
| Durham | Laptops | £250.00 | Low |
| Durham | Printers | £300.00 | Medium |
| Greater Manchester | Smartphones | £600.00 | Medium |
| Greater Manchester | Laptops | £400.00 | Medium |

#### **Submission:**

* A completed Pivot Table summarising sales by county and product.
* A new column in the dataset categorising products by sales volume using the SWITCH function.
  + Please paste your completed work below

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| Print screen 1 | |  |  |  | | --- | --- | --- | | **Row Labels** | **Sum of Sales Volume** | **Switch** | | **Laptops** | **£2,450.00** |  | | Cornwall | £700.00 | High | | Durham | £250.00 | Low | | Greater Manchester | £400.00 | Medium | | Lancashire | £600.00 | Medium | | Yorkshire | £500.00 | Medium | | **Printers** | **£1,500.00** |  | | Cornwall | £400.00 | Medium | | Durham | £300.00 | Medium | | Essex | £800.00 | High | | **Smartphones** | **£1,250.00** |  | | Essex | £300.00 | Medium | | Greater Manchester | £600.00 | Medium | | Lancashire | £150.00 | Low | | Yorkshire | £200.00 | Low | | **Grand Total** | **£5,200.00** |  | |

# Day 3: Task 3

Please download the dataset ‘Day\_3\_Task\_3\_Bike\_Sales\_Visualisations\_Lab.xlsx’ from [here](https://justit831-my.sharepoint.com/:x:/g/personal/danpe_justit_co_uk/ESeJLtyZhYxIpZXluVywvvkBxgx2EtpPUzmxLCzQBGTKNQ?e=naSu4B).

The lab instructions can be found [here.](https://justit831-my.sharepoint.com/:b:/g/personal/danpe_justit_co_uk/Ec1IWsNPl_ZMuaSbNcaLyVcByy3JcZaQgoG1FeFwO9neRQ?e=6lsJG1) Do not worry if you do not complete the lab, just working with data and playing with the charts will be good experience.

Please paste your results below:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| Print screen 1 | |  |  |  | | --- | --- | --- | | **Year** | **12-month Profit** | **12-month Revenue** | | 2017 | £4,065,680.00 | £10,289,670.00 | | 2018 | £7,747,551.00 | £17,028,380.00 | | 2019 | £7,417,353.00 | £15,705,990.00 | | 2020 | £9,909,624.00 | £22,405,052.00 | | 2021 | £12,986,202.00 | £29,747,226.00 | | **Grand Total** | **£42,126,410.00** | **£95,176,318.00** |  |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Sum of Revenue** | **Product\_Category** |  |  |  | | **Country** | **Accessories** | **Bikes** | **Clothing** | **Grand Total** | | Australia | 3284787 | 20231486 | 1911313 | 25427586 | | Canada | 2305298 | 4317696 | 1391542 | 8014536 | | France | 1627689 | 7378349 | 841175 | 9847213 | | Germany | 1724549 | 7544500 | 713154 | 9982203 | | United Kingdom | 1951000 | 8184668 | 954338 | 11090006 | | United States | 5819323 | 21551497 | 3443954 | 30814774 | | **Grand Total** | **16712646** | **69208196** | **9255476** | **95176318** |  |  |  | | --- | --- | | **Age\_Group** | **Sum of Revenue** | | Adults (35-64) | 47323876 | | Seniors (64+) | 339700 | | Young Adults (25-34) | 34310905 | | Youth (<25) | 13201837 | | **Grand Total** | **95176318** | |

# Day 4: Task 1

You have been asked to deliver your analysis findings to the board of directors, with your analysis you have identified that customers are leaving your company at the 12-month point, this is typically when they receive their renewal price.

Conduct research and complete the below questions:

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| How would you prepare for the delivery? | I will rehearse my delivery to ensure clarity and confidence. Will try to keep my explanation clear and concise while ensuring that I am engaging with the audience. |
| What tools would you use for the delivery? | As a Data analyst I will use these tools - Excel/SQL/Python or R as a processing tool. And Microsoft power point presentation for delivering to the Audience |
| What is prospecting and why would you complete this before your delivery? | Prospecting of data analysis refers to the initial phase of understanding and gathering the relevant data, information, or context needed to deliver a meaningful analysis or presentation. It's about identifying the most important areas to focus on, understanding the key questions or problems that need to be addressed, and ensuring that the data I am working with aligns with those needs. |
| Tell me best practices for public speaking and providing updates to senior leaders | To prove updates to senior leaders with clear communication, confidence, and a focus on actionable business insights.  I will structure my presentation effectively,in a way that highlights the significance of my findings which aligns to the business objectives. With practice, these skills will help me connect with senior leaders and ensure that my updates have the impact they deserve. |
| What will you show the board in your delivery? | When delivering an update to the board of directors / senior leadership, the focus will be the current problem, data available , recommendations based on the data , deliver actionable insights, that directly relate to business performance, strategy, and decision making. |
| How will you articulate the changes that are needed? | As a data analyst, articulating the changes that are needed requires a clear, structured, and data-backed approach. Will need to effectively communicate both the problems identified through my analysis and the action required to address those issues. |
| Provide a list of online resources and videos that will support your preparation for public speaking | <https://www.youtube.com/watch?v=i5mYphUoOCs&t=1s>  <https://www.youtube.com/watch?v=Ns_z4wEtdRM&t=3s> |
| Evaluate tools that provide visualisation.  Tell me what they are.  Tell me what you would choose when delivering your presentation and why | Here’s an evaluation of some of the most commonly used data Visualisation Tools.  Power BI/Tableau and with the very latest one Microsoft Data Formulator  If the Goal is to present to a non-technical senior leadership and provide clear, interactive insights quickly, Tableau/Power BI would be my top choices. Both offer high interactivity, scalability, and impressive visual appeal, which would keep the audience engaged and an appropriate solution for creating clear and understandable reports and dashboards. |

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| **Course Notes** |

It is recommended to take notes from the course, use the space below to do so, or use the revision guide shared with the class:

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| **Additional Information** |

We have included a range of additional links to further resources and information that you may find useful, these can be found within your revision guide.

**END OF WORKBOOK**

**Please check through your work thoroughly before submitting and update the table of contents if required.**

**Please send your completed work booklet to your trainer.**