

# **Data Technician**

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### **Table of contents**

Day 1: Task 1	2
Day 2: Task 1	
Day 2: Task 2	7
Day 2: Task 3	8
Day 3: Task 1	15
Day 3: Task 2	18
Dataset:	18
Step 1: Create a Pivot Table	18
Step 2: Use the SWITCH Function	18
Submission:	19
Day 3: Task 3	20
Day 4: Task 1	22
Course Notes	25
Additional Information	27

# 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

#### What is it?

The Data Protection Act (DPA) is a UK law that governs how personal data is processed, stored, and shared to protect individuals' privacy. The most recent version is the Data Protection Act 2018, which incorporates the EU's General Data Protection Regulation (GDPR) into UK law post-Brexit.

#### Why is it important?

Protects individuals' privacy, ensures transparency, and prevents misuse of data.

#### Real-world example:

A GP surgery must:

- 1) Store medical records with strong encryption
- 2 Only share patient data with other clinicians when necessary
- (3) Let patients access their records within 1 month (SAR)
- (4) Not keep records longer than NHS retention policies

#### Impact on working with data:

For organizations:

- Must register with ICO unless exempt (fee applies)
- Need lawful basis for all processing
- Special rules for criminal offense data
- Extra protections for children's data

For individuals:

- Right to be informed about data use
- Can request erasure of social media posts
- Protection against automated decision-making

## **Breach consequences:**

#### Violation Maximum Penalty

Standard infringements £8.7M or 2% global turnover Serious infringements £17.5M or 4% global turnover

Additional risks:

- ICO investigations and audits
- Compensation claims from individuals
- Loss of data sharing privileges

#### What is it?

The General Data Protection Regulation (GDPR) is a comprehensive EU/UK data privacy law that governs how organizations collect, process, and protect personal data. It came into force in May 2018 and was retained in UK law post-Brexit as the UK GDPR, alongside the Data Protection Act 2018 (DPA 2018).

### Why is it important?

Standardizes data rights across the EU/UK and holds organizations accountable.

# **GDPR**

#### Real-world example:

A retail company must:

- 1) Get clear consent before emailing marketing offers (no pre-ticked boxes)
- (2) Encrypt customer payment details
- (3) Delete old customer records after 5 years of inactivity
- (4) Report a data breach within 72 hours if risks exist

### Impact on working with data:

For businesses:

- Must document all data processing activities
- Need Data Protection Officers if handling sensitive data
- Required to conduct Privacy Impact Assessments for risky projects
- Must implement "privacy by design" in new systems



For individuals:  Right to access all data held about you (SAR)  Can demand corrections or deletions  Can object to profiling/automated decisions Breach consequences: Violation Type Minor (e.g., poor record-keeping) Major (e.g., security negligence) Additional risks:  Class-action lawsuits from affected users Permanent loss of customer trust Bans on data processing activities What is it? The Freedom of Information Act 2000 (FOIA) is a UK law that gives individuals the right to access recorded information held by public authorities, promoting transparency and accountability.  Real-world example: Scenario: A citizen requests: COVID-19 spending by their local council Covince government transparency and accountability. Real-world example: Scenario: A citizen requests: COVID-19 spending by their local council Real-world example: Scenario: A citizen requests: Covince government transparency and accountability. Real-world example: Scenario: A citizen requests: Covince government transparency and accountability. Real-world example: Scenario: A citizen requests: Covince government transparency and accountability. Real-world example: Scenario: A citizen requests: Covince government transparency and accountability. Real-world example: Scenario: A citizen requests Need systems to track requests/deadlines Required to redact exempt information (e.g., personal data under GDPR) For requesters: No need to justify requests Required to redact exempt information (e.g., personal data under GDPR) For requesters: No need to justify requests Compater Wissing deadline (20 days) Forced disclosure + reputational damage Destroying records to avoid FOIA Criminal charges for staff What is it? UK law criminalizing unauthorized access to computers and cybercrimes. Why is it important? Deters hacking, data theft, and cyberattacks. Maintains trust in digital systems. Real-world example: Scenario: A penetration tester: Gets written permission before testing a company's systems Real-world example: Scenario: A penetration tester: Gets written per										
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3 Reports vulnerabilities responsibly		· ·								
		<u> </u>								
Impact on working with data:			onsibly							
		Impact on working with data:								

- Requires strict access controls (e.g., role-based permissions)
- Mandates activity logging to detect unauthorized access
- Prohibits use of exploits/malware (even for "research") without authorization

**Breach consequences:** 

Offence Potential Penalty

**Basic hacking** (Section 1) 2 years prison + fine

Hacking to commit fraud (Section 2) 5 years prison

**Deploying ransomware** (Section 3) 10-14 years prison

**Selling hacking tools** (Section 3A) Same as Section 3

# 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
scree n 1
""

	Transaction II ~	Date ~	Customer II	Gender ~	Age ~	Product Categor ~	Quantity ~	Price per Uni ~	Revenue ~	Commission
	1	11/24/2023	CUST001	Male	34	Beauty	3	\$50.0	\$150.00	\$2.25
	2	2/27/2023	CUST002	Female	26	Clothing	2	\$500.0	\$1,000.00	\$15.00
	3	1/13/2023	CUST003	Male	50	Electronics	1	\$30.0	\$30.00	\$0.45
	4	5/21/2023	CUST004	Male	37	Clothing	1	\$500.0	\$500.00	\$7.50
	5	5/6/2023	CUST005	Male	30	Beauty	2	\$50.0	\$100.00	\$1.50
	6	4/25/2023	CUST006	Female	45	Beauty	1	\$30.0	\$30.00	\$0.45
П	7	3/13/2023	CUST007	Male	46	Clothing	2	\$25.0	\$50.00	\$0.75
	8	2/22/2023	CUST008	Male	30	Electronics	4	\$25.0	\$100.00	\$1.50
	9	12/13/2023	CUST009	Male	63	Electronics	2	\$300.0	\$600.00	\$9.00
	10	10/7/2023	CUST010	Female	52	Clothing	4	\$50.0	\$200.00	\$3.00
	11	2/14/2023	CUST011	Male	23	Clothing	2	\$50.0	\$100.00	\$1.50
	12	10/30/2023	CUST012	Male	35	Beauty	3	\$25.0	\$75.00	\$1.13
	13	8/5/2023	CUST013	Male	22	Electronics	3	\$500.0	\$1,500.00	\$22.50
	14	1/17/2023	CUST014	Male	64	Clothing	4	\$30.0	\$120.00	\$1.80
	15	1/16/2023	CUST015	Female	42	Electronics	4	\$500.0	\$2,000.00	\$30.00
	16	2/17/2023	CUST016	Male	19	Clothing	3	\$500.0	\$1,500.00	\$22.50
	17	4/22/2023	CUST017	Female	27	Clothing	4	\$25.0	\$100.00	\$1.50
	18	4/30/2023	CUST018	Female	47	Electronics	2	\$25.0	\$50.00	\$0.75
	19	9/16/2023	CUST019	Female	62	Clothing	2	\$25.0	\$50.00	\$0.75
	20	11/5/2023	CUST020	Male	22	Clothing	3	\$300.0	\$900.00	\$13.50
	21	1/14/2023	CUST021	Female	50	Beauty	1	\$500.0	\$500.00	\$7.50

