Just IT

B2W group

Apprenticeships | Training | Recruitment

Data Technician

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Course Date: 17/04/25

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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

Data Protection Act	Uk law post-Brexit that outlines how companies can use personal data and keep it safe. It gives people the right to control their own data and prevents misuse by organisations. E.g. name, email, addresses, photos and more. Organisations must ensure data is used within the law and fairly, with a purpose, up to date, kept temporarily while needed, handled securely, and not share without permission. Similar to GDPR it's there to protect your privacy and give you more control over your own information.
GDPR	EU regulation that gives people control over how their information is collected, stored and used. E.g. name, email, addresses, photos and more. Applies to any organisation even those based outside the EU. Individuals have the right to access their personal data, right to have their data corrected, deleted or objected.
Freedom of Information Act	This gives people the right to access information held by public authorities. Keeps organisations open and accountable to the public promoting transparency, This encourages democracy as people are informed able to request information such as how tax money is being spent, public health records or environmental issues.
Computer Misuse Act	Protect computer systems and data from unauthorised access or modification. Criminalises acts that threaten the integrity of computer systems. Addresses cybercrime, including hacking, computer fraud and the spread of viruses. Penalties vary under each section and can be from 6 months up to 10 years and a fine.

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'

Print screen 1

Transaction ID	Date	Customer ID	Gender	Age	Product Categor	Quantity	Price per Uni	Revenue	Commission 20
74	22/11/2023	CUST074	Female	18	Beauty	4	£500.00	£2,000.00	£3
93	14/07/2023	CUST093	Female	35	Beauty	4	£500.00	£2,000.00	£3
139	15/12/2023	CUST139	Male	36	Beauty	4	£500.00	£2,000.00	£3
257	19/02/2023	CUST257	Male	19	Beauty	4	£500.00	£2,000.00	£3
281	23/05/2023	CUST281	Female	29	Beauty	4	£500.00	£2,000.00	£3
447	06/07/2023	CUST447	Male	22	Beauty	4	£500.00	£2,000.00	£3
480	29/06/2023	CUST480	Female	42	Beauty	4	£500.00	£2,000.00	£3
503	25/10/2023	CUST503	Male	45	Beauty	4	£500.00	£2,000.00	£3
577	13/02/2023	CUST577	Male	21	Beauty	4	£500.00	£2,000.00	£3
592	24/01/2023	CUST592	Female	46	Beauty	4	£500.00	£2,000.00	£3
743	16/01/2023	CUST743	Female	34	Beauty	4	£500.00	£2,000.00	£3
808	01/04/2023	CUST808	Male	33	Beauty	4	£500.00	£2,000.00	£3
832	11/09/2023	CUST832	Male	47	Beauty	4	£500.00	£2,000.00	£3
124	27/10/2023	CUST124	Male	33	Clothing	4	£500.00	£2,000.00	£3
166	02/04/2023	CUST166	Male	34	Clothing	4	£500.00	£2,000.00	£3
253	31/08/2023	CUST253	Female	53	Clothing	4	£500.00	£2,000.00	£3
269	01/02/2023	CUST269	Male	25	Clothing	4	£500.00	£2,000.00	£3
342	24/10/2023	CUST342	Female	43	Clothing	4	£500.00	£2,000.00	£3
420	23/01/2023	CUST420	Female	22	Clothing	4	£500.00	£2,000.00	£3
476	29/08/2023	CUST476	Female	27	Clothing	4	£500.00	£2,000.00	£3
487	24/07/2023	CUST487	Male	44	Clothing	4	£500.00	£2,000.00	£3
547	07/03/2023	CUST547	Male	63	Clothing	4	£500.00	£2,000.00	£3
561	27/05/2023	CUST561	Female	64	Clothing	4	£500.00	£2,000.00	£3

