

**Data Technician**

|  |
| --- |
|  |

|  |
| --- |
| Name: |
| Course Date: |
|  |

**Table of contents**

[Day 1: Task 1 2](#_Toc77637984)

[Day 2: Task 1 2](#_Toc1634060488)

[Day 2: Task 2 3](#_Toc152114794)

[Day 2: Task 3 4](#_Toc257844391)

[Day 3: Task 1 4](#_Toc1014152162)

[Day 3: Task 2 5](#_Toc1498274088)

[Dataset: 5](#_Toc1056274673)

[Step 1: Create a Pivot Table 5](#_Toc782776295)

[Step 2: Use the SWITCH Function 5](#_Toc365195726)

[Submission: 6](#_Toc485671904)

[Day 3: Task 3 6](#_Toc1856180793)

[Day 4: Task 1 7](#_Toc381189142)

[Course Notes 9](#_Toc1368242635)

[Additional Information 10](#_Toc305684719)

# Day 1: Task 1

Please 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

|  |  |
| --- | --- |
| Data Protection Act | **What is Data Protection Act:**  It’s a UK Act of Parliament and it protects people and lays down the rules about how the personalized data can be used by organizations, businesses and governments. Primary goal is to ensure fair sharing of data value between different actors and to promote data access and use.  **Why is it important:**  It is important to ensure that personal data is handled responsibly and securely by third party members/groups and not misused as it is dealing with sensitive information such as health records, bank details and personal details.  **Provide a real-world example of how you can follow it:**  Scenario: E-Commerce Website– collects personal information from people such as full name, address, email, card payment details, and order history.   * Must get the consent from the customer and inform that how their data will be used * Collect the data which is necessary to fulfil the order * All personal and payment data should be stored and transmitted securely. * Customers should be able to view and correct their personal data. Eg: Customers can log in to their account and update their contact information, shipping address, or payment methods. * If there is a breach of customer payment information, the company must immediately notify the affected customers and recommend steps they can take to protect themselves (e.g., changing passwords)   **How does it impact working with data** :   * Individuals must be informed about what data is collected, why it’s being collected, and how long it will be retained. * If a company/business/government fails to obtain proper consent before collecting data or mishandles it, it could face penalties from data protection authorities * Always try to protect personal data from unauthorized access, loss, or breaches. * Organizations need to train their employees on data protection principles to ensure compliance.   **What could happen if you breached it:**  If a company fails to implement proper data security measures and suffers a data breach. And proper legal actions must be taken like facing fines and compensations. In such cases companies/businesses loss their reputation as well |
| GDPR | **What is GDPR:**  The General Data Protection Regulation is a new data privacy and security law and aims to safeguard and protect natural persons personal data and individuals privacy during processing  **Why is it important:**  Mainly GDPR mandates businesses to implement individuals Security to protect their data from breaches. GDPR includes many common forms of data, including names, postal and email addresses plus telephone numbers, driving licence, bank account, credit card, passport and social security numbers.  **Provide a real-world example of how you can follow it:**  For examples , GP collects any sensitive personal data (such as medical history, diagnosis, treatment plans), they must inform patients about how their data will be used and seek explicit consent. This could be done via a consent form where patients clearly agree to the processing of their data for specific purposes (e.g., medical treatment, follow-up care, insurance purposes).  **How does it impact working with data:**  Any government applications or organizations are required to collect only the data necessary for the intended purpose, and nothing more. This minimizes the risks of data breaches or misuse.  e.g. A healthcare provider may retain patient medical records for a set number of years after treatment, after which the data must be securely erased or anonymized.  **What could happen if you breached it:**  The GP/Hospital could face significant fines for failing to protect sensitive patient data. Patients whose data was exposed in the breach could file lawsuits for emotional distress, loss of privacy, or financial harm, leading to expensive legal fees and potential compensation payments and patients may be entitled to compensation if they suffer tangible damage from the breach. |
