**Data Technician**

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| Course Date: Monday 12th May – Thursday 15th May 2025 |
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**Table of contents**

[Day 1: Task 1 2](#_heading=h.rn8b4rl8qxiy)

[Day 2: Task 1 2](#_heading=h.8o0d3x5ibq8j)

[Day 2: Task 2 3](#_heading=h.ghb8bu6xelp4)

[Day 2: Task 3 4](#_heading=h.l792sxrfbok)

[Day 3: Task 1 4](#_heading=h.nmregmb98u82)

[Day 3: Task 2 5](#_heading=h.mmy8481kfx8s)

[Dataset: 5](#_heading=h.684igdqtxlpv)

[Step 1: Create a Pivot Table 5](#_heading=h.ktv9r7oqf89c)

[Step 2: Use the SWITCH Function 5](#_heading=h.pynzalnqby7h)

[Submission: 6](#_heading=h.ruv57tsgy2la)

[Day 3: Task 3 6](#_heading=h.zdciey7vi1ec)

[Day 4: Task 1 7](#_heading=h.7bmubqeemjw3)

[Course Notes 9](#_heading=h.e2d2d46231jf)

[Additional Information 10](#_heading=h.fcxrj9qa4xr4)

# Day 1: Task 1

Please research and complete the below boxes on common 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?**   * A law designed to project personal data stored on computers or in an organised paper filing system * Gives individuals control over how their personal data is used by organisations, businesses or the government   **Why is it important?**   * Protects privacy * Gives control to the individual * Prevents misuse and harm * Ensures organisations are held accountable * Fosters a relationship of trust   **Real world example of how it can be followed**   * Schools storing personal information about its students * Only certain faculty members who need to know certain information can access sensitive information   **How does it impact working with data?**   * **Compliance:** Organizations must follow laws governing data collection and usage, requiring clear privacy policies and consent. * **Resources:** Implementing data privacy measures involves cost for legal compliance and technologies * **Trust:** Proper data management builds consumer trust and loyalty.   **What if it is breached?**   * **Legal Penalties:** Organizations may face significant fines and legal actions. * **Reputation Damage:** Breaches can harm customer trust and brand reputation. * **Operational Disruptions:** Managing breaches diverts resources and can impact business operations. |
| GDPR | **What is it?**  GDPR= Law from EU how personal data of individuals is collected, stored and processed and shared.  **Why is it important?**   * Protects individual privacy * Fosters transparency and trust * Accountability of companies * Promotion ethical data use   **Real world example of how it can be followed**   * A company that wants to send promotional emails to consumers within the EU * Emails including unsubscribe links so customers can withdraw consent   **How does it impact working with data?**   * Organisations must have a legal reason to process personal data such as consent or public task * Limits data collection (limited to collecting data that is necessary for specific purposes) * Emphasis on data accuracy and quality * Requires transparency and accountability * Gives people data rights * Must give data breach notifications * Compulsory security measures must be put in place to protect personal data within organisations   **Consequences of GDPR Breach:**   * Fines: Up to €20 million or 4% of global annual turnover (whichever is higher), for serious violations. * Reputational Damage: Loss of trust from users, customers, and partners. * Legal Action: Data subjects may sue for damages if their rights are violated. * Operational Disruption: Investigations by Data Protection Authorities (DPAs) may require audits, data access restrictions, or even temporary bans on processing data. * Mandatory Notifications: You must report serious breaches within 72 hours to a supervisory authority and sometimes to affected individuals. |
| Freedom of Information Act | Freedom of Information Act 2000 (FOIA)  **What is it?**  - UK legislation that grants the public the right to access information held by public authorities,  - Examples: government departments, local councils, the NHS, schools, and police forces.  - Aims to promote transparency and accountability in public administration  **Why is it important?**   * Promotes transparency and trust * Upholds the authority of the public * Accountability of governments * Improves public services   **Real world example of how it can be followed?**   * Journalist requesting data from a local education authority on school exclusions over the last 5 years with information related to ethnicity, reason for exclusion and year * If information isn’t exempt, it is sent to journalist in a clear format * Any refusal must be given with reason   **How does it impact working with data?**  - Influences how public bodies manage and handle data:  - Data Management: Authorities must maintain organized records to comply with potential information requests.  - Transparency: Encourages the sharing of data, fostering trust and accountability.  - Exemptions: Some information may be withheld if its release could harm national security, law enforcement, or personal privacy .  - Data Security: Authorities must protect data from loss or alteration and ensure personal data is handled according to privacy laws.  - Proactive Disclosure: Many public bodies must release certain types of information regularly, reducing the need for individuals to ask for it.  **What happens if it is breached?**  - Enforcement Actions: The Information Commissioner’s Office (ICO) can issue decision notices requiring authorities to comply with the Act .  - Investigations: The ICO can investigate instances of criminal destruction, alteration, or concealment of information.  - Appeals: Individuals can appeal decisions to the Information Rights Tribunal .  - Criminal Penalties: In severe cases, such as intentionally destroying or concealing information to avoid disclosure, individuals can face criminal charges, including fines or imprisonment.  - Reputation Damage: Failing to comply with FOIA can harm the reputation of the public authority, as it may be seen as untrustworthy or secretive. |
| Computer Misuse Act | **What is it?**  The **Computer Misuse Act 1990** is a law designed to protect computer systems and data. It criminalizes activities such as:   * **Unauthorized access** to computer systems (hacking) * **Unauthorized modification** of data (e.g., introducing viruses) * **Using computers to commit further offenses** (e.g., fraud or identity theft) * **Unauthorized acts that impair the operation of a computer** (e.g., denial-of-service attacks)   **Why is it important?**   * Facilitates punishment of cybercriminals * Prevents/minimises damage to systems * Sets legal standard for digital/online behaviour * Protection against unauthorised access   **Real life example of how it would be followed**   * A teenager hacking into a school database to find upcoming GCSE papers with the intent to leak/sell them * Signals unauthorised access and intent to commit further illegal activities * May result in fines, prison/young offenders etc   **How does it impact working with data?**  When working with data, especially in professional or academic settings, the Act means:   * You must **only access systems and data you are authorized to use** * You should **not share login credentials** or use someone else’s * You must **avoid altering or deleting data** unless you have permission * You need to ensure **data is secure**, and not vulnerable to unauthorized access   Organizations must also ensure staff are trained and systems are protected from misuse.  **What if it is breached?**  Breaching the Computer Misuse Act is a **criminal offense**. Consequences can include:   * **Fines** of thousands of pounds * **Prison sentences** (up to life imprisonment for serious offenses) * **Loss of job or career prospects** * **Damage to your reputation** and potential civil lawsuits |