Print screen 2

Transaction ID	Date	Customer ID	Gender	Age	Product Category	Quantity	Price per Unit	Revenue	Commission 2023
561	27/05/2023	CUST561	Female	64	Clothing	4	£500.00	£2,000.00	£30.00
735	04/10/2023	CUST735	Female	64	Clothing	4	£500.00	£2,000.00	£30.00
161	22/03/2023	CUST161	Male	64	Beauty	2	£500.00	£1,000.00	£15.00
440	26/10/2023	CUST440	Male	64	Clothing	2	£300.00	£600.00	£9.00
220	03/03/2023	CUST220	Male	64	Beauty	1	£500.00	£500.00	£7.50
408	15/04/2023	CUST408	Female	64	Beauty	1	£500.00	£500.00	£7.50
596	07/02/2023	CUST596	Female	64	Electronics	1	£300.00	£300.00	£4.50
698	19/07/2023	CUST698	Female	64	Electronics	1	£300.00	£300.00	£4.50
282	25/08/2023	CUST282	Female	64	Electronics	4	£50.00	£200.00	£3.00
163	02/01/2023	CUST163	Female	64	Clothing	3	£50.00	£150.00	£2.25
830	22/06/2023	CUST830	Female	64	Clothing	3	£50.00	£150.00	£2.25
14	17/01/2023	CUST014	Male	64	Clothing	4	£30.00	£120.00	£1.80
532	19/06/2023	CUST532	Female	64	Clothing	4	£30.00	£120.00	£1.80
122	03/10/2023	CUST122	Male	64	Electronics	4	£30.00	£120.00	£1.80
173	08/11/2023	CUST173	Male	64	Electronics	4	£30.00	£120.00	£1.80
187	07/06/2023	CUST187	Female	64	Clothing	2	£50.00	£100.00	£1.50
692	07/09/2023	CUST692	Female	64	Clothing	2	£50.00	£100.00	£1.50
897	26/09/2023	CUST897	Female	64	Electronics	2	£50.00	£100.00	£1.50
758	12/05/2023	CUST758	Male	64	Clothing	4	£25.00	£100.00	£1.50
218	22/09/2023	CUST218	Male	64	Beauty	3	£30.00	£90.00	£1.35
399	01/03/2023	CUST399	Female	64	Beauty	2	£30.00	£60.00	£0.90
80	10/12/2023	CUST080	Female	64	Clothing	2	£30.00	£60.00	£0.90
25	26/12/2023	CUST025	Female	64	Beauty	1	£50.00	£50.00	£0.75
473	25/02/2023	CUST473	Male	64	Beauty	1	£50.00	£50.00	£0.75
429	28/12/2023	CUST429	Male	64	Electronics	2	£25.00	£50.00	£0.75
882	06/06/2023	CUST882	Female	64	Electronics	2	£25.00	£50.00	£0.75
376	16/05/2023	CUST376	Female	64	Beauty	1	£30.00	£30.00	£0.45
566	02/12/2023	CUST566	Female	64	Clothing	1	£30.00	£30.00	£0.45
191	18/10/2023	CUST191	Male	64	Beauty	1	£25.00	£25.00	£0.38
363	03/06/2023	CUST363	Male	64	Beauty	1	£25.00	£25.00	£0.38
223	02/02/2023	CUST223	Female	64	Clothing	1	£25.00	£25.00	£0.38
547	07/03/2023	CUST547	Male	63	Clothing	4	£500.00	£2,000.00	£30.00

Print screen 3

Total commission	£6,840

`=SUM(J1:J1001,J1)` `=SUM(Commission_2023)`

Print screen 4

Average Commission	£6.84	£6.84

`=AVERAGE(J1:J1001,J1)` `=AVERAGE(Commission_2023)`

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:

Student name	English	Mathematic	Science	Average	Highest score
Carol	75	85	85		
Ted	80	75	90		
Khan	85	75	80		
Harry	80	70	80		
Sarah	80	70	80		
John	65	80	70		
Linda	90	50	70		
Edward	55	80	60		
Mary	55	70	65		
Thomas	55	30	65		

Task

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 fucntion, 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

Print screen 1

1.

Student name	English
Linda	90
Khan	85
Ted	80
Harry	80
Sarah	80
Carol	75
John	65
Edward	55
Mary	55
Thomas	55

Student name	English	Mathema
Carol	75	85
John	65	80
Edward	55	80
Khan	85	75
Ted	80	75
Harry	80	70
Sarah	80	70
Mary	55	70
Linda	90	50
Thomas	55	30

Student name	English	Mathema	Science
Ted	80	75	90
Carol	75	85	85
Khan	85	75	80
Harry	80	70	80
Sarah	80	70	80
John	65	80	70
Linda	90	50	70
Mary	55	70	65
Thomas	55	30	65
Edward	55	80	60

2.