| Freedom of Information Act | What is Freedom of Information Act: Is a law that grants the public the right to access information held by public authorities or bodies. In the UK, the Freedom of Information Act 2000 provides public access to information held by public authorities.  It does this in two ways:   * public authorities are obliged to publish certain information about their activities; and * members of the public are entitled to request information from public authorities.   **Why is it important:**  FOIA allows the public to access documents that inform debates on legislation, regulations, and government practices. This encourages informed public participation in the democratic process. Some key reasons are:   * Promotes Transparency in Government * Strengthens Democracy * Encourages Public Participation * Protects Civil Liberties   **Provide a real-world example of how you can follow it**:  Scenario: Investigating Government Spending on a Public Health Program.  The first step is to identify the government agency or department responsible for managing this program. In this case, it might be the Department of Health or a local public health agency.   1. Identify the Government Agency 2. Submit a FOIA Request 3. Agency Response 4. Review the Documents  Take Action Based on Findings This example shows how you can follow FOIA to request government documents, access crucial information, and take action based on that data. It allows individuals, journalists, and activists to hold government entities accountable, ensuring that public funds and resources are managed transparently and ethically.  **How does it impact working with data:**  FOIA significantly impacts how public organizations manage, store, and share data. It encourages transparency, accountability, and accessibility, but also requires careful attention to data privacy, exemptions, and retention. As organizations strive to comply with FOIA requests, they must adopt strong data management practices, modernize their data systems, and create clear policies for data sharing and retention to ensure they are both transparent and legally compliant.  **What could happen if you breached it:**  If a government agency or public body fails to comply with FOIA, it can face legal action, including lawsuits filed by requesters or advocacy groups. Courts can compel the organization to release the requested information, and the organization may be required to pay the legal costs associated with the case. |
| Computer Misuse Act | **What is Computer Misuse Act:**  The Computer Misuse Act 1990 is a UK law that addresses unauthorized access to computer systems and the misuse of digital data. It was introduced to combat growing concerns about cybercrime and unauthorized access to computer systems, particularly as the internet and computing technologies began to expand rapidly.  It also provides guidance on offences relating to the collection, processing, and storage of personal data under the Data Protection Act 2018 (‘DPA’)  **Why is it important:**  It will be protecting Against Cybercrime and for Securing Personal and Sensitive Data, Supporting National Security because if unauthorised user acts causing, or creating risk of, serious damage  Provide a real-world example of how you can follow it:  The Computer Misuse Act plays a key role in national security by protecting government and Defence-related computer systems from being infiltrated or compromised by unauthorized individuals or groups, such as cyber-terrorists or hostile nation-states.  A hacker trying to access classified military information would be committing a crime under the Act, and prosecution under this law helps prevent such sensitive data from being compromised.  **How does it impact working with data:**  The Act makes it illegal to access data without proper authorization. This means that organizations must implement robust access controls and ensure that only authorized personnel can access sensitive or critical data.  **What could happen if you breached it:**  If an organization's computer system is hacked and sensitive customer data is accessed, the Act requires the organization to respond appropriately, report the breach, and take steps to prevent further unauthorized access. |

# Day 2: Task 1

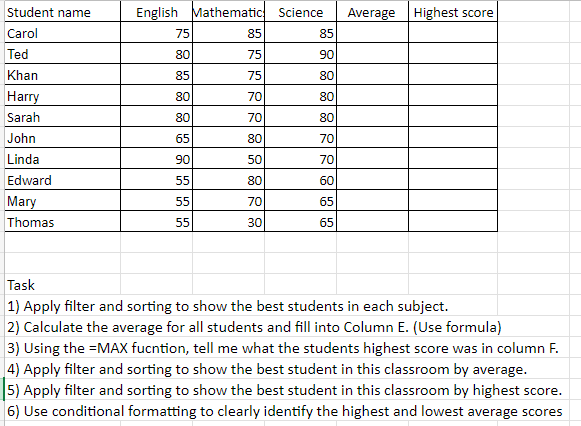
Please research and complete the following tasks within the retail-sales\_dataset.xlsx document, paste a print screen into the provided boxes below:

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’**

|  |  |
| --- | --- |
| 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:



|  |  |
| --- | --- |
| Print screen 1 | 1.    2.    3. |
|  | 4.    5.    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!

|  |  |
| --- | --- |
| Print screen 1 | Calculated Total and Average marks as below:    Calculated the Maximum mark, minimum mark, mean, median, standard deviation for each subject.    Using IFS statement calculated ‘Grade’ column    Concatenate, Hlookup, Vlookup, CountIf: |

# 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:

|  |  |
| --- | --- |
| Print screen 1 | Creating Pivot table        Filter the data and setting ‘For empty cells show’ as ‘0’ value    Visualizing data using Pivot table dat using Charts: |
| In which markets does Germany have customers? | In Adults(35-64) age group under below markets:  Mountain-200 Silver, 42  Mountain-200 Silver, 46  Mountain-200 Silver, 38 |
| What country has sales in all markets? | Australia |
| What are the most profitable markets by country, age group, and gender? | Australia has more profits |
| Any other findings? | United States has zero profit in Youth(<25) in the Bikes market.  Germany has no market under the age group Youth and Youth Adults.  France does not market under Adults. |

# 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

|  |  |
| --- | --- |
| Print screen 1 | 1. Pivot Table     2. Categorising products |

# 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:

|  |  |
| --- | --- |
| Print screen 1 | Line Chart:    Change the number format in vertical axis :  Chart Title:    Change the Legend names to “Annual Profit” and “Annual Revenue”:    Change the position of the Legend from Right to Left    Vertical and horizontal Axis Titles: |