# 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 – H** 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 ‘**P10’**
4. Using the ‘AVERAGE’ function, show me the average commission in cell **‘P11’**

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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:



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| Print screen 1 | 1. Linda is the best at English and Mathematics. Ted is the best at Science.      1. The averages for students calculated; filled in Column E.   3/4/5) Students highest scores displayed in column F. Ted is the best student in terms of average and highest score.      6) Used conditional formatting to identify the highest and lowest average scores. Green are the highest, amber/yellow are the middle and the red/deep orange are the lower 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:

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| Print screen 1 |  |
| In which markets does Germany have customers? | Germany has customers in the following markets (I wasn’t sure how to interpret the question to be honest):   * Mountain-200 Black, 38 * Mountain-200 Black, 46 * Mountain-200 Silver, 38 * Mountain-200 Silver, 42 * Mountain-200 Silver, 46 |
| What country has sales in all markets? | None of them have sales in all markets but that could be me totally misinterpreting the question. |
| What are the most profitable markets by country, age group, and gender? | Country:  Australia = Mountain-100 Black, 38  Canada = Mountain-200 Silver, 38  France = Mountain-200 Black, 38  Germany = Mountain-200 Silver, 46  United States = Mountain-200 Black, 46  United Kingdom = Mountain-200 Black, 38  Age Group:  Youth = Mountain-200 Silver, 46  Young Adults = Mountain-200 Silver, 38  Adults = Mountain-200 Black, 46  Gender:  Males = Mountain-200 Black, 38  Females = Mountain-200 Black, 46 |
| Other Insights? | When it comes to the mountain-100 Black, 38, Mountain-100 Black 48, Mountain-100 Silver 44, Mountain-500 Black 44, Mountain-500 Black 42, Mountain-500 Silver,40 and Mountain-500 Silver, 42:   * There was no profit gained within the male category for these particular markets * This points to males being less likely to purchase these particular products * Marketing efforts could be used to find out why and change their marketing strategy based on that feedback |