	Transaction II	Date ~	Customer I	l ∨ G	iender ~	Age 👊	<b>Product Categ</b>	or Quan	tity - Pri	ce per Uni 🗸	Revenue Co	ommissio
	14	1/17/2023	CUST014	_	Male	64	Clothing	4	,	\$30.0	\$120.00	\$1.80
	25	12/26/2023	CUST025		emale	64	Beauty	1		\$50.0	\$50.00	\$0.75
	80	12/10/2023	CUST080	F	emale	64	Clothing	2		\$30.0	\$60.00	\$0.90
	122	10/3/2023	CUST122		Male	64	Electronics	4		\$30.0	\$120.00	\$1.80
	161	3/22/2023	CUST161		Male	64	Beauty	2		\$500.0	\$1,000.00	\$15.00
	163	1/2/2023	CUST163		emale	64	Clothing	3		\$50.0	\$150.00	\$2.25
	173	11/8/2023	CUST173		Male	64	Electronics	4		\$30.0	\$120.00	\$1.80
Print	187	6/7/2023	CUST187	F	emale	64	Clothing	2		\$50.0	\$100.00	\$1.50
	191	10/18/2023	CUST191		Male	64	Beauty	1		\$25.0	\$25.00	\$0.38
scree	218	9/22/2023	CUST218		Male	64	Beauty	3		\$30.0	\$90.00	\$1.35
30100	220	3/3/2023	CUST220	1	Male	64	Beauty	1		\$500.0	\$500.00	\$7.50
n 2	223	2/2/2023	CUST223	F	emale	64	Clothing	1		\$25.0	\$25.00	\$0.38
11 &	282	8/25/2023	CUST282	F	emale	64	Electronics	4		\$50.0	\$200.00	\$3.00
	363	6/3/2023	CUST363		Male	64	Beauty	1		\$25.0	\$25.00	\$0.38
	376	5/16/2023	CUST376	F	emale	64	Beauty	1		\$30.0	\$30.00	\$0.45
	399	3/1/2023	CUST399	F	emale	64	Beauty	2		\$30.0	\$60.00	\$0.90
	408	4/15/2023	CUST408	F	emale	64	Beauty	1		\$500.0	\$500.00	\$7.50
	429	12/28/2023	CUST429		Male	64	Electronics	2		\$25.0	\$50.00	\$0.75
	440	10/26/2023	CUST440	1	Male	64	Clothing	2		\$300.0	\$600.00	\$9.00
	473	2/25/2023	CUST473		Male	64	Beauty	1		\$50.0	\$50.00	\$0.75
	532	6/19/2023	CUST532		emale	64	Clothing	4		\$30.0	\$120.00	\$1.80
	A	В	С	D	E	-	G	Н	1	1	K	L
	1 Transaction I			Gender ~	Age -	Product Catego		Price per Un	Revenue	Commissio	K	
	2 14	1/17/2023	CUST014	Male	64	Clothing	4	\$30.0	\$120.00	\$1.80		Commissio
	3 25	12/26/2023		Female	64	Beauty	1	\$50.0	\$50.00	\$0.75		
	4 80 5 122	12/10/2023 10/3/2023	CUST080 CUST122	Female Male	64 64	Clothing Electronics	2 4	\$30.0 \$30.0	\$60.00	\$0.90 \$1.80		
	6 161	3/22/2023	CUST161	Male	64	Beauty	2	\$500.0	\$1,000.00	\$15.00	†	
	7 163	1/2/2023	CUST163	Female	64	Clothing	3	\$50.0	\$150.00	\$2.25		
	8 173	11/8/2023	CUST173	Male	64	Electronics	4	\$30.0	\$120.00	\$1.80		
Print	9 187 10 191	6/7/2023	CUST187 CUST191	Female Male	64 64	Clothing Beauty	1	\$50.0 \$25.0	\$100.00 \$25.00	\$1.50 \$0.38	total of commission	\$6,840
	11 218	9/22/2023	CUST218	Male	64	Beauty	3	\$30.0	\$90.00	\$1.35	average commission	
scree	12 220	3/3/2023	CUST220	Male	64	Beauty	1	\$500.0	\$500.00	\$7.50		,
36166	13 223	2/2/2023		Female	64	Clothing	1	\$25.0	\$25.00	\$0.38		
n 3	14 282	8/25/2023		Female	64	Electronics	4	\$50.0	\$200.00	\$3.00		
11 5	15 363 16 376	6/3/2023	CUST363	Male	64	Beauty	1	\$25.0	1 525.00		1	
		5/16/2023	CUST376	Female	1 64	Beauty	1	\$30.0				
	16 <b>376</b> 17 <b>399</b>	5/16/2023 3/1/2023		Female Female	64 64	Beauty Beauty	1 2	\$30.0 \$30.0	\$30.00 \$60.00	\$0.45 \$0.90		
	17 399 18 408	3/1/2023 4/15/2023	CUST399 CUST408	Female Female	64 64	Beauty Beauty	2 1	\$30.0 \$500.0	\$30.00 \$60.00 \$500.00	\$0.45 \$0.90 \$7.50		
	17 399 18 408 19 429	3/1/2023 4/15/2023 12/28/2023	CUST399 CUST408 CUST429	Female Female Male	64 64 64	Beauty Beauty Electronics	2 1 2	\$30.0 \$500.0 \$25.0	\$30.00 \$60.00 \$500.00 \$50.00	\$0.45 \$0.90 \$7.50 \$0.75		
	17 399 18 408 19 429 20 440	3/1/2023 4/15/2023 12/28/2023 10/26/2023	CUST399 CUST408 CUST429 CUST440	Female Female Male Male	64 64 64 64	Beauty Beauty Electronics Clothing	2 1 2 2	\$30.0 \$500.0 \$25.0 \$300.0	\$30.00 \$60.00 \$500.00 \$50.00 \$600.00	\$0.45 \$0.90 \$7.50 \$0.75 \$9.00		
	17 399 18 408 19 429	3/1/2023 4/15/2023 12/28/2023	CUST499 CUST408 CUST429 CUST440 CUST473	Female Female Male	64 64 64	Beauty Beauty Electronics	2 1 2	\$30.0 \$500.0 \$25.0	\$30.00 \$60.00 \$500.00 \$50.00	\$0.45 \$0.90 \$7.50 \$0.75		
	17 399 18 408 19 429 20 440 21 473 22 532 23 561	3/1/2023 4/15/2023 12/28/2023 10/26/2023 2/25/2023 6/19/2023 5/27/2023	CUST399 CUST408 CUST429 CUST440 CUST473 CUST532 CUST561	Female Female Male Male Male Female Female	64 64 64 64 64 64 64	Beauty Beauty Electronics Clothing Beauty Clothing Clothing	2 1 2 2 2 1 4 4	\$30.0 \$500.0 \$25.0 \$300.0 \$50.0 \$30.0 \$500.0	\$30.00 \$60.00 \$500.00 \$50.00 \$600.00 \$50.00 \$120.00 \$2,000.00	\$0.45 \$0.90 \$7.50 \$0.75 \$9.00 \$0.75 \$1.80 \$30.00		
	17 399 18 408 19 429 20 440 21 473 22 532 23 561 24 566	3/1/2023 4/15/2023 12/28/2023 10/26/2023 2/25/2023 6/19/2023 5/27/2023 12/2/2023	CUST399 CUST408 CUST429 CUST440 CUST473 CUST532 CUST561 CUST566	Female Female Male Male Male Female Female Female	64 64 64 64 64 64 64 64	Beauty Beauty Electronics Clothing Beauty Clothing Clothing Clothing	2 1 2 2 1 4 4 4	\$30.0 \$500.0 \$25.0 \$300.0 \$50.0 \$30.0 \$500.0 \$30.0	\$30.00 \$60.00 \$500.00 \$50.00 \$600.00 \$50.00 \$120.00 \$2,000.00 \$30.00	\$0.45 \$0.90 \$7.50 \$0.75 \$9.00 \$0.75 \$1.80 \$30.00 \$0.45		
	17 399 18 408 19 429 20 440 21 473 22 532 23 561	3/1/2023 4/15/2023 12/28/2023 10/26/2023 2/25/2023 6/19/2023 5/27/2023 12/2/2023 2/7/2023	CUST399 CUST408 CUST429 CUST440 CUST473 CUST5473 CUST556 CUST566 CUST596	Female Female Male Male Male Female Female	64 64 64 64 64 64 64	Beauty Beauty Electronics Clothing Beauty Clothing Clothing	2 1 2 2 2 1 4 4	\$30.0 \$500.0 \$25.0 \$300.0 \$50.0 \$30.0 \$500.0	\$30.00 \$60.00 \$500.00 \$50.00 \$600.00 \$50.00 \$120.00 \$2,000.00	\$0.45 \$0.90 \$7.50 \$0.75 \$9.00 \$0.75 \$1.80 \$30.00		
	17 399 18 408 19 429 20 440 21 473 22 532 23 561 24 566 25 596 26 692	3/1/2023 4/15/2023 12/28/2023 10/26/2023 2/25/2023 6/19/2023 5/27/2023 12/2/2023 2/7/2023 9/7/2023	CUST399 CUST408 CUST429 CUST440 CUST473 CUST532 CUST561 CUST566 CUST596 CUST596 CUST692	Female Female Male Male Male Female Female Female Female Female	64 64 64 64 64 64 64 64 64	Beauty Beauty Electronics Clothing Beauty Clothing Clothing Clothing Clothing Electronics	2 1 2 2 1 4 4 4 1 1	\$30.0 \$500.0 \$25.0 \$300.0 \$50.0 \$50.0 \$30.0 \$30.0 \$30.0 \$30.0 \$50.0	\$30.00 \$60.00 \$500.00 \$50.00 \$600.00 \$50.00 \$120.00 \$2,000.00 \$30.00	\$0.45 \$0.90 \$7.50 \$0.75 \$9.00 \$0.75 \$1.80 \$30.00 \$0.45 \$4.50	K	L
