Data Technician

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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

Data Protection Act	• **What is it**: The Data Protection Act (UK, 2018) is a law that controls how personal information is used by organizations, businesses, and the government. It works alongside the GDPR.

	• **Why is it important**: It ensures individuals' privacy is respected and that organizations handle data fairly, lawfully, and transparently. • **Real-world example**: A company collects customer emails for a newsletter. It must tell users how their data will be used and get consent before sending emails. • **How it impacts working with data**: Employees must ensure personal data is stored securely, used only for the intended purpose, and kept only as long as necessary. • **What could happen if you breached it**: You could face legal action, fines (up to £17.5 million or 4% of annual turnover), and damage to reputation.
GDPR	**What is it**: A regulation in EU law (also applied in the UK) that governs how personal data is processed and gives individuals more control over their information. **Why is it important**: It strengthens data protection and gives individuals rights like access to their data, the right to be forgotten, and data portability. **Real-world example**: Before collecting customer data on a website, a company uses a consent form and allows users to opt in or out of cookies. **How it impacts working with data**: Staff must ensure data processing is transparent, secure, and that users can request changes or deletion of their data at any time. **What could happen if you breached it**: Heavy fines (up to €20 million or 4% of annual turnover), lawsuits, and loss of customer trust.
Freedom of Information Act	**What is it**: A UK law giving the public the right to access information held by public authorities (e.g., councils, NHS, government departments).

	Why is it important: It promotes transparency and accountability in public services. **Real-world example**: A citizen requests information from a local council about how public money is being spent. The council must respond within 20 working days. **How it impacts working with data**: Employees in public sectors must organize and manage data properly to respond quickly and legally to requests. **What could happen if you breached it**: Failure to respond or deliberate obstruction can lead to investigations by the Information Commissioner's Office (ICO) and penalties.
Computer Misuse Act	**What is it**: A UK law that criminalizes unauthorized access to computer systems and data, including hacking and spreading malware. **Why is it important**: It protects systems and data from malicious attacks or unauthorized use. **Real-world example**: An employee accessing confidential files without permission, even out of curiosity, could be prosecuted under this act. **How it impacts working with data**: Access to systems and data must be strictly controlled, and staff must only use systems for authorized purposes. **What could happen if you breached it**: Penalties include criminal prosecution, fines, imprisonment, and job loss.

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

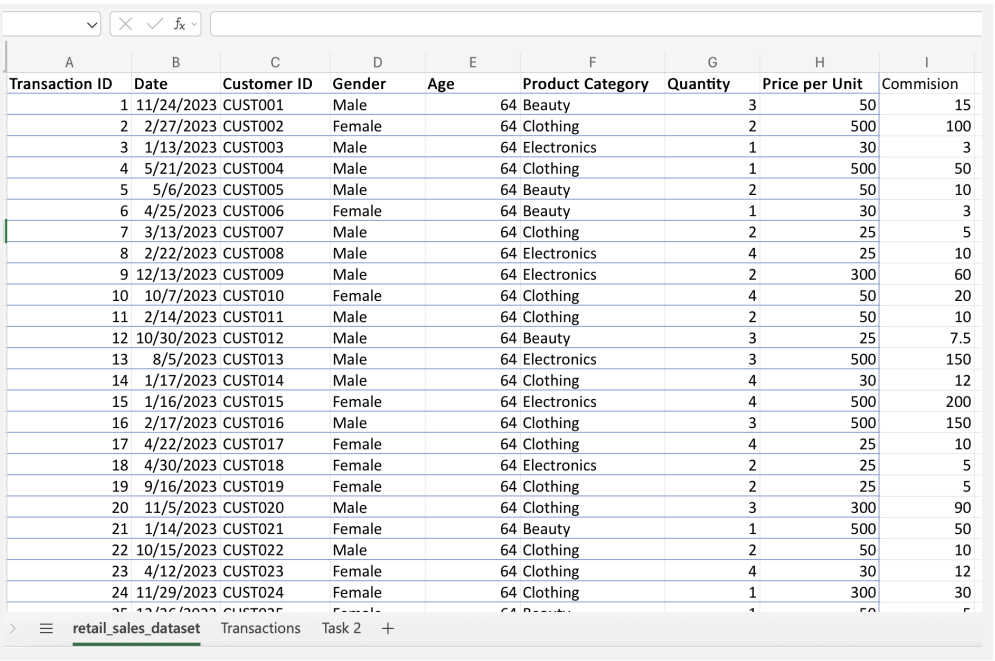
Transaction ID	Date	Customer ID	Gender	Age	Product Category	Quantity	Price per Unit
1	11/24/2023	CUST001	Male	34	Beauty	3	50
2	2/27/2023	CUST002	Female	26	Clothing	2	500
3	1/13/2023	CUST003	Male	50	Electronics	1	30
4	5/21/2023	CUST004	Male	37	Clothing	1	500
5	5/6/2023	CUST005	Male	30	Beauty	2	50
6	4/25/2023	CUST006	Female	45	Beauty	1	30
7	3/13/2023	CUST007	Male	46	Clothing	2	25
8	2/22/2023	CUST008	Male	30	Electronics	4	25
9	12/13/2023	CUST009	Male	63	Electronics	2	300
10	10/7/2023	CUST010	Female	52	Clothing	4	50
11	2/14/2023	CUST011	Male	23	Clothing	2	50
12	10/30/2023	CUST012	Male	35	Beauty	3	25
13	8/5/2023	CUST013	Male	22	Electronics	3	500
14	1/17/2023	CUST014	Male	64	Clothing	4	30
15	1/16/2023	CUST015	Female	42	Electronics	4	500
16	2/17/2023	CUST016	Male	19	Clothing	3	500
17	4/22/2023	CUST017	Female	27	Clothing	4	25
18	4/30/2023	CUST018	Female	47	Electronics	2	25
19	9/16/2023	CUST019	Female	62	Clothing	2	25
20	11/5/2023	CUST020	Male	22	Clothing	3	300
21	1/14/2023	CUST021	Female	50	Beauty	1	500
22	10/15/2023	CUST022	Male	18	Clothing	2	50
23	4/12/2023	CUST023	Female	35	Clothing	4	30
24	11/29/2023	CUST024	Female	49	Clothing	1	300
25	12/26/2023	CUST025	Female	64	Beauty	1	50
26	10/7/2023	CUST026	Female	28	Electronics	2	500
27	8/3/2023	CUST027	Female	38	Beauty	2	25
28	4/23/2023	CUST028	Female	43	Beauty	1	500
29	8/18/2023	CUST029	Female	42	Electronics	1	30
30	10/29/2023	CUST030	Female	39	Beauty	3	300
31	5/23/2023	CUST031	Male	44	Electronics	4	300
32	1/4/2023	CUST032	Male	30	Beauty	3	30
33	3/23/2023	CUST033	Female	50	Electronics	2	50
34	12/24/2023	CUST034	Female	51	Clothing	3	50
35	8/5/2023	CUST035	Female	58	Beauty	3	300
36	6/24/2023	CUST036	Male	52	Beauty	3	300