Student name	English	Mathematic:	Science	Average
Ted	80	75	90	81.666667
Carol	75	85	85	81.666667
Khan	85	75	80	80
Harry	80	70	80	76.666667
Sarah	80	70	80	76.666667
John	65	80	70	71.666667
Linda	90	50	70	70
Mary	55	70	65	63.333333
Thomas	55	30	65	50
Edward	55	80	60	65

3.

Student name	English	Mathematic:	Science	Average	Highest score
Ted	80	75	90	81.666667	90
Carol	75	85	85	81.666667	85
Khan	85	75	80	80	85
Harry	80	70	80	76.666667	80
Sarah	80	70	80	76.666667	80
John	65	80	70	71.666667	80
Linda	90	50	70	70	90
Mary	55	70	65	63.333333	70
Thomas	55	30	65	50	65
Edward	55	80	60	65	80

4.

Student name	English	Mathematic:	Science	Average	Highest score
Ted	80	75	90	81.666667	90
Carol	75	85	85	81.666667	85
Khan	85	75	80	80	85
Harry	80	70	80	76.666667	80
Sarah	80	70	80	76.666667	80
John	65	80	70	71.666667	80
Linda	90	50	70	70	90
Edward	55	80	60	65	80
Mary	55	70	65	63.333333	70
Thomas	55	30	65	50	65

5.

Student name	English	Mathematic	Science	Average	Highest score
Ted	80	75	90	81.666667	90
Linda	90	50	70	70	90
Carol	75	85	85	81.666667	85
Khan	85	75	80	80	85
Harry	80	70	80	76.666667	80
Sarah	80	70	80	76.666667	80
John	65	80	70	71.666667	80
Edward	55	80	60	65	80
Mary	55	70	65	63.333333	70
Thomas	55	30	65	50	65

6.

Student name	English	Mathematic	Science	Average	Highest score
Ted	80	75	90	81.666667	90
Linda	90	50	70	70	90
Carol	75	85	85	81.666667	85
Khan	85	75	80	80	85
Harry	80	70	80	76.666667	80
Sarah	80	70	80	76.666667	80
John	65	80	70	71.666667	80
Edward	55	80	60	65	80
Mary	55	70	65	63.333333	70
Thomas	55	30	65	50	65

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

VLOOKUP and XLOOKUP

Select App:	OneDrive	
Category	Productivity	
Type	Free	Free
Revenue	$ 4,704,744.00	$ 4,704,744.00
Profit	$ 1,881,897.60	$ 1,881,897.60

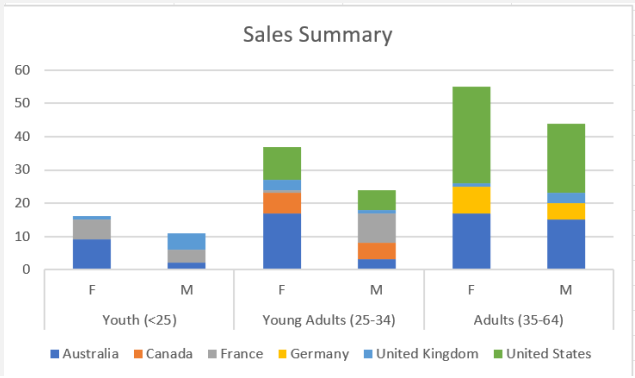
Select App:	OneDrive	
Category	=XLOOKUP(H4,App,Category,Fa)	
Type	=VLOOKUP(H4,info_table,2,FALSE)	=XLOOKUP(H4,App,Type,FALSE)
Revenue	=VLOOKUP(H4,info_table,3,FALSE)	=XLOOKUP(H4,App,Revenue,FALSE)
Profit	=VLOOKUP(H4,info_table,4,FALSE)	=XLOOKUP(H4,App,Profit,FALSE)

Removing duplicate data

Using the file 'Day_3_Task_1_Bike_Sales_Pivot_Lab.xlsx', the trim function was used to join the 3 different United States columns to one. Then the new column with the updated data was used to refresh the initial results from the pivot table and bar chart. This is cleaning.