	17 399 18 408 19 429 20 440 21 473 22 532 23 561 24 566 25 596	3/1/2023 4/15/2023 12/28/2023 10/26/2023 2/25/2023 6/19/2023 5/27/2023 12/2/2023 2/7/2023 9/7/2023	CUST399 CUST408 CUST429 CUST440 CUST473 CUST532 CUST561 CUST566 CUST596 CUST692	Female Female Male Male Male Female Female Female Female	64 64 64 64 64 64 64 64 64 64	Beauty Beauty Electronics Clothing Beauty Clothing Clothing Clothing Clothing Electronics	2 1 2 2 1 4 4 4 1 1 2	\$30.0 \$500.0 \$25.0 \$300.0 \$50.0 \$50.0 \$500.0 \$30.0 \$30.0 \$30.0	\$30.00 \$60.00 \$500.00 \$50.00 \$600.00 \$50.00 \$120.00 \$2,000.00 \$30.00	\$0.45 \$0.90 \$7.50 \$0.75 \$9.00 \$0.75 \$1.80 \$30.00 \$0.45 \$4.50	к	L
	17 399 18 408 19 429 20 440 21 473 22 532 23 561 24 566 25 596 26 692  A A 1 Transaction 2 14	3/1/2023 4/15/2023 12/28/2023 10/26/2023 2/25/2023 6/19/2023 5/27/2023 12/2/2023 9/7/2023 B Date 1/17/2023	CUST399 CUST408 CUST429 CUST440 CUST473 CUST532 CUST566 CUST566 CUST566 CUST596 CUST092 CUST091	Female Female Male Male Male Male Female Female Female Female Female Female Male Male	64 64 64 64 64 64 64 64 64 64 64 64	Beauty Beauty Beauty Electronics Clothing Beauty Clothing Clothing Clothing Clothing Clothing Clothing Electronics Clothing Froduct Catego Clothing	2 1 2 2 2 1 4 4 4 1 1 1 2 2 G	\$30.0 \$500.0 \$25.0 \$300.0 \$50.0 \$30.0 \$30.0 \$30.0 \$30.0 \$70.0	\$30.00 \$60.00 \$500.00 \$500.00 \$50.00 \$120.00 \$2,000.00 \$300.00 \$100.00	\$0.45 \$0.90 \$7.50 \$0.75 \$9.00 \$0.75 \$1.80 \$30.00 \$1.50 \$1.50	К	L
	17 399 18 408 19 429 20 440 21 473 22 532 23 561 24 566 25 596 26 692  A A 1 Transaction  2 14 3 25	3/1/2023 4/15/2023 12/28/2023 10/26/2023 2/25/2023 6/19/2023 5/27/2023 12/2/2023 2/7/2023 9/7/2023 B  Date (1/17/2023 12/26/2023	CUST399 CUST408 CUST429 CUST440 CUST4440 CUST473 CUST561 CUST566 CUST566 CUST692 C C Customer   V CUST025	Female Female Male Male Male Female	64 64 64 64 64 64 64 64 64 64 64 64	Beauty Beauty Beauty Electronics Clothing Beauty Clothing Clothing Clothing Electronics Clothing F Product Catego Clothing Beauty	2 1 2 2 1 4 4 1 1 2 G Quantit 4 4	\$30.0 \$500.0 \$25.0 \$300.0 \$50.0 \$30.0 \$500.0 \$30.0 \$50.0 H Price per Un \$30.0 \$30.0 \$50.0	\$30.00 \$60.00 \$50.00 \$50.00 \$600.00 \$120.00 \$30.00 \$300.00 \$100.00	\$0.45 \$0.90 \$7.50 \$0.75 \$9.00 \$0.75 \$1.80 \$30.00 \$0.45 \$4.50 \$1.50 \$1.50 \$1.50	К	
	17 399 18 408 19 429 20 440 21 473 22 532 23 561 24 566 25 596 26 692  A Tansaction  2 14 3 25 4 80	3/1/2023 4/15/2023 12/28/2023 10/26/2023 2/25/2023 6/19/2023 5/27/2023 12/2/2023 2/7/2023 9/7/2023 B Date 1/17/2023 12/26/2023 12/26/2023	CUST399 CUST408 CUST440 CUST429 CUST440 CUST473 CUST556 CUST566 CUST566 CUST596 CUST596 CUST501 CUST092 C CUST080	Female Female Male Male Male Female	64 64 64 64 64 64 64 64 64 64 64 64	Beauty Beauty Beauty Electronics Clothing Beauty Clothing Clothing Clothing Clothing Electronics Clothing F Product Catego Clothing Beauty Clothing	2 1 2 2 2 1 4 4 4 4 1 1 2 2 G Quantit 4 4 1 1 2 2	\$30.0 \$500.0 \$25.0 \$300.0 \$50.0 \$30.0 \$500.0 \$30.0 \$30.0 \$700	\$30.00 \$60.00 \$500.00 \$50.00 \$600.00 \$120.00 \$30.00 \$300.00 \$120.00 \$300.00 \$120.00 \$120.00 \$120.00 \$100.00	\$0.45 \$0.90 \$7.50 \$0.75 \$9.00 \$0.75 \$1.80 \$30.00 \$0.45 \$4.50 \$1.50 \$1.50 \$0.75 \$1.50	K	
	17 399 18 408 19 429 20 440 21 473 22 532 23 561 24 566 25 596 26 692 A 1 Transaction   2 14 3 2 25 4 80	3/1/2023 4/15/2023 12/28/2023 10/26/2023 2/25/2023 6/19/2023 5/27/2023 12/2/2023 2/7/2023 9/7/2023 B  Date (1/17/2023 12/26/2023	CUST399 CUST408 CUST429 CUST440 CUST4440 CUST473 CUST561 CUST566 CUST566 CUST692 C C Customer   V CUST025	Female Female Male Male Male Female	64 64 64 64 64 64 64 64 64 64 64 64	Beauty Beauty Beauty Electronics Clothing Beauty Clothing Clothing Clothing Electronics Clothing F Product Catego Clothing Beauty	2 1 2 2 1 4 4 1 1 2 G Quantit 4 4	\$30.0 \$500.0 \$25.0 \$300.0 \$50.0 \$30.0 \$500.0 \$30.0 \$50.0 H Price per Un \$30.0 \$30.0 \$50.0	\$30.00 \$60.00 \$50.00 \$50.00 \$600.00 \$120.00 \$30.00 \$300.00 \$100.00	\$0.45 \$0.90 \$7.50 \$0.75 \$9.00 \$0.75 \$1.80 \$30.00 \$0.45 \$4.50 \$1.50 \$1.50 \$1.50	к	
	17 399 18 408 19 429 20 440 21 473 22 532 23 561 24 566 25 596 26 692  A 1 Transaction   V 2 14 3 25 4 80 5 122	3/1/2023 4/15/2023 12/28/2023 10/26/2023 2/25/2023 6/19/2023 5/27/2023 12/2/2023 9/7/2023 B Date 1/17/2023 12/26/2023 12/19/2023 12/19/2023	CUST399 CUST408 CUST440 CUST449 CUST440 CUST473 CUST561 CUST566 CUST566 CUST692 C C Customer I  CUST040 CUST025 CUST080 CUST080 CUST161	Female Female Male Male Male Male Female Female Female Female D Gender Male Female Male	64 64 64 64 64 64 64 64 64 64 64 64 64 6	Beauty Beauty Beauty Electronics Clothing Beauty Clothing Clothing Clothing Electronics Clothing Electronics Clothing F Product Catego Clothing Beauty Clothing Electronics Beauty Clothing	2 1 2 2 2 1 4 4 1 1 1 2 G Quantit 4 4 4	\$30.0 \$500.0 \$25.0 \$300.0 \$50.0 \$30.0 \$500.0 \$300.0 \$500.0 H Price per Un \$30.0 \$50.0 \$30.	\$30.00 \$60.00 \$500.00 \$50.00 \$50.00 \$120.00 \$2,000.00 \$30.00 \$100.00 	\$0.45 \$0.90 \$7.50 \$0.75 \$9.00 \$0.75 \$1.80 \$30.00 \$1.50 \$1.50 \$1.50 \$1.50	к	
	17 399 18 408 19 429 20 440 21 473 22 532 23 561 24 566 25 596 26 692  A 1 Transaction   2 14 3 25 4 80 5 122 6 161 7 163 8 173	3/1/2023 4/15/2023 12/28/2023 10/26/2023 2/25/2023 5/27/2023 12/2/2023 12/2/2023 9/7/2023 B Date 1/17/2023 12/20/2023 12/20/2023 12/20/2023 12/20/2023 12/20/2023 12/20/2023 12/20/2023 11/3/2023 11/3/2023	CUST399 CUST408 CUST429 CUST429 CUST440 CUST555 CUST556 CUST566 CUST566 CUST692 C C CUST014 CUST014 CUST0125 CUST015 CUST015 CUST016 CUST016 CUST016 CUST016 CUST017 CUST017	Female Female Male Male Male Male Female Female Female Female Female Female Female Male Male Female Male Female Female Male Male Male Male Male	64 64 64 64 64 64 64 64 64 64 64 64 64 6	Beauty Beauty Beauty Electronics Clothing Beauty Clothing Clothing Clothing Clothing Clothing Electronics Clothing F Froduct Catego Clothing Beauty Clothing Electronics Beauty Clothing Electronics Electronics Electronics	2 1 2 2 2 1 4 4 1 1 1 2 G Quantit 4 4 1 2 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	\$30.0 \$500.0 \$25.0 \$300.0 \$50.0 \$30.0 \$500.0 \$300.0 \$500.0 H Price per Un \$30.0 \$50.0 \$30.0 \$50.0 \$50.0 \$30.0 \$50.0 \$30.0 \$50.0 \$30.0 \$50.0 \$30.0 \$30.0 \$30.0 \$30.0 \$50.0 \$30.0 \$30.0 \$30.0 \$50.0 \$30.	\$30.00 \$60.00 \$500.00 \$500.00 \$500.00 \$50.00 \$120.00 \$30.00 \$30.00 \$100.00 \$120.00 \$50.00 \$120.00 \$120.00 \$50.00 \$50.00 \$120.00 \$120.00 \$120.00 \$120.00 \$120.00	\$0.45 \$0.90 \$7.50 \$0.75 \$9.00 \$0.75 \$1.80 \$30.00 \$1.50 \$1.50 \$1.50 \$1.80 \$1.80 \$2.25 \$1.80	к	