Print screen 2

Transaction ID	Date	Customer ID	Gender	Age	Product Category	Quantity	Price per Unit
1	11/24/2023	CUST001	Male	64	Beauty	3	50
2	2/27/2023	CUST002	Female	64	Clothing	2	500
3	1/13/2023	CUST003	Male	64	Electronics	1	30
4	5/21/2023	CUST004	Male	64	Clothing	1	500
5	5/6/2023	CUST005	Male	64	Beauty	2	50
6	4/25/2023	CUST006	Female	64	Beauty	1	30
7	3/13/2023	CUST007	Male	64	Clothing	2	25
8	2/22/2023	CUST008	Male	64	Electronics	4	25
9	12/13/2023	CUST009	Male	64	Electronics	2	300
10	10/7/2023	CUST010	Female	64	Clothing	4	50
11	2/14/2023	CUST011	Male	64	Clothing	2	50
12	10/30/2023	CUST012	Male	64	Beauty	3	25
13	8/5/2023	CUST013	Male	64	Electronics	3	500
14	1/17/2023	CUST014	Male	64	Clothing	4	30
15	1/16/2023	CUST015	Female	64	Electronics	4	500
16	2/17/2023	CUST016	Male	64	Clothing	3	500
17	4/22/2023	CUST017	Female	64	Clothing	4	25
18	4/30/2023	CUST018	Female	64	Electronics	2	25
19	9/16/2023	CUST019	Female	64	Clothing	2	25
20	11/5/2023	CUST020	Male	64	Clothing	3	300
21	1/14/2023	CUST021	Female	64	Beauty	1	500
22	10/15/2023	CUST022	Male	64	Clothing	2	50
23	4/12/2023	CUST023	Female	64	Clothing	4	30
24	11/29/2023	CUST024	Female	64	Clothing	1	300

retail_sales_dataset | Transactions | Task 2

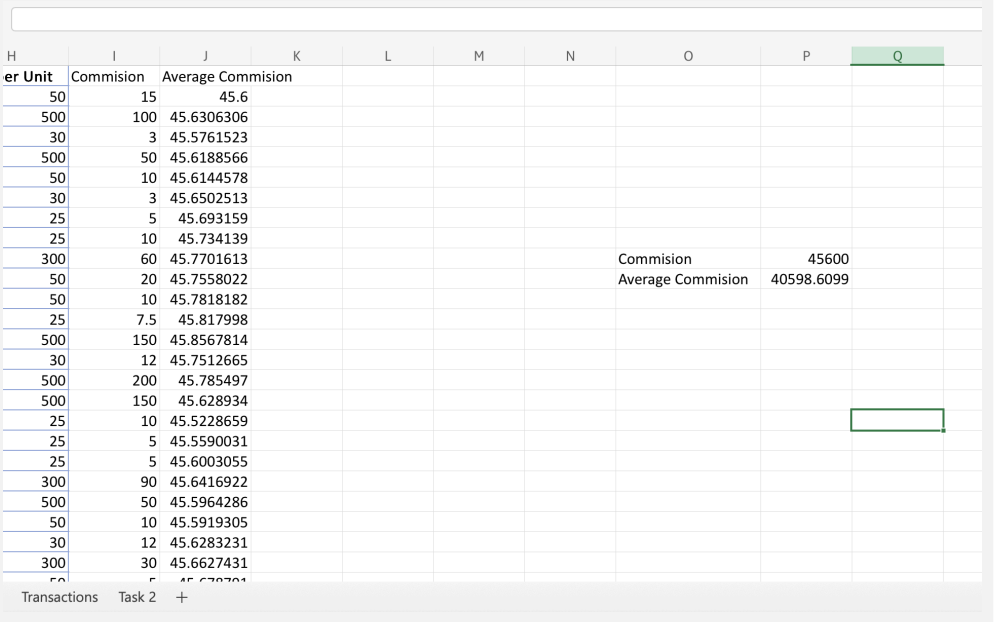
Print screen 3



Transaction ID	Date	Customer ID	Gender	Age	Product Category	Quantity	Price per Unit	Commision
1	11/24/2023	CUST001	Male	64	Beauty	3	50	15
2	2/27/2023	CUST002	Female	64	Clothing	2	500	100
3	1/13/2023	CUST003	Male	64	Electronics	1	30	3
4	5/21/2023	CUST004	Male	64	Clothing	1	500	50
5	5/6/2023	CUST005	Male	64	Beauty	2	50	10
6	4/25/2023	CUST006	Female	64	Beauty	1	30	3
7	3/13/2023	CUST007	Male	64	Clothing	2	25	5
8	2/22/2023	CUST008	Male	64	Electronics	4	25	10
9	12/13/2023	CUST009	Male	64	Electronics	2	300	60
10	10/7/2023	CUST010	Female	64	Clothing	4	50	20
11	2/14/2023	CUST011	Male	64	Clothing	2	50	10
12	10/30/2023	CUST012	Male	64	Beauty	3	25	7.5
13	8/5/2023	CUST013	Male	64	Electronics	3	500	150
14	1/17/2023	CUST014	Male	64	Clothing	4	30	12
15	1/16/2023	CUST015	Female	64	Electronics	4	500	200
16	2/17/2023	CUST016	Male	64	Clothing	3	500	150
17	4/22/2023	CUST017	Female	64	Clothing	4	25	10
18	4/30/2023	CUST018	Female	64	Electronics	2	25	5
19	9/16/2023	CUST019	Female	64	Clothing	2	25	5
20	11/5/2023	CUST020	Male	64	Clothing	3	300	90
21	1/14/2023	CUST021	Female	64	Beauty	1	500	50
22	10/15/2023	CUST022	Male	64	Clothing	2	50	10
23	4/12/2023	CUST023	Female	64	Clothing	4	30	12
24	11/29/2023	CUST024	Female	64	Clothing	1	300	30

retail_sales_dataset | Transactions | Task 2

Print screen 4



er Unit	Commision	Average Commision			
50	15	45.6			
500	100	45.6306306			
30	3	45.5761523			
500	50	45.6188566			
50	10	45.6144578			
30	3	45.6502513			
25	5	45.693159			
25	10	45.734139			
300	60	45.7701613	Commision	45600	
50	20	45.7558022	Average Commision	40598.6099	
50	10	45.7818182			
25	7.5	45.817998			
500	150	45.8567814			
30	12	45.7512665			
500	200	45.785497			
500	150	45.628934			
25	10	45.5228659			
25	5	45.5590031			
25	5	45.6003055			
300	90	45.6416922			
500	50	45.5964286			
50	10	45.5919305			
30	12	45.6283231			
300	30	45.6627431			