# 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:

|  |  |
| --- | --- |
| How would you prepare for the delivery? | When the customers are leaving your company at the 12-month point , it’s important to present clear, actionable insights and prepare for the presentation to the board of directors which typically includes:   1. **Understand Your Audience:** The board cares about the company’s growth, profits, and long-term success. Focus on how customer churn (people leaving) at the 12-month mark affects those areas. 2. **Clearly state the issue**: Customers are leaving right when they’re due for their renewal because of the price increase. This is causing a drop in business. 3. **Show the evidence**: Use simple graphs or charts to show:    * + How many customers leave after 12 months.      + How this affects the company’s finances (lost revenue).      + If competitors are offering better deals. 4. **Get customer feedback**: Include quotes from the customer point of view 5. **Offer the solutions**: What you recommend and suggest ways to fix the problem such as communicating price changes/discounts/rewards better so customers encourage them to stay. 6. **Prepare presentation** with easy-to-understand slides with graphs or charts and have a backup plan in case of any issues.    * Keep your presentation short but impactful. Allow time for questions at the end.    * Present your findings clearly and confidently, helping the board make informed decisions to address the churn problem. |
| What tools would you use for the delivery? | Microsoft PowerPoint , Data Visualisation tools like Tableau or Power BI, Meeting links such as Zoom, Microsoft Teams, Document sharing tools like Google Drive, OneDrive etc., and some Survey form/feedback tools to get the customer feedback, Timer . |
| What is prospecting and why would you complete this before your delivery? | * By research the Board’s background , understanding the company goals/rules * Identify the **key performance indicators (KPIs)** the board typically focuses on, like **revenue growth**, **profit margins.** * Think about potential **objections** or **concerns** the board might have such as cost, time frame and prepare responses. |
| Tell me best practices for public speaking and providing updates to senior leaders | * **Know your audience** and what’s important to them. * **Keep it simple** and focused on the key points. * **Prepare for questions** and answer honestly. * **Use visuals** to help explain your data. * **Speak confidently** and engage with your audience. * **Offer solutions** that align with business goals. * **Follow up** to make sure everyone is on the same page. |
| What will you show the board in your delivery? | By following points described in **‘How would you prepare for the delivery? ‘** section    * **Keep it Simple**: Use visuals and clear numbers – give the overview using Charts/Graphs * **Stay on Point**: Focus on what the board needs to know and decide. Make bullet points with main reasons customers are leaving. * **Timeline** for implementing solutions like price adjustments or loyalty programs * **What** happens next whennothing is done and show the list with actions to be taken for the board to approve. * **Encourage Questions**: Be ready to answer questions to make sure they understand your points. * **Key takeaways** and actions needed from the board. |
| How will you articulate the changes that are needed? | Here’s a simpler way to explain the changes needed:   1. Explain the Problem 2. Why Change is Necessary 3. Propose the Changes and 4. Explain how we’ll Make the Changes 5. What are the Expected Results and what it will solve 6. Get Board Approval |
| Provide a list of online resources and videos that will support your preparation for public speaking | TED Talks, Coursera – Public Speaking Courses, YouTube Channels, LinkedIn Learning – Public Speaking and Presentation Skills.  **Practice** or rehearse, the more you practice, the more comfortable you'll become. Use resources like **Zoom** or **Google Meet** to practice with a friend or record yourself |
| Evaluate tools that provide visualisation.  Tell me what they are.  Tell me what you would choose when delivering your presentation and why | **Microsoft PowerPoint –** It is widely used for creating slideshows and presentations. It offers a variety of built-in tools to visualize data, including charts, graphs, smart art, and templates  **Tableau - Is** a powerful data visualization tool that allows you to create interactive and visually appealing dashboards and reports. Used for analysing large datasets and creating dynamic, interactive visualizations. Great for exploring and analysing data quickly.  **Power BI -** Is a business analytics tool from Microsoft that helps you visualize data, create reports, and share insights. Visualizing complex business data and sharing interactive reports within an organization, It has Integration with a wide range of data sources (Excel, SQL, Google Analytics, etc.)  **Google Data Studio -** Google Data Studio is a free tool that turns your data into customizable, interactive reports and dashboards.  I have explored in google there are other tools are available in the market such as Infogram, OpenHeatMap, Chart.js, Zoho Analytics, Datawrapper, Lucidchart, Canva etc.,  I personally choose either Power BI -  **Power BI** becoming most powerful tool for data visualisation and would be used for real-time/complex data insights or deeper interactive exploration of the data. It has seamless Microsoft Integration like Excel, Azure, SQL Server and Office 365. Some other key reasons:   * It is easy to use for beginners and experienced data professionals even non-technical background people are connects it with easily. * It has built in DAX functions and easily transform/clean the data using Power Query Editor. * And connects to different data sources. * Affordable price compared to Tableau. * Share the reports easily. * It’s a cloud based platform allows for data access from anywhere and also has desktop/mobile apps access. * Offers data security feature RLS (Row Level Security) which ensures that users only see the data they are authorised to view. |

|  |
| --- |
| **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:

|  |
| --- |
| Leant about Microsoft Excel and it is a powerful tool Office 365. Data will be in columns and rows and we can create multiple sheets with in single workbook. Share workbooks with others and collaborate within the teams.   * We can perform multiple functions and formulas to calculate Sum, Avg, Max, Min, VLOOKUP , Switch etc., * We have option to create visuals of data using pie charts, bar charts, line graphs and so on. * Using Pivot tables we can summarize and analyse large data sets and aggregate data dynamically. We have ‘Slicer’ option in the pivot tables to filter the data in more interactive way. * We can apply different formats like filter the data using specified criteria. Sort the data for example Sort data alphabetically, numerically, or by custom order. And also do colouring for the values in the columns using conditional formatting. * Also have text related functions like CONCATENATE, LEFT, RIGHT, MID which allows to manipulate strings with respect to custom formatting. * By creating ‘Macros’ we can add repetitive tasks in the columns or rows. * We have one feature called ‘What-If Analysis’ allows to explore different scenarios and outcomes by providing various inputs. * Excel workbook also provides Password-protect your workbooks and worksheets to restrict access. |

|  |
| --- |
| **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.**