Sum of Order_Quantity	Country								
Age_Group	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

Sum of Order_Quantity		Country_update						
Age_Group	Customer_Gender	Australia	Canada	France	Germany	United Kingdom	United States	Grand Total
Youth (<25)	F	9	0	6	0	1	0	16
	M	2	0	4	0	5	0	11
Youth (<25) Total		11	0	10	0	6	0	27
Young Adults (25-34)	F	17	6	1	0	3	10	37
	M	3	5	9	0	1	6	24
Young Adults (25-34) Total		20	11	10	0	4	16	61
Adults (35-64)	F	17	0	0	8	1	29	55
	M	15	0	0	5	3	21	44
Adults (35-64) Total		32	0	0	13	4	50	99
Grand Total		63	11	20	13	14	66	187



Day 3: Task 1

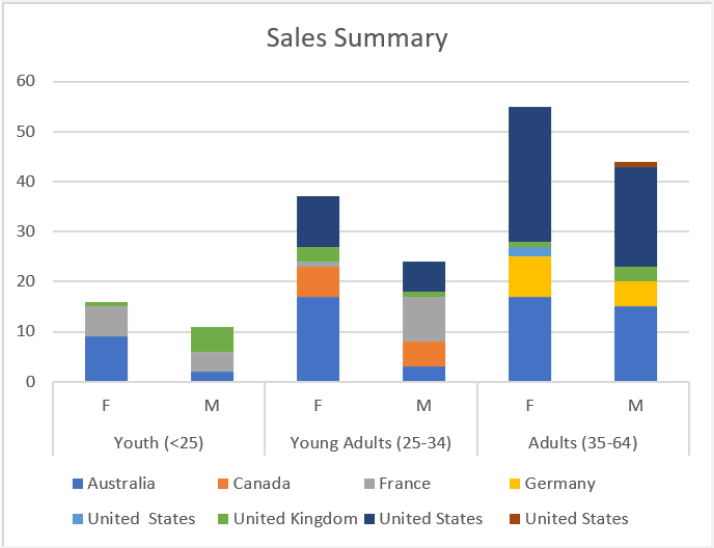
Please download the dataset 'Day_3_Task_1_Bike_Sales_Pivot_Lab.xlsx' from here.

The lab instructions can be found here. Do not worry if you do not complete the lab, just working with data and playing with the pivot table will be good experience.

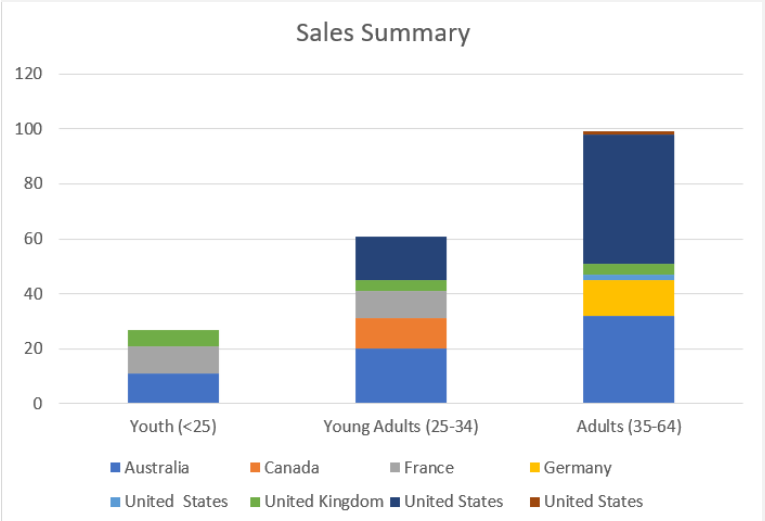
Please paste your final pivot table below and complete the reflection questions:

Print screen 1

Sum of Order_Quantity		Country								
Age_Group	Customer_Gender	Australia	Canada	France	Germany	United States	United Kingdom	United States	United States	Grand Total
Youth (<25)	F	9	0	6	0	0	1	0	0	16
	M	2	0	4	0	0	5	0	0	11
Youth (<25) Total		11	0	10	0	0	6	0	0	27
Young Adults (25-34)	F	17	6	1	0	0	3	10	0	37
	M	3	5	9	0	0	1	6	0	24
Young Adults (25-34) Total		20	11	10	0	0	4	16	0	61
Adults (35-64)	F	17	0	0	8	2	1	27	0	55
	M	15	0	0	5	0	3	20	1	44
Adults (35-64) Total		32	0	0	13	2	4	47	1	99
Grand Total		63	11	20	13	2	14	63	1	187



Sum of Order_Quantity	Country								
Age_Group	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



In which markets does Germany have customers ?	Adults (35-64)
What country has sales in all markets?	Australia
What are the most profitable markets by country, age group, and gender?	Female adults (35-64) in the United States
Any other findings?	Females in all age groups have purchased more in total than males.