Transactions | Task 2

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

Student name	English	Mathema	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

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

Product Category	Quantity	Mean
Beauty	771	2.51
Clothing	894	2.55
Electronics	849	2.48

Sum of Quantity / Product Category	Gender: Female	Male	(blank)	Grand Total
Beauty	418	353		771
Clothing	441	453		894
Electronics	439	410		849
(blank)				
Grand Total	1298	1216		2514

=IF([@Age]>60,"Senior",IF([@Age]>25,"Adult","Young Adults"))

Transaction ID	Date	Customer ID	Gender	Age	age Group	Product Category	Quantity	Price per Unit
1	11/24/2023	CUST001	Male	34	Adult	Beauty	3	50
2	2/27/2023	CUST002	Female	26	Adult	Clothing	2	500
3	1/13/2023	CUST003	Male	50	Adult	Electronics	1	30
4	5/21/2023	CUST004	Male	37	Adult	Clothing	1	500
5	5/6/2023	CUST005	Male	30	Adult	Beauty	2	50
6	4/25/2023	CUST006	Female	45	Adult	Beauty	1	30
7	3/13/2023	CUST007	Male	46	Adult	Clothing	2	25
8	2/22/2023	CUST008	Male	30	Adult	Electronics	4	25
9	12/13/2023	CUST009	Male	63	Senior	Electronics	2	300
10	10/7/2023	CUST010	Female	52	Adult	Clothing	4	50
11	2/14/2023	CUST011	Male	23	Young Adults	Clothing	2	50
12	10/30/2023	CUST012	Male	35	Adult	Beauty	3	25
13	8/5/2023	CUST013	Male	22	Young Adults	Electronics	3	500
14	1/17/2023	CUST014	Male	64	Senior	Clothing	4	30
15	1/16/2023	CUST015	Female	42	Adult	Electronics	4	500
16	2/17/2023	CUST016	Male	19	Young Adults	Clothing	3	500
17	4/22/2023	CUST017	Female	27	Adult	Clothing	4	25
18	4/30/2023	CUST018	Female	47	Adult	Electronics	2	25
19	9/16/2023	CUST019	Female	62	Senior	Clothing	2	25
20	11/5/2023	CUST020	Male	22	Young Adults	Clothing	3	300
21	1/14/2023	CUST021	Female	50	Adult	Beauty	1	500

=VLOOKUP(A9,retail_sales_dataset!A:G,6

Transaction ID	Total Sales	Product category
10		Adult
15		Adult
25		Senior
30		Adult
54		Adult
55		Adult
67		Adult
89		Adult
100		Adult

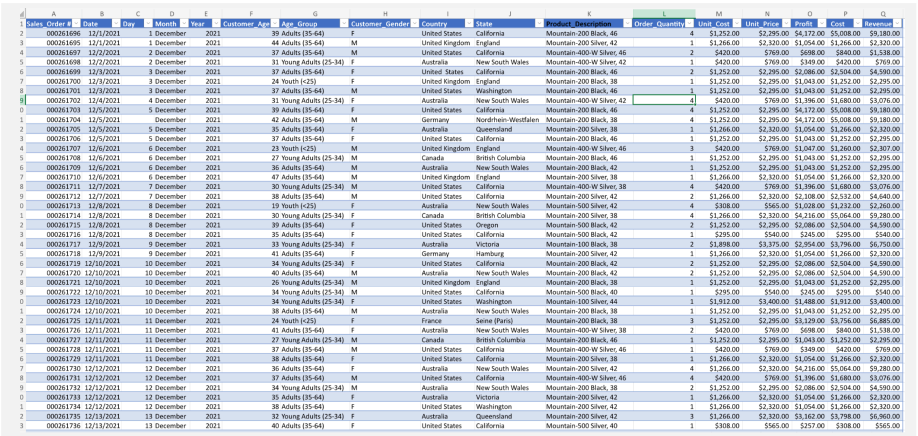
Day 3: Task 1

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.

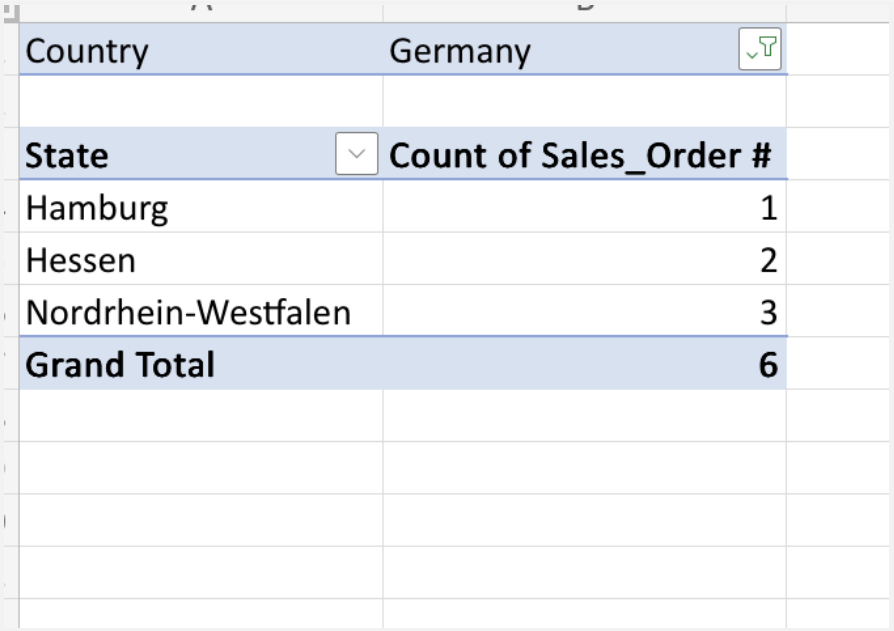
Please paste your final pivot table below and complete the reflection questions:

Print screen 1



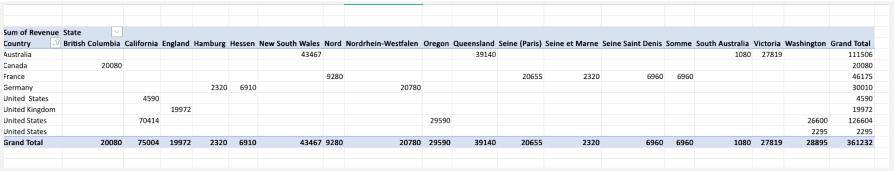
Sales_Order #	Date	Day	Month	Year	Customer_Age	Age_Group	Customer_Gender	Country	State	Product_Description	Order_Quantity	Unit_Cost	Unit_Price	Profit	Cost	Revenue
000261696	12/1/2021	1	December	2021		39 Adults (35-64)	F	United States	California	Mountain-200 Black, 46	4	$1,252.00	$2,295.00	$4,172.00	$5,008.00	$9,180.00
000261695	12/1/2021	1	December	2021		44 Adults (35-64)	M	United Kingdom	England	Mountain-200 Silver, 42	1	$1,266.00	$2,320.00	$1,054.00	$1,266.00	$2,320.00
000261697	12/2/2021	2	December	2021		37 Adults (35-64)	M	United States	California	Mountain-400-W Silver, 46	2	$420.00	$769.00	$698.00	$840.00	$1,538.00
000261698	12/2/2021	2	December	2021		31 Young Adults (25-34)	F	Australia	New South Wales	Mountain-400-W Silver, 42	1	$420.00	$769.00	$349.00	$420.00	$769.00
000261699	12/3/2021	3	December	2021		37 Adults (35-64)	F	United States	California	Mountain-200 Black, 46	2	$1,252.00	$2,295.00	$2,086.00	$2,504.00	$4,590.00
000261700	12/3/2021	3	December	2021		24 Youth (<25)	F	United Kingdom	England	Mountain-200 Black, 38	1	$1,252.00	$2,295.00	$1,043.00	$1,252.00	$2,295.00
000261701	12/3/2021	3	December	2021		37 Adults (35-64)	M	United States	Washington	Mountain-200 Black, 46	1	$1,252.00	$2,295.00	$1,043.00	$1,252.00	$2,295.00
000261702	12/4/2021	4	December	2021		31 Young Adults (25-34)	F	Australia	New South Wales	Mountain-400-W Silver, 42	4	$420.00	$769.00	$1,396.00	$1,680.00	$3,076.00
000261703	12/5/2021	5	December	2021		39 Adults (35-64)	F	United States	California	Mountain-200 Black, 46	4	$1,252.00	$2,295.00	$4,172.00	$5,008.00	$9,180.00
000261704	12/5/2021	5	December	2021		42 Adults (35-64)	M	Germany	Nordrhein-Westfalen	Mountain-200 Black, 38	4	$1,252.00	$2,295.00	$4,172.00	$5,008.00	$9,180.00
000261705	12/5/2021	5	December	2021		35 Adults (35-64)	F	Australia	Queensland	Mountain-200 Silver, 38	1	$1,266.00	$2,320.00	$1,054.00	$1,266.00	$2,320.00
000261706	12/5/2021	5	December	2021		37 Adults (35-64)	F	United States	California	Mountain-200 Black, 46	1	$1,252.00	$2,295.00	$1,043.00	$1,252.00	$2,295.00
000261707	12/6/2021	6	December	2021		23 Youth (<25)	M	United Kingdom	England	Mountain-400-W Silver, 46	3	$420.00	$769.00	$1,047.00	$1,260.00	$2,307.00
000261708	12/6/2021	6	December	2021		27 Young Adults (25-34)	M	Canada	British Columbia	Mountain-200 Black, 46	1	$1,252.00	$2,295.00	$1,043.00	$1,252.00	$2,295.00
000261709	12/6/2021	6	December	2021		36 Adults (35-64)	M	Australia	New South Wales	Mountain-200 Black, 42	1	$1,252.00	$2,295.00	$1,043.00	$1,252.00	$2,295.00
000261710	12/6/2021	6	December	2021		47 Adults (35-64)	M	United Kingdom	England	Mountain-200 Silver, 38	1	$1,266.00	$2,320.00	$1,054.00	$1,266.00	$2,320.00
000261711	12/7/2021	7	December	2021		30 Young Adults (25-34)	M	United States	California	Mountain-400-W Silver, 38	4	$420.00	$769.00	$1,396.00	$1,680.00	$3,076.00
000261712	12/7/2021	7	December	2021		38 Adults (35-64)	M	United States	California	Mountain-200 Silver, 42	2	$1,266.00	$2,320.00	$2,108.00	$2,532.00	$4,640.00
000261713	12/8/2021	8	December	2021		19 Youth (<25)	F	Australia	New South Wales	Mountain-500 Silver, 42	4	$308.00	$565.00	$1,028.00	$1,232.00	$2,260.00
000261714	12/8/2021	8	December	2021		30 Young Adults (25-34)	F	Canada	British Columbia	Mountain-200 Silver, 38	4	$1,266.00	$2,320.00	$4,216.00	$5,064.00	$9,280.00
000261715	12/8/2021	8	December	2021		39 Adults (35-64)	F	United States	Oregon	Mountain-500 Black, 42	2	$1,252.00	$2,295.00	$2,086.00	$2,504.00	$4,590.00
000261716	12/8/2021	8	December	2021		35 Adults (35-64)	F	United States	California	Mountain-500 Black, 42	1	$295.00	$540.00	$245.00	$295.00	$540.00
000261717	12/9/2021	9	December	2021		33 Young Adults (25-34)	F	Australia	Victoria	Mountain-100 Black, 38	2	$1,898.00	$3,375.00	$2,954.00	$3,796.00	$6,750.00
000261718	12/9/2021	9	December	2021		41 Adults (35-64)	F	Germany	Hamburg	Mountain-200 Silver, 42	1	$1,266.00	$2,320.00	$1,054.00	$1,266.00	$2,320.00
000261719	12/10/2021	10	December	2021		34 Young Adults (25-34)	F	United States	California	Mountain-200 Black, 42	2	$1,252.00	$2,295.00	$2,086.00	$2,504.00	$4,590.00
000261720	12/10/2021	10	December	2021		40 Adults (35-64)	M	Australia	New South Wales	Mountain-200 Black, 42	2	$1,252.00	$2,295.00	$2,086.00	$2,504.00	$4,590.00
000261721	12/10/2021	10	December	2021		26 Young Adults (25-34)	M	United Kingdom	England	Mountain-200 Black, 38	1	$1,252.00	$2,295.00	$1,043.00	$1,252.00	$2,295.00
000261722	12/10/2021	10	December	2021		34 Young Adults (25-34)	M	United States	California	Mountain-500 Black, 40	1	$295.00	$540.00	$245.00	$295.00	$540.00
000261723	12/10/2021	10	December	2021		34 Young Adults (25-34)	F	United States	Washington	Mountain-100 Silver, 44	1	$1,912.00	$3,400.00	$1,488.00	$1,912.00	$3,400.00
000261724	12/10/2021	10	December	2021		38 Adults (35-64)	M	Australia	New South Wales	Mountain-200 Black, 38	1	$1,252.00	$2,295.00	$1,043.00	$1,252.00	$2,295.00
000261725	12/11/2021	11	December	2021		24 Youth (<25)	F	France	Seine (Paris)	Mountain-200 Black, 38	3	$1,252.00	$2,295.00	$3,129.00	$3,756.00	$6,885.00
000261726	12/11/2021	11	December	2021		41 Adults (35-64)	F	Australia	New South Wales	Mountain-400-W Silver, 38	2	$420.00	$769.00	$698.00	$840.00	$1,538.00
000261727	12/11/2021	11	December	2021		27 Young Adults (25-34)	M	Canada	British Columbia	Mountain-200 Black, 46	1	$1,252.00	$2,295.00	$1,043.00	$1,252.00	$2,295.00
000261728	12/11/2021	11	December	2021		37 Adults (35-64)	M	United States	California	Mountain-400-W Silver, 46	1	$420.00	$769.00	$349.00	$420.00	$769.00
000261729	12/11/2021	11	December	2021		38 Adults (35-64)	F	United States	California	Mountain-200 Silver, 38	1	$1,266.00	$2,320.00	$1,054.00	$1,266.00	$2,320.00
000261730	12/12/2021	12	December	2021		36 Adults (35-64)	F	Australia	New South Wales	Mountain-200 Silver, 42	4	$1,266.00	$2,320.00	$4,216.00	$5,064.00	$9,280.00
000261731	12/12/2021	12	December	2021		37 Adults (35-64)	M	United States	California	Mountain-400-W Silver, 46	4	$420.00	$769.00	$1,396.00	$1,680.00	$3,076.00
000261732	12/12/2021	12	December	2021		34 Young Adults (25-34)	M	Australia	New South Wales	Mountain-200 Black, 38	2	$1,252.00	$2,295.00	$2,086.00	$2,504.00	$4,590.00
000261733	12/12/2021	12	December	2021		35 Adults (35-64)	F	Australia	Victoria	Mountain-200 Silver, 42	1	$1,266.00	$2,320.00	$1,054.00	$1,266.00	$2,320.00
000261734	12/12/2021	12	December	2021		38 Adults (35-64)	F	United States	Washington	Mountain-200 Silver, 42	1	$1,266.00	$2,320.00	$1,054.00	$1,266.00	$2,320.00
000261735	12/13/2021	13	December	2021		32 Young Adults (25-34)	F	Australia	Queensland	Mountain-200 Silver, 42	3	$1,266.00	$2,320.00	$3,162.00	$3,798.00	$6,960.00
000261736	12/13/2021	13	December	2021		40 Adults (35-64)	F	United States	California	Mountain-500 Silver, 40	1	$308.00	$565.00	$257.00	$308.00	$565.00