Print	17 399 18 408 19 429 20 440 21 473 22 532 23 561 24 566 25 596 26 692  A 1 Transacton   2 14 3 25 4 80 5 122 6 161 7 163 8 173 9 187	3/1/2023 4/15/2023 12/28/2023 10/26/2023 2/25/2023 6/19/2023 5/27/2023 12/2/2023 12/2/2023 9/7/2023 B Date (1/17/2023 12/26/2023 12/10/2023 12/2023 12/2023 11/8/2023 11/8/2023 6/7/2023	CUST399 CUST408 CUST440 CUST429 CUST440 CUST473 CUST561 CUST566 CUST569 CUST692 C CUST0692 CUST1693 CUST1693 CUST187	Female Male Male Male Male Male Female Female Female Female Female Female Male Female Female Male Female Male Female Male Female	64 64 64 64 64 64 64 64 64 64 64 64 64 6	Beauty Beauty Beauty Electronics Clothing Beauty Clothing Clothing Clothing Electronics Clothing Electronics Clothing Electronics Clothing Beauty Clothing Beauty Clothing Electronics Beauty Clothing Electronics Clothing	2 1 2 2 1 4 4 1 1 2 G Quantit 4 1 2 3 4 4 2 2	\$30.0 \$500.0 \$25.0 \$300.0 \$50.0 \$30.0 \$500.0 \$300.0 \$500.0 \$50.0 \$30.0 \$50.0 \$30.0 \$50.0 \$30.0 \$50.0 \$30.0 \$50.0 \$30.0 \$50.0 \$30.0 \$50.0 \$30.0 \$50.0	\$30.00 \$60.00 \$500.00 \$500.00 \$500.00 \$100.00 \$120.00 \$300.00 \$100.00 \$120.00 \$100.00 \$120.00 \$120.00 \$120.00 \$120.00 \$120.00 \$120.00 \$120.00 \$120.00 \$120.00 \$120.00	\$0.45 \$0.90 \$7.50 \$0.75 \$9.00 \$0.75 \$1.80 \$30.00 \$0.45 \$4.50 \$1.50 \$0.75 \$1.80 \$1.50 \$1.80 \$2.25 \$0.25 \$1.80		Commissio
Print	17 399 18 408 19 429 20 440 21 473 22 532 23 561 24 566 25 596 26 692  A 1 Transaction   2 14 3 25 4 80 5 122 6 161 7 163 8 173	3/1/2023 4/15/2023 12/28/2023 10/26/2023 2/25/2023 5/27/2023 12/2/2023 12/2/2023 9/7/2023 B Date 1/17/2023 12/20/2023 12/20/2023 12/20/2023 12/20/2023 12/20/2023 12/20/2023 12/20/2023 11/3/2023 11/3/2023	CUST399 CUST408 CUST429 CUST429 CUST440 CUST555 CUST556 CUST566 CUST566 CUST692 C C CUST014 CUST014 CUST0125 CUST015 CUST015 CUST016 CUST016 CUST016 CUST016 CUST017 CUST017	Female Female Male Male Male Male Female Female Female Female Female Female Female Male Male Female Male Female Female Male Male Male Male Male	64 64 64 64 64 64 64 64 64 64 64 64 64 6	Beauty Beauty Beauty Electronics Clothing Beauty Clothing Clothing Clothing Clothing Clothing Electronics Clothing F Froduct Catego Clothing Beauty Clothing Electronics Beauty Clothing Electronics Electronics Electronics	2 1 2 2 2 1 4 4 1 1 1 2 G Quantit 4 4 1 2 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	\$30.0 \$500.0 \$25.0 \$300.0 \$50.0 \$30.0 \$500.0 \$300.0 \$500.0 H Price per Un \$30.0 \$50.0 \$30.0 \$50.0 \$50.0 \$30.0 \$50.0 \$30.0 \$50.0 \$30.0 \$50.0 \$30.0 \$30.0 \$30.0 \$30.0 \$50.0 \$30.0 \$30.0 \$30.0 \$50.0 \$30.	\$30.00 \$60.00 \$500.00 \$500.00 \$500.00 \$50.00 \$120.00 \$30.00 \$30.00 \$100.00 \$120.00 \$50.00 \$120.00 \$120.00 \$50.00 \$50.00 \$120.00 \$120.00 \$120.00 \$120.00 \$120.00	\$0.45 \$0.90 \$7.50 \$0.75 \$9.00 \$0.75 \$1.80 \$30.00 \$1.50 \$1.50 \$1.50 \$1.80 \$1.80 \$2.25 \$1.80	total of commission average commission	Commission
	17 399 18 408 19 429 20 440 21 473 22 532 23 561 24 566 25 596 26 692  A 1 Transaction I 2 14 3 25 4 80 5 122 6 161 7 163 8 173 9 187 10 191 11 218 12 220	3/1/2023 4/15/2023 12/28/2023 10/26/2023 2/25/2023 6/19/2023 5/27/2023 12/2/2023 12/2/2023 9/7/2023 B  Date	CUST399 CUST408 CUST440 CUST440 CUST4440 CUST473 CUST561 CUST566 CUST569 CUST692 C CUST692 CUST692 CUST080 CUST080 CUST163 CUST164 CUST122 CUST165 CUST165 CUST165 CUST167 CUST173 CUST187 CUST191 CUST128 CUST220	Female Female Male Male Male Female Female Female Female Female Male Male Male Male Male Male Male M	64 64 64 64 64 64 64 64 64 64 64 64 64 6	Beauty Beauty Beauty Beauty Electronics Clothing Beauty Clothing Clothing Clothing Electronics Clothing Electronics Clothing Beauty Clothing Beauty Clothing Electronics Beauty Clothing Electronics Clothing Beauty Clothing Beauty Beauty Beauty Beauty Beauty Beauty Beauty Beauty Beauty	2 1 2 2 1 4 4 1 1 2 G Quantit 4 1 2 4 4 1 2 3 4 4 1 1 1 2 1 1 2 1 1 1 2 1 1 1 1 1 1 1	\$30.0 \$500.0 \$25.0 \$300.0 \$50.0 \$30.0 \$500.0 \$300.0 \$500.0 \$300.0 \$50.0 \$30.0 \$50.0 \$30.0 \$50.0 \$30.0 \$50.0 \$30.0 \$50.0 \$30.0	\$30.00 \$60.00 \$500.00 \$500.00 \$500.00 \$500.00 \$120.00 \$300.00	\$0.45 \$0.90 \$7.50 \$0.75 \$9.00 \$0.75 \$1.80 \$30.00 \$1.50 \$1.50 \$1.50 \$1.80 \$2.25 \$1.80 \$1.80 \$1.80 \$1.80 \$1.80 \$1.80 \$1.80 \$1.80	total of commission	Commission
Print scree	17 399 18 408 19 429 20 440 21 473 22 532 23 561 24 566 25 596 26 692  A Tansaction 2 14 3 25 4 80 5 122 6 161 7 163 8 173 9 187 10 191 11 218 12 220 13 223	3/1/2023 4/15/2023 1/15/2023 1/2/8/2023 10/26/2023 2/25/2023 6/19/2023 5/27/2023 12/2/2023 9/7/2023 9/7/2023 12/16/2023 12/16/2023 12/26/2023 12/2023 1/2/2023	CUST399 CUST408 CUST440 CUST440 CUST4440 CUST473 CUST561 CUST566 CUST566 CUST596 CUST692 C CUST061 CUST061 CUST061 CUST061 CUST070 CUST014 CUST014 CUST015 CUST016 CUST016 CUST017 CUST017 CUST017 CUST017 CUST017 CUST017 CUST017 CUST019 CUST122 CUST019 CUST122 CUST163 CUST123 CUST123 CUST1218 CUST1218 CUST1218 CUST1220 CUST223	Female Female Male Male Male Female Female Female Female Female Male Female	64 64 64 64 64 64 64 64 64 64 64 64 64 6	Beauty Beauty Beauty Beauty Electronics Clothing Beauty Clothing Clothing Clothing Electronics Clothing Electronics Clothing Electronics Clothing Beauty Clothing Electronics Beauty Clothing Electronics Beauty Clothing Electronics Elec	2 1 1 2 2 1 1 4 4 4 1 1 1 2 2 6 G Quantit 2 4 4 2 2 3 3 4 4 2 2 1 1 3 3 1 1 1 1	\$30.0 \$500.0 \$25.0 \$300.0 \$50.0 \$30.0 \$500.0 \$30.0 \$300.0 \$50.0 H Price per Un \$30.0 \$50.0 \$30.0 \$50.0 \$30.0 \$50.0 \$30.0 \$50.0 \$30.0 \$50.0 \$30.0 \$50.0 \$30.0 \$50.0 \$30.0 \$50.0	\$30.00 \$60.00 \$500.00 \$500.00 \$50.00 \$50.00 \$2,000.00 \$300.00 \$300.00 \$100.00 \$120.00 \$50.00 \$120.00 \$120.00 \$120.00 \$150.00 \$150.00 \$150.00 \$150.00 \$150.00 \$150.00 \$150.00 \$150.00 \$150.00 \$150.00 \$150.00 \$150.00 \$150.00	\$0.45 \$0.90 \$7.50 \$0.75 \$9.00 \$0.75 \$1.80 \$30.00 \$0.45 \$4.50 \$1.50 \$1.50 \$1.80 \$0.75 \$1.80 \$0.75 \$0.75 \$0.90 \$1.80 \$0.75 \$0.90 \$0.85 \$0.75 \$0.90 \$0.85 \$0.75 \$0.90 \$0.85 \$0.75 \$0.90 \$0.85 \$0.75 \$0.90 \$0.85 \$0.75 \$0.90 \$0.85 \$0.75 \$0.90 \$0.85 \$	total of commission	Commission