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

Sum of Sales Volume	Product			
County	Laptops	Printers	Smartphones	Grand Total
Cornwall	700	400	0	1100
Durham	250	300	0	550
Essex	0	800	300	1100
Greater Manchester	400	0	600	1000
Lancashire	600	0	150	750
Yorkshire	500	0	200	700
Grand Total	**2450**	**1500**	**1250**	**5200**

County	Product	Sales Volume	Value
Yorkshire	Laptops	500	Medium
Yorkshire	Smartphones	200	Low
Cornwall	Laptops	700	High
Cornwall	Printers	400	Medium
Lancashire	Smartphones	150	Low
Lancashire	Laptops	600	Medium
Essex	Printers	800	High
Essex	Smartphones	300	Medium
Durham	Laptops	250	Low
Durham	Printers	300	Medium
Greater Manchester	Smartphones	600	Medium
Greater Manchester	Laptops	400	Medium

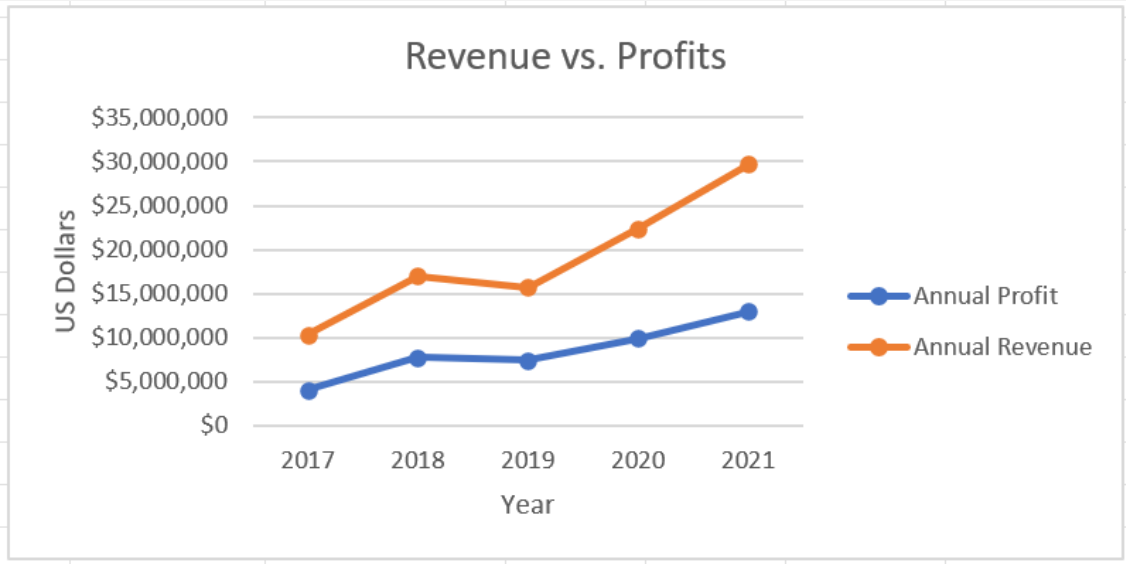
Day 3: Task 3

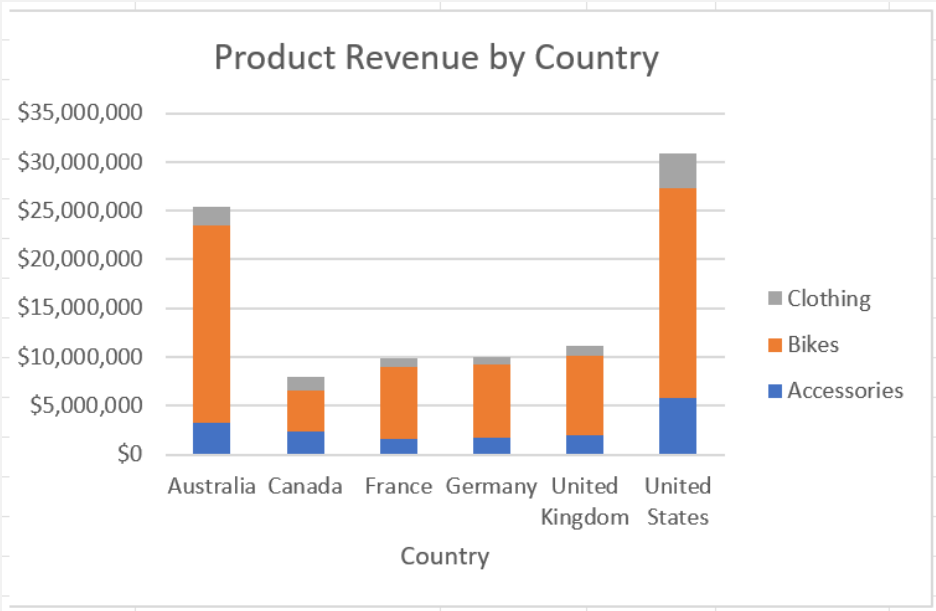
Please download the dataset 'Day_3_Task_3_Bike_Sales_Visualisations_Lab.xlsx' from here.

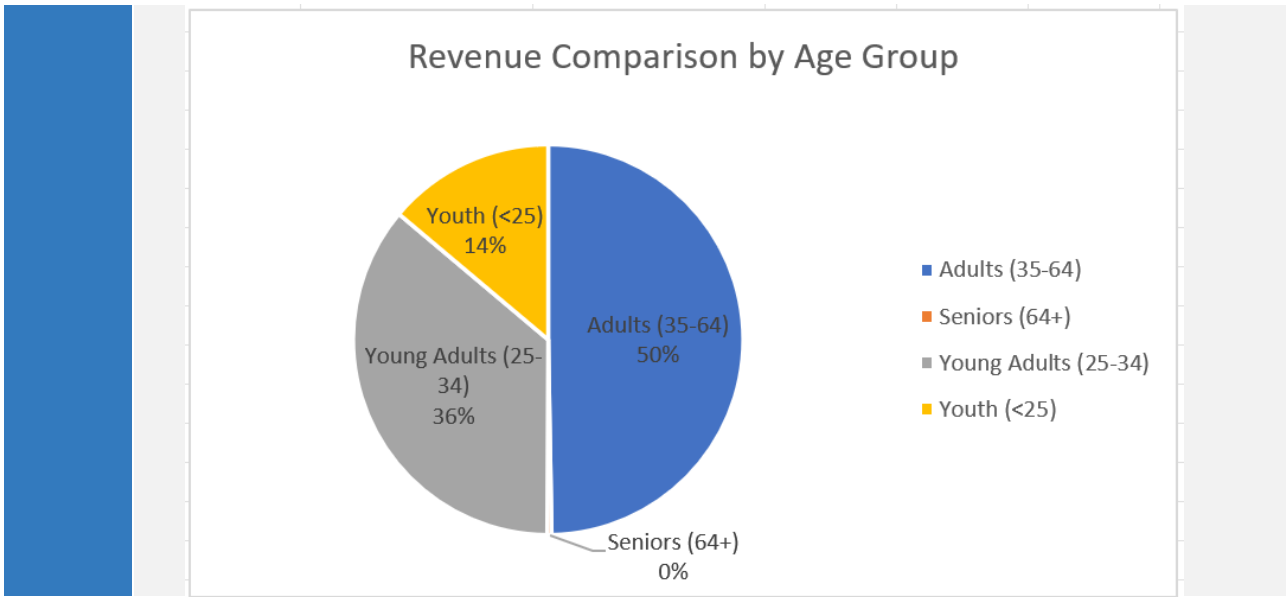
The lab instructions can be found here. Do not worry if you do not complete the lab, just working with data and playing with the charts will be good experience.