In which markets does Germany have customers?



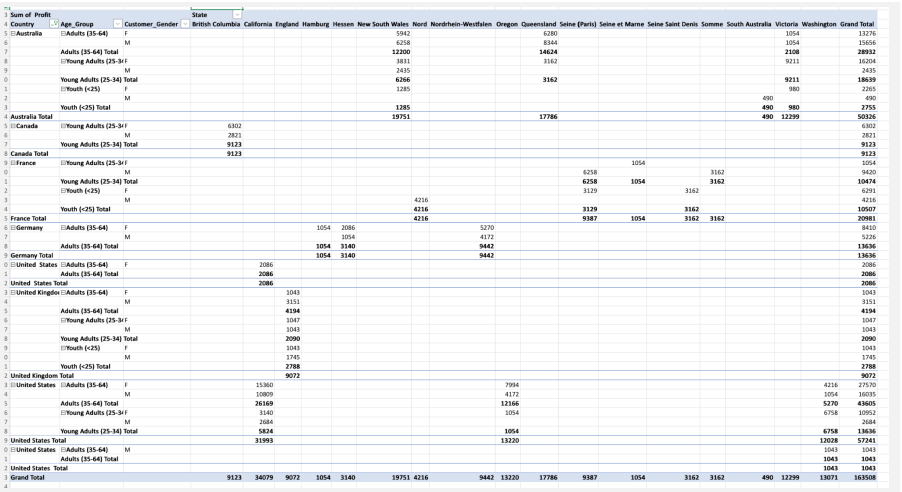
Country	Germany
State	Count of Sales_Order #
Hamburg	1
Hessen	2
Nordrhein-Westfalen	3
Grand Total	6

What country has sales in all markets?



Sum of Revenue	State																		
Country	British Columbia	California	England	Hamburg	Hessen	New South Wales	Nord	Nordrhein-Westfalen	Oregon	Queensland	Seine (Paris)	Seine et Marne	Seine Saint Denis	Somme	South Australia	Victoria	Washington	Grand Total
Australia						43467				39140					1080	27819		111506
Canada	20080																	20080
France							9280				20655	2320	6960	6960				46175
Germany				2320	6910			20780										30010
United States		4590																4590
United Kingdom			19972															19972
United States		70414							29590								26600	126604
United States																	2295	2295
Grand Total	20080	75004	19972	2320	6910	43467	9280	20780	29590	39140	20655	2320	6960	6960	1080	27819	28895	361232

What are the most profitable markets by country, age group, and gender?