# 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:**

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| **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 |

#### **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.

#### **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.

#### **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 | * 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. |

# 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 | * Part 1: Creating a Line Chart      * Part 2: Creating a Column Chart      * Part 3: Creating a Pie Chart |

# Day 4: Task 1

You have been asked to deliver your analysis findings to the board of directors, within 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 would go through a planning stage first. This would include:   * To clarify and highlight what the purpose of the presentation is. Maybe in that, enquire about what the board of directors are interested in finding out. In this case, to showcase a customer retention issue at the 12 month mark and what will be presented would align with what the directors are expecting (e.g. just facts or also recommendations?) * Know the audience well and plan the presentation with that in mind. In this case, the use of non-technical language may be advisable unless they specifically ask for technical deep dives and insights * Choosing how to structure the presentation. So if I am using a PowerPoint presentation, I would order it similar to this: Introduce the problem + why it is important, present the key insights, implications of the problem, recommendations and actionable next steps   Preparing for delivery on the public speaking and communication side:   * Ensure that I know my material inside and out which will help me in my answering of questions * Practicing out loud, maybe on a practice audience who are similar to the target demographic or can role play as board of directors * Preparing presentation slides with a balance of information and visuals – keeping it minimalistic and relevant * Prepare evidence as potential answers to pushback questions |
| What tools would you use for the delivery? | * Microsoft PowerPoint presentation * Simple speaker notes that will aid me what to talk about and when * Excel produced graphs * A clicker for smooth navigation (would depend if the presentation is in person or remote) |
| What is prospecting and why would you complete this before your delivery? | Prospecting is the process of identifying and reaching out to potential customers/clients who could take an interest in a product, service or something you are offering. It is key when delivering a presentation that is aimed at influencing decision-makers such as a board of directors.  Why I would complete this before my delivery?   * To enable you to tailor my delivery in a way that matters to the directors, having identified the type of people I will be speaking to * I can prioritise what you focus on so that it aligns to the directors * Building credibility beforehand * Can anticipate objections or questions * Can build focused as well as relevant recommendations/actionable insights |
| Tell me best practices for public speaking and providing updates to senior leaders | Some best practices for public speaking:   * Knowing your audience * Being clear and concise * Using visuals intelligently * Engaging with eye contact and body language * Prepare for questions   For providing updates to senior leaders:   * Lead with headlines and key insights * Keep a focus on outcome and use data to back up points * Keep it brief and structured * Stay professional and neutral * Leave time for discussion |
| What will you show the board in your delivery? | * Summary slide – key findings, why it matters and recommended action * Line/bar chart showing retention rates over time etc * Impact on the business – like revenue loss, potential gain if retention improves * Using the voice of the customer – outlining quotes or surveys that highlight dissatisfaction and reasons to leave * Competitor insight * Proposed solutions – like improved communication and show the potential impact * Next steps (what is needed going forward)– further research, budget etc |
| How will you articulate the changes that are needed? | * To state and reiterate the problem clearly * Highlight and explain the business impact * Note the root causes * To talk about necessary changes that are relevant * Overall, link back to the strategic goals of the organisation |
| Provide a list of online resources and videos that will support your preparation for public speaking | <https://www.youtube.com/watch?v=rTRfNQFY4ao>  <https://www.youtube.com/watch?v=i5mYphUoOCs>  <https://www.youtube.com/watch?v=bsxJVgb6Kls>  <https://medium.com/learning-data/5-public-speaking-tips-for-data-analysts-how-to-calm-your-nerves-and-crush-that-presentation-3cf69c0e062e> |
| Evaluate tools that provide visualisation.  Tell me what they are.  Tell me what you would choose when delivering your presentation and why | Microsoft Excel   * Pro = Ideal for quick charts such as bar, line and pie charts * Con = Limited in design customisation   Power BI   * Pro = Real time updates and great integration of excel, databases, SharePoint etc * Con = Power BI pro required to access full sharing functions   I would use Microsoft Excel as a visualisation tool because I can prepare visuals quickly and excel tends to be a format that most people are familiar with.   * I could use line/bar charts to show retention over 12 months * Pivot tables/charts to easily breakdown leaving (churn) rates by different categories such as customer type * I could display these within a PowerPoint presentation * Maybe a summary predictive/what if analysis chart or table to showcase impact based on recommendations/actionable insights being carried out |

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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.**