

**Data Technician**

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

Please complete the boxes below regarding common laws and regulations that must be followed when working with customer data. Use the 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 | It’s a UK law established in 2018 on how the data will be stored, processed and collected.  Data must be stored securely to prevent unauthorised access to sensitive data.  Real world example: Locking away any physical files, ensuring devices are encrypted if they have data stored on them.  We must inform individuals about what data we’re collecting, why and how it will be used and stored. We also require a legal basis for the collection of data, including consent, contract and legal obligations.  Organisations could be fined by the Information Commissioner’s Office (ICO), which could cause reputation damage and loss of customers to the organisation. |
| GDPR | The General Data Protection Regulation (GDPR) is an EU law that sets rules for how organisations handle the personal data of individuals within the EU.  It aims to give individuals more control over their data, such as the right to access their data, the right to have it erased, the right to know how it's used and decide whether it can be processed or not.  Organisations must keep the user data safe and secure as they have legal obligations. They also need to notify any breach immediately. Failure to do so can cause hefty fines and imprisonment. |
| Freedom of Information Act | The Freedom of Information Act 2000 grants the public the right to access information held by public authorities in the UK. It requires these authorities to disclose information when requested, unless specific exemptions apply. The act aims to promote transparency and accountability in public bodies.  Individuals can make requests for information in writing. Public authorities are required to publish certain information by law.  The Information Commissioner’s Office (ICO) oversees the act and handles complaints about its implementation. The ICO has the power to issue monetary penalties for failing to comply with the Act. Additionally, failure to comply with an enforcement notice or information notice can lead to contempt of court, potentially resulting in unlimited fines or imprisonment. |
| Computer Misuse Act | The Computer Misuse Act 2000 encompasses a range of offences, such as attempting to gain unauthorised access to a computer for purposes like fraud, blackmail, or spreading viruses. For instance, your friend leaves his tablet on the sofa. Without his permission, you access his Amazon account and order a new console. Unauthorised access to commit or facilitate further offences is also covered. The penalties for breaching the Computer Misuse Act can include fines, imprisonment, or both. |

# 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 ‘sort’ function, sort ‘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:



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| Print screen 1 | In English, Thomas is the best student.    In Math, Khan is the best student.    In Science, Mary is the best student.    Two students, Mary and Khan, achieved the Highest Score of 245.    6) |

# 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? |  |
| What country has sales in all markets? | Australia and England |
| What are the most profitable markets by country, age group, and gender? | Australia has the most profitable markets by age group, gender wise. |
| Any other findings? |  |