Sum of Profit			State																		
Country	Age_Group	Customer_Gender	British Columbia	California	England	Hamburg	Hessen	New South Wales	Nord	Nordrhein-Westfalen	Oregon	Queensland	Seine (Paris)	Seine et Marne	Seine Saint Denis	Somme	South Australia	Victoria	Washington	Grand Total
Australia	Adults (35-64)	F						5942				6280						1054		13276
		M						6258				8344						1054		15656
	Adults (35-64) Total							12200				14624						2108		28932
	Young Adults (25-34)	F						3831				3162						9211		16204
		M						2435												2435
	Young Adults (25-34) Total							6266				3162						9211		18639
	Youth (<25)	F						1285										980		2265
		M															490			490
	Youth (<25) Total							1285									490	980		2755
Australia Total								19751				17786					490	12299		50326
Canada	Young Adults (25-34)	F	6302																	6302
		M	2821																	2821
	Young Adults (25-34) Total		9123																	9123
Canada Total			9123																	9123
France	Young Adults (25-34)	F												1054						1054
		M											6258			3162				9420
	Young Adults (25-34) Total												6258	1054		3162				10474
	Youth (<25)	F											3129		3162					6291
		M							4216											4216
	Youth (<25) Total								4216				3129		3162					10507
France Total									4216				9387	1054	3162	3162				20981
Germany	Adults (35-64)	F				1054	2086			5270										8410
		M					1054			4172										5226
	Adults (35-64) Total					1054	3140			9442										13636
Germany Total						1054	3140			9442										13636
United States	Adults (35-64)	F		2086																2086
	Adults (35-64) Total			2086																2086
United States Total				2086																2086
United Kingdom	Adults (35-64)	F			1043															1043
		M			3151															3151
	Adults (35-64) Total				4194															4194
	Young Adults (25-34)	F			1047															1047
		M			1043															1043
	Young Adults (25-34) Total				2090															2090
	Youth (<25)	F			1043															1043
		M			1745															1745
	Youth (<25) Total				2788															2788
United Kingdom Total					9072															9072
United States	Adults (35-64)	F	15360								7994							4216	27570	
		M	10809								4172							1054	16035	
	Adults (35-64) Total		26169								12166							5270	43605	
	Young Adults (25-34)	F	3140								1054							6758	10952	
		M	2684																2684	
	Young Adults (25-34) Total		5824								1054							6758	13636	
United States Total			31993								13220							12028	57241	
United States	Adults (35-64)	M																1043	1043	
	Adults (35-64) Total																	1043	1043	
United States Total																		1043	1043	
Grand Total			9123	34079	9072	1054	3140	19751	4216	9442	13220	17786	9387	1054	3162	3162	490	12299	13071	163508

Any other findings?

Age_Group	Sum of Profit
Adults (35-64)	57.18%
Young Adults (25-34)	33.00%
Youth (<25)	9.82%
Grand Total	**100.00%**

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:

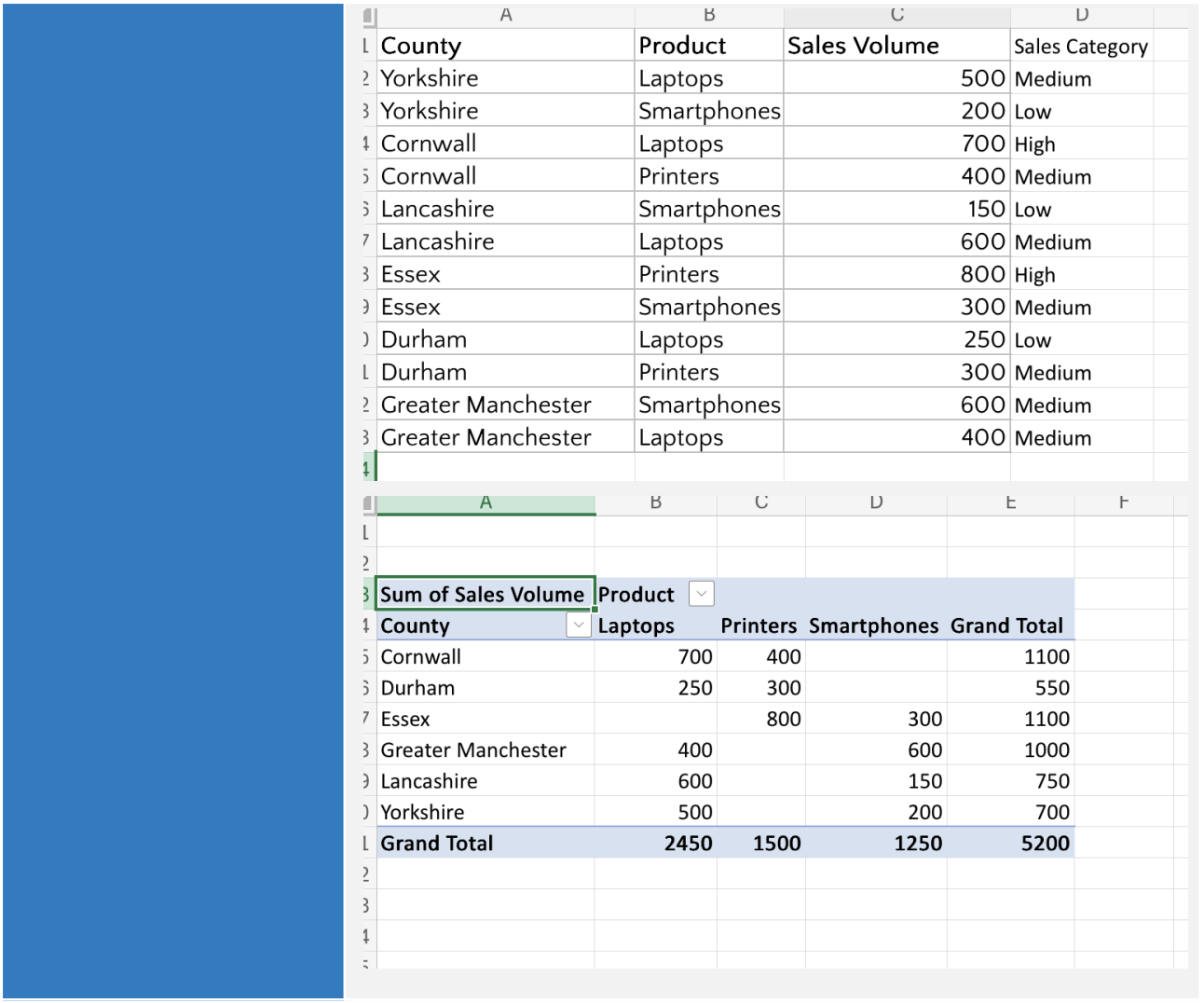
```
=SWITCH(TRUE, C2 > 600, "High", C2 >= 300, "Medium", "Low")
```

- Apply this formula to each row, and check if the products are categorised correctly.
- In 'Sales Volume' you need to remove the space after each amount
- Confirm the data type is numerical

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



County	Product	Sales Volume	Sales Category
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