scree	17 399 18 408 19 429 20 440 21 473 22 532 23 561 24 566 25 596 26 692  A 1 Transaction 1 2 14 3 25 4 80 5 122 6 161 7 163 8 173 9 187 10 191 11 218 12 220 13 223 14 282	3/1/2023 4/15/2023 12/28/2023 10/26/2023 2/25/2023 6/19/2023 5/27/2023 12/2023 9/7/2023 9/7/2023 8  Date 1/17/2023 12/26/2023 12/26/2023 12/2023 3/22/2023 1/2/2023 1/2/2023 1/2/2023 1/2/2023 1/2/2023 1/2/2023 1/2/2023 1/2/2023 1/2/2023 1/2/2023 1/2/2023 3/3/2023 2/2/2023 8/25/2023	CUST399 CUST408 CUST429 CUST429 CUST440 CUST473 CUST556 CUST566 CUST596 CUST692 C CUST692 CUST692 CUST692 CUST691 CUST014 CUST014 CUST025 CUST016 CUST105 CUST106 CUST107 CUST112 CUST112 CUST113 CUST113 CUST113 CUST113 CUST123 CUST122 CUST123 CUST223 CUST223 CUST223	Female Female Male Male Male Male Male Male Female Female Female Female Female Male Female Male Male Male Male Male Male Male Female	64 64 64 64 64 64 64 64 64 64 64 64 64 6	Beauty Beauty Beauty Beauty Electronics Clothing Beauty Clothing Clothing Clothing Clothing Electronics Clothing Beauty Clothing Beauty Clothing Electronics Beauty Clothing Electronics Clothing Electronics Beauty Clothing Electronics Electronics Electronics Electronics Electronics	2 1 1 2 2 1 1 4 4 1 1 1 2 2 4 4 2 2 3 3 4 4 2 2 1 1 3 3 1 1 1 4 4	\$30.0 \$500.0 \$25.0 \$300.0 \$50.0 \$30.0 \$500.0 \$300.0 \$50.0 H Price per Un \$30.0 \$50.0 \$50.0	\$30.00 \$60.00 \$500.00 \$500.00 \$500.00 \$120.00 \$2,000.00 \$300.00 \$300.00 \$100.00 \$120.00 \$120.00 \$120.00 \$120.00 \$120.00 \$120.00 \$120.00 \$150.0	\$0.45 \$0.90 \$7.50 \$0.75 \$9.00 \$0.75 \$1.80 \$30.00 \$0.45 \$4.50 \$1.50 \$1.80	total of commission	Commission
	17 399 18 408 19 429 20 440 21 473 22 532 23 561 24 566 25 596 26 692  A Tansaction 2 14 3 25 4 80 5 122 6 161 7 163 8 173 9 187 10 191 11 218 12 220 13 223	3/1/2023 4/15/2023 1/15/2023 1/2/8/2023 10/26/2023 2/25/2023 6/19/2023 5/27/2023 12/2/2023 9/7/2023 9/7/2023 12/16/2023 12/16/2023 12/26/2023 12/2023 1/2/2023	CUST399 CUST408 CUST440 CUST449 CUST440 CUST473 CUST561 CUST566 CUST569 CUST692 C CUST692 CUST692 CUST692 CUST691 CUST169	Female Female Male Male Male Female Female Female Female Female Male Female	64 64 64 64 64 64 64 64 64 64 64 64 64 6	Beauty Beauty Beauty Beauty Electronics Clothing Beauty Clothing Clothing Clothing Electronics Clothing Electronics Clothing Electronics Clothing Beauty Clothing Electronics Beauty Clothing Electronics Beauty Clothing Electronics Elec	2 1 1 2 2 1 1 4 4 4 1 1 1 2 2 6 G Quantit 2 4 4 2 2 3 3 4 4 2 2 1 1 3 3 1 1 1 1	\$30.0 \$500.0 \$25.0 \$300.0 \$50.0 \$30.0 \$500.0 \$30.0 \$300.0 \$50.0 H Price per Un \$30.0 \$50.0 \$30.0 \$50.0 \$30.0 \$50.0 \$30.0 \$50.0 \$30.0 \$50.0 \$30.0 \$50.0 \$30.0 \$50.0 \$30.0 \$50.0	\$30.00 \$60.00 \$500.00 \$500.00 \$50.00 \$50.00 \$2,000.00 \$300.00 \$300.00 \$100.00 \$120.00 \$50.00 \$120.00 \$120.00 \$120.00 \$150.00 \$150.00 \$150.00 \$150.00 \$150.00 \$150.00 \$150.00 \$150.00 \$150.00 \$150.00 \$150.00 \$150.00 \$150.00	\$0.45 \$0.90 \$7.50 \$0.75 \$9.00 \$0.75 \$1.80 \$30.00 \$0.45 \$4.50 \$1.50 \$1.50 \$1.80 \$0.75 \$1.80 \$0.75 \$0.75 \$0.90 \$1.80 \$0.75 \$0.90 \$0.85 \$0.75 \$0.90 \$0.85 \$0.75 \$0.90 \$0.85 \$0.75 \$0.90 \$0.85 \$0.75 \$0.90 \$0.85 \$0.75 \$0.90 \$0.85 \$0.75 \$0.90 \$0.85 \$	total of commission	Commission
scree	17 399 18 408 19 429 20 440 21 473 22 532 23 561 24 566 25 596 26 692  A 1 Transaction 1 2 14 3 25 4 80 5 122 6 161 7 163 8 173 9 187 10 191 11 218 12 220 13 223 14 282 15 363 16 376 17 399	3/1/2023 4/15/2023 12/28/2023 10/26/2023 2/25/2023 5/19/2023 12/2023 12/2023 12/2023 12/2023 12/2023 12/2023 12/2023 12/2023 12/2023 12/2023 12/2023 12/2023 12/2023 12/2023 12/2023 1/2/2023	CUST399 CUST408 CUST429 CUST440 CUST429 CUST440 CUST552 CUST556 CUST566 CUST596 CUST692 C CUST501 CUST692 CUST187 CUST1187 CUST1187 CUST1187 CUST128 CUST220 CUST223 CUST363 CUST363 CUST363	Female Female Male Male Male Male Male Male Female Female Female Female Male Female Female Female Female	64 64 64 64 64 64 64 64 64 64 64 64 64 6	Beauty Beauty Beauty Beauty Electronics Clothing Beauty Clothing Clothing Clothing Electronics Clothing Electronics Clothing Beauty Clothing Electronics Beauty Clothing Electronics Clothing Electronics Beauty Clothing Electronics Clothing Electronics Clothing Electronics Electronics Clothing Electronics Clothing Electronics Electronics Beauty	2 1 1 2 2 1 1 4 4 1 1 1 2 2 4 4 2 2 3 3 4 4 2 2 1 1 3 3 1 1 1 1 2 2 1 1 1 2 2 1 1 1 1	\$30.0 \$500.0 \$25.0 \$300.0 \$50.0 \$30.0 \$500.0 \$300.0 \$50.0 H Price per Un \$30.0 \$50.0 \$30.0 \$50.0 \$30.0 \$50.0 \$30.0 \$50.0 \$30.0 \$50.0 \$30.0 \$50.0 \$30.0 \$50.0 \$30.0	\$30.00 \$60.00 \$500.00 \$500.00 \$500.00 \$120.00 \$2,000.00 \$300.00 \$300.00 \$100.00 \$120.00 \$120.00 \$120.00 \$120.00 \$120.00 \$120.00 \$120.00 \$150.00 \$150.00 \$150.00 \$250.00 \$250.00 \$250.00 \$250.00 \$250.00 \$250.00 \$250.00 \$250.00	\$0.45 \$0.90 \$7.50 \$0.75 \$9.00 \$0.75 \$1.80 \$30.00 \$0.45 \$4.50 \$1.50 \$1.80 \$0.75 \$1.80 \$1.50 \$1.80 \$0.75 \$1.80 \$0.45 \$4.50 \$1.80 \$0.75 \$0.90 \$1.80 \$1.80 \$1.80 \$1.80 \$0.75 \$0.90 \$1.80 \$1.80 \$0.75 \$0.75 \$0.75 \$0.75 \$0.75 \$0.75 \$0.80 \$0.45 \$0.75 \$0.90 \$1.80 \$1.80 \$1.80 \$1.80 \$1.50 \$0.38 \$	total of commission	Commission
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# 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	3	3
Khan	85	75	80		570
Harry	80	70	80		
Sarah	80	70	80	5	32 35
John	65	80	70		
Linda	90	50	70		
Edward	55	80	60		3 24
Mary	55	70	65		
Thomas	55	30	65	5	5
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