# 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 |

#### **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 |  |

# 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 |  |

# 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? | First, I need to get my head around this. The board is concerned with the big picture: strategic impact, financial considerations, and risk management. Therefore, I need to ensure that I focus on the "so what" of this customer churn, including the financial consequences and what we can do about it. I'll dive deep into the data. I need to figure out:  Exactly how many customers are leaving and how much money we're losing (and could lose).  If certain types of customers are more likely to leave.  Are there other reasons besides the renewal price? Maybe competitors' prices, or customers not feeling like they're getting enough value, or even issues with our features or customer service leading up to renewal.  What solutions could work? I'll brainstorm and analyse ideas like different pricing plans, loyalty programs, or reaching out to customers before renewal.  Then, I'll build a clear story. It needs to be simple and impactful:  **The Problem:** Clearly state the churn issue and its financial hit.  My Analysis: Briefly explain why it's happening (renewal pricing) and any other factors.  My Solutions: Present well-thought-out, actionable ideas.  Expected Results: Measure the benefits of trying my solutions (e.g., reduced churn, increased customer value, retained revenue).  **What I Need:** Explain to the board what I'm requesting (such as budget or approval for a test programme).  I'll also try to anticipate any questions the board might have and prepare data-backed answers. Lastly, I'll rehearse extensively to ensure I'm confident and clear, and I'll seek feedback from classmates or mentors. I'll also develop some clear visuals to aid their understanding. |
| What tools would you use for the delivery? | For the actual presentation, I'll use Microsoft PowerPoint, Canva or Google Slides. Everyone's familiar with these, and they're great for making structured slides with text, images, charts, and graphs.  For creating the charts and dashboards that will go into my presentation, I'll use Tableau or Microsoft Power BI. These are super helpful for really digging into the data and making professional-looking visuals.  If the meeting is virtual, I'll use Zoom, Microsoft Teams, or Google Meet to make sure everyone can see and hear me. If it's in person, I might have a whiteboard or flip chart ready for any spontaneous discussions. I might also prepare some concise handouts if needed. |
| What is prospecting and why would you complete this before your delivery? | Usually, "prospecting" is about finding new customers. But for this board meeting, it means understanding the board members themselves. I need to do my homework on each person:   1. What are their backgrounds and areas of expertise? 2. What are their priorities or concerns for the company? 3. How might they react to my findings and suggestions? Some might care most about money, others about long-term strategy. 4. Who might support my ideas, and who might push back?   Doing this "prospecting" beforehand is super important because it lets me:   * Tailor my message to what each board member cares about. * Prepare for tough questions before they're even asked. * Build allies who can help champion my proposals. * Show them I'm not just prepared with the data, but that I also understand the board's dynamics. |
| Tell me best practices for public speaking and providing updates to senior leaders | I know I need to be really good at this part. Here are my key takeaways for speaking to senior leaders:   1. **Know My Audience:** I'll tailor everything to what they need to know. 2. **Be Concise:** They're busy. I need to get to the main point quickly, almost like an inverted pyramid: most important info first, then details. 3. **Start with "So What?":** Immediately explain the problem, its impact, and why it matters to the company. 4. **Focus on Solutions:** They want to know how I'm going to fix it, not just the problem itself. 5. **Use Data (Wisely):** Back up my claims with solid numbers, but present them clearly and visually, not just dump raw data. 6. **Tell a Story:** Structure my presentation with a clear beginning, middle, and end. 7. **Practice, Practice, Practice:** Rehearse out loud to make sure my timing and flow are perfect. 8. **Be Professional**: Look and act confident, make eye contact, and speak clearly. 9. **Prepare for Questions:** Think about what tough questions they might ask and have answers ready. If I don't know, I'll say so and offer to follow up. 10. **Listen Actively:** Pay attention to their questions and comments. 11. **Clear Call to Action:** What exactly do I need them to decide or approve? 12. Follow Up: Send any requested info promptly. |
| What will you show the board in your delivery? | My presentation will include:   1. **An Executive Summary:** Just one slide or a brief statement with the main problem (churn at 12 months due to renewal pricing) and my overall recommendation. 2. **Churn Rate Trends:** A graph showing how the churn rate has looked over time, specifically highlighting that spike at the 12-month mark. 3. **Financial Impact:** How much money we've lost and could lose. I'll also explain how it affects **Customer Lifetime Value (CLTV)** and how much more expensive it is to get new customers than to keep old ones. 4. **Customer Segments:** If some customer groups are leaving more than others, I'll show that. 5. **Root Cause (Renewal Pricing):** I'll show how our renewal price compares to the initial price and maybe a quick look at competitors' prices. Any customer feedback on price will go here too. 6. **Proposed Solutions:** I'll present a few options:    * **Dynamic/Tiered Pricing:** How we could adjust prices based on loyalty or usage.    * **Value Reinforcement:** How we can remind customers of our value before renewal.    * **Loyalty Programs:** Discounts or benefits for loyal customers.    * **Proactive Customer Success:** How we can reach out to customers before renewal. 7. **Projected Impact:** How much I expect churn to drop and how much revenue we'll keep if we implement these solutions. 8. **Timeline & Resources:** A high-level plan for what's needed (budget, people, tech). 9. **KPIs for Success:** How we'll measure if my changes are working. 10. **Call to Action:** What decisions or approvals I need. |