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

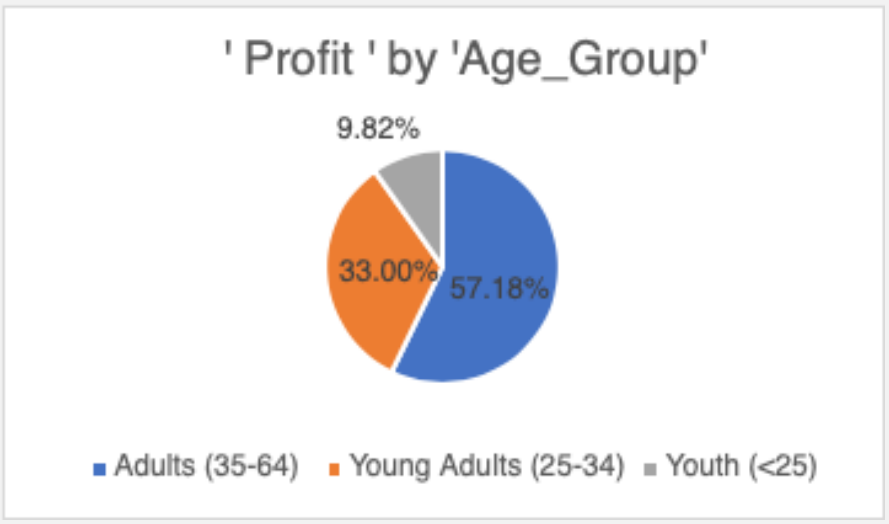
Day 3: Task 3

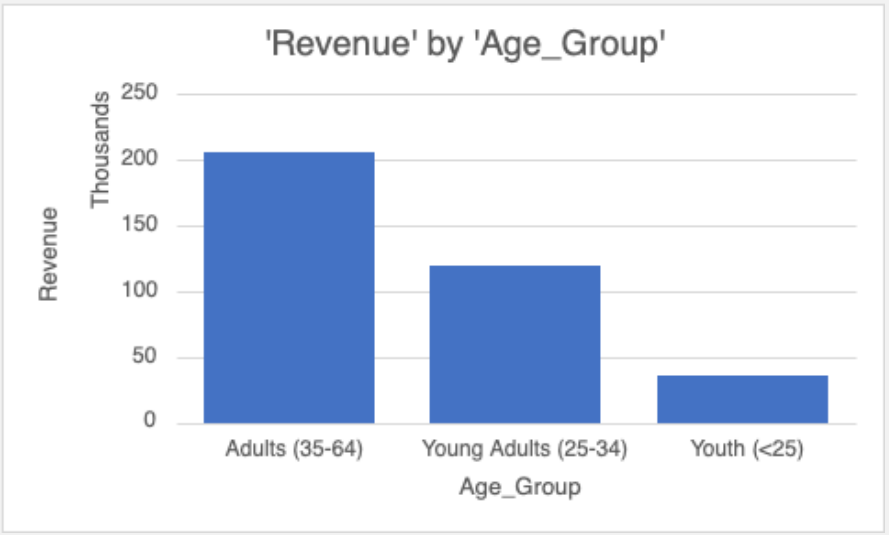
Please download the dataset 'Day_3_Task_3_Bike_Sales_Visualisations_Lab.xlsx' from here.

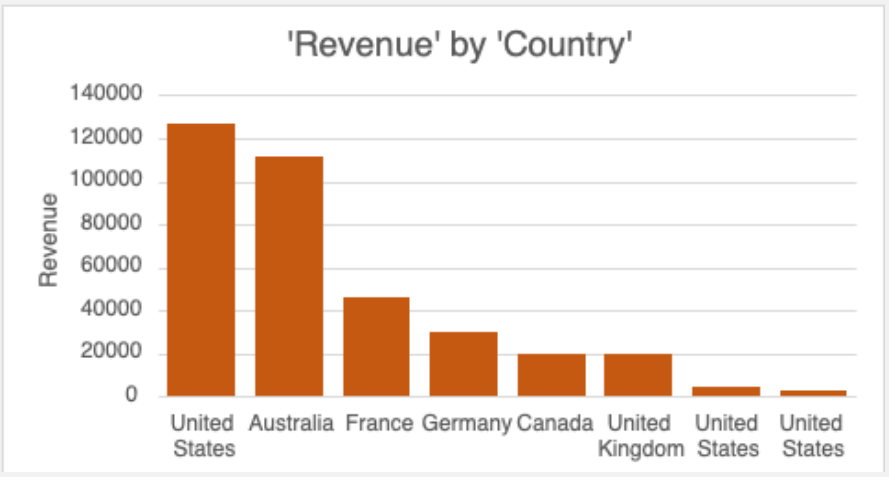
The lab instructions can be found here. Do not worry if you do not complete the lab, just working with data and playing with the charts will be good experience.

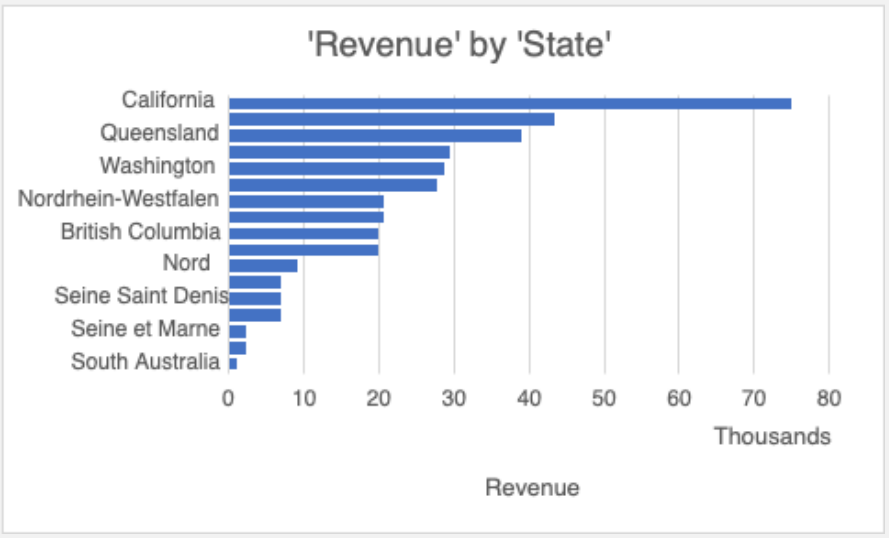
Please paste your results below:

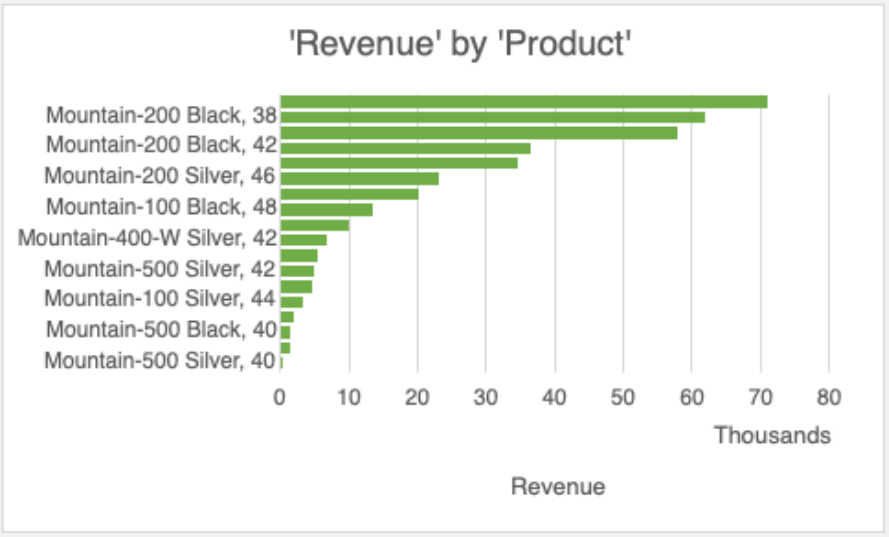
Print screen 1


' Profit ' by 'Age_Group'
9.82%
33.00%
57.18%
Adults (35-64)
Young Adults (25-34)
Youth (<25)