# **English Subject - Best students**

Print screen 1

Student name	Englisl√↓	Mathema 🔻	Scienc	Average	Highest scc ~
Linda	90	50	70	70.00	90
Khan	85	75	80	80.00	85
Ted	80	75	90	81.67	90
Harry	80	70	80	76.67	80
Sarah	80	70	80	76.67	80
Carol	75	85	85	81.67	85
John	65	80	70	71.67	80
Edward	55	80	60	65.00	80
Mary	55	70	65	63.33	70
Thomas	55	30	65	50.00	65

**Math Subject - Best students** 

Student name	Englis	Mathema√↓	Scienc	Average	Highest scc 🔻
Carol	75	85	85	81.67	85
John	65	80	70	71.67	80
Edward	55	80	60	65.00	80
Khan	85	75	80	80.00	85
Ted	80	75	90	81.67	90
Harry	80	70	80	76.67	80
Sarah	80	70	80	76.67	80
Mary	55	70	65	63.33	70
Linda	90	50	70	70.00	90
Thomas	55	30	65	50.00	65

# **Science Subject - Best students**

Student name 🔻	Englisl	Mathema 🔻	Scienc	Average	Highest scc 🗡
Ted	80	75	90	81.67	90
Carol	75	85	85	81.67	85
Khan	85	75	80	80.00	85
Harry	80	70	80	76.67	80
Sarah	80	70	80	76.67	80
John	65	80	70	71.67	80
Linda	90	50	70	70.00	90
Mary	55	70	65	63.33	70
Thomas	55	30	65	50.00	65
Edward	55	80	60	65.00	80

**Print screen 2** 

Student name	Englist Y	Mathema 🗡	Science	Average	Highest scc 🗸
Ted	80	75	90	81.67	90
Carol	75	85	85	81.67	85
Khan	85	75	80	80.00	85
Harry	80	70	80	76.67	80
Sarah	80	70	80	76.67	80
John	65	80	70	71.67	80
Linda	90	50	70	70.00	90
Mary	55	70	65	63.33	70
Thomas	55	30	65	50.00	65
Edward	55	80	60	65.00	80

Print screen 3 The best students in the classroom by average



Student name	Englisl	Mathema	Scienc	Average	Highest scc 🗡
Ted	80	75	90	81.67	90
Carol	75	85	85	81.67	85
Khan	85	75	80	80.00	85
Harry	80	70	80	76.67	80
Sarah	80	70	80	76.67	80
John	65	80	70	71.67	80
Linda	90	50	70	70.00	90
Mary	55	70	65	63.33	70
Thomas	55	30	65	50.00	65
Edward	55	80	60	65.00	80

Print screen 4

Student name	Englist ~	Mathema 🗸	Science	Average	Highest scc ↓↓
Ted	80	75	90	81.67	90
Linda	90	50	70	70.00	90
Carol	75	85	85	81.67	85
Khan	85	75	80	80.00	85
Harry	80	70	80	76.67	80
Sarah	80	70	80	76.67	80
John	65	80	70	71.67	80
Edward	55	80	60	65.00	80
Mary	55	70	65	63.33	70
Thomas	55	30	65	50.00	65

The best students in the classroom by highest score

Print screen 5

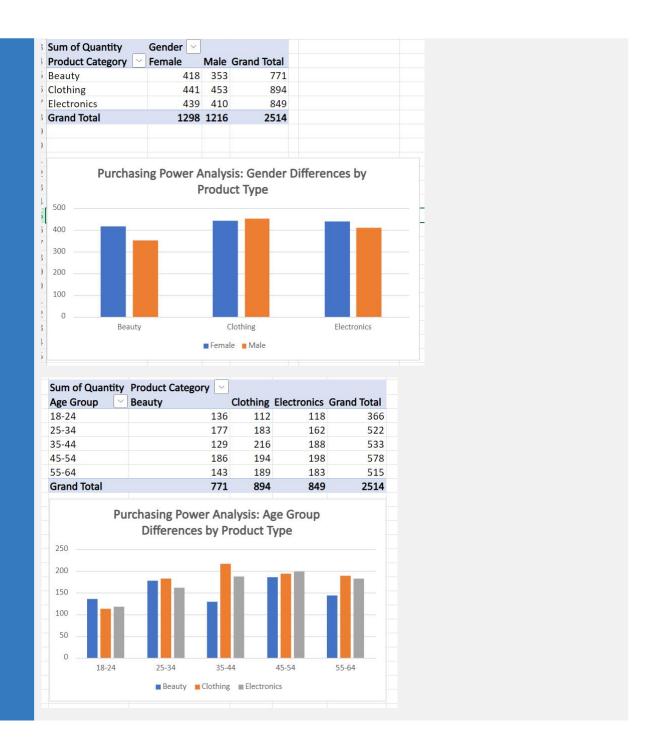
Conditional Formatting - Highest and Lowest average scores							
Student name	Englisl	Mathema 🔻	Scienc	Average	Highest scc 🗸		
Ted	80	75	90	81.67	90		
Carol	75	85	85	81.67	85		
Khan	85	75	80	80.00	85		
Harry	80	70	80	76.67	80		
Sarah	80	70	80	76.67	80		
John	65	80	70	71.67	80		
Linda	90	50	70	70.00	90		
Mary	55	70	65	63.33	70		
Thomas	55	30	65	50.00	65		
Edward	55	80	60	65.00	80		

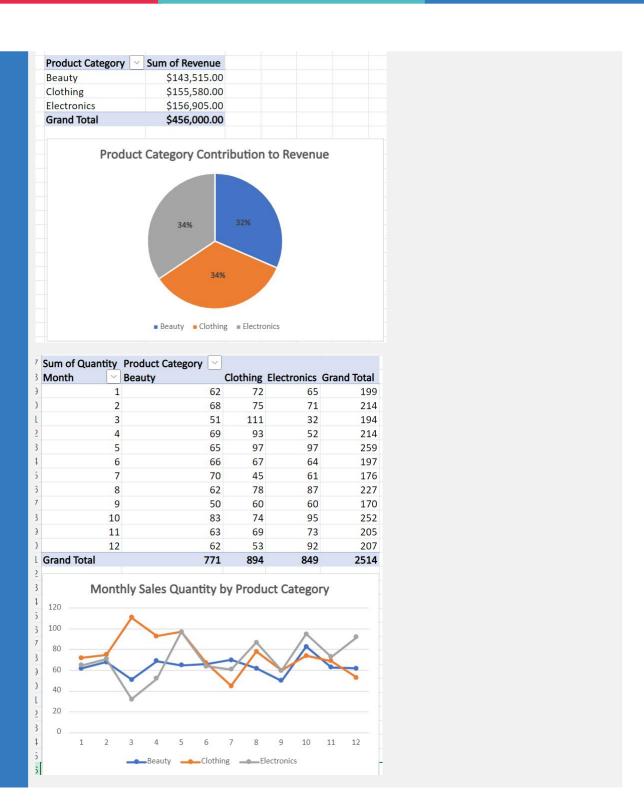


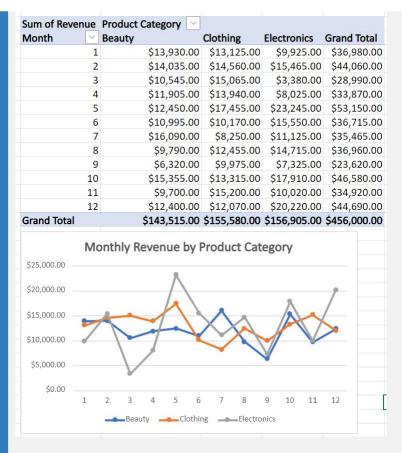
# Day 2: Task 3

Using the skills developed today, have some fun with the data set you have imported. Paste your work below and enjoy!