Please paste your results below:

Print screen 1






Revenue Comparison by Age Group
Youth (<25)
14%
Adults (35-64)
50%
Young Adults (25-34)
36%
Seniors (64+)
0%
Adults (35-64)
Seniors (64+)
Young Adults (25-34)
Youth (<25)

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:

How would you prepare for the delivery?	I will focus on keeping the message clear and simple using a presentation for delivery with key findings and recommendations. Use supporting data such as graphs, charts and tables on Excel to validate the conclusion that the customers are leaving at 12 months when they see their renewal price.
What tools would you use for the delivery?	I would use Excel for analysing and visualising the data, and PowerPoint to structure the presentation. These tools will allow me to present insights clearly and professionally.
What is prospecting and why would you complete this before your delivery?	Prospecting is about understanding who you are presenting to and what is important for them. Knowing the board's goals helps tailor the message and ensures it is relevant and impactful.
Tell me best practices for public speaking and providing updates to senior leaders	Stay clear and focused on the point. Share enough data to support your findings and highlight the impact. Be ready for questions and speak confidently. Maintain good posture. Practice helps to make the delivery effective and increases your confidence.
What will you show the board in your delivery?	I will show a clear line or bar chart highlighting customer retention at the 12-month mark. Line chart will show the number of active customers each month, with a dip at 12. Whereas the bar chart will show each month before the sharp drop at 12. This will outline the potential business impact.
How will you articulate the changes that are needed?	I will suggest improvements to the service such as reviewing the pricing strategy to understand what could be deterring customers. Another suggestion could be to send reminders or loyalty offers before the end of the year to provide more options. This could improve customer lifetime value. I will use supporting data to justify each recommendation and explain their alignment with the company goals.

Provide a list of online resources and videos that will support your preparation for public speaking	TED Talks on Public Speaking https://www.ted.com/topics/public+speaking Harvard Business Review – Presentation Tips https://hbr.org/search?term=public+speaking YouTube – Chris Anderson: TED's Secret to Great Public Speaking https://www.youtube.com/watch?v=-FOCpMAww28 LinkedIn Learning – Public Speaking Foundations https://www.linkedin.com/learning/public-speaking-foundations
Evaluate tools that provide visualisation. **Tell me what they are.** **Tell me what you would choose when delivering your presentation and why**	Some tools that provide visualisation are Excel, PowerPoint, Tableau and Power BI. Excel is a spreadsheet tool with built-in charting features. Good for quick analysis and simple charts. PowerPoint is a Microsoft tool for creating interactive dashboards and reports. For a board level presentation I will choose Excel for analysis and visualisation, and PowerPoint to deliver it. More advanced tools: Tableau is a powerful tool for creating interactive detailed dashboards from large datasets. This is good for businesses that need engaging reports visually that are in depth. Power BI is Microsoft's data visualisation tool to create interactive reports. Its user friendly with products like Excel. It's a good choice for small businesses as its cost-effective.

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:

Absolute and relative

F3 or function F4
Absolute referencing- $ before and after the number and letter to copy and drag to have the same number

Tabs in excel are called ribbon

Relative is different

cells accross worksheets
Demo!cell or cells name

Name range
top cell - ctrl - shift - down to select entire coloumn
formulas then create from selection name from top row
got to name manager and see name

Revenue
= quantity * price
click corner and double click to apply to whole coloumn

decrease decimal to make number an integer
price currency
date

Commision
revenue*absolute value of percentage
eg. =I2*M4

Sort
data>sort>a-z

Multi level sorting
sort>Revenue>add level> product category>insert>table

Make a table
select entire range>ctrl a>

Home>editing>select all and choose option

Aggregate Functions

sumif(range,criteria(summing))
eg total commission for all clothing
sumif(Product_category, "clothing",commission)

sumifs(sum_range, criteria_range1,
eg total commission for clothing for men
sumifs(commission, Product_category,"clothing",gender, "male")

averageif
averageifs
eg averageifs(Product_category,"clothing",gender, "male")

=count # of cells that have numbers
=counta # of cells that have numbers or text (eg. not blank)
=countblank # of cells that are blank
=countif # of cells that meet a condition

=unique()
gives distinct

Switch cannot do equal functions

Conditional formatting
Home>conditional formatting>highlight cell rules

Date functions
=d1-d2 gives number of days
=(d1-d2)/365 to give the years

To pull out the separate data
=day(d1)
=month(d1)
=year(d1)

Tells you specific dates
=text(d3,"dddd") eg. tuesday ddd=tues
=text(d3,"mmmm") eg. april
=text(d3,"yyyy")

vlookup
Formulas>insert function>search vlookup>enter info

Importing data
Data>fromtext/csv>choose file>transform data

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.