'Revenue' by 'Age_Group'
Revenue
Thousands
250
200
150
100
50
0
Adults (35-64)
Young Adults (25-34)
Youth (<25)
Age_Group


'Revenue' by 'Country'
Revenue
140000
120000
100000
80000
60000
40000
20000
0
United States
Australia
France
Germany
Canada
United Kingdom
United States
United States





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?

Understand Your Audience: Tailor your presentation to senior leaders who will be interested in clear, data-backed recommendations with business impact.

Craft a Clear Narrative:

- Problem: Customers leave at 12-month renewal.

	• Insight: Link this churn with pricing, customer experience, or retention strategies. • Action: Recommend a retention strategy. **Use Data to Support Claims**: Highlight internal metrics (e.g., cost per employee, customer acquisition cost, payroll efficiency) to show potential ROI of retention strategies. **Practice Your Pitch**: Rehearse with peers or record yourself to gain confidence and clarity. **Prepare for Questions**: Anticipate objections or deeper questions about financials, timelines, or implementation costs.
What tools would you use for the delivery?	**Microsoft PowerPoint or Google Slides**: For structured, clean visual presentation. **Excel or Google Sheets**: To reference the payroll/headcount data. **Power BI or Tableau**: For interactive dashboards and visuals if available. **Zoom or MS Teams**: For remote delivery, with screen sharing and chat Q&A. **Canva**: If you need highly polished, branded visuals.
What is prospecting and why would you complete this before your delivery?	Prospecting is the process of researching and understanding your audience, their needs, pain points, and expectations before engagement. **Why It Matters**: • Helps **customize** your message to resonate with the board's goals (e.g., profitability, retention).

	• Uncovers **strategic interests** or current initiatives the board is focused on (e.g., cost-cutting vs. growth). • Ensures your delivery is **relevant** and impactful, increasing buy-in.
Tell me best practices for public speaking and providing updates to senior leaders	**Be Concise**: Avoid technical jargon and long-winded explanations. **Lead with Key Insights**: Get to the point quickly—start with conclusions. **Use Storytelling**: Frame data in a narrative that creates engagement. **Data Visualization**: Use charts and graphs instead of data tables. **Rehearse Timing**: Ensure your delivery fits within the allotted time. **Confident Body Language**: Stand tall, make eye contact, use hand gestures. **Anticipate Objections**: Be prepared with answers or next steps. **End with a Call to Action**: Clearly state what you want from them—approval, budget, feedback, etc.
What will you show the board in your delivery?	**Key Finding**: Customer churn spikes at the 12-month renewal point. **Data Snapshot**: • Cost of replacing a lost customer. • Payroll efficiency—how many resources are focused on retention?

	• Comparison of salaries by department—e.g., is Sales sufficiently staffed or overpaid relative to impact? **Churn Trends**: Visual chart showing churn by month. **Recommendations**: • Adjust renewal communication strategy. • Offer loyalty discounts. • Introduce customer success check-ins at 9 and 11 months. **Expected Outcomes**: • Lower churn. • Increased revenue per customer. • Lower CAC (customer acquisition cost) over time.
How will you articulate the changes that are needed?	**Use "Why > What > How" Framework**: • **Why**: "We're seeing a pattern of churn exactly at the renewal point. This is costing us £X annually." • **What**: "We propose a targeted retention strategy—new renewal pricing, earlier engagement." • **How**: "The rollout will be phased over 3 months. The cost is minimal compared to retention revenue gains." **Use Financial Justification**: • "Improving retention by just 10% could increase annual revenue by £Y without additional customer acquisition spend."

Provide a list of online resources and videos that will support your preparation for public speaking	**YouTube Channels**: • TEDx Talks: Learn storytelling and pacing from pros. • Harvard Business Review: Presentation skills for executives. • Amy Cuddy's TED Talk on body language. **Courses**: • LinkedIn Learning – Public Speaking Foundations • Coursera – Dynamic Public Speaking by University of Washington • Toastmasters International **Books**: • "Talk Like TED" by Carmine Gallo • "Confessions of a Public Speaker" by Scott Berkun

Evaluate tools that provide visualisation.
 	
Tell me what they are.
 	
Tell me what you would choose when delivering your presentation and why
	a. What they are:
	• **Excel/Google Sheets**: Basic but effective for quick charts and tables.
	• **Power BI**: Microsoft's business analytics tool for dashboards, KPIs, interactivity.
	• **Tableau**: Industry-leading tool for powerful, beautiful visual storytelling.
	• **Looker Studio (formerly Google Data Studio)**: Great for web-based dashboard sharing.
	
	b. What I would choose and why:
	• **For this delivery**: **Power BI or Tableau** (depending on availability)
	  ○ **Why**:
	  ■ Clean visuals with interactive elements.

    - Integration with Excel for payroll/headcount data.
    - Professional and impactful in boardroom settings.
- If these are unavailable, use **PowerPoint + Excel visuals**, ensuring high contrast (e.g., dark background with bright charts for visual appeal).

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:

- `=SUM(A1:A10)` — Adds all numbers in cells A1 through A10
- `=AVERAGE(A1:A10)` — Calculates the average of numbers in A1 to A10
- `=MIN(A1:A10)` — Finds the smallest number in the range
- `=MAX(A1:A10)` — Finds the largest number in the range
- `=CONCATENATE(A1, " ", B1)` or `=A1 & " " & B1` — Joins text from A1 and B1 with a space
- `=TRIM(A1)` — Removes extra spaces from text
- `=VLOOKUP(lookup_value, table_array, col_index, [range_lookup])` — Looks up a value vertically
- `=ROUND(A1, 2)` — Rounds number in A1 to 2 decimal places
- `=COUNTA(A1:A10)` — Counts non-empty cells in range
- `=COUNTIF(A1:A10, ">5")` — Counts cells with values greater than 5

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.