#### Data resources: retail\_sales\_dataset\_Master **Vlookup Function and Pivot Table** Total Sales Transaction ID **Product category** Transaction ID Product Category Sum of Rever \$200.00 10 Clothing **■ 10** Clothing \$200 15 \$2,000.00 \$2,000 Electronics ■ 15 Electronics \$50.00 25 Beauty ■ 25 Beauty \$50 30 \$900.00 Beauty 30 Beauty \$900 \$1,500.00 Electronics **54** Electronics \$1,500 55 \$120.00 55 Beauty \$120 67 \$1,200.00 Beauty **⊟ 67** Beauty \$1,200 89 \$2,000.00 Electronics ■ 89 Electronics \$2,000 100 \$30.00 Electronics □ 100 Electronics \$30 **Grand Total** \$8,000 **Functions Training: Print** scree Male 6/3/2023 CUST363 Beauty \$25.0 \$25.00 \$0.38 SUMIF(Table1[Gender], "Male", 7 1216 e1[Quantity]) ,"Male",Table1[Product 5/16/2023 CUST376 \$30.0 \$30.00 \$0.45 n 1 353 Category],"Beauty") AVERAGEIF(Table1[Gender],"Ma 3/1/2023 CUST399 Female 64 Beauty \$30.0 \$60.00 \$0.90 sumifs 4/15/2023 CUST408 64 Beauty \$500.0 \$500.00 \$7.50 averageif 2.48 Table1[Quantity]) 1001,"Male",Table1[Produc 2.50 Category],"Beauty") averageifs 1000 COUNT(Table1[Quantity]) 10/26/2023 CUST440 Male Clothing \$300.0 \$600.00 \$9.00 1000 COUNT(Table1[Quantity]) 1000 COUNTA(Table1[Gender]) 0 COUNTBLANK(Table1[Quan COUNTIF(Table1[Product 5/27/2023 CUST561 Clothing \$500.0 \$2,000.00 \$30.00 countif 307 Category], "Beauty") Category], "Beauty", D2:D1001," 141 e") CUST566 12/2/2023 Female Clothing \$30.0 \$30.00 \$0.45 counifs \$300.0 \$50.0 \$300.0 \$500.0 7/19/2023 CUST698 10/4/2023 CUST735 Female 64 \$300.00 \$4.50 Female Clothing **Data Analysis:**







# **Findings:**

- When it comes to the purchase of beauty products, there are more women than men. However, for clothes and electronic products, there is no significant difference in purchasing behavior between male and female.
- People in the 35-44 age group market are significantly more likely to purchase clothing than beauty products and electronic products.
- Analysis of clothing purchasing behavior: As the age group grows, clothing purchases gradually increase and reach their peak in the age range of 35 to 44. Then, with further age growth, there is a downward trend in people's clothing purchases.
- For the analysis of clothing purchasing behavior, as the age group grows, clothing purchases gradually increase and reach their peak in the 45-54 age group. Then, as age further increases, people's purchases of electronic products show a downward trend.
- The company's revenue proportions in the three product types are basically the same, and there is no situation of over-reliance on any one type of product.
- The sales of beauty products remained stable throughout the year, the sales
  of clothing products showed a downward trend, and the sales of electronic

products showed an upward trend.

• At the monthly revenue level, the revenue of clothing products and beauty products generally tends to be stable, but the revenue of electronic products fluctuates greatly.

# Day 3: Task 1

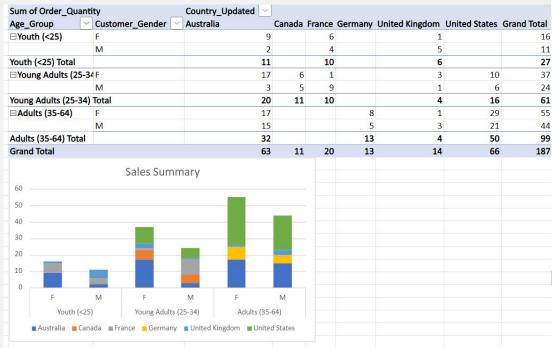
Please download the dataset 'Day\_3\_Task\_1\_Bike\_Sales\_Pivot\_Lab.xlsx' from <a href="here">here</a>.

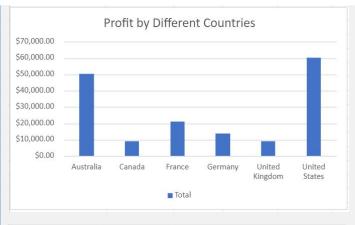
The lab instructions can be found <u>here</u>. Do not worry if you do not complete the lab, just working with data and playing with the pivot table will be good experience.

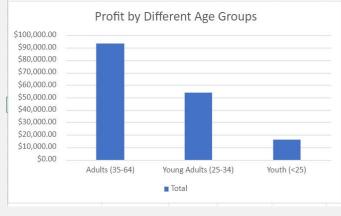
Please paste your final pivot table below and complete the reflection questions:

Age_Group	Country_Updated	Sum of Order_Quantity	Sum of Profit
⊟Youth (<25)	Australia	11	\$2,755.00
	France	10	\$10,507.00
	United Kingdom	6	\$2,788.00
Youth (<25) Total		27	\$16,050.00
☐ Young Adults (25-34)	Australia	20	\$18,639.00
	Canada	11	\$9,123.00
	France	10	\$10,474.00
	<b>United Kingdom</b>	4	\$2,090.00
	United States	16	\$13,636.00
Young Adults (25-34) To	otal	61	\$53,962.00
<b>⊟Adults (35-64)</b>	Australia	32	\$28,932.00
	Germany	13	\$13,636.00
	<b>United Kingdom</b>	4	\$4,194.00
	United States	50	\$46,734.00
Adults (35-64) Total		99	\$93,496.00
Grand Total		187	\$163,508.00

Print screen 1









In which markets does Germany have customers ?

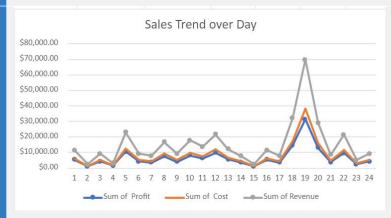
From the pivot table, as we could see, in the market where the age group is Adults (35-64), there are orders for bike in Germany. Other than that, in markets of other age groups, there are no orders for bicycles in Germany.

What country has sales in all Australia and the United Kingdom, cause they have order quantity records which aren't equal to 0 in all age groups.

### markets?

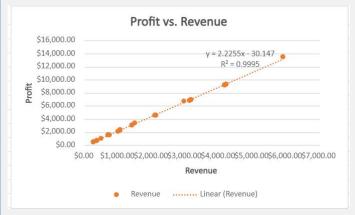
What are the most profitable markets by country, age group, and gender?

Based on the bar charts above, we could find that the United States is the most profitable markets by country, and adults (35-64) is the most profitable market by age group, while female is the most profitable market by gender.



# Any other findings?

The overall profit in December was in a state of slight fluctuation before the 17th, but generally tended to be stable. However, during the days from the 17th to the 19th, the profit witnessed a rapid increase and reached the revenue peak on the 19th. As Christmas approaches, profits start to decline gradually. Although there is a slight increase in profits during the period from the 21st to the 22nd, the overall profits remain on a downward trend.



Profit and revenue show a positive correlation, that is, as revenue increases, profit will also increase.

# 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:

- o For sales greater than 600: "High"
- o For sales between 300 and 600: "Medium"
- o 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.
  - o Please paste your completed work below

Print scree n 1

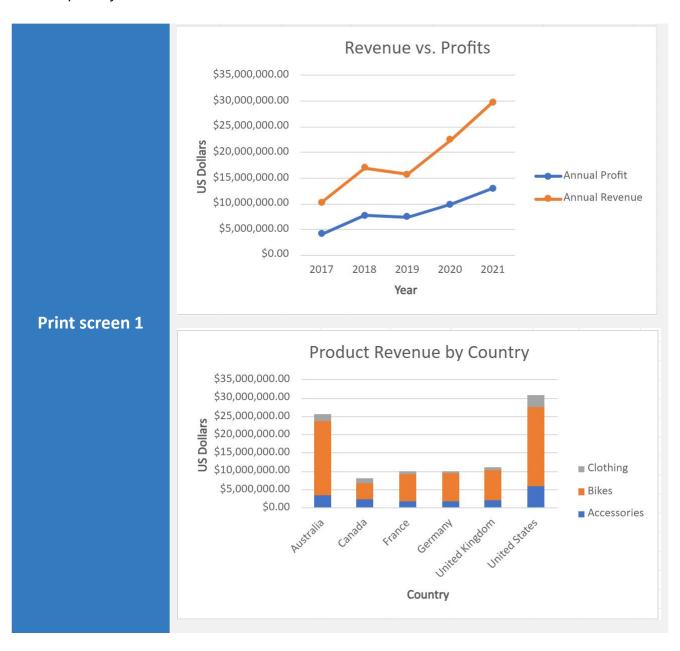
County	Product	Sales Volume	Sales Range_IFS	Switch2categories_Wrong	Switch2categories_Right	Sum of Sales Volume	Product ~			
Yorkshire	Laptops	500	Between 300 and 600	Medium	Medium	County	Laptops	Printers	Smartphones	<b>Grand Tot</b>
Yorkshire	Smartphones	200	Less than 300	Low	Low	Cornwall	700	400	0	1100
Cornwall	Laptops	700	More than 600	High	High	Durham	250	300	0	550
Cornwall	Printers	400	Between 300 and 600	Medium	Medium	Essex	0	800	300	1100
Lancashire	Smartphones	150	Less than 300	Low	Low	Greater Manchester	400	0	600	1000
Lancashire	Laptops	600	More than 600	Medium	High	Lancashire	600	0	150	750
Essex	Printers	800	More than 600	High	High	Yorkshire	500	0	200	700
Essex	Smartphones	300	Less than 300	Medium	Low	Grand Total	2450	1500	1250	5200
Durham	Laptops	250	Less than 300	Low	Low					
Durham	Printers	300	Less than 300	Medium	Low					
Greater Manchester	Smartphones	600	More than 600	Medium	High					
Greater Manchester	Laptops	400	Between 300 and 600	Medium	Medium					