| How will you articulate the changes that are needed? | I'll explain it clearly, using data, and focusing on solutions:   * Board, my analysis clearly shows a significant jump in customer churn at the 12-month mark, right when they get their renewal pricing. This isn't just a number; it's a growing loss of revenue, currently costing us such amount annually, and it'll get worse if we don't act. * This churn directly hits our profits and growth. Every customer we lose means we have to spend more to get a new one, increasing our Customer Acquisition Cost and hurting our Customer Lifetime Value. We're essentially trying to fill a leaky bucket. * My deep dive shows that customers are leaving because they don't see enough value at the renewal price point. They're comparing our renewal price to what they're getting, and often, they're deciding to leave." * To fix this, we need a two-pronged approach focusing on pricing and value communication. I propose the following changes:   **First,** let's look into a tiered or dynamic renewal pricing model. This would let us offer more competitive pricing to our loyal customers, perhaps based on how long they've been with us or how much they use our product. It's about optimizing prices to reflect the long-term value our customers receive.  **Second,** we need to improve our proactive value reinforcement. Before the 12-month renewal, we should actively remind customers of the benefits they've gotten throughout the year – maybe personalised usage reports or highlights of new features.  **Third,** let's consider loyalty incentives. This could be early renewal discounts or extra features for long-term customers. (And the why.)  By making these changes, I expect a X% reduction in churn at the 12-month mark within the first year, which means we'll keep (specific pounds amount) in revenue.  To make these changes happen, we'll need [specific resources, like budget for a consultant, more people for the customer success team, or new tech].  I'm asking for the board's approval to start a pilot program for these initiatives, beginning with such actions and a budget of such amount. |
| Provide a list of online resources and videos that will support your preparation for public speaking | I will research and use some online resources for how to make a presentation to Senior Leaders/Executives, such as Coursera, Udemy, or YouTube Channels (Alexander Lyon). |
| Evaluate tools that provide visualisation.  Tell me what they are.  Tell me what you would choose when delivering your presentation and why | Data visualisation tools help turn raw data into easy-to-understand charts and graphs. This makes it much easier to see trends and patterns.  Here are some key tools:   1. **Tableau:**    * **What it is:** A top-tier tool for interactive data visualisation. It's known for being easy to use with drag-and-drop features and can connect to lots of different data sources. It creates nice-looking dashboards.    * **My thoughts:** Very powerful for complex analysis and interactive visuals. It can be a bit pricey and has a learning curve, but it's great for detailed dashboards. 2. **Microsoft Power BI:**    * **What it is:** Microsoft's business intelligence tool, integrated with other Microsoft products like Excel. It's good for data modelling and interactive dashboards.    * **My thoughts:** Strong integration if we're already a Microsoft shop, often more affordable. Good for company-wide use, but sometimes less intuitive than Tableau for certain designs. 3. **Google Looker Studio (formerly Data Studio):**    * **What it is:** A free, web-based tool from Google. It connects easily to Google Analytics, Google Ads, and Google Sheets.    * **My thoughts:** Free and great for Google services, easy to share. But it's not as powerful for deep data transformations as Tableau or Power BI.   **What I'd Choose for My Presentation and Why**  For my delivery to the board, I would use Microsoft PowerPoint as the main presentation tool, but I'd create the actual data visualisations using Tableau or Microsoft Power BI.  **Here's why:**   * **PowerPoint for Delivery:** The board is used to PowerPoint presentations. It lets me control the story I'm telling, presenting one key idea or chart at a time. This keeps them focused on my narrative without getting lost in interactive dashboards. I can seamlessly embed high-quality images of charts from Tableau or Power BI. * **Tableau or Power BI for Visualization Creation:** These tools are excellent for turning my complex churn data into clear, professional, and impactful charts and graphs. They can handle large datasets efficiently, which is crucial for my analysis of customer churn and revenue impact. Also, they're great for my own exploratory analysis as I prepare, even if not every detail makes it into the final presentation.   By combining these, I get the best of both worlds: the strong analytical and visualization power of a dedicated BI tool, combined with the structured, controlled delivery of a standard presentation. If there's a chance they'll want to dig into the data live during Q&A, I might have a live dashboard ready in the background, but the main presentation would be static slides for clarity and focus. |

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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.**