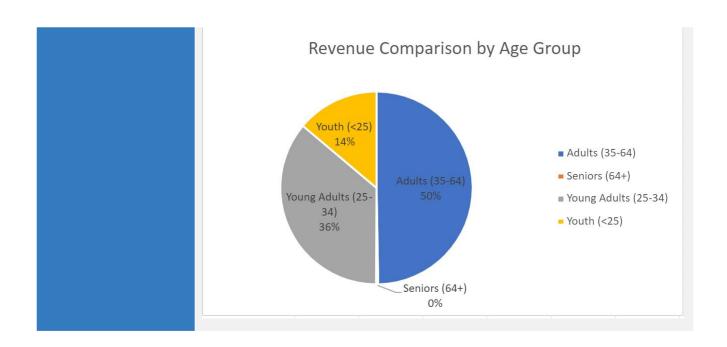
# Day 3: Task 3

Please download the dataset 'Day\_3\_Task\_3\_Bike\_Sales\_Visualisations\_Lab.xlsx' from <a href="here">here</a>.

The lab instructions can be found <u>here.</u> 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:





# 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:

Conduct research and con	Tiplete the below questions.
	<ul> <li>Data Collecting: Collecting the related data which could be used for analyzing from different sources such like online platforms, user apps, web scraping data and stuff like that.</li> </ul>
	<ul> <li>Data Cleansing: Fixing or removing incorrect, corrupted, incorrectly formatted, duplicate, or incomplete data within a dataset. There are many opportunities for data to be duplicated or mislabeled, When combining multiple data sources, .</li> </ul>
How would you prepare for the	• Data Verification: Double-check churn metrics, ensure sample size is significant, and validate that the 12-month churn spike correlates with renewal pricing.
delivery?	<ul> <li>Segment Analysis: Break down churn by customer type, pricing tier, region, or acquisition channel.</li> </ul>
	<ul> <li>Hypothesis Testing: Run statistical tests (e.g., t-test) to confirm that renewal price changes are statistically linked to increased churn.</li> </ul>
	• Storyline Creation: Structure the presentation as:
	As-is: What's happening (data pattern)
	<ul> <li>As-is: Why it's happening (renewal price correlation)</li> </ul>
	> To-be: What we should do (data-driven solutions)
	Data Analysis Tools:
What tools would	SQL for querying churn-related tables
you use for the delivery?	Python (pandas, seaborn/matplotlib) for EDA and visuals

> Excel for simple pivot analysis or for the simple

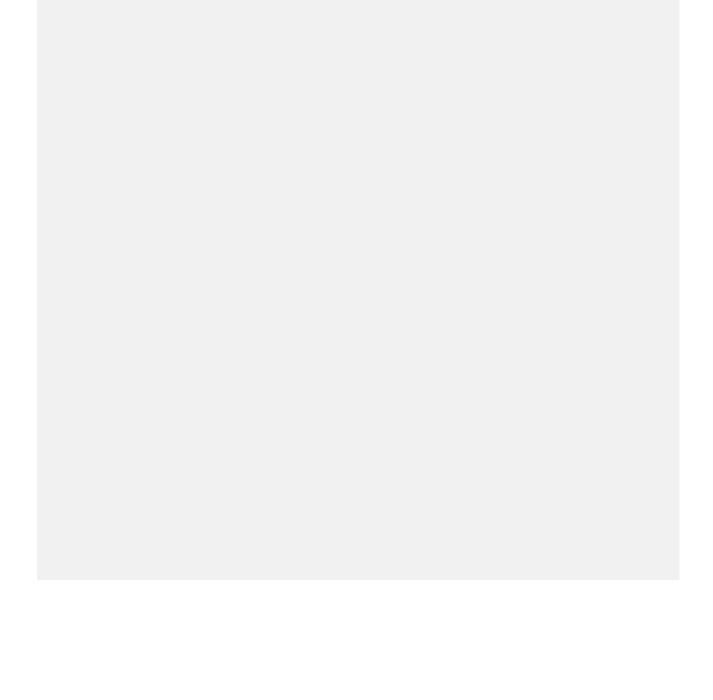
	dashboard				
	Visualization & Reporting:				
	Power BI for dashboards showing churn rates over time, by cohort				
	PowerPoint for final board presentation with embedded visuals				
	<ul> <li>Prospect data refers to information about potential customers or clients that can be used for sales and</li> </ul>				
	marketing purposes.				
What is prospecting and why would you	<ul> <li>As a data analyst, we should do data prospecting before the delivery that is because:</li> </ul>				
complete this before your delivery?	Understanding the board's priorities (e.g., revenue growth, customer lifetime value)				
	Identifying stakeholders who influence decisions on pricing/retention.				
	This lets you focus your presentation on business outcomes of churn — not just raw data.				
	From my perspective, I think the best practices for public speaking and providing updates to senior leaders should follow the following 5 points:				
Tell me best practices	<ul> <li>Lead with insights: "At the 12-month mark, churn increases by 34%, directly after price renewal notifications."</li> </ul>				
for public speaking and providing updates to senior leaders	<ul> <li>Keep visuals simple: Use 1 graph per slide – e.g., a line graph showing churn by month, annotated at the 12- month point.</li> </ul>				
ledder3	<ul> <li>Be prepared with 2-3 key takeaways: Don't overload with data.</li> </ul>				
	<ul> <li>Use executive-friendly language: Instead of "95% confidence interval," say "the data strongly suggests"</li> </ul>				

	<ul> <li>End with clear next steps: e.g., "A/B test new retention pricing by Q3."</li> </ul>
What will you show the board in your delivery?	<ul> <li>Churn Heatmap: Monthly retention rate by cohort.</li> <li>Line Graph: % churn over 24 months, highlighting the 12-month spike.</li> <li>Customer Survey Feedback: Snippets showing dissatisfaction with renewal pricing.</li> <li>Financial Impact: Estimated revenue lost due to churn post-renewal.</li> <li>Scenario Forecasts: Predicted churn reduction if price changes or loyalty discounts are applied.</li> </ul>
How will you articulate the changes that are needed?	<ul> <li>Show A/B test plan for different renewal prices</li> <li>Suggest a pilot program for high-risk cohorts</li> <li>I would like to use the following sentences to illustrate something:</li> <li>"The data shows a x% increase/decrease in churn at the 12-month renewal point. Customers who received a x% price increase/decrease are more likely to leave. We recommend introducing price anchoring, loyalty incentives, or testing personalized renewal rates. If we improve/reduce churn by just x%, we could retain/improve/loss £ x in revenue annually."</li> </ul>
Provide a list of online resources and videos that will support your preparation for public speaking	<ul> <li>Storytelling with Data YouTube – how to turn analytics into persuasive visuals</li> <li>LinkedIn Learning – Data Storytelling</li> <li>Coursera – Presentation Skills for Analysts</li> <li>bilibili – Chinese Special Online Platform contained many learning resources</li> </ul>
Evaluate tools that provide visualisation.	

Tell me what they	Tool	Description	Why use it		
are.	Power BI	Dashboard tool with filters and drilldowns	Great for interactive visual storytelling at executive level		
Tell me what you would choose when delivering your presentation and why	Tableau	Advanced dashboard tool for complex datasets	Strong at trend analysis, great for churn segmentation		
	Excel	Quick, manual charts	Good for fast visuals or backup handouts		
	PowerPoint	Presentation software that allows users to create engaging slideshows for communication purposes	Present customer feedback quotes and summarize key actions for decision-makers		
	<ul><li>When delivering my presentation, I'd use:</li><li>Power BI: To show interactive churn analysis, filters by</li></ul>				
	segment				
	PowerPoint: Embed key visuals for clear storytelling				

# **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:



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.

